



**PATENT EXHAUSTION IN CASES OF RECYCLING  
AND REPAIR OF GOODS**

**BY**

**MR. ANIRUT SOMBOON**

**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE DEGREE OF MASTER OF LAWS  
IN BUSINESS LAWS (ENGLISH PROGRAM)**

**FACULTY OF LAW**

**THAMMASAT UNIVERSITY**

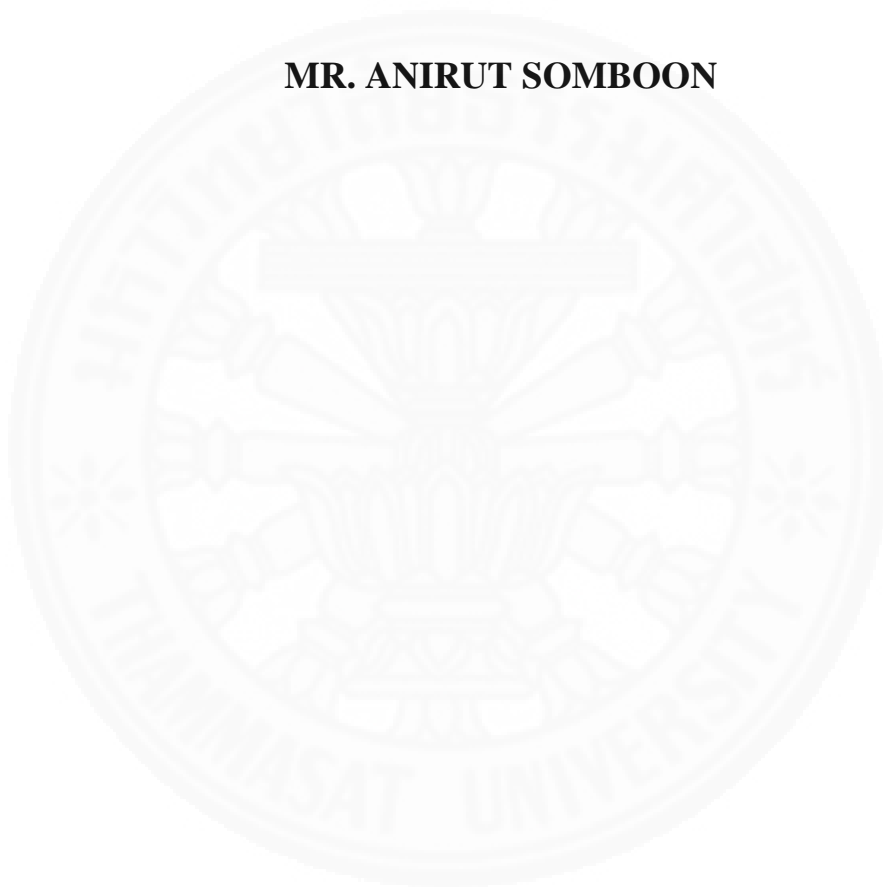
**ACADEMIC YEAR 2015**

**COPYRIGHT OF THAMMASAT UNIVERSITY**

**PATENT EXHAUSTION IN CASES OF RECYCLING  
AND REPAIR OF GOODS**

**BY**

**MR. ANIRUT SOMBOON**



**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE DEGREE OF MASTER OF LAWS  
IN BUSINESS LAWS (ENGLISH PROGRAM)**

**FACULTY OF LAW**

**THAMMASAT UNIVERSITY**

**ACADEMIC YEAR 2015**

**COPYRIGHT OF THAMMASAT UNIVERSITY**



THAMMASAT UNIVERSITY

FACULTY OF LAW

THESIS

BY

MR. ANIRUT SOMBOON

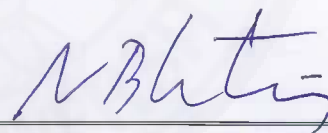
ENTITLED

PATENT EXHAUSTION IN CASES OF RECYCLING AND REPAIR OF GOODS

has been approved as partial fulfillment of the requirements  
for the degree of Master of Laws in Business Laws  
(English Program)

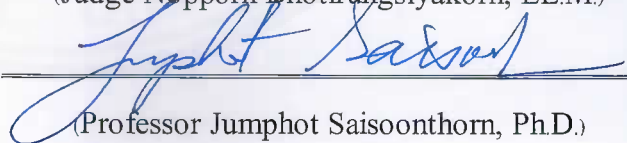
on August 11, 2016

Chairman



(Judge Nopporn Bhotirungsiyakorn, LL.M.)

Member and Advisor



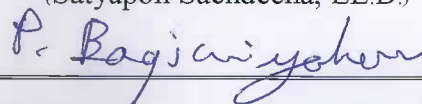
(Professor Jumphot Saisoonthorn, Ph.D.)

Member



(Satyapon Sachdecha, LL.D.)

Member



(Professor Pathaichit Eagjariyakorn, Docteur en Droit)

Dean



(Professor Udom Rathamarit, Docteur en Droit)

Thesis Title	PATENT EXHAUSTION IN CASES OF RECYCLING AND REPAIR OF GOODS
Author	Mr. Anirut Somboon
Degree	Master of Laws
Major Field/Faculty/University	Business Laws (English Program) Faculty of Law Thammasat University
Thesis Advisor	Professor Jumphot Saisoonthorn, Ph.D.
Academic Years	2015

## ABSTRACT

In this era of global environmental problems, reducing natural resources consumption by recycling used goods into new goods and repairing damaged goods to be correctly re-workable is the essential resolution. Moreover, doing so is economically advantageous to consumers.

According to the exhaustion doctrine, a legitimate transfer of a title in patented goods generally consumes exclusive rights conferred by a patent in the goods. To use or resell the said goods transferred, purchasers or others obtaining them do not need to request any permission from a patentee. The exhaustion, however, is not absolute. Among all exclusive rights conferred by a patent, only the rights which are of an exclusively commercial nature involve the exhaustion as a consequence of the sale, whereas, other rights concerning manufacturing or physical product handling, *e.g.*, producing, reconstructing, etc., are not exhausted.

The nature of recycling used patented goods, without reducing it into ingredients, into recycled goods serving its initial utility, *e.g.*, recycled ink cartridges, and repairing damaged patented fall in the realm between permissibility under patent exhaustion and infringement of patent protection. Some sorts of these acts are permissible while the others are deemed as reconstruction. Unsurprisingly, purchasers or proprietors of patented goods and recycling businesses may be liable for patent

infringement. Conversely, such activities may decrease the interest of a patentee, negatively affecting the incentives for inventors to develop new technologies. Therefore, appropriate concrete provisions of law to distinguish between permissible repair/recycling and infringing reconstruction are required to deal with such problems so as to ensure the rights of all said persons exercised over patented goods.

Additionally, a patentee may create post-sale restrictions, with adhesion contracts, on using goods covered by his patent to avoid exhaustion of patent rights. The enforceability of such restrictions, perhaps, hinders purchasers, proprietors and recycling businesses from using goods under normal social convention. Thus, the provisions of law are required to deal with this issue to preclude overexpansion of patent rights.

The study of foreign patent laws and court's decisions demonstrates that case laws in the U.S. and the court's decisions in Japan are highly persuasive for interpretations of patent law governing the issues of distinguishing between permissible repair/recycling and infringing reconstruction under patent exhaustion, and the enforceability of post-sale restriction on the use of patented goods in respect of patent field. Due to the lack of minimum standards set by TRIPs, each Member state has been allowed to determine the scope of patent exhaustion for its national enforcement. The implementation of patent exhaustion in these matters in the U.S. and Japan are individual difference.

As to Thai Patent law, the exhaustion provision under Section 36 paragraph two (7) of Thai patent Act deprived of such standard of distinction between permissible repair/recycling and infringing reproduction. The uncertainty of admission of post-sale restrictions in patent field remains insufficient to ensure the rights of purchasers, recycling businesses and patentees. Therefore, it is essential to advances Thai patent law to catch up with the growth of the awareness of environment and sustainability.

**Keywords:** recycling and repair, exhaustion doctrine, patent infringement

## ACKNOWLEDGEMENTS

First of all, I would like to express my sincere gratitude to the Faculty of Laws, Thammasat University for giving me an opportunity to be part of the Master of Laws (English Program) and to all the professors for educating me of legal profession which is undoubtedly very useful to my career.

To Professor Jumphot Saisoonthorn, my thesis advisor, I would like to express my deepest gratitude for his encouragement, advice and support from beginning the thesis until success. Moreover, I would like to extend my sincerest thanks and appreciation to Judge Nopporn Bhotirungsiyakorn, Professor Pathaichit Eagjariyakorn and Adjunct Professor Satyapon Sachdecha for devotion of their valuable time and for their insightful guidance which incited me to widen my research from various perspectives. Without all supports received from them, my thesis would not have been successfully completed.

Also, my warm thanks to all my friends and staffs of Master of Laws in Business Laws (English Program), Faculty of Law, Thammasat University for their encouragements and supports throughout my thesis writing period.

Lastly, I take this opportunity to express the profound gratitude from my deep heart to my beloved parents, Mr. Anun and Mrs. Absonsamang Somboon, and my siblings, Ms. Shinenapa and Ms. Tawanshine Somboon, who always give me the everlasting love and continuous supports. All my success including the success of this thesis is devoted to them.

Mr. Anirut Somboon  
Thammasat University  
Year 2015

## TABLE OF CONTENTS

	Page
ABSTRACT	(1)
ACKNOWLEDGEMENTS	(3)
LIST OF TABLES	(8)
LIST OF FIGURES	(9)
LIST OF ABBREVIATIONS	(10)
CHAPTER 1 INTRODUCTION	1
1.1 Background and Problems	1
1.2 Hypothesis	3
1.3 Objectives of Study	4
1.4 Scope of Study	4
1.5 Methodology	5
1.6 Expected Results	5
CHAPTER 2 BACKGROUND OF PATENT PROTECTION AND EXHAUSTION DOCTRINE AND RECYCLING AND REPAIR OF GOODS	7
2.1 Repair and Recycling	7
2.1.1 Definition	7
2.1.1.1 Repair	7
2.1.1.2 Recycling	8
2.1.2 Benefits of Repair and Recycling	11
2.1.3 The Scope of Repair and Recycling Considered under Patent Exhaustion Doctrine	12
2.1.3.1 Repair	13
2.1.3.2 Recycling	13
2.2 Patent Protection	14
2.2.1 Patent Right	15
2.2.2 Theories for Patent Protection	16

2.2.2.1 Natural Rights Theory	16
2.2.2.2 Reward Theory	17
2.2.2.3 Incentive to Invent Theory	18
2.2.2.4 Disclosure of Information Theory	19
2.2.3 Patent Infringement	20
2.2.3.1 Literal Infringement	21
2.2.3.2 Interpretation of Patent Claims	21
2.2.3.3 Doctrine of Equivalents	22
2.2.3.4 Indirect Patent Infringement	24
2.3 Exhaustion Doctrine	24
2.3.1 The Exhaustion Doctrine and the Implied License Doctrine	26
2.3.1.1 The Exhaustion Doctrine	26
2.3.1.2 The Implied License Doctrine	27
2.3.2 Purposes of Exhaustion of Intellectual Property Rights	28
2.3.2.1 Intellectual Property Owners	28
2.3.2.2 Assignees	28
2.3.2.3 Third Parties	29
2.3.3 Extent of Exhaustion of Patent Right	29
2.3.4 Geographical Scope of Patent Exhaustion	31
2.3.4.1 National Exhaustion	31
2.3.4.2 Regional Exhaustion	32
2.3.4.3 International Exhaustion	32
2.4 Contractual Limitation of Patent Exhaustion	33
2.4.1 License Restrictions	34
2.4.2 Post-Sale Restrictions	34
<b>CHAPTER 3 EXHAUSTION OF PATENT RIGHT REGARDING RECYCLING AND REPAIR OF GOODS IN FOREIGN LAWS</b>	<b>37</b>
3.1 Patent Protection	37



3.1.1 Patent Right	37
3.1.1.1 United States	37
3.1.1.2 Japan	39
3.1.2 Patent Infringement	41
3.1.2.1 United States	41
3.1.2.2 Japan	43
3.2 Exhaustion of Patent Right	45
3.2.1 Implementation of Exhaustion Doctrine	46
3.2.1.1 United States	46
3.2.1.2 Japan	52
3.2.2 Geographical Scope of Patent Exhaustion	54
3.2.2.1 United States	54
3.2.2.2 Japan	55
3.3 Post-Sale Restriction on Use of the Patented Goods	55
3.3.1 United States	55
3.3.2 Japan	60
3.4 Distinctions between Permissible Repair/Recycling and Infringing Reproduction	61
3.4.1 United States	61
3.4.1.1 Repair and Reconstruction Dichotomy	62
3.4.1.2 Repair Parts Bill	68
3.4.2 Japan	68
3.4.2.1 Major Scholarly Theories	68
3.4.2.2 Repair-Reconstruction Test	72
3.4.3 Comparison of Standards in United States and Japan applied to Recycled Cartridge Cases	75
3.4.4 Europe	79
3.4.4.1 The United Kingdom	80
3.4.4.2 Germany	82
3.4.4.3 The Netherlands	84
3.4.4.4 'Repair Clause' Proposal	85
3.4.5 Singapore	87

CHAPTER 4 EXHAUSTION OF PATENT RIGHT REGARDING RECYCLING AND REPAIR OF GOODS IN THAILAND	88
4.1 Patent Protection	88
4.1.1 Brief History of Thai Patent Law	88
4.1.2 Patent Right	89
4.1.3 Patent Infringement	92
4.2 Exhaustion of Patent Right in Thailand	95
4.2.1 Implementation of Exhaustion Doctrine	95
4.2.2 Geographical Scope of Patent Exhaustion	98
4.3 Post-Sale Restriction on Use of Patented Goods	99
4.4 Distinctions between Permissible Repair/Recycling and Infringing Reproduction	101
4.5 Recycling and Repair Businesses in Thailand	105
4.6 Problems of the Thai Patent Act	107
CHAPTER 5 CONCLUSION AND RECOMMENDATIONS	110
5.1 Conclusion	110
5.2 Recommendations	111
REFERENCES	117
APPENDICES	127
APPENDIX A: THAI PATENT ACT B.E. 2522 (1979)	128
APPENDIX B: Interview session with Dr. Jakkrit Kuanpoth	157
BIOGRAPHY	159

## LIST OF TABLES

Tables	Page
3.1 Common Fact Patterns under Repair and Reconstruction Dichotomy	67
3.2 Patent Grants for the Top 10 Offices in 2013	78



## LIST OF FIGURES

Figures	Page
3.1 “Single Use Only” Labelling of Medical Devices	56
3.2 Convertible Folding Top with Automatic Seal at Rear Quarter	64
3.3 Canon’s Japanese Patent on Ink Cartridges	73



## LIST OF ABBREVIATIONS

<b>Symbols/Abbreviations</b>	<b>Terms</b>
AIPPI	International Association for the Protection of Intellectual Property
CAFC	US Court of Appeals for the Federal Circuit
CJEU	Court of Justice of the European Union
EPA	US Environmental Protection Agency
EPO	European Patent Office
EPUE	European patent with unitary effect
EU	European Union
IPRs	intellectual property rights
ISWA	International Solid Waste Association
JPO	Japan Patent Office
TFEU	The Treaty on the Functioning of the European Union
TRIPs	Agreement on Trade-Related Aspects of Intellectual Property Rights
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
UPC	Unified Patent Court
US	United States
USPTO	US Patent and Trademark Office
WFD	Waste Framework Directive
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

# CHAPTER 1

## INTRODUCTION

### 1.1 Background and Problems

Nowadays, global human population has been rapidly growing, approximately 75 million people or 1.14 percent increasing annually.<sup>1</sup> Human living has away had negative impacts on environment either directly or indirectly. Not only have finite resources been increasingly consumed, but also the waste generated therefrom have been caused concurrently.

In ecology aspects, recycling and repair of goods have become more and more considerable methods to reduce raw materials and energy consumption, and also to abstain from causing environmental problems in association with the disposal of materials,<sup>2</sup> especially plastic wastes which are frequently used in a wide range of products and generally take a very long time for degradation. In economic aspect, recycled goods which are based on original high-priced products, but sold at more affordable prices by third parties who are not inventors or authorized sellers have economical advantage to consumers. Likewise, consumers would choose to repair worn-out or used products and continuously use it rather than purchase a new costly one from a producer. However, in situation that these goods embodying patents, it is reluctant to answer the question whether recycling and repairing thereof are permissible or infringing activities under patent law aspect.

As the purpose of patent law is for rewarding invention disclosure, patent is created to protect rights of an inventor to exploit his invention by granting an inventor

---

<sup>1</sup> Population Reference Bureau, *2014 World Population Data Sheet*, available at [http://www.prb.org/pdf14/2014-world-population-data-sheet\\_eng.pdf](http://www.prb.org/pdf14/2014-world-population-data-sheet_eng.pdf)

<sup>2</sup> C.R.C Mohanty, *PPT Presentation, Reduce, Reuse and Recycle (the 3Rs) and Resource Efficiency as the basis for Sustainable Waste Management*, United Nations Centre for Regional Development, available at [https://sustainabledevelopment.un.org/content/dsd/csd/csd\\_pdfs/csd-19/learningcentre/presentations/May%209%20am/1%20-%20Learning\\_Centre\\_9May\\_ppt\\_Mohanty.pdf](https://sustainabledevelopment.un.org/content/dsd/csd/csd_pdfs/csd-19/learningcentre/presentations/May%209%20am/1%20-%20Learning_Centre_9May_ppt_Mohanty.pdf)

a set of exclusive rights to prevent third parties, who have no consent of the inventor, from making, using, offering for sale, selling, or importing<sup>3</sup> within a limited period of time in the country where the patent is granted.<sup>4</sup> Nevertheless, under the exhaustion doctrine, such monopoly rights are consumed when patented products have been legitimately sold<sup>5</sup> in order to limit an exploitation of a patent and to support free circulation of goods.<sup>6</sup> Once patented products have been sold either by patentees or third parties with patentees' consent, purchasers can use or resell them without permission from patentees.<sup>7</sup> The right to use generally includes simple repair. Hence, purchasers basically can repair patented products to keep it working without requesting patentees' permission beforehand. Purchasers however cannot construct a new article in place of the original one.<sup>8</sup> The acts of recycling and repair thus may collide with exclusive rights of patentees. Distinction between permissible repair/recycling and infringing reproduction should be, though it is really difficult, determined precisely since lack of clear standards causes significant problems. For example, without predictability of the scope of rights, a use of patented product by a downstream user merely with intention to maintain the product condition may constitute reproducing which is expressed to be an infringement. Or, recycling businesses may not be confident to carry on their businesses owing to no standard in the patent law guiding that their works are permissible.

According to this study, the activities of recycling and repair of legitimately sold goods embodying patent are set as matters of exhaustion of exclusive patent rights, and there are many countries, especially the United States of America and Japan, which even though there is no statutes legislated to govern, the case laws of which provide a repair defense as the extension of exhaustion doctrine establishing standards for distinguishing the activities from infringing reconstruction so as to ensure purchasers' or third parties' rights to use and patentees' rights to produce patented product, by

---

<sup>3</sup> Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) art. 28.

<sup>4</sup> *See id.* at art. 33.

<sup>5</sup> *See* Donald Chisum, Chisum on Patents § 16.03 [2] (2005).

<sup>6</sup> Ashley Roughton et al., *The Modern Law of Patents* 302 (2nd ed. 2010).

<sup>7</sup> Chisum, *supra* note 5.

<sup>8</sup> Chisum, *supra* note 5, at § 16.03 [3].

balancing between incentives for inventors to develop new technologies and public interests in practicing patented goods in post-sale.

In addition, there are problems of limitation of patent exhaustion. By claiming ‘freedom of contract’, the patentees may limit or impose condition on practicing patented products. Neither the patent exhaustion provision in Thai Patent Act nor Supreme Court Decision provides a clear framework of whether such agreement is valid to avoid exhaustion of patent over patented products. Specially, post-sale restrictions on the use of patented goods or field-of-use limitations, *e.g.*, stamping on the surface of goods the sign indicating that this product is for ‘single use only’, probably play an essential role in determining patent exhaustion in cases of goods recycling and repair. The said adhesion contracts may be held that it falls within the scope of patent grant as recognized in some foreign laws, such as the United States. Consequently, purchasers perhaps suffer from overexpansion of patent rights.

## **1.2 Hypothesis**

The current Thai Patent Act, Section 36 paragraph two (7) is not clear whether or not recycling and repair of patented product are permissible, and to what extent are these permissible under exhaustion doctrine. In order to ensure the rights of purchasers to use, recycling businesses to recycle and patentees to exclude others from producing products embodying patent, it is essential to amend the law by including specific provisions which directly govern this issue and draw a clear line of distinction between permissible repair/recycling and infringing reproduction balancing between patentee’ interests and public interests. Furthermore, the existing law is not explicit about a limitation of patent exhaustion, especially by post-sale restriction information on the use of patented goods concerning the activities of recycling and repair of goods. To promote fair trade and consumer protection, the law should be more certain for preventing overexpansion of patent rights.



### **1.3 Objectives of Study**

- a. To study the meaning of recycling and repair of goods, the benefits thereof, and how they pose problems on determining patent exhaustion.
- b. To study laws in foreign countries, *i.e.*, the United States of America and Japan regarding patent protection and exhaustion of patent rights in cases of recycling and repair of goods including standards of distinguishing between permissible repair/recycling and infringing reproduction in the United Kingdom, Germany, the Netherlands, and Singapore.
- c. To study laws in foreign countries, *i.e.*, the United States of America and Japan regarding how post-sale restrictions play a role in determining exhaustion of patent rights, especially restrictions on post-sale use concerning the activities of recycling and repair of patented articles.
- d. To study the existing patent exhaustion provision under Thai Patent Act and to discuss determining recycling and repair of patented articles in the context of patent exhaustion doctrine in comparison with the laws of the United States of America and Japan.
- e. To identify the existing patent exhaustion provision under Thai Patent Act regarding post-sale restrictions on exhaustion of patent rights and to compare with the United States of America and Japan.
- f. To propose a properly legal principle relating to exhaustion patent rights in cases of recycling and repair of goods, both standards of distinction between repair/recycling and reproduction and post-sale restrictions on the use of patented articles, with the purpose of balancing between incentive for development of new inventions and public interest.

### **1.4 Scope of Study**

This thesis will mainly focus on the study of the recycling and repair of goods embodying invention patent in products and the issue of exhaustion of patent rights

occurred therefrom. The study shall be based on foreign laws, *i.e.*, the United States of America, Japan, and Thai laws; and further glance through standards of distinguishing between repair/recycling and reproduction provided by statutory laws or case laws in some countries; *i.e.*, the United Kingdom, Germany, the Netherlands, and Singapore. Additionally, this thesis will focus on the issue of contractual limitation of patent exhaustion by post-sale restriction on the use of patented goods in the United States of America, Japan, and Thailand.

### **1.5 Methodology**

The primary method used in this thesis is based on documentary research concerning study and analysis of treatises, textbooks, articles, journals, court's decision, scholar's opinion, AIPPI publications, interview, information on the Internet, domestic and international laws and government publications.

### **1.6 Expected Results**

- a. To understand the meaning of recycling and repair of goods and how they post problems on determining patent exhaustion.
- b. To understand the laws in other countries dealing with patent exhaustion in cases of recycling and repair of goods.
- c. To understand how post-sale restrictions play a role in determining exhaustion of patent rights and how restrictions on post-sale use limit patent exhaustion in cases of recycling and repair of patented goods in foreign laws.
- d. To understand how Patent law in Thailand deals with problem of determining recycling and repair of patented articles in exhaustion of patent rights.
- e. To understand how Patent law in Thailand deals with problem of determining post-sale restrictions on the use of patented articles in context of patent exhaustion.

- f. To be able to provide appropriate suggestions to deal with all the above mentioned issues.



## CHAPTER 2

### BACKGROUND OF PATENT PROTECTION AND EXHAUSTION DOCTRINE AND RECYCLING AND REPAIR OF GOODS

#### 2.1 Repair and Recycling

##### 2.1.1 Definition

###### 2.1.1.1 Repair

The definition of repair is generally to put something which is damaged, broken, or working incorrectly, back into its original condition again,<sup>9</sup> or to restore something damaged or broken to good condition or working order;<sup>10</sup> for instance, sewing the seam of clothes that have torn closed again, replacing car tires when it blew out, or fixing the defective hardware of laptop.

More thoroughly, in the term of maintenance engineering, repair is sometimes called corrective maintenance<sup>11</sup> which is conducted to get an object working again. Its program focuses on regular task that will maintain all critical device and system in optimum operating condition. The major objectives of corrective maintenance program are to: eliminating breakdown, eliminating deviation, eliminating unnecessary repairs, and optimizing all critical planned system.<sup>12</sup>

In comparison with modification, repair does not change the form or quality of an object, but only restores it back into its original condition.<sup>13</sup> On the other hand, the purpose of modification naturally is not to bring back the original condition of an object but to improve its quality. Therefore, whether or not an object is damaged is normally

---

<sup>9</sup> See Cambridge Dictionaries Online, *available at* <http://dictionary.cambridge.org>

<sup>10</sup> See Collin English Dictionary, *available at* <http://www.collinsdictionary.com>

<sup>11</sup> There are three types of maintenance in use: Preventive Maintenance, Operational Maintenance, and Corrective Maintenance.

<sup>12</sup> See <http://www.wikipedia.org>

<sup>13</sup> See Merriam-Webster Dictionaries Online, *available at* <http://www.merriam-webster.com>

not to be taken into the consideration for the definition of modification, whereas, repair means restoring damaged objects.

### 2.1.1.2 Recycling

In general definition as recognized by anyone, recycling is that recovered materials are brought back into value chain and utilized as secondary raw materials.<sup>14</sup> However, recycling exactly lacks of consistency in its own terminology and seems confusing interface with other waste treatment options, especially reuse. Owing to the difference in approaches and assessments, the uncertainty of the definition exists.<sup>15</sup>

In the United States Environmental Protection Agency (EPA), “Recycling” is one of the waste management alternatives. It means reforming or reprocessing of recovered materials. And, recycling sometimes might be precisely defined as series of activities of collection, disassembly and procession, which products or other materials are recovered from or otherwise diverted from solid waste stream, for use in form of raw material in manufacture of new products.<sup>16</sup>

In Waste Framework Directive (WFD) which is European Union Directive laying the basis in order to turn the EU into a recycling society, the term recycling is defined more thoroughly. It means “any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations.”<sup>17</sup>

---

<sup>14</sup> ISWA, *Key Issue Paper on The Definition of Recycling*, Presentation in the 4th ISWA Beacon Conference on Waste Prevention and Recycling, Copenhagen, 16-17 June 2014, available at [http://www.beacon-cph.dk/fileadmin/user\\_upload/documents/16\\_June/1200\\_\\_Bjoern\\_Appelqvist.pdf](http://www.beacon-cph.dk/fileadmin/user_upload/documents/16_June/1200__Bjoern_Appelqvist.pdf)

<sup>15</sup> *Id.*

<sup>16</sup> Christian Madu, *Handbook of Environmentally Conscious Manufacturing* 271 (2001).

<sup>17</sup> European Commission, *Waste Framework Directive 2008/98/EC art. 3 (17)*

### **a. Classification by Levels of Reprocessing**

Not only recycling is able to be classified by the types of materials, *e.g.*, waste paper and card board recycling, plastic recycling, metal recycling, wood recycling, glass recycling, textiles recycling, and bricks/inert waste recycling;<sup>18</sup> but International Solid Waste Association (ISWA) also classifies the types of recycling by the complexity of reprocessing as follows:<sup>19</sup>

#### *1. Product Recycling*

Product recycling is defined as reprocessing an object whereby its physical and chemical constitution are not changed in order to use it again as its original utility or in different purpose; for example, refurbishing of a single use camera with replacement film and resealing, boring and refilling of printer's or copy machine's single use ink or toner cartridges, or using of end-of-life tires as fenders.<sup>20</sup>

#### *2. Mechanical Recycling*

Mechanical recycling is also known as material recycling, material recovery or related to plastics or back-to-plastics recycling. It basically means a method by which physical constitution of an object is destroyed and reprocessed into new secondary raw materials without changing basic chemical structure of the material; for instance, melting and reprocessing of metals, or grinding plastic wastes and reprocessing recyclates that can be converted into new plastics products.<sup>21</sup>

#### *3. Feedstock Recycling*

Feedstock recycling or so-called chemical recycling is that physical and chemical constitution of an object is broken down into individual components and then these will be fed back as raw material prepared to remanufacture again for new or same

---

<sup>18</sup> See [http://www.ismwaste.co.uk/recycling\\_services/recycling.html](http://www.ismwaste.co.uk/recycling_services/recycling.html)

<sup>19</sup> ISWA, *supra* note 14.

<sup>20</sup> ISWA, *supra* note 14.

<sup>21</sup> ISWA, *supra* note 14.

product, such as, the new depolymerization processes which convert some plastics types back into monomers for the production of virgin plastics.<sup>22</sup>

### **b. Comparison between Recycling and Reuse**

Recycling is the use of waste as material to manufacture a new product. It involves alteration of physical form of an object or material and then a new object will be made therefrom.<sup>23</sup> In this sense, nothing but only waste can be recycled.<sup>24</sup> On the other hand, reuse which consumes less energy and resource is preferred by people rather than recycling.<sup>25</sup> Reuse is the use of an object or material again, either for its initial purpose or a related purpose, without any essential alteration of physical form of an object or material.<sup>26</sup> The terms reuse and recycling are often used interchangeably.<sup>27</sup> For example, a recycled ink cartridge, which used up and has been refilled and resold, might be argued that it should be called the reused cartridge instead of the recycled cartridge as commonly known.<sup>28</sup>

However, in the situation that wastes mean the objects unintended to be used again and generally recycling is considered to be a form of waste management while reuse is considered to be a form of waste prevention,<sup>29</sup> the use of product wastes as materials in producing same products even without an essential alteration should not be defined as reuse. This act literally should be considered as recycling instead because such materials, which are not intended to be reusable, become wastes before the reprocess. In other words, reprocessing used products unintended for reusable to be usable again even as same as its original utility should be classified as recycling.

Nonetheless, even though the terminology of recycling is still uncertain, it does not have much impact on determination in the context of patent exhaustion. The scope

---

<sup>22</sup> ISWA, *supra* note 14.

<sup>23</sup> See <http://www.calrecycle.ca.gov/reducewaste/Define.htm>

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

<sup>27</sup> See <http://www.calrecycle.ca.gov/reducewaste/Electronics/InkAndToner.htm>

<sup>28</sup> *Id.*

<sup>29</sup> See, *supra* note 27.

of activities which are the problems taken into consideration of patent infringement and exhaustion of patent right is specified in 2.1.3.

### **2.1.2 Benefits of Repair and Recycling**

Repair is considered as waste prevention and also known as source reduction that has many positive consequences on both environmental and economic points of view as follows:<sup>30</sup>

#### Environmental Benefits<sup>31</sup>

- a. *Conservation of natural resources:* the resources, *i.e.*, metals, water, and petroleum will be conserved through reducing the amount of raw materials needed to be used in manufacturing.
- b. *Reduction of environmental impact from raw material extraction:* the impacts concerning mining, drilling, extracting, processing and transporting these raw materials will be minimized due to reduction of the use of raw materials in manufacturing.
- c. *Reduction of energy usage and pollution from manufacturing:* the need to manufacture new goods or reprocess materials will be minimized, thereby saving energy and avoiding pollution.
- d. *Reduction of waste disposal facilities:* burdens on landfills and combustors will be eased, including disputes over new facilities location.

---

<sup>30</sup> US Environmental Protection Agency (EPA), *Spotlight on Waste Prevention*, EPA's Program to Reduce Solid Waste at the Source, EPA530-K-95-002 June 1995, available at <http://www.epa.gov/epawaste/conserve/pubs/spotlight.pdf>

<sup>31</sup> *Id.*



Economic Benefits<sup>32</sup>

- a. *Cutback on waste management costs:* the costs associated with collecting and processing the amount of waste will be lessened, including costs of siting and operating management facilities such as landfills, combustors and materials recovery facilities.
- b. *Savings in material and supply costs:* for organization, saving in avoidable costs of purchasing products that can be reusable is significant. Activities of waste prevention will save such costs.
- c. *Savings from more efficient work practices:* waste-reducing work habits, e.g., using Email in place of paper will save time and money.
- d. *Potential revenues from selling unwanted or reusable materials:* it will be possible to earn revenues from selling reusable goods that are no longer needed to yard sales rather than throwing them away as waste.

Generally, recycling is considered to be in waste management which is of great benefits to consumers and society in economic aspect and environmental protection as same as waste prevention. However, waste prevention is preferred rather than waste management since the latter does not always get cost-effective. To recycle waste, the high amount of costs of: collection, recovering, and reprocessing is normally emerged, and sometimes it may create abundant pollution under such process.<sup>33</sup>

### **2.1.3 The Scope of Repair and Recycling Considered under Patent Exhaustion Doctrine**

---

<sup>32</sup> *Id.*

<sup>33</sup> See <http://www.conserve-energy-future.com/advantages-and-disadvantages-of-recycling.php>

Initially, it should be noted that the recycled and repaired objects are goods which have been produced in order to be put in the market. Considering the context of doctrine of patent exhaustion, activities of recycling and repair of goods by purchasers or third parties are merely occurred after goods have been legitimately sold. Also, such goods aforementioned mean none other than patented products or products produced using patented process. In this study, the term ‘goods’ therefore are referred interchangeably with such products.

### **2.1.3.1 Repair**

Repair that will be analyzed later in context of patent exhaustion doctrine in this study is limited to restoration of damaged, worn, or faulty goods in post-sale by a purchaser, a downstream user or anyone having permission therefrom so as to make it return to its original condition suitable for the intended use of the product.<sup>34</sup> In the situation of replacement of many components of a product as a whole protected by patent and replacement of a specific part essential for a patented product or invention, it ought to determine whether these aforementioned activities are permissible under patent exhaustion or otherwise constitutes reproduction. With regard to patent rights and their exhaustion, repair and reproduction are treated differently. To this extent, repair may no longer be under disposition of patentee since it has been exhausted, whereas, reproduction shall be monopoly right retained by patent system to a patentee within limited period of time. It is therefore necessary to find proper line between them so as to balance between incentives for inventors and public interests in free trading and using goods.

### **2.1.3.2 Recycling**

Recycling in light of such circumstance is not beyond the scope of activities of reprocessing used or worn out products embodying patent into new products which are identical to the original products having virtually served its initial utility not reducing

---

<sup>34</sup> International Association for the Protection of Intellectual Property (AIPPI), *Working Guidelines*, Question Q205 Exhaustion of IPRs in case of recycling and repair of goods, available at <http://www.aippi.org>

it into ingredients. This sort of recycling is classified as product recycling in the level of reprocessing;<sup>35</sup> for instance, recycling used ink or toner cartridge, refurbishing used disposable cameras, and so forth. As mentioned above, it is necessary to draw a line to what the extent should repair/recycling be permitted under doctrine of exhaustion. Nonetheless, recycling using entire products to manufacture new and/or different products – that is classified as mechanical and feedstock recycling, *e.g.*, the use of waste paper or waste plastic for production of recycling paper or other plastic goods – does not concern the doctrine of exhaustion.<sup>36</sup> On the account that original entity of goods is no longer exist, the doctrine of exhaustion does not need to be considered. Last but not least, in the same sense, recycling through use of its ingredients or components to form new and/or different products is also excluded.<sup>37</sup> These activities shall be determined solely under examination of patent infringement dispute instead.

Nonetheless, it should be noted that, in practice, the term “recycled” goods might be often used interchangeably with other words, *e.g.*, “used”, “reconditioned”, “remanufactured”, “refreshed”, “refurbished”, “repaired”, “recertified”, or “like new”. The difference of terminology even defined by slightly different purposes does not affect the determination in this study, as long as these acts fall within the scope of recycling specified above.

## 2.2 Patent Protection

Without a patent protection, anyone can make and sell an invention which an inventor has spent his time and money and has used his knowledge to develop or make, without permission and compensation to an inventor. Should any state let it be in this way, no one will be persuaded to create new inventions. The main purpose of patents is to grant protection for innovative products and processes from unwanted copying. Conferring upon an inventor an exclusive right over his invention to exclude others

---

<sup>35</sup> *Id.*

<sup>36</sup> *Id.*

<sup>37</sup> *Id.*

from making, using, selling or importing for a certain period seems to be the best way for an inventor to recoup the investment and society to utilize the invention.

### 2.2.1 Patent Right

Literally, ‘patent’ is a word originating from the Latin ‘*patere*’ the meaning of which is ‘to lay open’ or to make available to public.<sup>38</sup> A patent is a set of exclusive rights granted by a state to an inventor to make, use, or sell an invention for a certain number of years in order to exchange for disclosing detail of invention that is a solution to a technological problem.<sup>39</sup>

Often, the patent rights are recognized as monopoly. Monopoly is exactly a Greek cumulative term between the prefix ‘mono-’ meaning ‘alone or single’ and the suffix ‘-poly’ meaning ‘to sell’ that is normally used when any person or enterprise is the single supplier of a particular commodity or characterized by a lack of economic competition. In legal term, monopoly means a business entity having power to charge as high prices as his will. On the other hand, exclusive patent rights are not granted to an inventor in sense of monopoly to practice an invention embodying a patent other than the rights to keep others from making, using, offering for sale, selling, and importing it; or grant a license to others to engage in the conduct; within the limited period of time. Patent owners are still subject to anti-trust law and distinguishable from endless monopolization. The exclusive rights granted by patent are limited by time. The insertion of the term “monopoly” into the understanding of patent, therefore, mischaracterizes the patent system as a whole.<sup>40</sup>

---

<sup>38</sup> <http://www.merriam-webster.com>

<sup>39</sup> World Intellectual Property Organization (WIPO), *WIPO Intellectual Property Handbook: Policy, Law and Use* 17 (2008).

<sup>40</sup> See the Boardman & Clark Intellectual Property Group, *This Tomayto Is Not A Tomahto: Differentiating Monopolies and Exclusive Patent Rights*, available at [http://www.boardmanclark.com/ip\\_blog\\_posts/this-tomayto-is-not-a-tomahto-differentiating-monopolies-and-exclusive-patent-rights/](http://www.boardmanclark.com/ip_blog_posts/this-tomayto-is-not-a-tomahto-differentiating-monopolies-and-exclusive-patent-rights/)

The patent right is beneficial to both the public and the inventor. The inventor obtains exclusive rights within a limited term, whereas, the public receives legitimate and innovative goods.<sup>41</sup>

### 2.2.2 Theories for Patent Protection

To answer the question why any state shall protect intellectual property including patent by granting exclusive rights to individuals, there are four primary theories that can be identified<sup>42</sup> and classified into two types.<sup>43</sup> The natural rights and reward theories are grounded on the concept of fairness for individuals who create innovation, whereas, incentive to invent and disclosure of information theories are considered under utilitarian theory based on the reason of economic.<sup>44</sup> Rather than concentrating upon rewarding individual inventors, the utilitarian theory would attempt to increase the happiness of society at large.<sup>45</sup>

#### 2.2.2.1 Natural Rights Theory

The natural rights justification strongly influences continental European intellectual property systems.<sup>46</sup> A “labor theory of property” was developed in seventeenth-century by an English philosopher, John Locke known as the “Father of Classical Liberalism”<sup>47</sup>, provided that he believed that God gave the earth and everything therein to all mankind in common, and every single person has a property

---

<sup>41</sup> *Id.*

<sup>42</sup> Fritz Machlup, *An Economic Review of the Patent System*, Study No. 15, Subcomm. Pat. Trademark & Copyright, Jud. Comm., 85th Cong., 2d Sess. 9, 21 (1958), available at [https://mises.org/sites/default/files/An%20Economic%20Review%20of%20the%20Patent%20System\\_Vol\\_3\\_3.pdf](https://mises.org/sites/default/files/An%20Economic%20Review%20of%20the%20Patent%20System_Vol_3_3.pdf).

<sup>43</sup> Janice Mueller, *An Introduction to Patent Law* 26 (2nd ed. 2006).

<sup>44</sup> *Id.*

<sup>45</sup> *Id.*

<sup>46</sup> *Id.*

<sup>47</sup> Tim Delaney, *The March of Unreason: Science, Democracy, and the New Fundamentalism* 18 (2005).

interest in their own body and labor.<sup>48</sup> When human mixes labor with something the nature provided, he makes it his property. Every people have a natural property right in his own thought.<sup>49</sup> Under moral right, others are able to recognize instantly that using with unauthorized to use shall be condemned as stealing or piracy.

There are some problems under this theory purely applied to intellectual property. It just appears to award property rights and never permit the intellectual property to pass into the public domain.<sup>50</sup> The theory does not address balancing between proprietary rights against enhancement of the public domain. It also lacks of dealing with allocation of efforts by multiple innovators.<sup>51</sup> It is really common that works of some inventors have been typically built on the earlier work of other inventors.<sup>52</sup> The cumulative process of invention which is often occurred in reality fails in the theory.

#### **2.2.2.2 Reward Theory**

Reward for services rendered is characterized for conveying proprietary rights in intellectual property. According to the theory, inventors as the men who exert to create beneficial things to society should have rights to receive rewards for their creations in proportion to their usefulness to society. In parallel, society acquiring the utility should have moral obligation to reward the inventor for the right to use.<sup>53</sup>

However, this theory never directs to reward the invention created accidentally, rather than intentionally and inventively. Moreover, this theory assumes that a value of invention sold in the market is the suitable reward to which a patentee should attain because of its usefulness to society. In reality, that measure is quite not correct since

---

<sup>48</sup> John Locke, *Second Treatise of Government*, 1690, Ch. 5, §§ 26-27, at 11 (last amended 2008).

<sup>49</sup> Machlup, *supra* note 42.

<sup>50</sup> Mueller, *supra* note 43.

<sup>51</sup> Mueller, *supra* note 43, at 27.

<sup>52</sup> Isaac Newton said of his inventive genius that “*if I have seen further [than other men], it is by standing on the shoulders of giants.*”, *Columbia World of Quotations* No. 41418 (1996), available at <http://www.bartleby.com/66/18/41418.html>.

<sup>53</sup> Mueller, *supra* note 43, at 27.

the price is set freely by a patentee who is the sole source of patented invention without having to encounter any market competitors. The price of invention which a patentee obtains may not always be an accurate reflection of its social utility. On the one hand, some inventions may be overvalued by marketplace beyond real value to society. On the other hand, inventions which become more beneficial to society may be undervalued criticized on moral issue or other grounds, such as, contraceptives.<sup>54</sup>

### 2.2.2.3 Incentive to Invent Theory

As Abraham Lincoln described, “the patent system added the fuel of interest to the fire of genius.”<sup>55</sup> This theory always assumes that invention is beneficial to society and human would to create inventions whenever having economics incentive. Thus, any state should govern patent protection in order to promote invention and technological development, which will lead to creating more and more valuable works. Legal measure of granting monopoly within a period of time is believed to be the best way to urge inventors to produce useful works for society.<sup>56</sup> Since each process of production including research and development has so high costs, granting inventors the rights to exploit the invention exclusively by the state may be the correct mean to recoup their investment.

However, many classical economists argue that intellectual property rights (IPRs) are unnecessary because inventions are often occurred accidentally and inventive activities were inborn before conception of patent system.<sup>57</sup> In the model business that product competition is important and any private organization endeavors

---

<sup>54</sup> Mueller, *supra* note 43, at 27.

<sup>55</sup> This quote from a speech given by Abraham Lincoln is inscribed over a door of the building that houses the U.S. Department of Commerce in Washington, D.C. The USPTO, a bureau of the Department of Commerce, was once housed in this building, but is currently located in northern Virginia.

<sup>56</sup> จักรกฤษณ์ ควรวจน์, กฎหมายสิทธิบัตร: แนวคิดและบทวิเคราะห์ (พิมพ์ครั้งที่ 3 พ.ศ. 2556), น.31. (Jakkrith Kuanpoth, Patent Law: Concept and Analysis 31 (3rd ed. 2013).)

<sup>57</sup> Birgitte Andersen, *The Rationales for Intellectual Property Rights: The Twenty-First Century Controversies* 8 (2003), presented in the DRUID Summer Conference 2003 on Creating, Sharing and Transferring Knowledge, Copenhagen, 12-14 June 2003.



is a market dominance, investment in inventing and manufacturing new products to be sold in market, especially in oligopolistic market, before other competitors is more necessary.<sup>58</sup> Hence, grants of monopoly to motivate creating works beneficial to society may not be a primary rationale.

#### 2.2.2.4 Disclosure of Information Theory

This theory assumes that any invention would remain secret from which society never derive but patent system stipulates disclosure of the invention by giving it up for monopoly power.<sup>59</sup> In this situation, a patent is not interpreted as privilege the society grants but regarded as a social contract.<sup>60</sup> As a *quid pro quo* or bargaining exchange between an inventor and society, an inventor is conveyed, in limited period of time, rights to exclude others from exploiting his invention in exchange for disclosing, through a patent officer, of the making and using process to become part of the wide community's knowledge base, causing anyone to be able to utilize their available information after the patent expiration. Also, sharing invention knowledge has impact on development of innovation since there will be a speeding up learning from strengths and weaknesses of existing inventions in order to create a new work, which is often better than the former. Therefore, it is beneficial to an entire society provided that quality of life of people in the society will be unstoppably being improved.<sup>61</sup>

It may seem the most reasonable. However, many inventors do not believe in this patent rationale of incentive to disclose information. In case where an inventor considers that he can keep invention ideas a secret, a patent system will be ignored. Thus, shrewd inventors would use the patent system to disclose only non-unique

---

<sup>58</sup> Frederic Scherer, *Industrial Market Structure and Economic Performance* 447 (2nd ed. 1980).

<sup>59</sup> Fritz Machlup and Edith Penrose, *The Patent Controversy in the Nineteenth Century*, *Journal of Economic History* 26 (1950), available at <http://c4sif.org/wp-content/uploads/2010/09/Machlup-Penrose-The-Patent-Controversy-in-the-Nineteenth-Century-1950-b.pdf>

<sup>60</sup> Andersen, *supra* note 57, at 18.

<sup>61</sup> Mueller, *supra* note 44, at 28.



inventions which is practically easy to be found out of its way, *e.g.*, reverse engineering, and to merely restrict it to markets.<sup>62</sup>

### 2.2.3 Patent Infringement

Under patent protection that patent owners can prevent others from violating their exclusionary rights basically consisting of making, using, selling and importing the invention; any person who commits these activities without authorization by a licensing agreement or given consent from the owner generally shall be held liable for patent infringement. However, it may vary from jurisdiction to jurisdiction. For instance, in some countries, not merely does the use without authority constitute patent infringement but such a potentially infringing activity must also have commercial purpose.<sup>63</sup>

Patents typically are territorial and infringement of patent right is merely possible in a country or region in which a patent is in force.<sup>64</sup> For instance, if a patent is granted in Thailand, any person in Thailand is prohibited from making, using, selling or importing patented item. But, people in other countries may be free to exploit patented invention in their country.

Moreover, to constitute patent infringement, an action of a prohibited act with respect to a patented invention must be done during the term of the patent which also varies from jurisdiction to jurisdiction. According to patent laws in most countries, the

---

<sup>62</sup> Andersen, *supra* note 57, at 20.

<sup>63</sup> Article 12 of the Ordinance No. 03-07 of July 19, 2003 on Patents of Algeria; Section 22(1) of the Patents Act of Austria; Article 11 of the Patent Law of China; Article 18 of the Law on Industrial Property of Honduras contained in Decree No. 12-99-E; Article 68 of the Japanese Patent Act; Section 58 of the Industrial Property Act, 2002 (IPA) of Kenya; Article 30 of the Ordinance No. 89-019 Establishing Arrangements for the Protection of Industrial Property (of July 31, 1989) of Madagascar; Article 53 of the Patent Act of the Netherlands; Section 1(1) of the Patent Act of Norway; Article 66(1) of the Industrial Property Law of Poland; Article 94 of the Patent Act of the Republic of Korea; Section 28 of the Patents Act Chapter 216 Laws of Uganda cited in WIPO, *Exceptions and Limitations to Patent Rights: Private and/or Non-Commercial Use*, Standing Committee on the Law of Patents (2013), at 4.

<sup>64</sup> See <http://www.wipo.int/patents/en/>

term of patent is 20 years from the filing date of the application.<sup>65</sup> Making, using, selling, and importing patented invention after the term of patent has been lapsed do not constitute patent infringement because that invention is no longer protected by the patent law system.

Patent laws in every countries authorize the courts to determine the scope of patent protection through the interpretation of patent claims written in patent specification to seek patented invention content and examine whether and to what extent the patent is able to prohibit other's activities.<sup>66</sup> In general, any person might be liable for direct patent infringement, if his action literally infringes a prior patent claim or even its equivalent. Also, one might be liable for indirect patent infringement when he supplies a part of a product intended to be used for patented item.

### **2.2.3.1 Literal Infringement**

The term "literal infringement" is defined that each and every element in the patent claim has identical correspondence in the allegedly infringing device or process.<sup>67</sup> There are two practices of patent claim interpretation: central definition theory and peripheral definition theory. The difference in methods of claim interpretation can leads to distinguishable consequences and different development in patent law system.<sup>68</sup>

### **2.2.3.2 Interpretation of Patent Claims**

#### ***a. Central Definition Theory***

---

<sup>65</sup> H. Jackson Knight, *Patent Strategy for Reserchers and Reserch Managers* Ch. 1.7 (3rd ed. 2013).

<sup>66</sup> Kuanpoth, *supra* note 56, at 287.

<sup>67</sup> Doug Bania, *Rational Damages: Understanding Patent Infringement Criteria in IP Litigation*, available at <http://www.consor.com/intellectual-property-advice/understanding-patent-infringement-criteria-in-ip-litigation.html>

<sup>68</sup> Mineko Mohri, *Maintenance, Replacement and Recycling – Patentees' Rights in the aftermarkets* 17 (2010).

The central definition theory requires that the scope of patent protection should be determined through defining the principle forming the incentive idea or solution underlying the claim language.<sup>69</sup> It was the traditional form of claim interpretation in many countries, such as, Germany prior to the adoption of the European Patent Convention in 1973 and the U.S. before the Patent Act of 1870 that adopted more literal approach to determine the scope of patent.<sup>70</sup> Under the central definition theory used at that time, the scope of patent protection extended to the preferred embodiment and its equivalent.<sup>71</sup> Also, patent infringement could be determined by comparing the accused device with the description and drawing of patented invention.<sup>72</sup>

### ***b. Peripheral Definition Theory***

The peripheral definition theory requires the courts to determine the scope of patent protection through referring to the wording of the claims.<sup>73</sup> Courts presently tend to interpret patent claims strictly. Anything beyond the wording of the claim is outside patent protection.<sup>74</sup> Its process involves reading a claim or claims onto the technology of interest. If all of the claim's elements are found in the accused technology, the claim is said to "read on" the technology. On the other hand, if a single element from the claim is missing from the technology, the claim does not literally read on the technology and the technology generally does not infringe the patent with respect to that claim.<sup>75</sup>

### **2.2.3.3 Doctrine of Equivalent**

---

<sup>69</sup> Toshiko Takenaka, *Interpreting patent Claims: The United States, Germany and Japan*, 17 IIC Studies 1, 3 (1995) cited in *id.*

<sup>70</sup> Matthew Fisher, *Fundamentals of Patent Law: Interpretation and Scope of Protection* 179-180 (2008).

<sup>71</sup> *Id.*

<sup>72</sup> *Id.*

<sup>73</sup> Takenaka, *supra* note 69.

<sup>74</sup> Dennis Malone and Richard L. Schmalz, *Peripheral Definition Theory v. Central Definition Theory in Patent Claim Interpretation: A Survey of the Federal Circuits*, 32 Geo. Wash. L. Rev. 609, 610 (1963-1964).

<sup>75</sup> Maddala Geetha, *Claim Chart - An Useful Patent Tool* (2008), available at <http://ezinearticles.com/?Claim-Chart---An-Useful-Patent-Tool&id=1146685>

Even not literally infringed, a patent may be infringed in accordance with a range of equivalence if some element of the accused device performs substantially the same function in substantially the same way and to achieve substantially the same outcome. Thus, the extent of patent protection is not limited to the identical use of features given in the claim but also extends to equivalent embodiments that a person skilled in the art can recognize the accused invention equally effective to patented one. Consistent with the claim interpretation, it might consider that under the peripheral definition theory, the doctrine of equivalents is applied to restrict a claim which is considered to be too broad because it covers subsequent independent inventions of others on the one hand. On the other hand, under the central definition theory, “the doctrine of equivalents is used to expand the claim beyond its literal terms.”<sup>76</sup>

The degree of application of doctrine of equivalent varies from country to country. In general, the result of determining equivalence can be classified into 4 types.<sup>77</sup>

(1) If there is not a patent claim literally covering the allegedly product and a patentee cannot show any element of the product equivalent to essential feature of patented product, there will not be direct patent infringement.

(2) If the claim literally covers the allegedly product but a patentee cannot show any element of the product equivalent to essential feature of patented product, there also will not be direct patent infringement.

(3) If the claim literally covers the allegedly product and a patentee can show an element of the product equivalent to essential feature of patented product, there also will be direct patent infringement.

(4) If there is not a patent claim literally covering the allegedly product but a patentee cannot show any element of the product equivalent to essential feature of patented product, there will be direct patent infringement.

---

<sup>76</sup> Malone and Schmalz, *supra* note 74.

<sup>77</sup> Kuanpoth, *supra* note 56, at 288-289.

#### 2.2.3.4 Indirect Patent Infringement

To reinforce the rights of a patentee to exclude others from infringing a patent, patent laws in some state – such as, Germany, the U.S. and Japan – allow patentees to pursue causes of action against those contributing to or inducing patent infringement by others. A third party therefore may be found liable for indirect patent infringement if that person actively induced, encouraged or materially contributed to infringing activity.<sup>78</sup>

However, international conventions, *e.g.*, TRIPs, does not provide institution of indirect patent infringement. Thus, the application of indirect patent infringement is different from country to country. For instance, in the U.S. patent law, a direct infringement is a prerequisite in order to bring an indirect patent infringement claim, while, under German patent Act, a direct infringement is not required when a patentee shows an unlawful indirect use of such invention. Also, the concept of indirect patent infringement is not very widely applied.<sup>79</sup>

### 2.3 Exhaustion Doctrine

By the act of introduction of a product incorporating claimed inventions, whether a product itself or a process directly manufacturing it, into the commercial area, a set of exclusive rights over a product ceases to exist provided that the introduction has been happened by the right owner or by others with the right owner's consent.<sup>80</sup> The product, therefore, becomes free from the protection of patent rights.<sup>81</sup> A patentee can no longer exercise his patent right to exclude others from using, selling or importing a product. The doctrine of exhaustion moreover applies not only to products sold by a

---

<sup>78</sup> Andrew R. Sommer, *Indirect Patent Infringement - ABA YLD 101 Practice Series*, available at [http://www.americanbar.org/groups/young\\_lawyers/publications/the\\_101\\_201\\_practice\\_series/infringement.html](http://www.americanbar.org/groups/young_lawyers/publications/the_101_201_practice_series/infringement.html)

<sup>79</sup> 12 Hugh C. Hansen, *Intellectual Property Law and Policy* 87 (2013).

<sup>80</sup> Nuno Pires de Carvalho, *the TRIPs Regimes of Patent Rights* 108 (2nd ed. 2005).

<sup>81</sup> Lawrence Anthony Sullivan, *Antitrust* 573 (1977); Herbert Hovenkamp, *Federal Antitrust Policy – the Law of Competition and its Practice* 290-291 (1994) cited in *id.* at 108.

patentee but also to products sold by licensees authorized from a patentee as well.<sup>82</sup> Thus, once any person have legitimately obtained patented product, that person is free to use, transfer or distribute it without further authorization from a patentee.<sup>83</sup> With regardless of how much times a product has been transferred, as long as it was put on the market or distributed by a patentee or by other with his consent, one who possesses it is free to exercise those right.

There are two general reasons to describe patent exhaustion. Firstly, on account of the legal reason that patent rights are separated from a subject matter of patent, when a product has been sold, its property right in tangible goods transferred goes along with the article, while patent rights do not but retain with a patentee. A patentee cannot oppose any activities to practice patented article purchased by a third party. Secondly, a patentee should not be permitted by law to extract revenue twice since he has already been duly rewarded at the first sale, otherwise patent rights may be expanded beyond purpose of the patent law. Owing to its purely legal concept, the amount of revenue from the exploitation of patented invention is not matter to be concerned with.<sup>84</sup>

However, it should be noted that the exhaustion of patent granted to a patentee a set of exclusive rights, consumes merely the rights which associate with commercialization. Although, a patentee may be unable to oppose a sale of or even an offer for sale of sold patented products by a purchaser, the former can prevent the others from activities related to producing a product embodying patent or using a patented process to produce products.<sup>85</sup>

Procedurally, the doctrine of exhaustion is as an affirmative defense asserted by a purchaser against infringement concerning a sale or use of a patented article after it has been authorized for sale by a patentee. In case where subject matters of invention patent are a patented product and patented process of producing, the allegedly

---

<sup>82</sup> Amber Hatfield Rovner, *Practical Guide to Application of (or Defense against) Product-Based Infringement Immunities under the Doctrines of Patent Exhaustion and Implied License*, 12 Tex. Intell. Prop. L.J. 227, ¶ 229 (2004).

<sup>83</sup> Anthony Taubman et al., *A Handbook on the WTO TRIPS Agreement* 18 (2012).

<sup>84</sup> Carvalho, *supra* note 80, at 108-109.

<sup>85</sup> See Arthur Miller and Michael Davis, *Intellectual Property – Patents, Trademarks, and Copyright in a Nutshell* 135-137 (1990).

infringing activities can be widely classified as performed during, before and after the production. The defense against patent infringement under the doctrine of exhaustion is specifically concerned with activities performed after the production, *e.g.*, selling, offering to sell, importing or even keeping to sell patented product or the product directly produced using patented process.<sup>86</sup>

### **2.3.1 The Exhaustion Doctrine and the Implied License Doctrine**

Both exhaustion of intellectual rights and implied license are often mentioned interchangeably since an implied license is closely related to the exhaustion doctrine.<sup>87</sup> These are two justifications for the same thing.<sup>88</sup> This topic attempts to precisely describe both definitions of the exhaustion doctrine and the doctrine of implied license.

#### **2.3.1.1 The Exhaustion Doctrine**

Under the exhaustion doctrine of intellectual property rights, once an article that embodies intellectual properties, *i.e.*, patent, copyright, or trademark, have been authorized for sale by an intellectual property owner, 'IP Owner', intellectual property rights held by an IP Owner which cover a purchased article shall be exhausted automatically. Under this doctrine, an IP Owner generally cannot restrain other persons from selling and using the article which he sold. Purchasers and third parties, therefore, can use or resell the article without permission from an IP Owner.<sup>89</sup>

As a consequence of a legitimate transfer of a title in the tangible article and the exhaustion is a natural consequence of the intangible nature of assets covered by intellectual property, *e.g.*, expressions, knowledge, reputation, quality or origin. Owing to their intangible nature, they do not follow the tangible article that they are associated

---

<sup>86</sup> William Cornish and David Llewellyn, *Intellectual Property: Patents, Copyright, Trade Marks and Allied Rights* 251-252, 258-259 (6th ed. 2008) cited in Vijay Kumar Himanshu, *Patent Monopoly and Doctrine of Exhaustion: Limits on Exclusive Right*, 16 JIPR 453, 453-462 (2011).

<sup>87</sup> Chisum, *supra* note 5, at § 16.03.

<sup>88</sup> Chisum, *supra* note 5, at § 16.03.

<sup>89</sup> James Kobak Jr., *Exhaustion of Intellectual Property Rights and International Trade*, 5 GEJ 1, 2 (2005).



with.<sup>90</sup> In addition, an IP Owner should not be allowed to extract revenue more than once.

### 2.3.1.2 The Implied License Doctrine

The concept of implied license applies in particular in connection with contract regarding transaction of an article protected by intellectual property rights. An implied license is an unwritten license that a licensor permits a licensee to do something that would normally require express permission of a licensor. If a contract, such as sale of goods, does not contain any specific regulation, a purchaser as a licensee can assume that he obtains an implied license to use or resell the article.<sup>91</sup> A licensee, therefore, can use or resell the article for its ordinary purpose without intellectual property rights infringement because it can be implied that a licensor granted a licensee or a purchaser the consent to do so. Conversely, in case where a licensor conditioned the use or sale of the article in the contract or its packaging label, a licensee must comply with such specific regulation.

The theory of implied license is recognized in some jurisdiction, such as Australia, Canada, New Zealand, and it has a solid base in the United Kingdom.<sup>92</sup>

As aforementioned, even though both exhaustion doctrine and implied license theory mean the consumption of rights in intellectual property, the distinction between them is essential to be considered since it may lead to different legal consequences. On the one hand, implied license is deemed as optional exhaustion that is subject to the intention of an IP Owner. Whether or not patent rights embodied within the articles become exhausted, it relies on patentee's informed or implied consent. And, with

---

<sup>90</sup> WIPO, *Interface Between Exhaustion of Intellectual Property Rights and Competition Law*, Committee on Development and Intellectual Property (CDIP) in Geneva, 16- 20 November 2009, at 4.

<sup>91</sup> นันทน อินทนนท์, ปัญหากฎหมายเกี่ยวกับหลักการสิ้นสิทธิในทรัพย์สินทางปัญญา (วิทยานิพนธ์ปริญญา มหาบัณฑิต, คณะนิติศาสตร์, มหาวิทยาลัยรามคำแหง, 2540), น. 17. (Nandana Indananda, *Legal Problems Regarding the Exhaustion Doctrine of Intellectual Property Rights 17* (Master's Thesis, Faculty of Law, Ramkhamhaeng University, 1997).)

<sup>92</sup> AIPPI, *Summary Report*, Question Q205 Exhaustion of IPRs in case of recycling and repair of goods, available at <http://www.aippi.org>



regardless of its sale authorized or unauthorized, he can control the disposition of the articles in aftermarket.<sup>93</sup> On the other hand, under the exhaustion doctrine, intellectual property rights of an IP Owner to exclude all others from the set of activities is exhausted automatically and an IP Owner cannot prevent others from using or disposing of the articles which have been authorized sale. In other words, the exhaustion doctrine generally focuses solely on the product sold, whereas, a concept of implied license may result from the conduct of a patentee.<sup>94</sup>

### **2.3.2 Purposes of Exhaustion of Intellectual Property Rights**

Exhaustion of intellectual property rights has purposes for intellectual property owners, assignees, and third parties as follows:

#### **2.3.2.1 Intellectual Property Owners**

Exhaustion of intellectual property rights affirms that, before an IP Owner sells articles which embody intellectual properties, he has exclusive rights to exploit his intellectual property as long as the specific law conferred. Additionally, existence of the exhaustion doctrine has a progressive impact on an IP Owner in commercial aspect since in case of no exhaustion of intellectual property rights, no one would like to buy such article which purchasers who use or resell it shall constitute intellectual property infringement. Lack of the exhaustion, therefore, eliminates economic value of intellectual property because there is no market demand for goods which purchasers cannot be exploited.<sup>95</sup>

#### **2.3.2.2 Assignees**

Exhaustion of intellectual property rights is to ensure an assignee to be able to use or dispose the articles embodying intellectual property rights as he sees fit, whether an assignee purchases it from an IP Owner or authorized seller or subsequently obtained

---

<sup>93</sup> Kuanpoth, *supra* note 56, at 327-328.

<sup>94</sup> Rovner, *supra* note 82, at ¶ 246.

<sup>95</sup> Kuanpoth, *supra* note 56, at 32.

title of the article. Without such exhaustion, use or resale of the article shall be held infringing intellectual property rights since these use or resale is exclusive right conferred upon an IP Owner.<sup>96</sup>

### **2.3.2.3 Third Parties**

Exhaustion of intellectual property rights is to protect interest of third parties or other consumers in public who are subsequently assigned the articles embodying intellectual property rights, regardless of how many time the articles have been transferred. Under the exhaustion doctrine, since the exclusive right held by an IP Owner was exhausted, third parties that are neither an IP Owner as a seller nor an assignee as a buyer or who are not a party to the contract are entitled to use or dispose of it.<sup>97</sup>

Nevertheless, there is an argument that the exhaustion doctrine of intellectual property rights is not necessary because when the articles embodying intellectual property rights were sold without specific regulation, in accordance with implied license theory, an IP Owner does not only consent an assignee to use or dispose the article for its ordinary purpose, but if an assignee resell it to a third party, it can be implied that an IP Owner consents such third party to do so as well.<sup>98</sup>

### **2.3.3 Extent of Exhaustion of Patent Right**

Intellectual property rights is typically defined in term of rights granted to a holder to prevent others from making use of it. For example, a patent grants an inventor the rights to prevent others from making, using, selling, or importing the invention; trademark grants to a holder the rights to prevent others from using a protected sign on identical or similar goods in which consumer will likely be confused; and copyright grants a holder the rights to prevent others from reproducing the work or making

---

<sup>96</sup> Kuanpoth, *supra* note 56.

<sup>97</sup> Kuanpoth, *supra* note 56, at 33.

<sup>98</sup> Jeremy Phillip and Alison Firth, *Introduction to Intellectual Property Law* 82 (2nd ed. 1990).

available to public. Each intellectual property rights, when the articles have been authorized sale, are exhausted immediately but not all of rights is exhausted. One having legitimately obtained the article has entitlement to use, sell, transfer or distribute it without consent from an IP owners but this entitlement must not affect other exclusive rights IP owners may enjoy.<sup>99</sup> For instance, one who purchased a copyright-protected CD has right to exhibit a movie for home use only. That person may not be entitled to make reproduction or public performances of the movie.

In case of patent, when the patented products are sold with consent of a patentee, the exclusive rights of a patentee to control the use and sale of them are exhausted, and a purchaser is free to use or resell that products without further permission from a patentee. A patentee, however, retains the rights to exclude purchasers of the products from making patented invention anew, except there is special authorization from a patentee.<sup>100</sup>

It should be noted that, concerning the issue in this study, although the exclusive rights over making an invention is still retained with a patentee, a purchaser is entitled to repair patented products or replace its damaged parts in order to keep it working. However, that repair does not include a complete reproduction or reconstruction, otherwise a purchaser shall constitute patent infringement.<sup>101</sup> The problem on what extent activities are held permissible repair or fall within an infringing reproduction will be analyzed in this study so as to find proper standards of distinguishing them.

### **2.3.4 Geographical Scope of Patent Exhaustion**

---

<sup>99</sup> Taubman, *supra* note 83, at 18-19.

<sup>100</sup> *See, e.g.*, *Monsanto Co. v. Scruggs*, 459 F.3d 1328, 1336 (Fed. Cir. 2006); *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336 (1961); *Morgan Envelope Co. v. Albany Perforated Wrapping Paper Co.*, 152 U.S. 425 (1894); *Cotton-Tie Co. v. R&D Tool & Eng'g Co.*, 291 F.3d 780 (Fed. Cir. 2002).

<sup>101</sup> Hillary Pearson and Clifford Miller, *Commercial Exploitation of Intellectual Property* 90-91 (1990).

It is generally accepted that a patent right is exhausted within the jurisdiction in which the first sale has taken place. However, whether such right is exhausted once its first sale has taken place outside the jurisdiction in question depends on what concept of exhaustion that jurisdiction applies. Generally, there are 3 types of geographical scope of patent exhaustion as follows.

#### **2.3.4.1 National Exhaustion**

The concept of national exhaustion does not allow a patent owner to control commercial exploitation of goods which have been put on domestic market by a patent owner or by other with his consent. However, the sale of a patented product in one country has no impact on exclusive rights protected by patent law in another country. A patent owner or an authorized licensee could still have rights to oppose the importation of original goods marketed abroad based on exclusive rights of importation.<sup>102</sup> Therefore, parallel imports of that goods already sold abroad constitute patent infringement in any country whose patent law applies national exhaustion concept.<sup>103</sup>

National exhaustion restricting the shipment of goods embodying IP rights between countries has an effect of impeding global trade. It is aimed to protect beneficiaries assigned in different territories. Because price differentials in each state might result from voluntariness of IP right holders, for example, in order to serve the market in low income countries or the difference of producing costs in each countries; countries which consider this regime do not let others to take arbitrage opportunity and deprive of exploitation of IP right owners in their countries.

---

<sup>102</sup> WIPO, *International Exhaustion and Parallel Importation*, available at [http://www.wipo.int/sme/en/ip\\_business/export/international\\_exhaustion.htm](http://www.wipo.int/sme/en/ip_business/export/international_exhaustion.htm).

<sup>103</sup> Taubman, *supra* note 83, at 19.

### 2.3.4.2 Regional Exhaustion

In the case of regional exhaustion, the first sale of patented products by a patentee or by other with his consent exhausts exclusive rights over the products not only domestically, but also within the whole region.<sup>104</sup> Concept of regional exhaustion extends national to international exhaustion for two or more countries in the specified region.<sup>105</sup> Parallel imports within the specified region can no longer be opposed based on the rights. A patentee is able to oppose the importation of the products having been sold in countries outside the specified region.

The Court of Justice of the European Union (CJEU) have developed the regional exhaustion based on the basis of the rules on free movement of goods under Articles 34 and 36 of the Treaty on the Functioning of the European Union (TFEU), in order for strengthening the common market implementation. The enforcement of this regime is aimed to prevent the European market from segmented into national territories as the member countries agreed to share the common purpose of establishing and maintaining an efficient and competitive single market.<sup>106</sup>

### 2.3.4.3 International Exhaustion

Where a country applies the concept of international exhaustion, exclusive rights protected by patent law is exhausted once the product has been sold by a patent owner or by other with his consent in any part of the world.<sup>107</sup> A patentee who has a patent in countries applies international exhaustion concept cannot prevent others from the parallel importation of and the sale of patented product which has been legitimately sold in other countries.<sup>108</sup> When parallel imports are not illegal in that country, purchasers of such product are also free to use, sell, transfer or distribute it without consent from a patentee.

---

<sup>104</sup> WIPO, *supra* note 102.

<sup>105</sup> 1 Patrick F. J. Macroy et al, *The World Trade Organization: Legal, Economic and Political Analysis* 1070 (2005).

<sup>106</sup> WIPO, *supra* note 90, at 17-18.

<sup>107</sup> WIPO, *supra* note 102.

<sup>108</sup> Taubman, *supra* note 83, at 19.

International exhaustion allows parallel imports and renders markets to be more efficient because the competition in the markets is increased. People in any country using this regime, moreover, can facilely access to critical goods protected by IP laws, for example, medicine.<sup>109</sup>

## 2.4 Contractual Limitation of Patent Exhaustion

According to international laws of which the substantive provision does not state a concrete framework of patent exhaustion to be implemented by member states, whether the exhaustion of patent rights can be limited by contractual restrictions as conditional sale relies on the national patent law of each countries. In the general concept of exhaustion doctrine, merely an authorized sale triggers doctrine of patent exhaustion. One might realize that violation of restriction may render the sale to become unauthorized and make a patent not being exhausted. It, however, varies from country to country. There are 2 conflicting notions of patent exhaustion.<sup>110</sup>

- a. Mandatory rule: if any country considers patent exhaustion to be mandatory, a patent becomes exhausted once it has been legitimately sold regardless of whether a patentee subjects the sale to express patent restrictions, and;
- b. Default rule: in any country which treats exhaustion of patent right as a default rule, a patent is exhausted only when the sale of patented product was unconditional. In other words, in this rule, a patentee can avoid exhaustion of patent right by imposing restrictions to control the resale or use of goods in aftermarkets.<sup>111</sup>

---

<sup>109</sup> Christopher J. Clugston, *International Exhaustion, Parallel Imports, and the Conflict between the Patent and Copyright Laws of the United States*, 4 BLR 3, 96 (2013).

<sup>110</sup> Wentong Zheng, *Exhausting Patents*, 63 UCLA L. Rev. 122, 128 (2016).

<sup>111</sup> *Id.* at 128-138.

Plenty of cases in United States, for example, exhibit the following circumstances that many patentees tried to contract out the exhaustion of their patent right by setting condition or restriction.<sup>112</sup> The courts have confronted the difficulty in determining boundaries of patent exhaustion since the consideration of patent exhaustion as a mandatory rule may cause inflexibility in patent businesses, whereas, considering it as a default rule may over expand the exclusive right of a patentee. The contractual limitation of exhaustion of patent rights imposed by a patentee can be divided into 2 types as follows.

#### **2.4.1 License Restrictions**

Typically, patent law does not merely grant exclusive rights to produce, use, sell, offer to sell, import patented product, including use of patented process. However, a patentee might also decide to assign the patent or license to others to practice his patented invention. Under various forms of licensing agreement; apart from an exclusive license that a patentee transfers all indicia of ownership to a licensee and surrenders all rights under his patent,<sup>113</sup> rendering the patent rights over licensed goods to be completely exhausted;<sup>114</sup> a patentee may seek to impose several conditions on the license agreement, for instance, field-of-use limitation, tie-in clause, price limitation or etc.

In the case where a license granted by a patentee to a licensee to make and sell is subject to specific restrictions and these restrictions have been violated, the licensee's sale become unauthorized and the doctrine of patent exhaustion is not triggered. A patentee, therefore, can claim for patent infringement against a licensee and any downstream customers.<sup>115</sup> In other words, when the license restrictions have not been violated, the sale even made by licensee to a purchaser exhausts a patentee's rights.

---

<sup>112</sup> *See id.*

<sup>113</sup> *See* <http://www.generalpatent.com/services/patent-licensing>

<sup>114</sup> Himanshu, *supra* note 86, at 456.

<sup>115</sup> *General Talking Pictures Corp. v. Western Elec. Co.*, 304 U.S. 175, 181 (1937).



### 2.4.2 Post-Sale Restrictions

In this circumstance, a patentee may sell his goods protected by invention patent with restrictions directly imposed on a purchaser in form of notice in order to enforce his patent rights over such goods once sold since a patentee is generally prevented therefrom, if the authorized sale is unconditional.<sup>116</sup> There are various purposes of condition or restriction set by a patentee, which can be classified into two categories: (1) post-sale restrictions on sale of patented article, *e.g.*, a resale price restriction, and (2) post-sale restriction on use of patented article, *e.g.*, a restriction to use with the non-patented articles, or a restriction on reuse of patented article.<sup>117</sup>

In comparison, the post-sale restrictions are different from the field-of-use limitation on sale characterized as license restriction. This is because the former is that a patentee purports to restrict the use or sale of patented article which has been sold and in the hands of customers, whereas, the latter imposed on a licensee in selling patented articles. Patentees are able to avoid exhaustion of his patent through imposing specific restrictions on the licensing agreement against licensees. On the other hand, whether a patentee can set the condition imposed on purchasers by the restriction on post-sale use varies from country to country, as will be described in Chapter 3.

Whether and how much recycling or repair of goods embodying invention patent should be permissible, as of the issue of this study, is not merely determined activities committed by a user. Also, the post-sale restrictions – especially the single-use restriction which manifests the intention of a patentee – is necessary to be taken into account of consideration of patent exhaustion in cases of recycling and repair of goods. The validity of restrictions may be a threshold issue that a defendant can be held liable for patent infringement without consideration of other elements.

---

<sup>116</sup> Rinechart Amelia Smith, *Contracting Patent: A Modern Patent Exhaustion Doctrine*, 23 Harv. J. Law Technol. 2, 495-496 (2010).

<sup>117</sup> *See id.* at 495-498.



Nevertheless, as aforementioned that the lack of a uniformed framework of patent exhaustion lefts each countries to draw their regimes, this issue may vary from country to country. Some countries address that a patentee's intentions or contractual restrictions do not essentially play role in relation to the exhaustion of intellectual property rights but fall outside the scope of patent grant. Instead, it would be solely considered under the contract laws.<sup>118</sup>



---

<sup>118</sup> AIPPI, *supra* note 92, at 12-13.

## CHAPTER 3

### EXHAUSTION OF PATENT RIGHT REGARDING RECYCLING AND REPAIR OF GOODS IN FOREIGN LAWS

#### 3.1 Patent Protection

##### 3.1.1 Patent Right

Many patent laws in foreign countries, especially member states of the World Trade Organization (WTO), are harmonized through the provision under Article 28 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs)<sup>119</sup> that established basic rights of the patentee, as minimum standard, to preclude others without consent from making, using, selling, offering for sale or importing the patented product, using the patented process, or importing products made with the process.<sup>120</sup> Both United States and Japan, as WTO members to which TRIPs Agreement applies, implemented this provision within their own patent laws to affirm the exclusive right of patentee.

##### 3.1.1.1 United States

The statement of the U.S. Congress enumerates power under Article 1 Section 8 of the United States Constitution which delegated the Federal Government the power

---

<sup>119</sup> TRIPs art. 28 Rights Conferred:

- “1. A patent shall confer on its owner the following exclusive rights:*
- (a) where the subject matter of a patent is a product, to prevent third parties not having the owner's consent from the acts of: making, using, offering for sale, selling, or importing for these purposes that product;*
  - (b) where the subject matter of a patent is a process, to prevent third parties not having the owner's consent from the act of using the process, and from the acts of: using, offering for sale, selling, or importing for these purposes at least the product obtained directly by that process.*
- 2. Patent owners shall also have the right to assign, or transfer by succession, the patent and to conclude licensing contracts.”*

<sup>120</sup> See 3 United Nations Conference on Trade and Development (UNCTAD), Project on Dispute Settlement in International Trade, Ch. 3.14, 21 (2003), available at [http://unctad.org/en/docs/edmmisc232add18\\_en.pdf](http://unctad.org/en/docs/edmmisc232add18_en.pdf)

to enact the Patent Act.<sup>121</sup> Pursuant to the constitutional grant, the Congress passed the first Patent Act in 1790, titled “An Act to promote the progress of useful Arts.” The law has been heavily revised two times in 1793 and 1836 until the Congress passed the currently effective Patent Act in 1870.<sup>122</sup>

There are three types of patents in the United States: (a) utility patent, including the functional aspects of products and processes; (b) design patent, covering the ornamental design of useful objects; and (c) plant patent, protecting a new variety of living plant. Each type is protected by conferring upon the patentee the right to exclude others from making, using, offering for sale, or selling the invention, or importing the invention into the United States for a certain period.<sup>123</sup> To obtain the patent protection, the inventor must submit his application to the U.S. Patent and Trademark Office (USPTO).

For utility patent, concerning this study, Section 101 of Title 35 U.S.C. sets out the subject matter of patent which is broadly defined as any process, machine, manufacture, or composition of matter, or improvement thereof.<sup>124</sup> In *Diamond v. Chakrabarty*, the Supreme Court found that Congress intended “anything under the sun that is made by man” to be subject matter of patent.<sup>125</sup> However, the Court also stated that the broad definition is limited for three categories of subject matter; the laws of nature, physical phenomena, and abstract ideas; for which any person may not obtain

---

<sup>121</sup> U.S. Const. art. I, § 8, cl. 8:

*“The Congress shall have power to...promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.”*

<sup>122</sup> Mueller, *supra* note 44, at 29-31.

<sup>123</sup> Gene Quinn, *the Constitutional Underpinnings of Patent Law*, available at <http://www.ipwatchdog.com/2011/05/11/the-constitutional-underpinnings-of-patent-law/id=16865/>

<sup>124</sup> 35 U.S.C. § 101 (1970):

*“Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”*

<sup>125</sup> *Diamond v. Chakrabarty*, 447 U.S. 303 (1980).

patent protection.<sup>126</sup> Although there is a broad subject matter to be granted the protection, other requirements consisting of utility, novelty, non-obviousness, and enablement, must be satisfied as well.

The exclusive right is conferred upon the patentee by USPTO to make, use, offer for sale, or sell the invention throughout the United States, or import the invention into the United States. In cases where the invention is a process, the exclusive right to use, offer for sale or sell throughout the United States, or import into the United States, products made by that process shall be for 20 years from the date of filing.<sup>127</sup>

### 3.1.1.2 Japan

In Japan, after an invention (whether product or process) – satisfied the requirements, *i.e.*, novelty, inventive step, industrial applicability – is patented, the patentee shall have the exclusive right to commercial work of the patented invention

---

<sup>126</sup> Quinn, *supra* note 123.

<sup>127</sup> 35 U.S.C. § 154 (1970):

“(a) *In General.*—

- (1) *Contents.*— *Every patent shall contain a short title of the invention and a grant to the patentee, his heirs or assigns, of the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States, and, if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States, or importing into the United States, products made by that process, referring to the specification for the particulars thereof.*
- (2) *Term.*— *Subject to the payment of fees under this title, such grant shall be for a term beginning on the date on which the patent issues and ending 20 years from the date on which the application for the patent was filed in the United States or, if the application contains a specific reference to an earlier filed application or applications under section 120, 121, or 365 (c), from the date on which the earliest such application was filed.”*

according to Section 68 of the Japanese Patent Act.<sup>128</sup> Furthermore, the term “work” was explicitly defined under the said Act Article 2 (3) as the following acts:<sup>129</sup>

- a. in the case of an invention of a product, the act of producing, using, transferring or otherwise handling the product (assigning and leasing), exporting, importing, or offering for transfer, etc.;
- b. in the case of an invention of a process, the act of using the process;
- c. in the case of an invention of a process for producing products, the act of using, transferring, exporting, importing, offering for transfer, or otherwise handling products produced by the process.

The exclusive right of each subject matter of the patent shall expire after a period of 20 years from the filing date of the patent application. However, in some incident, such duration of patent rights can be extended, but not exceeding 5 years.<sup>130</sup>

---

<sup>128</sup> Japanese Patent Act, § 68 (Effect of Patent Right):

*“A patentee shall have the exclusive right to work the patented invention as a business; provided, however, that where an exclusive license regarding the patent right is granted to a licensee, this shall not apply to the extent that the exclusive licensee is licensed to exclusively work the patented invention.”*

<sup>129</sup> Japanese Patent Act, § 2 (Definition):

*“(3) ‘Working’ of an invention in this Act means the Following acts:*  
*(i) in the case of an invention of a patent (including a computer program, etc., the same shall apply hereafter), producing, using, assigning, etc. (assigning and leasing and, in the case where the product is a computer program, etc. including providing through an electronic telecommunication line, the same shall apply hereinafter), importing or offering for assignment, etc. (including displaying for the purpose of assignment, etc., the same shall apply hereinafter) thereof.*  
*(ii) in the case of an invention of a process, the use thereof; and*  
*(iii) in the case of an invention of a process for producing a product, in addition to the action as provided in the preceding item, acts of using, assigning, etc., exporting or importing, or offering for assignment, etc. the product produced by the process.”*

<sup>130</sup> Japanese Patent Act, § 67 (Duration of patent rights):

*“(1) The duration of a patent right shall expire after a period of 20 years from the filing date of the patent application*  
*(2) Where there is a period during which the patented invention is unable to be worked because approvals prescribed by relevant Acts that are*

### 3.1.2 Patent Infringement

#### 3.1.2.1 United States

In the U.S. Patent law, a direct infringement of patent right may occur when any person has made use, sold, offered to sell, or imported an infringing invention or its equivalent.<sup>131</sup> The patentee is required to show the presence of every elements or its substantial equivalent in the allegedly infringing product.<sup>132</sup>

In general, patent infringement occurs after the patent is issued. The provision of pre-grant protection under 35 U.S.C. section 154(d), however, allows the patentee to obtain reasonable royalty damages from any person who committed certain infringing activities before the date of the patent issuance. The patentee must show that (1) the infringing activities occurred after the publication of the patent application,<sup>133</sup> (2) the patented claims are substantially identical to the claims in the published application,<sup>134</sup> and (3) the infringer had “actual notice” of the published patent application.<sup>135</sup>

Moreover, the patentee is able to assert indirect infringement against a third party who did not commit those prohibited activities directly so as to protect patents from piracy in the situation that the direct infringement is not enforceable. In the U.S., indirect infringement of patent right includes induced infringement and contributory

---

*intended to ensure the safety, etc. or any other disposition designated by Cabinet Order as requiring considerable time for the proper execution of the disposition in light of the purpose, procedures, etc., of such a disposition is necessary to obtain for the working of the patented invention, the duration of the patent right may be extended, upon the filing of a request for the registration of extension of the duration, by a period not exceeding 5 years”*

<sup>131</sup> 35 U.S.C. § 271 (a) – Infringement of patent:

*“Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.”*

<sup>132</sup> Prouty v. Ruggles, 41 U.S. 336 (1842); Wolverine World Wide, Inc. v. Nike, Inc., 38 F.3d 1192, 1199 (Fed. Cir. 1994).

<sup>133</sup> 35 U.S.C. § 154 (d)(1).

<sup>134</sup> 35 U.S.C. § 154 (d)(2).

<sup>135</sup> 35 U.S.C. § 154 (d)(1)(B).

infringement. Distinguishable from direct infringement, indirect infringement requires the patentee to present that the accused indirect infringer had knowledge of the patent and intent to infringe the patent right.<sup>136</sup> And, in order to bring a claim of induced infringement or contributory infringement, a direct infringement is prerequisite.<sup>137</sup>

First, any person who actively and knowingly induces another to infringe patent right shall be liable for induced infringement.<sup>138</sup> The patentee must prove that the accused infringer has actual or constructive knowledge of the patent,<sup>139</sup> and possesses a specific intent to cause the direct infringement.<sup>140</sup> Instructions, advertising, control over design or manufacturing, or encouraging infringing uses of staple products may be evidence of intent to induce infringement even where staple articles are sold.<sup>141</sup>

Second, any person who supplies a “non-staple” component of the patented invention or an unpatented part of the patented combination product to the direct infringer who makes, uses or sells the entire invention may be liable for contributory infringement.<sup>142</sup> To get remedy for contributory infringement, there are 4 elements that the patentee is required to show: (1) the sale of a component for a patented item; (2) that the component is a “material part of the invention,” (3) the accused infringer has

---

<sup>136</sup> Chisum, *supra* note 5, at § 17.01.

<sup>137</sup> Nordberg Mfg. Co. v. Jackson Vibrators, Inc., 393 F.2d 192, 197 (7th Cir. 1968).

<sup>138</sup> 35 U.S.C. § 271 (b) – Inducement: “Whoever actively induces infringement of a patent shall be liable as an infringer.”

<sup>139</sup> SEB S.A. v. Montgomery Ward & Co., 594 F.3d 1360, 1378 (Fed. Cir. 2010).

<sup>140</sup> DSU Med. Corp. v. JMS Co., 471 F.3d 1293, 1304 (Fed. Cir. 2006).

<sup>141</sup> Ricoh Co., Ltd. v. Quanta Computer, Inc., 550 F.3d 1325, 1340-43 (Fed. Cir. 2008).

<sup>142</sup> 35 U.S.C. § 271 (c) – Contributory Infringement:

*“(c) Whoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.”*



knowledge that the part was “made or especially adapted for use in an infringement,” and (4) that the component is a non-staple article or has no non-infringing use.<sup>143</sup>

With respect to the knowledge requirement, the court stated that contributory infringement requires “not only knowledge that the component was especially made or adapted for a particular use but also knowledge of the patent which proscribed that use.”<sup>144</sup> And, with respect to the “non-staple article” requirement, even if that component is embedded in a larger device that has non-infringing uses, one who supplies that sort of component shall be liable for contributory infringement.<sup>145</sup>

### 3.1.2.2 Japan

The act of direct infringement includes all of the claimed elements or its equivalent.<sup>146</sup> If the allegedly infringed product or method contains all the features of the claims in the disputed patent, there is a literal infringement.<sup>147</sup> If a literal infringement does not exist, courts may consider Doctrine of Equivalents Infringement.<sup>148</sup> The Supreme Court in *Ball spline bearing case* decided on February 24, 1998 to provide the requirements for applying the doctrine of equivalents that several courts in subsequent patent infringement cases have cited.<sup>149</sup> The Court held that infringement is probably found under the doctrine of equivalents in consideration of the following five criteria: (1) the difference between the claimed invention and accused product or process does not relate to the essential part of the invention; (2) there is an interchangeability between a claim element and a structure of accused product or process, *i.e.*, the accused product or process has the same function and result;

---

<sup>143</sup> Hewlett-Packard Co. v. Bausch & Lomb, Inc., 909 F.2d 1464, 1469 (Fed. Cir. 1990).

<sup>144</sup> Preemption Devices, Inc. v. Minnesota Mining & Mfg. Co., 803 F.2d 1170, 1174 (Fed. Cir. 1986).

<sup>145</sup> Ricoh Co., Ltd. v. Quanta Computer, Inc., 550 F.3d 1325, 1337 (Fed. Cir. 2008)

<sup>146</sup> City-Yuma Partners, *Introduction to Japanese Patent Litigation*, available at [http://www.city-yuwa.com/english/ip\\_group/ip\\_japanesepatent/index.html](http://www.city-yuwa.com/english/ip_group/ip_japanesepatent/index.html)

<sup>147</sup> Shoichi Okuyama, *Patent Infringement Litigation in Japan* (2007), available at <http://quon-ip.jp/30e/Patent%20Infringement%20Litigation%20in%20Japan.pdf>

<sup>148</sup> *Id.*

<sup>149</sup> City-Yuma Partners, *supra* note 146.



(3) such interchangeability or substitution was obvious at the time of infringement; (4) the accused product or process was not the same as or obvious over prior art of the patent; and (5) there is no special circumstance which could prevent application of the doctrine, *e.g.*, typically prosecution history estoppel.<sup>150</sup>

Generally, any person who uses, as defined in Article 2(3), a patented invention without any permission from the patentee shall be liable for infringement and the patentee can exercise his right to demand an injunction against that person or even a person who is likely to do so.<sup>151</sup> Moreover, not only is the patentee able to claim against the infringer for damages in torts under article 709 of the Civil Code, but also under the Patent Act which provides the presumption of amount of damage under Article 102, the presumption of negligence under Article 103, and the determination of a reasonable amount of loss under Article 105-3.<sup>152</sup>

In addition, indirect patent infringement is defined by Article 101 of Patent Act as the act deeming to constitute infringement of a patent right or an exclusive license. Item (i) of the Act prohibits offering any product exclusively used for the production of patented product.<sup>153</sup> Item (ii) of the Act prohibits offering any product indispensable for resolution of the problem by the patented invention. To be held for infringing acts, the accused infringer must have the subjective knowledge that the product is likely to be used in patent-infringing manner.<sup>154</sup> The method to find indispensability is

<sup>150</sup> Saikō Saibansho [Sup. Ct.] Feb. 24, 1998, 1994(o)No.1083.

<sup>151</sup> Japanese Patent Act, § 100:

*“(1) A patentee or exclusive licensee may demand a person who infringes or is likely to infringe the patent right or exclusive license to stop or prevent such infringement.”*

<sup>152</sup> Okuyama, *supra* note 147.

<sup>153</sup> Japanese Patent Act, § 101:

*“The following acts shall be deemed to constitute infringement of a patent right or an exclusive license:*

*(i) where a patent has been granted for an invention of a product, acts of producing, assigning, etc., importing or offering for assignment, etc. any product to be used exclusively for the producing of the said product as a business;”*

<sup>154</sup> Japanese Patent Act, § 101 (ii):

analogous with finding an essential part in the doctrine of equivalence. With respect to the indispensability requirement, the particular product sold by the accused indirect infringer is indispensable, if the product is a part which renders the inventive idea to be achieved when it exists in the patented invention.<sup>155</sup> Item (iii) of the Act prohibits processing the patented product.<sup>156</sup> Whether direct infringement is prerequisite for indirect infringement claim is decided on case-by-case basis.<sup>157</sup>

### 3.2 Exhaustion of Patent Right

The provision under Article 6 of the TRIPs Agreement<sup>158</sup> states that a measure of exhaustion of intellectual property rights cannot be scrutinized under provision of TRIPs Agreement.<sup>159</sup> For a sole patent right, although the provision under Article 28 of the TRIPs Agreement merely provides rights conferred upon the patentee,<sup>160</sup> the footnote to Article 28 further specified that the right conferred to use, sell, import or other distribute goods is subject to the provision of exhaustion of intellectual property rights under Article 6.<sup>161</sup> On account of the complexity of legal and economic aspects

---

*“...where a patent has been granted for an invention of a product, acts of producing, assigning, etc., importing or offering for assignment, etc. any product (excluding those widely distributed within Japan) to be used for the producing of the said product and indispensable for the resolution of the problem by the said invention as a business, knowing that the said invention is a patented invention and the said product is used for the working of the invention;”*

<sup>155</sup> Mohri, *supra* note 68, at 37.

<sup>156</sup> Japanese Patent Act, § 101 (iii):

*“...where a patent has been granted for an invention of a product, acts of possessing the said product for the purpose of assigning, etc. or exporting it as a business;”*

<sup>157</sup> Mohri, *supra* note 68, at 34.

<sup>158</sup> TRIPs art. 6 Exhaustion:

*“For the purposes of dispute settlement under this Agreement, subject to the provisions of Articles 3 and 4 nothing in this Agreement shall be used to address the issue of the exhaustion of intellectual property rights.”*

<sup>159</sup> See Carvalho, *supra* note 80, at 104-105.

<sup>160</sup> TRIPs art. 28, *supra* note 85.

<sup>161</sup> Footnote to the TRIPs art. 28:

having yet to be fully assessed, it seems likely to let each member state to freely establish its own regime for exhaustion without challenge, unless it arises disputes under provisions of other WTO Agreements, *e.g.*, GATT.<sup>162</sup>

### 3.2.1 Implementation of Exhaustion Doctrine

#### 3.2.1.1 United States

The exhaustion doctrine, also referred to as the first-sale doctrine, has no origin from any statutory law but was developed by decisions of the courts,<sup>163</sup> especially in generative *Univis Lens* case which fully explicated the scope of patent exhaustion doctrine. Typically, patent exhaustion was raised by an accused infringer as an assertive defense to infringement in the context of downstream use of licensed product.<sup>164</sup>

As in several cases from mid-eighteenth century, the United States Supreme Court initially recognized that exclusive patent right of the patentee could be exhausted through a legitimate purchase of such patented product.<sup>165</sup> In 1873, the Court in *Adams v. Burke* case firstly held that an authorized sale of a patented article gave the consideration to the patentee for the use of invention and it precluded the patentee from further consideration or restriction on the article.

“[W]hen the patentee, or the person having his rights, sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use .... That is to say, the patentee or his assignee having in the act of sale received all the royalty or consideration

---

*“This right, like all other rights conferred under this Agreement in respect of the use, sale, importation or other distribution of goods, is subject to the provisions of Article 6.”*

<sup>162</sup> See Carvalho, *supra* note 80.

<sup>163</sup> The United States Group, *United States Group Report*, Question Q205 Exhaustion of IPRs in cases of recycling or repair of goods, available at <https://www.aippi.org>

<sup>164</sup> See, *e.g.*, *Monsanto Co. v. Scruggs*, 459 F.3d 1328, 1333-1336 (Fed. Cir. 2006)

<sup>165</sup> John Osborne, *A Coherent View of Patent Exhaustion: A Standard Based on Patentable Distinctiveness*, 20 Santa Clara High Tech. L.J. 643, 647 (2003), available at: <http://digitalcommons.law.scu.edu/chtlj/vol20/iss3/3>

which he claims for the use of his invention in that particular machine or instrument, it is open to the use of the purchaser without further restriction...”<sup>166</sup>

Seventy years later, the Supreme Court firmly defined the concept of patent exhaustion doctrine, also known as the first-sale doctrine, in *Univis Lens* case.<sup>167</sup> The disputed activity was that Univis Company, who manufactured the product, had several patents with claims for their finished lens imposed conditions, *i.e.*, fixing resale prices of the lens blanks, embodying the essential features of the patent claims directed to completed lens, on the downstream licensees after it had been sold by other his licensees.<sup>168</sup> Although *Univis Lens* case was characterized as antitrust, the Court’s decision was based on the principle of patent exhaustion developed from the previous case.<sup>169</sup> The Supreme Court states “the patentee cannot control the resale price of patented articles which he has sold, either by resort to an infringement suit, or...by stipulating for price maintenance by his vendees.”<sup>170</sup> The Court also found that the unfinished article included the essential features of the claimed invention.

“[W]here one has sold an uncompleted article which, because it embodies essential features of his patented invention, is within the protection of his patent, and has destined the article to be finished by the purchaser in conformity to the patent, he has sold his invention so far as it is or may be embodied in a particular article. The reward he was demanded and received is for the article and the invention which it embodies and which his vendee is to practice upon it. He has thus parted with his right to assert the patent monopoly with respect to it and is no longer free to control the price at which it may be sold either”<sup>171</sup>

---

<sup>166</sup> *Adams v. Burke*, 84 U.S. 453, 456 (1873), (emphasis added).

<sup>167</sup> *United States v. Univis Lens Co.*, 316 U.S. 241 (1942).

<sup>168</sup> *Osborne*, *supra* note 165, at 649.

<sup>169</sup> *The United States Group*, *supra* note 102, at 2.

<sup>170</sup> *Univis Lens*, 316 U.S. at 250.

<sup>171</sup> *Univis Lens*, 316 U.S. at 250-251 (emphasis added).

Consequently, by applying the patent exhaustion doctrine,<sup>172</sup> the Court held that, though it was merely a partially completed patented article, the patentee was not entitled to control its resale prices on downstream licensees after it has been sold by authorized parties since the degree of completion of article, whether in completed form or in uncompleted form, was irrelevant.<sup>173</sup>

“Whether the licensee sells the patented article in its completed form or sells it before completion for the purpose of enabling the buyer to finish and sell it, he has equally parted with the article, and made it the vehicle for transferring to the buyer ... that article. To that extent, he has parted with his patent monopoly in either case, and has received in the purchase price every benefit of that monopoly which the patent law secures to him”<sup>174</sup>

It can be seen that the Court clearly established the doctrine of patent exhaustion which does not only apply to the sale of patented article but also extends its scope to cover the sale of a partially completed patented article encompassing the essential features of the claimed invention and having no other use except in the finished patented article. The holding and statement in the *Univis Lens* case regarding patent exhaustion have been cited by the long line of the subsequent cases.<sup>175</sup> Neither the Supreme Court nor the Federal Court has attempted to rescind this holding.<sup>176</sup>

---

<sup>172</sup> *Univis Lens*, 316 U.S. at 249 noting that: “Sale by a patent owner of an article which is capable of use only in practicing the patent is a relinquishment of the patent monopoly with respect to that article.”

<sup>173</sup> Osborne, *supra* note 165, at 649-650.

<sup>174</sup> *Univis Lens*, 316 U.S. at 252.

<sup>175</sup> See, e.g., LG Elecs., Inc. v. Asustek Computer, Inc., 65 U.S.P.Q.2d 1589, 1598 (N.D. Cal. 2002), reaff'd, summ.judg granted, in part, 248 F. Supp. 2d 912 (N.D. Cal. 2003).; Cyrix Corp. v. Intel Corp. 846 F. Supp. 522, 540 (E.D. Tex 1994), aff'd without op., 42 F.3d 1411 (Fed. Cir. 1994); Cyrix Corp. v. Intel Corp., 803 F. Supp. 1200, 1214 (E.D. Tex. 1992), appeal dismissed without op., 9 F.3d 978 (Fed. Cir. 1993); Wilbur-Ellis Co. v. Kuther, 377 U.S. 422, 425 (1964).

<sup>176</sup> *Id.*

### Definition of Essential Features

The Supreme Court decision in *Univis Lens* case did not state a clear definition of essential features of patent claim that shall be exhausted after it has been sold, but district courts in subsequent cases provided the meaning.<sup>177</sup>

#### *Cyrix v. Intel*<sup>178</sup>

In *Cyrix v. Intel*, as the facts similar to those facts of *Univis Lens*, the District Court for the Eastern District of Texas applied the patent exhaustion doctrine enunciated by decision of the Supreme Court in *Univis Lens*.

“[t]he patent exhaustion doctrine is so strong that it applies even to an incomplete product that has no substantial use other than to be further manufactured into a completed patented and allegedly infringing article.”<sup>179</sup>

Furthermore, by relying on *Univis Lens*, the court characterized an essential feature as a feature of a patent claim that distinguishes over the prior art.<sup>180</sup> Concisely, a patentable distinct feature is an essential feature. In other words, when an unpatented article containing such feature was sold, the unpatented article may subject a patented combination or completed product, of which it is a part, to patent exhaustion.<sup>181</sup> This assertion was the most clarifying interpretation of the Supreme Court decision in *Univis Lens*, since it was issued.<sup>182</sup> Even if the district court’s decision in *Cyrix v. Intel* was affirmed without the Federal Circuit Court opinion, the patentable distinctiveness is a decisive criteria drawing the line in an analysis of exhaustion.<sup>183</sup>

---

<sup>177</sup> Osborne, *supra* note 165, at 651.

<sup>178</sup> *Cyrix Corp. v. Intel Corp.*, 846 F. Supp. 522, 540 (E.D. Tex 1994), *aff’d* without op., 42 F.3d 1411 (Fed. Cir. 1994).

<sup>179</sup> *Cyrix Corp.*, 846 F. Supp. at 540.

<sup>180</sup> *Cyrix Corp.*, 846 F. Supp. at 534.

<sup>181</sup> United States Group, *supra* note 102, at 2.

<sup>182</sup> Osborne, *supra* note 165, at 653-654.

<sup>183</sup> Osborne, *supra* note 165, at 654.



*LGE Decisions*<sup>184</sup>

As to the incident in *LGE* which was similar to both *Univis Lens* and *Cyrix v. Intel*, the court interpreted those decision in order to preclude a patentee from over exploitation of their partially completed product.

“[T]he holding and reasoning of *Cyrix* is persuasive authority for the proposition that the sale or license of an essential element of a patented device may exhaust the patentee’s statutory right to exclude others from making, selling or using that device.”<sup>185</sup>

Moreover, relying on the *Univis Lens* Supreme Court holding,<sup>186</sup> the district court concluded that licensee’s sale of the components, which were the unpatented microprocessors and chipsets made by Intel under license agreement with *LGE*, exhausted *LGE*’s patent rights because those components were “destined ... to be finished by the purchaser in conformity with the patent” or had no reasonable non-infringing use.<sup>187</sup> A non-infringing use means the use made from a product that does not infringe others’ intellectual property rights. Consistent with the holding in *Univis Lens*, an article including essential features of a patent claim has no non-infringing use.<sup>188</sup>

On the other hands, to allege an affirmative defense against patent exhaustion, the patentee must have a finding that the articles had non-infringing use because it would not be defined as an essential element of a patented device and the patentee, therefore, may benefit from his right over the article that is not subject to patent exhaustion.<sup>189</sup>

---

<sup>184</sup> *LG Elecs., Inc. v. Asustek Computer, Inc.*, 65 U.S.P.Q.2d 1589, 1598 (N.D. Cal. 2002); *LG Elecs., Inc. v. Asustek Computer, Inc.*, 248 F. Supp 2d 912 (N.D. Cal. 2003) (collectively referred to herein as "LGE" decisions) (the second LGE decision reaffirmed the first decisions' holding of exhaustion of apparatus claims).

<sup>185</sup> *LGE*, 65 U.S.P.Q.2d at 1595.

<sup>186</sup> *Univis Lens*, 316 U.S. at 250-51.

<sup>187</sup> *LG Elecs., Inc. v. Asustek Computer, Inc.*, Nos. C 01-00326 CW et al., 2002 WL 31996860, at \*11-13 (N.D. Cal. Aug. 20, 2002).

<sup>188</sup> *Univis Lens*, 316 U.S. at 251.

<sup>189</sup> *See Univis Lens*, 316 U.S. at 251.

As aforementioned, both cases defined the essential features of article subject to patent exhaustion, even unpatented, as a feature of a patent claim that distinguishes over the prior art or a feature of the component having no reasonable non-infringing use.

Until 2008, the Supreme Court's decision in *Quanta* reinforced the rule from *Univis Lens* concerning exhaustion of patent right over the component which is a part of the patented article, after its authorized sale. This decision can be summarized that the sale of the component will trigger patent exhaustion, if firstly, the component is reasonable and intended to be used merely to practice the patent or has no non-infringing use, and secondly, the component embodies essential features of the patented invention, including all inventive aspects.<sup>190</sup>

#### Patent Exhaustion with Respect to Apparatus and Method Claims

In *Bandag* case,<sup>191</sup> the Federal Circuit expressly indicated that the patent in question was not directed to equipment for performing the claimed method.<sup>192</sup> The court distinguished between apparatus and method claims in the context of patent exhaustion and stated that a method claim, per se, cannot be exhausted:

“The doctrine that the first sale by a patentee of an article embodying his invention exhausts his patent rights in that article,..., is inapplicable here, because the claims of the [patent] are directed to a ‘method of retreading’ ...”<sup>193</sup>

---

<sup>190</sup> *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617, at 2119-2120 (2008) cited in Dong Yina, *A Patent Exhaustion Exposition: Situating Quanta v. LGE in the Context of Supreme Court Jurisprudence*, 2010 Stan. Tech. L. Rev. N2, ¶ 9, available at <https://journals.law.stanford.edu/sites/default/files/stanford-technology-law-review/online/dong-a-patent-exhaustion-exposition.pdf>

<sup>191</sup> *Bandag, Inc. v. Al Bolser's Tires Stores, Inc.*, 750 F.2d 903, 924 (Fed. Cir. 1984).

<sup>192</sup> *Bandag*, 750 F.2d at 922.

<sup>193</sup> *Bandag*, 750 F.2d at 924.



Nevertheless, the distinction appears no longer necessary.<sup>194</sup> In *Jazz Photo*, the Federal Circuit Court recognized that the doctrine of permissible repair is the principle of patent exhaustion<sup>195</sup> and applicable to both apparatus and process claims.

*“The defense of repair is applicable to process claims, as well as to apparatus claims, when the patented process was used in the United States and the patent right has been exhausted for the articles produced thereby.”*<sup>196</sup>

Additionally, in *Quanta*<sup>197</sup>, the patentee (LGE) assigned a license Intel to produce products by using the method protected by patents. The Supreme Court ruled that the exhaustion doctrine applied to the products which Intel produced by using LGE’s patented method, although the Intel products did not directly practice the method patents. The Court reasoned that the products embodied essential features of the patented processes.<sup>198</sup>

### 3.2.1.2 Japan

Some Japanese statutory laws, *e.g.*, Copyright Law<sup>199</sup>, Plant Variety Protection and Seed Act<sup>200</sup>, or etc., provide for exhaustion of right, but no provision of Japanese Patent Act refers to exhaustion doctrine. The exhaustion of patent right, however, has been recognized under court’s decisions, even if the doctrine is not codified in the statute.

Without patent exhaustion provision that excludes the subsequent activities of using or selling the purchased product embodying patent from patent infringement, even normally exercising a right of ownership over the product can technically constitute infringement after the product has been sold. Many scholars have proposed

---

<sup>194</sup> The United States Group, *supra* note 102, at 2.

<sup>195</sup> *Jazz Photo Corp. v. US Int’l Trade Comm’n*, 264 F.3d 1094, 1105 (Fed. Cir. 2001).

<sup>196</sup> *Jazz Photo*, 264 F.3d at 1108-1109.

<sup>197</sup> *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008).

<sup>198</sup> *Quanta*, 553 U.S. at 632-633.

<sup>199</sup> Japanese Copyright Act, § 26-2 (Right of Ownership Transfer).

<sup>200</sup> Japanese Plant Variety Protection and Seed Act, § 21 (Limitation of the effects of the Breeder’s Right).

theories that attempt to figure out the unjustifiable conclusion in abovementioned.<sup>201</sup> The Japanese prevailing theory explains patent exhaustion as follows: “when the patentee legitimately distributes a patented product, the patent has already accomplished its purpose concerning the product, and the patent right over the product is consequently exhausted.”<sup>202</sup> This theory, therefore, is known as the doctrine of patent exhaustion.

Not only is any theory existing for study but it is also influential in decisions of the court since theories have been frequently cited in the reasoning of the case decisions, *e.g.*, BBS or Canon ink cartridge cases described later.

As same as in other civil law system countries, Japanese courts have the roles to interpret written laws and apply to the fact of the particular case and the binding power of the court decisions is generally limited to the parties of the case. However, in patent field which is different from other laws, to avoid interpretation of ambiguous exhaustion provision, courts in Japan tend to minimize interpreting statutory law by proposing clear and concrete standards in their decisions.<sup>203</sup>

In *BBS Kraftfahrzeugtechnik AG v. K.K. Racimex Japan*, BBS Kraftfahrzeugtechnik AG (‘BBS’), a German company who had patents in both Europe and Japan for a particular type of car wheel, sold these products both in Germany and Japan through its subsidiaries, Nihon BBS KK and Washi Mayer KK. At that time, there was a sufficient price differential between the same product in Germany and Japan to enable an arbitrageur, Jap Auto Products KK (‘Jap Auto’), to buy the products in Germany, export them to Japan, and resell them to Racimex Japan KK (‘Racimex’). BBS brought a lawsuit against Jap Auto and Racimex, for patent infringement because BBS had not consented to the sale of the products in Japan. The importation and sale

---

<sup>201</sup> Kaoru Kuroda and Eiji Katayama, *Efforts to Establish Clear Standards for Exhaustion in Japan*, 7 Wash. J.L. Tech. & Arts 515, 518 (2012), available at <http://digital.law.washington.edu/dspace-law/handle/1773.1/1133>

<sup>202</sup> Nobuhiro Nakayama, *Kogyosyoyukenpo (Jo) Tokkyoho (Industrial Property Law: Volume 1, Patent Law)* (2nd ed. 1998), at 362-365 cited in *id.*; Hirohito Nakada, *Patent Exhaustion and the Recycling Business in the United States and Japan*, 14 CASRIP Newsletter 3 (Summer 2007).

<sup>203</sup> See Kuroda, *supra* note 201, at 526.

allegedly constituted patent infringement. The Japanese Supreme Court in *BBS* case recognized exhaustion doctrine of patent right and gave, for such adoption, two reasons as follows: “(i) if the patentees’ approval must be required anytime the patented products are assigned or otherwise disposed of, the free circulation of goods on the market will be prevented, and (ii) it is unnecessary to let the patentee exploit his invention twice in the stream of commerce.”<sup>204</sup>

### 3.2.2 Geographical Scope of Patent Exhaustion

#### 3.2.2.1 United States

The Supreme Court of the United States has never addressed the issue of geographical scope of patent exhaustion. The Federal Circuit, however, had initially hold in *Jazz Photo* case that “United States patent rights are not exhausted by products of foreign provenance. To invoke the protection of the first sale doctrine, the authorized first sale must have occurred under the United States patent.”<sup>205</sup> It can be understood that U.S. Patent system does not recognize international patent exhaustion but national patent exhaustion. Later, the Federal Circuit’s decision in *Fuji Photo* case reaffirmed such position by concluding that “[A patentee’s] foreign sales can never occur under a United States patent because the United States patent system does not provide for extraterritorial effect.”<sup>206</sup>

Even though, the U.S. Supreme Court addressed in *Kirtsaeng*, the copyright exhaustion case, the issue of international copyright exhaustion by ruling that “the ‘first sale’ doctrine applies to copies of a copyrighted work lawfully made abroad,”<sup>207</sup> the lower courts’ decisions in many subsequent cases in patent exhaustion cases thereafter declined to hold that *Kirtsaeng* had altered *Jazz Photo*’s territoriality requirement for

---

<sup>204</sup> *BBS Kraftfahrzeugtechnik AG v. K.K. Racimex Japan et al.*, 51 Minshu 299, 1612 Hanrei Ju1-to 3, at 8 (Sup. Ct. 3rd Petty Bench, July 1, 1997)

<sup>205</sup> *Jazz Photo*, 264 F.3d at 1105.

<sup>206</sup> *Fuji Photo Film Co. v. Jazz Photo Corp.*, 394 F.3d 1368, 1376 (Fed. Cir. 2005).

<sup>207</sup> *Kirtsaeng v. John Wiley & Sons, Inc.*, 133 S. Ct. 1351, 1355-1356 (2013).

patent exhaustion.<sup>208</sup> Furthermore, the *en banc* Federal Circuit in *Lexmark v. Impression*<sup>209</sup> affirmed that *Kirtsaeng* did not overrule *Jazz Photo*, such that the foreign sales did not exhaust the right to prevent subsequent resales in the United States due to the differences between copyright and patent statutory and case laws.<sup>210</sup>

### 3.2.2.2 Japan

The Supreme Court of Japan in *BBS* case adopted the national exhaustion of a patent right but permitted the parallel importation of goods unless the parties to the sale contract agreed and explicitly indicated on the goods to exclude Japan from the country in which the goods were to be sold or used. In the statement of the Court, “If a patent holder in Japan or an equivalent person assigns a patented product outside Japan to another person, the patent holder, unless there is an agreement with the assignee excluding Japan from the areas of sale or use of the said product, may not seek an injunction in Japan concerning the patented product on the basis of the patent right against the person who acquired the product from the assignee, except in cases where the above agreement has been made and is explicitly indicated on the product.”<sup>211</sup>

It may be concluded that Japan generally recognizes international exhaustion of patent right, unless the patentee of the products imported from foreign countries has an explicit prohibiting notice. Japan takes an intermediate position between international and domestic exhaustion of patent right.

## 3.3 Post-Sale Restriction on Use of the Patented Goods

---

<sup>208</sup> *Lexmark Int’l, Inc. v. Ink Techs. Printer Supplies, LLC*, Case No. 1:10-cv-564, 2014 U.S. Dist. LEXIS 41046, at\*22-23 (S.D. Ohio March 27, 2014); *Robert Bosch LLC v. Trico Prods. Corp.*, No. 12 C 437, 2014 U.S. Dist. LEXIS 69902, at \*5-6 (N.D. Ill. May 21, 2014); *San Disk Corp. v. Round Rock Research LLC*, No. C 11-5243, 2014 U.S. Dist. LEXIS 81290, at \*11-15 (N.D. Cal. June 13, 2014) cited in Alicia Carney, *Patent Exhaustion 1 Year After Kirtsaeng*, available at <http://www.law360.com/articles/578419/patent-exhaustion-1-year-after-kirtsaeng>

<sup>209</sup> *Lexmark Int’l, Inc. v. Impression Prods.*, 816 F.3d 721 (Fed. Cir. 2016).

<sup>210</sup> *Lexmark*, 816 F.3d at 727.

<sup>211</sup> *BBS*, *supra* note 204.

### 3.3.1 United States

In United States, the exhaustion doctrine or the first sale doctrine that limits the extent to which the patentee can control his article protected by patent is generally applied after an authorized sale. Nevertheless, in the case where the patentee restricts the purchaser to or imposes condition on use and disposal of the patented article, the violation of these restrictions has a negative impact on the authorization of the sale. By virtue of the violation of valid restrictions, the sale of patented articles becomes unauthorized. Without an authorized sale, the exhaustion doctrine therefore shall be inapplicable.<sup>212</sup>

The panel of the Federal Circuit basically permitted that post-sale restrictions with adhesion contracts can prevent patent exhaustion of the patentee's patent right over the patented products even after it is sold. In *Mallinckrodt*,<sup>213</sup> Mallinckrodt sold its patented medical devices to hospitals, stamped with the inscription, "Single Use Only", as figure 3.1 and its package inserted "instruct[ion] that the entire contaminated apparatus be disposed of in accordance with procedures for the disposal of biohazardous waste."<sup>214</sup>

**Figure 3.1: "Single Use Only" Labelling of Medical Devices**



Cook Medical, Product Labels

(Sources: <https://www.cookmedical.com/support/general-product-information/product-labels/>)

<sup>212</sup> John Gladstone Mills, *Patent Law Fundamentals* § 20:40:50 (2nd ed. 2002).

<sup>213</sup> *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700 (Fed. Cir. 1992).

<sup>214</sup> *Mallinckrodt*, 976 F.2d at 702.

Many hospitals, however, did not attend to the restriction but instead sold the spent devices to Medipart, to refurbish the devices and deliver back to the hospitals for additional use.<sup>215</sup> The court held that the patentee can condition the sale of patented goods with a restrictive notice and thereby restrict the disposition of the goods by the purchasers, with the exception of antitrust law violations, such as price-fixing and tie-in restrictions, or violations of other law or policy.<sup>216</sup>

“Unless the [post-sale restriction] violates some other law or policy (in the patent field, notably the misuse or antitrust law) private parties retain the freedom to contract concerning conditions of sale. The appropriate criterion [for the judgement of validity of the restriction] is whether Mallinckrodt’s restriction is reasonably within the patent grant, or whether the patentee has ventured beyond the patent grant and into behavior having an anticompetitive effect not justifiable under the rule of reason.”<sup>217</sup>

In other words, the effectiveness of the post-sale restrictions are limited to the circumstances in which the restrictions have anticompetitive effects relating to the subject matter within the scope of the patent claims. However, when anticompetitive effects do not relate to the patent, the restrictions may keep effective when these, the validity of which are subsequently analyzed by courts, do not violate the antitrust laws or do not constitute patent misuse since these are not determined as a *per se* violation and also survive the analysis under the rule of reason.<sup>218</sup>

---

<sup>215</sup> *Mallinckrodt*, 976 F.2d at 702.

<sup>216</sup> *Mallinckrodt*, 976 F.2d at 708.

<sup>217</sup> *Id.*

<sup>218</sup> *Virginia Panel Corp. v. Mac Panel Co.*, 133 F.3d 860, 869 (Fed. Cir. 1997) addressed the analysis under the rule of reason that:

*“the finder of fact must decide whether the questioned practice imposes an unreasonable restraint on competition, taking into account a variety of factors, including specific information about the relevant business, its condition before and after the restraint was imposed, and the restraint’s history, nature, and effect.”*



Moreover, to get effective post-sale restrictions, the purchaser on whom the post-sale restrictions are imposed must have an opportunity to reject such subjection.<sup>219</sup> Thus, it might be summed that restrictions on post-sale use of the patented goods can take effect and bind any purchaser, including third parties, who committed acts to make it usable again, if the restrictions do not violate antitrust law under rule of reason analysis and that purchaser did not reject it.

Subsequently, the Supreme Court decided in *Quanta*,<sup>220</sup> holding that “[n]othing in the License Agreement restricts Intel’s right to sell its microprocessors and chip sets to purchasers who intend to combine them with non-Intel parts. It broadly permits Intel to ‘make, use, [or] sell’ products free of LGE’s patent claims.”<sup>221</sup> In the facts, LGE, who was the owner of method patent, licensed Intel to manufacture products thereby and sold the manufactured products but did not license purchasers or third parties to combine the products with any non-Intel product. Also, by a separate agreement, LGE required Intel to notify purchasers that they were not authorized to combine the products with non-Intel parts for resale.<sup>222</sup> However, the Court merely decided the limitation of sale by finding that the license agreement failed to explicitly bind the licensee.

“The License Agreement authorized Intel to sell products that practiced the patents. No conditions limited Intel’s authority to sell products substantially embodying the patents....Intel’s authorized sale to Quanta thus took its products outside the scope of the patent monopoly, and as a result, LGE can no longer assert its patent rights against Quanta.”<sup>223</sup>

In other words, whether the post-sale restriction is a valid limitation to make the sale ‘unauthorized’ for avoiding patent exhaustion was not decided by the Court in *Quanta*. As noted by many patent scholar, the U.S. Supreme Court in *Quanta* was widely expected to rule on whether *Mallinckrodt* was good law. The Court, however,

---

<sup>219</sup> See *id.* at 707; see *Arizona Cartridge Remanufacturers Assoc. Inc. v. Lexmark Int’l Inc.*, 68 U.S.P.Q.2d 1786, 1793 (N.D. Cal. 2003) cited in the United States Group, *supra* note 102.

<sup>220</sup> *Quanta*, 553 U.S. 617 (2008).

<sup>221</sup> *Quanta*, 553 U.S. at 636.

<sup>222</sup> *Quanta*, 553 U.S. at 638.

<sup>223</sup> See *Quanta*, 553 U.S. at 637.

side stepped the issue by narrowly interpreting the license agreement so that it was not a conditional license. Since the Court side stepped the issue, it remains unclear to what extent a patentee can use a conditional license to impose restrictions on downstream purchasers.<sup>224</sup>

In 2016, the *en banc* Federal Circuit in *Lexmark v. Impression*, however, held that exhaustion of patent right may be avoided by valid post-sale contractual restrictions.<sup>225</sup> In the facts, Lexmark International, Inc. manufactures and sells printers and toner cartridges protected by multiple of its own patents. Lexmark sells toner cartridges in the United States and in other countries under two programs: (1) a “Regular Cartridge” program, under which cartridges are sold at full price and without restriction on resale or reuse of the cartridge; and (2) a “Return Program Cartridge” program, under which cartridges are sold at a 20% discount, but subject to no-resale and no-reuse restrictions. All customers received these adequate notices about the programs. Impression Products, Inc. acquired spent cartridges restricted “Return Program Cartridges” for refilling and sale in the United States. Lexmark brought a lawsuit against Impression for patent infringement, alleging that Impression’s refurbishment and sale of domestically sold cartridges infringed Lexmark’s patents.<sup>226</sup>

The court clearly distinguished this case from *Quanta* on the basis that: (1) the Supreme Court in *Quanta* did not address a sale made by a patentee that was subject to a post-sale restriction, and (2) did not distinguish between the activities of a patent owner and those of a licensee. Rather, the patentee in *Quanta* granted the licensee the unrestricted authority that did not exceed in the sales that were found to invoke exhaustion.<sup>227</sup> The court reasoned that a sale which includes a clearly communicated lawful restriction on the post-sale use or resale of a patented goods does not confer any authority beyond those restricted in the initial sale on the buyer or subsequent purchasers. The use or resale of a patented goods in violation of a post-sale restriction,

---

<sup>224</sup> Steven Seidenberg, *Patent Predicament*, 18 *InsideCounsel* 202 (2008), available at <http://www.insidecounsel.com/2008/09/01/patent-predicament->

<sup>225</sup> *Lexmark*, 816 F.3d at 726.

<sup>226</sup> *Lexmark*, 816 F.3d at 727-729.

<sup>227</sup> *Lexmark*, 816 F.3d at 737-738.



therefore, is unauthorized and constitutes an infringement of the patent owner's rights.<sup>228</sup>

In conclusion, the post-sale restriction to avoid patent exhaustion, as *Mallinckrodt's* ruling, is still open, although the U.S. Supreme Court has never affirmed the effectiveness of post-sale restrictions. Considered as a default rule, exhaustion of patent right is triggered, unless the sale of product is conditional. Currently, patentees in U.S. are free to impose the restrictions until the U.S. Supreme Court rules otherwise.

### 3.3.2 Japan

In Japan, the patent exhaustion objectively tended to be determined from the aspect of acceptance in public sense.<sup>229</sup> A Grand Panel of Intellectual Property High Court ruled in *Canon* case that “[i]n light of the fact that an exhaustion of a patent is admitted from the perspective of harmonization between the protection of inventions under the Patent Act and social and public interest (see the Supreme Court Judgment on the BBS Case), exhaustion of a patent should not be prevented by the patentee's intention.”<sup>230</sup> Against the United States Federal Circuit's ruling in *Mallinckrodt*, a patentee cannot limit patent exhaustion by making any agreement. Therefore, the restriction on use of the patented product, once it has been sold, shall be ineffective to override exhaustion doctrine.

However, without statutory provision and clear decision of the Supreme Court, there are suggestions from Japanese scholars relevant to the possibility that patent exhaustion may be limited by a contract between the patentee and purchasers, unless such contract violated the Antimonopoly Act or social order, by reasoning that, even in an authorized sale of the products, the patentee can still collect fees for use from the purchasers.<sup>231</sup> On the other hand, in common understanding and recognizing the Japan

---

<sup>228</sup> *Lexmark*, 816 F.3d at 737.

<sup>229</sup> Nakada, *supra* note 202.

<sup>230</sup> *Canon Inc. v. Recycle Assist Co.*, no. 2005 (Ne) 20021, at 22, the full case officially translated to English available at [http://www.ip.courts.go.jp/app/files/hanrei\\_en/403/000403.pdf](http://www.ip.courts.go.jp/app/files/hanrei_en/403/000403.pdf)

<sup>231</sup> Takashi Hashiba, *Kansetsu Shingai Ni Tsuite* [Indirect Infringement (I)(II)(III)] (1976), 26-11 Tokkyo kanri 1115; see H. Yoshida, *Syōjintoha nanika – keiyaku*,

Patent law system, the exhaustion of patent right is not allowed to be restricted by any contract.<sup>232</sup>

### **3.4 Distinctions between Permissible Repair/Recycling and Infringing Reproduction**

A ton of cases, statutory laws and scholarly theories in foreign countries, not only United States and Japan but the United Kingdom, Germany, the Netherlands European Union and Singapore, provided the guideline for interpreting the issue. A wide range of legal issues and facts have been discussed. Almost every country in the list have considered both repair and recycling in the same sense. The standards of the distinction, even merely referring to repair, would be applicable to recycling as well.

#### **3.4.1 United States**

Unless, the patented goods have been sold with the valid post-sale restriction on use, the following repair and reconstruction dichotomy is used to discuss both recycling and repair cases. Since in United States patentees are allowed to control exhaustion of their patent rights through contract, the patent right over the sold and patented article, therefore, does not exhaust, if the sale of the patented articles is conditional.<sup>233</sup>

##### **3.4.1.1 Repair and Reconstruction Dichotomy**

---

*senyōhin to shūri/saiseisan wo tōshite* [What is exhaustion – contract, replaceable goods, and repair/reconstruction], 6 Hōseisakugaku kenkyū [Study of the law and policy of intellectual property] 71, 80 (2005) cited in Mohri, *supra* note 68, at 131; Japanese Group, *Japanese Group Report*, Question Q205 Exhaustion of IPRs in cases of recycling or repair of goods, available at <https://www.aippi.org>

<sup>232</sup> Hisao Shiomi, *the Application of Indirect Patent Infringement to the Divided Claim Infringement*, 41 patent Studies 5 (2006) cited in Mohri, *supra* note 68; Nakada, *supra* note 202.

<sup>233</sup> Nakada, *supra* note 202.

*Wilson*<sup>234</sup> is the very first case that the court introduced the repair and reconstruction dichotomy. The defendants in this case proceeded to replace cutting-knives, the components in planning-machines for which the plaintiff had patent, since the knives became worn out and to prolong its use, it needed to be replaced at least after 60 to 90 days of use, whilst the machines as a whole were expected to last for several years.<sup>235</sup> Finding that such a replacement was permissible, the Supreme Court established the ‘repair and reconstruction distinction’ which was upheld as follows.<sup>236</sup>

***a. It is permissible, by virtue of the right to use, to replace a part of a combination patent.***

“It is the use of the whole of that which a purchaser buys,...and when he repairs the damages which may be done to it, it is no more than the exercise of that right of care which everyone may use to give duration to that which he owns, or has a right to use as a whole. ...repairing partial injuries, whether they occur from accident or from wear and tear, is only refitting a machine for use.”<sup>237</sup>

***b. The right to repair no longer remains when the patented product was already spent.***

“But if, as a whole, it should happen to be broken, so that its parts could not be readjusted, or so much worn out as to be useless, then a purchaser cannot make or replace it by another, but he must buy a new one. The doing of either would be entire reconstruction.”<sup>238</sup>

***c. The right to repair includes even the replacement of essential parts, as long as the inventor intended the product to be used.***

---

<sup>234</sup> *Wilson v. Simpson*, 50 U.S. 109 (1850).

<sup>235</sup> *Wilson*, 50 U.S. at 120-125.

<sup>236</sup> Mohri, *supra* note 68, at 43.

<sup>237</sup> *Wilson*, 50 U.S. at 123.

<sup>238</sup> *Wilson*, 50 U.S. at 124.

For example, in this case where the cutting knives arranged as a part of the combination had a short lifespan, its replacement was necessary to fulfill the inventor's intention.<sup>239</sup>

"...the assignee could replace them from time to time, as they were needed,...though they are an essential and distinct constituent of the principle or combination of the invention, frequently replacing them, according to the intention of the inventor, is not a reconstruction of the invention... These, without having a definite duration, are contemplated by the inventor to last so long as the materials of which they are formed can hold together in use in such a combination."<sup>240</sup>

**d. *Replacement by changing the identity of the product however is impermissible.***

"Such a replacement of temporary parts does not alter the identity of the machine, but preserves it, though there may not be in it every part of its original material."<sup>241</sup>

Several years later, there was an overruling case, best known as *Aro I*,<sup>242</sup> the controversy of which concerned the replacement of a fabric top portion of a patented automobile convertible roof assembly. The defendant, *Convertible Replacement Company*, manufactured and sold replacement fabric tops for fit use for no other than the automobile convertible roof assembly, as shown in figure 3.1, on which the plaintiff

---

<sup>239</sup> *Id.* noting that:

*"the right [of the owner] to replace the cutter knives is not because they are of perishable materials, but because the inventor of the machine has so arranged them as a part of its combination, that the machine could not be continued in use without a succession of knives at short intervals. Unless they are replaced the invention would have been of little use to the inventor or to others."*

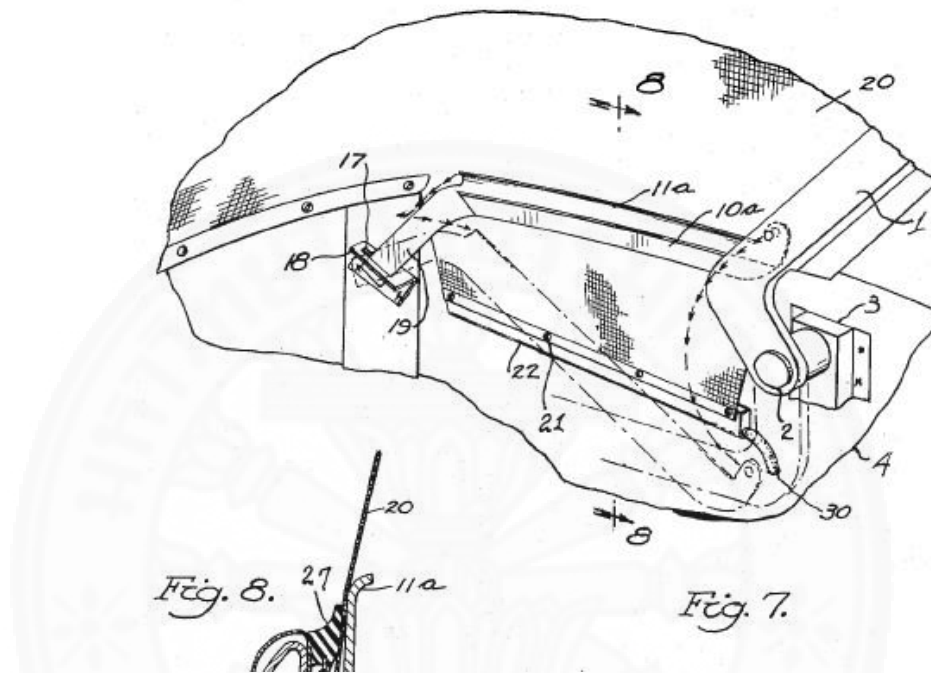
<sup>240</sup> *Wilson*, 50 U.S. at 125-126.

<sup>241</sup> *Wilson*, 50 U.S. at 126.

<sup>242</sup> *Aro Manufacturing Co. v. Convertible Top Replacement Co.*, 365 U.S. 336 (1961).

owned the patent covering the combination of a flexible top fabric, supporting structures, and a mechanism for sealing the fabric.<sup>243</sup>

**Figure 3.1: Convertible Folding Top with Automatic Seal at Rear Quarter**



USPTO, Convertible Top Assembly of U.S. Pat. No. 2,569,724

(Source: <https://www.google.com/patents/US2569724>)

The Supreme Court addressed that whether the replaced part was ‘essential’ or a ‘heart of the invention’ was refused to be considered because “the combination patent covers only the totality of the elements in the claim and that no element, separately viewed, is within the grant.”<sup>244</sup>

The Court’s decision also referred to the standard of distinguishing reconstruction from repair whereby the court established the broad test indicating that “the reconstruction of a patented entity, comprised of unpatented elements, is limited to such a true reconstruction of the entity as to ‘in fact make a new article,’ after the

<sup>243</sup> *Aro*, 365 U.S. 336.

<sup>244</sup> *Aro*, 365 U.S. at 344.

entity, viewed as a whole, has become spent.”<sup>245</sup> Repair is permissible until the whole article has been spent by reasoning that “in order to call the monopoly, conferred by the patent grant, into play for a second time, it must, indeed, be a second creation of the patented entity.”<sup>246</sup> Meanwhile, “mere replacement of individual unpatented parts, one at a time, whether of the same part repeatedly or different parts successively, is no more than the lawful right of the owner to repair his property.”<sup>247</sup>

Finally, the following multiple factors of the test for determination of distinguishing repair from reconstruction proposed by Judge Brennan and cited in the *Wilson*<sup>248</sup> and *Heyer*<sup>249</sup> precedent, and in the lower courts’ decisions were rejected:<sup>250</sup> “the life of the part replaced in relation to the useful life of the whole combination, the importance of the replaced element to the inventive concept, the cost of the component relative to the cost of the combination, the common sense understanding and intention of the patent owner and the buyer of the combination as to its perishable components, whether the purchased component replaces a worn-out part or is bought for some other purpose, and other pertinent factors.”<sup>251</sup>

As aforementioned, it can be summarized that to distinguish reconstruction from repair, the court ruled these terms solely through the idea of ‘spentness’ of the whole product. Currently, the test remains based on ‘spentness’, which repair or recycling is permissible as long as the product still retains its useful life.<sup>252</sup> A finding of the ‘spentness’ from the Supreme Court in *Aro I* did not provide its rigid framework and has been further interpreted by a number of the Federal Circuit decisions in

---

<sup>245</sup> *Aro*, 365 U.S. at 346.

<sup>246</sup> *Id.*

<sup>247</sup> *Id.*

<sup>248</sup> *Wilson*, 50 U.S. 109.

<sup>249</sup> *Heyer v. Duplicator Manufacturing Co.*, 263 U.S. 100 (1923).

<sup>250</sup> *Aro*, 365 U.S. at 362.

<sup>251</sup> *Aro*, 365 U.S. at 363-364.

<sup>252</sup> See Mark Janis, *A Tale of the Apocryphal Axe: Repair, Reconstruction, and the Implied License in Intellectual Property Law*, 58 Md. L. Rev. 423, 426 (1999).

subsequent cases, especially in *Husky* case<sup>253</sup> in which the repair and reconstruction case is identified into 3 categories as follows:<sup>254</sup>

- (1) In the case where the entire patented item is spent and the alleged infringer make it become usable again, it would be held as constitute reconstruction.
- (2) In the case where the alleged infringer replaces a spent part of the patented product, whether the replacement part is worn out or effectively spent, it would be held as permissible repair.
- (3) In the case where the alleged infringer replaced an unspent part to enable the product to perform a different function, it would be held as “akin to repair”.

Recently, courts in many cases have been in favor of consumers and recycling businesses rather than patentees. A substantial majority of court decisions have reached holdings of repair, not reconstruction.<sup>255</sup> According to the test of spentness of the whole product, in case where a patent relates to the entire product, replacing only a part of the product is likely to be repair. However, there is infringement, if the patent relates to that repaired part. Common fact patterns of cases which were associated with replacing some part of patented product and replacing a patented part of a product and their outcomes are listed in the following table.

---

<sup>253</sup> *Husky Injection Molding Systems Ltd. v. R & D Tool and Engineering Co.*, 291 F.3d 780 (Fed.Cir. 2002).

<sup>254</sup> *Husky*, 291 F.3d at 785-786.

<sup>255</sup> David Kagan, *Honey, I Shrunk the Patent Rights: How Implied Licenses and the Exhaustion Doctrine Limit Patent and Licensing Strategies* (2013), at 18, available at <http://c.ymcdn.com/sites/www.lesusacanada.org/resource/collection/B2D9101A-F6BA-4E58-AC7E-A805EA0E9B6E/Exhaustion-Implied-License.pdf>



**Table 3.1: Common Fact Patterns under Repair and Reconstruction Dichotomy**

Common Fact Patterns	Court Decisions
Take out, clean, and replace a part	Almost always repair
Replace a patented part with another patented part	Almost always reconstruction
Replace a patented part with an unpatented part with same or different functionality	Likely repair, but could be reconstruction depending upon the scope of claims
Replace a missing part	Some cases say this is reconstruction
Early replacement of a part	Repair, unless another category is applicable
Replace an unpatented part with an unpatented part	Almost always repair
Both new machine and old machine exist	Almost always reconstruction
Old machine discarded after new machine put together	Almost always reconstruction
Old machine has worn out completely and new machine put together in framework of old machine	Likely to be reconstruction but <i>Jazz Photo Corp. v. ITC</i> , 264 F3d 1094, 59 USPQ2d 1907 (Fed. Cir. 2001)
New functionality is incorporated into old machine by replacing some components with new ones	Can be repair or reconstruction, but trend seems to favor repair
Disassemble a machine, clean and service the parts, and reassemble the machine	Almost always repair
Disassemble several machines, and then rebuild the best parts into fewer machines	Likely to be repair

David Kagan, *Honey, I Shrunk the Patent Rights: How Implied Licenses and the Exhaustion Doctrine Limit Patent and Licensing Strategies*.

(Source: <http://c.y.mcdn.com/sites/www.iesusacanada.org/resource/collection/B2D9101A-F6BA-4E58-AC7E-A805EA0E9B6E/Exhaustion-Implied-License.pdf>)

### 3.4.1.2 Repair Parts bill

On March 13, 2008, Representative, Zoe Lofgren, introduced in the U.S. Congress a repair parts bill, H.R. 5638 (110th Cong., 2d Session) so as to broaden exclusion of repair activities mainly from design patent infringement. This proposed bill would add 35 U.S.C. § 271 a further subsection (j) the provision of which provided as follows:<sup>256</sup>

*“(j) it shall not be an act of infringement to make, use, offer to sell, or sell within the United States or import into the United States any article of manufacture that itself constitutes a component part of another article of manufacture, if the sole purpose of the component part is for the repair of the article of which it is a part so as to restore its appearance.”*<sup>257</sup>

However, this proposed bill has never been codified in the Code. In accordance with Freyer’s recommendation, there appeared to be no need to have this provision since the Supreme Court in *Aro I* has established the “repair and reconstruction dichotomy” which the courts can apply to design patent as well as utility patent. The legislative approach is perhaps too complex of a way to achieve the necessary interpretation with current law.<sup>258</sup>

## 3.4.2 Japan

### 3.4.2.1 Major Scholarly Theories

As above described in 3.2.1.2, there is no statutory provision associated with exhaustion doctrine aside from scholarly theories that has a highly persuasive authority for Japanese courts dealing with patent issues in interpreting statutes.<sup>259</sup> As to be described below, these are the theories in regarding to the issue of whether the patent

---

<sup>256</sup> William Freyer, *Comments to the U.S. Patent and Trademark Office on Pending Legislation H.R.5638 (110th Congress, 2d Session) and Design Protection*, available at <http://www.uspto.gov/sites/default/files/web/offices/pac/dapp/opla/comments/designstowhall/fryer.pdf>

<sup>257</sup> *Id.*

<sup>258</sup> *Id.*

<sup>259</sup> Nakada, *supra* note 202.

right would be exhausted in cases where third parties replace parts of or reprocess the patented products which may be damaged or spent after the sale of products by the patentee or by other with authority.

***a. Theory of Full Value of Patented Inventions***

In this theory, Professor Tamai reasonably explained that a patent right over an invention must be exhausted after it has been sold since a patentee has received full value for his patented invention and the patent system does not need the patentee to have an opportunity to exploit his invention for recovery of the full value again.<sup>260</sup> In other words, double exploitation must be prohibited and the patentee must surrender all patent right after the sale of invention.

When the patentee decides to sell his invention, it should be deemed that he sufficiently recovers full value of the invention. Activities of repairing, replacing a part of, and reprocessing a product embodying invention patent, thus, do not constitute infringement of patent right, regardless of whether the committed part is essential structure of the patented invention.<sup>261</sup> This is because the patentee has already received a proper reward for his creation at the sale of products.

However, the activities of repairing, replacement, and recycling a product which embodies invention patent so as to reuse the product after its function has absolutely been spent shall be determined that the said acts constitute infringement of patent right. Since such activities are beyond the scope of the assumed use of the patented product under normal social convention, the full value of the invention with regard to these activities is not yet recovered.<sup>262</sup> The patentee, therefore, should be permitted to exercise his patent right over the invention again even it though has been already sold.

---

<sup>260</sup> Katsuya Tamai, *Nihonkokunai niokeru tokkyoken no syōjin* [*Exhaustion of a Patent Right in Japan*], Shin-Saibanjitumutaikai 4 Titekizaisankankei soshoho [New Outline of Practice in Court, Litigation Laws relating to Intellectual Property] 233, 240 (2001) cited in Kuroda, *supra* note 201, at 525-526.

<sup>261</sup> *Id.*

<sup>262</sup> *Id.*

*b. Theory of Classification of Repairing and Manufacturing*

Repairing or reprocessing the product embodying invention patent is commonly considered as patent infringement when such act constitutes manufacturing. In this theory, Mr. Kosaku Yoshifuji and Mr. Kenichi Kumagai divided a patented product into 2 portions: (1) a patented portion having the features of the invention and (2) a non-patented portion.<sup>263</sup> Subsequently, it shall be considered that repair or reprocess of a non-patented portion does not constitute patent infringement. On the other hand, whether such activities committed over a patented portion may or may not constitute infringement of patent right depends upon the degree of the committed activities.<sup>264</sup>

One might argue that it would be inconsistent with the conventional understanding of laws, if the use of a product by the purchaser, who has ownership thereof, should not include repair or improvement of his product. Professor Nobuhiro Nakayama expressed his opinion that mere repair or reprocess of an essential part of the patented product is reasonably to be understood as manufacturing the patent infringing activity.<sup>265</sup> To determine whether the act in question is repair or manufacturing, it relies on the following factors: the purpose of the product, the nature of the patent right, and the portion covered by patent right.<sup>266</sup> For instance, refilling a used disposable camera with a replacement film, resealing and bringing it into the market again may generally constitute patent infringement since when considering the above factors, these activities lay beyond the traditional form of repair because in account with the purpose of the product as a threshold factor in this case, the product intended to be used only one time.

---

<sup>263</sup> Kōsaku Yoshifuji and Kenichi Kumagai, Tokkyokō Gaisetsu [Overview of Patent Act] 434 (13th ed. 1998) cited in Kuroda, *supra* note 201.

<sup>264</sup> *Id.* at 435.

<sup>265</sup> Nakayama, *supra* note 202, at 315.

<sup>266</sup> *Id.*

Last but not least in this theory, Mr. Kazuo Masui formulated a test for determining infringement of patent right. It is called ‘two-part test’ that is divided into the following two steps of considering issues:<sup>267</sup>

- (1) “Exhaustion issue” through considering the circumstance among the patentee and the purchaser and the equivalence between the activity in question and manufacturing of the patented product, to determine whether the activity in question falls within the lawful repair or manufacturing that requires the permission from the patentee as described below in second step;
- (2) “Infringement issue” to determine, in a case where the activity in question falls within manufacturing, whether the patentee has given the permission to do such activity explicitly or implicitly.

In consideration to the standard mentioned above, the activities which are defined as manufacturing under the first step and also have no explicit or implicit permission from the patentee under the second step shall be determined constitute patent infringement.

***c. Theory of Classification and Expected ‘Use’ under Normal Social Convention***

This theory was introduced by Professor Hisayoshi Yokoyama through classifying both the reasoning under the Japanese lower courts’ decisions and the other scholarly theories into two categories as follows:<sup>268</sup>

- (1) “Manufacturing approach” with regard of whether the accused activity of reprocessing a product embodying invention patent shall be evaluated as manufacturing or not;

---

<sup>267</sup> Kazuo Masui and Yoshiyuki Tamura, Tokkyo Hanrei Gaido [Guide of Patent Cases] 252-253 (2nd ed. 2000) cited in Kuroda, *supra* note 201, at 527.

<sup>268</sup> Hisayoshi Yokoyama, Tokkyoseihin nitausrū Henkeikōi to Tokkyokenshingai [Act of Processing a Patented Product and Infringement of a Patent Right] 130-131 (2004) cited in Kuroda, *supra* note 201, at 528.

- (2) “Exhaustion approach” with regard of whether the accused activity of reprocessing a product embodying invention patent shall be considered as the foreseeable act of using the product under normal social convention or not.

These two conflicting approaches in aforesaid may have emanate from the multidimensional aspects of patent protection. On the one hand, the manufacturing approach concentrates on an article protected by a patent. On the other hand, the exhaustion approach concentrates on the function of a patent right as the way to recoup investment thereof. Both approaches may be plausible to use for determining the issue.<sup>269</sup>

#### 3.4.2.2 Repair-Reconstruction Test

Patentees in Japan cannot control their patent exhaustion through imposing the restrictions on post-sale use on downstream purchasers. When the patented articles have been sold, the patent rights over them basically exhausts. However, to determine whether or not an exclusive right of the patentee is exhausted when a third party recycles or repairs sold patented articles, the repair-reconstruction test is specially provided by Grand Panel of IP High Court.<sup>270</sup>

Although Japan can be classified as a civil law legal system country, the Grand Panel of IP High Court was introduced to form reliable rules and ensure consistency of judicial decisions. In practice, the decisions of the Grand Panel are influential and fundamentally used to cite in the lower courts’ decisions,<sup>271</sup> though it is not officially enforceable on account of the legal system. Technically, Japanese legal system adopted common law system aspect to combine with the traditional civil law system in order to form the rules in the intellectual property fields.<sup>272</sup> In other words, when considering the weight of authority, even though it is not binding to the subsequent courts to follow

---

<sup>269</sup> *Id.*

<sup>270</sup> Nakada, *supra* note 202.

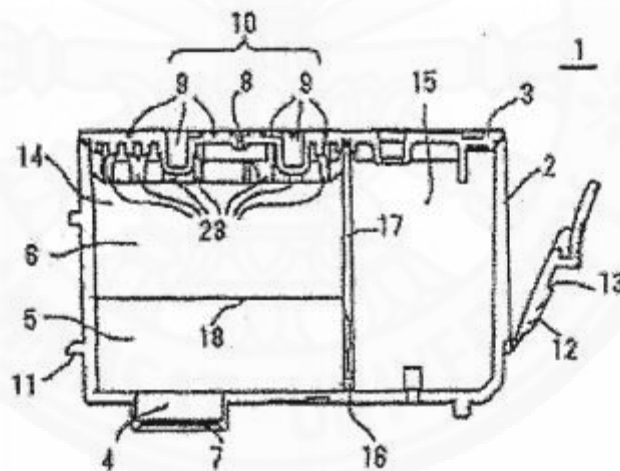
<sup>271</sup> Intellectual Property High Court, *Current Status*, available at <http://www.ip.courts.go.jp/eng/aboutus/current.html>. cited in Kuroda, *supra* note 201, at 534.

<sup>272</sup> See Kuroda, *supra* note 201, at 534-535.

(unlike case law in the U.S.), the decisions of the Japanese Grand Panel of IP High Court have utmost persuasive authority which the other courts are reluctant to overrule, unless there is a more reliable reason.

In 2006, Grand Panel of IP High Court was confronted with the facts that the plaintiff, Canon, was an owner of a patent right over ink cartridges, as shown in figure 3.3, that was produced and sold to customers. The original cartridges were not designed to be refillable. However, the defendant, Recycle Assist Company in Japan, recycled the used ink cartridge collected from the plaintiff's customers in U.S., Europe and Asia and sold the products again at a cheaper price than the original one sold by Canon in Japan. In the process of recycling cartridges, it bore a hole, washed the residual ink, refill new ink, and sealed the hole.<sup>273</sup>

**Figure 3.3: Canon's Japanese Patent on Ink Cartridges**



JPO, English translation of Claims 1 and 10 of Japanese Patent No. 3278410  
 (Source: [http://www.quon-ip.jp/30e/ipsystem\\_02\\_cannon.pdf](http://www.quon-ip.jp/30e/ipsystem_02_cannon.pdf))

Canon alleged that the process of refilling constituted infringed producing in claim 1 and the step of refilling itself infringed producing process in claim 10. Since the cartridges have been legitimately sold by the patentee even in foreign countries,

<sup>273</sup> *Canon, supra* note 230, at 6-8.



Recycle Assist asserted patent exhaustion as an affirmative defense against the charge. The Tokyo District court was in favor of the defendant and found that the Canon's patent over the product had exhausted and no patent infringement. Canon then appealed before the IP High Court.<sup>274</sup>

The Grand Panel ruled that a patent right over a patented product sold is not exhausted and therefore the patentee can exercise his patent right over the product if there are activities that would constitute reconstruction, sometimes called new production, rather than repair, as categorized into two Category:<sup>275</sup>

- (1) Where the patented product is reused or recycled after its utility, or *kôyô* in Japanese, has been depleted by virtue of the expiration of the ordinary lifespan of the product, through examining whether the patented product has finished its service as a product, or
- (2) Where a third party has made processes or replacements to the whole or part of the components corresponding to the essential portion of the patented invention by focusing on, while evaluating, the invention protected by patent.<sup>276</sup>

As involved with the First Category, the court further suggested that the expiration of the ordinary lifespan should be determined from a social or economic aspect. In that way, the lifespan of the product shall terminate due to the following reason:

- (a) Physical reason that the patented product can no longer be usable as a result of its abrasion or deterioration, *e.g.*, the normal wear and tear which may be physical or chemical;
- (b) Reasons determined by the applicable law or common understanding of society that the time and number of use of the product is limited as a result of hygienic reasons, or that the use of the product, even if it is still

---

<sup>274</sup> *Canon, supra* note 230, at 3.

<sup>275</sup> *Canon, supra* note 230, at 47.

<sup>276</sup> *Canon, supra* note 230, at 47-48.

physically or chemically usable, has reached the maximum number or duration, *e.g.*, drugs and disposable syringes.<sup>277</sup>

For the Second Category, the ‘essential portion’ of the patented invention was determined based on: (a) the previous unsolved technical problems which the invention in question solves, and (b) characteristic features as the key of the technical idea of the claimed invention that forms a basis for the solution of the unique technical problem.<sup>278</sup>

Applying to the facts, the Court held that the utility of ink cartridges has not been depleted under the First Category but under the Second Category the act of refilling the ink has recreated essential features in claim 1 as described that the capillary forces at the interface between the two chambers and pressure differential created by the ink-filled chamber was present again when refilling the ink. The patent over ink cartridges did not exhaust and the acts of the defendant committed without permission constituted infringement of patent right.<sup>279</sup>

Therefore, it might be determined that an act of replacement of a consumable part of the patented product is absolutely permissible as ‘usual repair.’ Whereas, an alteration of substantial part of the product with effort to prolong the lifespan of the product is not usual repair and thus it is impermissible.<sup>280</sup>

### **3.4.3 Comparison of Standards in United States and Japan applied to Recycled Cartridge Cases**

In United States, the Court of Appeals for the Federal Circuit’s (CAFC) decision in *Hewlett Packard Company v. Repeat-O-Type Stencil Mfg. Corp.*<sup>281</sup> affirmed the permissibility of recycling or modifying patented ink-jet cartridges in the aftermarkets. In the facts, Hewlett Packard (HP) manufactures, sells and has a variety of patents on

---

<sup>277</sup> *Canon, supra* note 230, at 48.

<sup>278</sup> *Canon, supra* note 230, at 48.

<sup>279</sup> *Canon, supra* note 230, at 52.

<sup>280</sup> *Canon, supra* note 230, at 37.

<sup>281</sup> *Hewlett Packard Company v. Repeat-O-Type Stencil Mfg. Corp.*, 123 F.3d 1445 (Fed Cir. 1997)

ink jet printers and cartridges.<sup>282</sup> Repeat-O-Type Stencil Manufacturing Corporation (ROT) purchased two types of unused ink cartridges from HP, modified the cap making the cartridges refillable by users, and sold these repacked in the original boxes. According to the “spentness” test for repair and reconstruction dichotomy formulated by *Aro I*, the CAFC determined the useful life of ink cartridge by assessing the life of the entirety of the cartridge, not the duration of the ink supply.<sup>283</sup> Thus, even assuming that the ink of the cartridges in the case has been used up beforehand, the consequence of recycling and modifying them to be usable again and refillable would still be permissible as akin to repair since the body of the cartridges remains usable. In other words, the court in the U.S. considered only whether the whole product has been spent.

Similar to the U.S. CAFC’s decision in *HP v. ROT*, the Grand Panel of Japan’s Intellectual Property High Court in *Canon*, as aforementioned in 3.4.2.2, heard the case in issue with respect to the acts of recycling cartridges sold legitimately by the patentee. Even though the facts in both cases were slightly different, the difference was not substantial and did not affect the rules that court in each countries applied in the cases.

In comparison between the current tests for the standard of distinction between permissible repair-recycling and infringing reconstruction in both countries’ patent laws, the First Category of the repair-reconstruction test established by the Grand Panel of Japan’s IP High Court in *Canon* is based on the idea of ‘spentness’, the same as the current test for repair and reconstruction dichotomy recognized by the U.S. Supreme Court precedent in *Aro I* which is binding the CAFC and lower courts in making decisions on *HP v. ROT* case and subsequent cases with similar issues. However, the consideration of this First Category in the Repair-Reconstruction Test in Japan does not merely include physical life of the product but also the economic aspect, whereas, the Repair-Reconstruction Dichotomy in U.S. considers the only the physical life of the product.

In addition, the Second Category of the Japanese repair-reconstruction test, which is the element test determining the component importance or inventiveness, was

---

<sup>282</sup> *Repeat-O-Type*, 123 F.3d at 1446-1447.

<sup>283</sup> *Repeat-O-Type*, 123 F.3d at 1453.

denied to be taken into the consideration by the precedent in *Aro I*. The U.S. Supreme Court concluded that the combination patent granted for the claimed invention covers all elements in the claims and no particular element shall be separately viewed.<sup>284</sup> The CAFC in *HP v. ROT* case therefore did not consider the importance of the recycled or altered parts.

The implementation of patent exhaustion in respect of recycling and repair cases in United States is broader than in Japan. According to U.S. repair and reconstruction dichotomy, the boundary of permissible activities of recycling and repair of the product embodying patent tends to be more expanded. However, it should be noted that U.S. patent law permits the patentee to avoid the patent exhaustion by imposing restrictions, *e.g.*, post-sale restriction or field-of-use restriction. In other words, the purchaser can be limited to the entitlement to repair, reuse, recycling, or other types of using of the goods he owns by a clause in the sale contract or even a label attached on the product package. On the other hand, the Japanese precedent prohibits the intention of the patentee from overriding patent exhaustion, although the permissibility of the recycling and repair of the goods under the repair-reconstruction test is narrower than under the U.S. repair and reconstruction dichotomy. The difference in enforceability of the contractual limitation of patent exhaustion may be one of the substantial impacts on considering the drawn line of distinguishing between permissible repair/recycling and reproduction which is not analogous in the U.S. and Japan.

Additionally, Japan was the dominant country in technology industry<sup>285</sup> and still is the world's leading country in innovation and technology,<sup>286</sup> as reflecting in the amount of patent grants for the top 10 offices in 2013 demonstrated in table 3.2. Many Japanese companies have been the world leader of technological manufacturing industries, especially automobiles, consumer electronics – including printing

---

<sup>284</sup> See *Aro*, 365 U.S. at 344.

<sup>285</sup> John Boudreau, *Japan's once mighty tech industry has fallen far behind Silicon Valley*, available at [http://www.mercurynews.com/ci\\_21760621/japans-once-mighty-tech-industry-has-fallen-far](http://www.mercurynews.com/ci_21760621/japans-once-mighty-tech-industry-has-fallen-far)

<sup>286</sup> Richard Florida, *The World's Leading Nations for Innovation and Technology*, available at <http://www.citylab.com/tech/2011/10/worlds-leading-nations-innovation-and-technology/224/>

technology. It may be comprehended that the court in *Canon* established such a standard of distinction for protecting the interest of manufacturers rather than the consumer welfare. On the other hand, United States inherently prefers to promote competitiveness. Without recycled or modified ink cartridges, the printer manufacturer may charge a higher price for new original cartridges owing to the lack of competition.<sup>287</sup> The availability of recycled or modified products is advantageous to consumers in United States.

**Table 3.2: Patent Grants for the Top 10 Offices in 2013**

Rank	Country	Patent Grants
1	Japan	340,364
2	United States	244,228
3	China	154,505
4	South Korea	123,817
5	European Patent Office	N/A
6	Germany	81,788
7	France	43,163
8	Russia	23,507
9	United Kingdom	21,017
10	Switzerland	20,166

WIPO, World Intellectual Property Indicators

(Source: [http://www.wipo.int/edocs/pubdocs/en/wipo\\_pub\\_941\\_2014.pdf](http://www.wipo.int/edocs/pubdocs/en/wipo_pub_941_2014.pdf))

Lastly, the standards of distinction in both countries are mindful of environmental concerns. On the one hand, the broad scope of permissible recycling and repair of goods under U.S. repair and reconstruction dichotomy undoubtedly encourage environment-friendly businesses. On the other hand, under Japanese repair-

<sup>287</sup> See Scott Tobias, *No Refills: the Intellectual Property High Court Decision in Canon v. Recycling Assist Will Negatively Impact the Printer Ink Cartridge Recycling Industry in Japan*, 16 Pac. Rim L. & Pol'y J. 3, 792-794 (2007).

reconstruction test, it seems arguable that the narrow scope of permissible recycling and repair harms the environment. The court in *Canon*, however, acknowledged that the construction of the patent law shall respect the philosophy of conservation of the environment.<sup>288</sup> Even merely collecting used cartridges to be used as a component in the manufacture of cement, the court concluded that such conduct by Canon was sufficient to be consistent with such environmental philosophy. The Japanese pro-manufacturer standard of the distinction does not absolutely harm the environment. Nevertheless, it might be possible that had Canon not asserted its environmental conduct collecting cartridges to make cement, the court's decision of such a standard of the distinction would have been differently formulated.

#### 3.4.4 Europe

In 2012, the European Union has reformed its old patent system to be a unified system which provides patent protection for all participating EU Member States on the basis of a single application and validation. The European Parliament approved the new type of European patent, the European patent with unitary effect (EPUE) or known as the unitary patent, under Regulation (EU) No. 1257/2012. It was expected to reduce duplicative and contradictory patent enforcement decision across jurisdictions within Europe and create a European patent with unitary effect in all jurisdictions. Once ratified, EU patent is no longer separately validated in each state via the payment of validation fees at the national patent offices. This unitary patent complements the existing patent system in Europe and does not affect patents granted by national patent offices and patents granted by the European Patent Office (EPO). The unitary patent, however, is subject to the same legal conditions in all member states. Also, the Unified Patent Court (UPC) has been established to provide exclusive jurisdiction with respect to unitary patents and European patents designating one or more member states.<sup>289</sup>

After that reformation, applicants can select to obtain three types of patent across Europe, consisting of national patents, European patents and unitary patents.

---

<sup>288</sup> *Canon*, *supra* note 230.

<sup>289</sup> Katrin Cremers et al., *Patent Litigation in Europe 1* (2013), available at <http://ftp.zew.de/pub/zew-docs/dp/dp13072.pdf>.

These are all subjected to the substantive EU patent law, which every member state has to implement. Presently, there are only Directive 98/44/EC (biotechnological inventions) and Regulation 2100/94 (plant variety rights).<sup>290</sup> Plus, in case of the Unitary Patent, pursuant to Article 24 (a) of the Agreement on a Unified Patent Court, the UPC is required to consider Regulation 1257/2012, which creates the Unitary Patent.

No current effective statutory EU patent law explicitly governs or precedes the national decisions in the matter of recycling and repair of patented goods. Article 64 (3) of the European Patent Convention also addressed that infringement of a European patent shall be dealt with by national law along with the national patent granted in that State. There were national courts in the U.K., Germany and the Netherlands hearing cases that involved repair and recycling of patented goods and formulated the distinction of repair/recycling and reproduction. In addition, closely related to the matter, the proposal for a repair clause asserted in Directive 98/71/EC on the industrial designs protection, once it is in effect, may transform the consideration of patent law.

#### **3.4.4.1 The United Kingdom**

Even though the UK Patent Act has been provided since 1977, there is no definition of repair therein. However, prior to the Act, Lord Halsbury had held in *Sirdar Rubber Co Ltd v Wallington, Weston & Co*<sup>291</sup> that “the principle is quite clear, although its application is sometimes difficult, you may prolong the life of a licensed article, but you must not make a new one under the cover of repair.”<sup>292</sup> Due to this decision, it was believed for a long time that repair of a patented product was under an implied license granted by the patentee,<sup>293</sup> until Lord Hoffman explained the new approach in *United Wire Ltd v Screen Repair Service (Scotland) Ltd*. As follows:

---

<sup>290</sup> See Taylorwessing, *Q&A - Unitary Patents*, available at [http://united-kingdom.taylorwessing.com/uploads/tx\\_siruplawyermanagement/UPC\\_QandA\\_What\\_is\\_the\\_UPLS.pdf](http://united-kingdom.taylorwessing.com/uploads/tx_siruplawyermanagement/UPC_QandA_What_is_the_UPLS.pdf)

<sup>291</sup> *Sirdar Rubber Co Ltd v Wallington, Weston & Co*, (1907) 24 PRC 539, HL.

<sup>292</sup> *Id.* at 543.

<sup>293</sup> Roughton, *supra* note 6, at 305.



“Repair is one of the concepts (like modifying or adapting) which shares a boundary with ‘making’ but does not trespass upon its territory. I therefore agree with the Court of Appeal that in an action for infringement by making, the notion of an implied license to repair is superfluous and possibly even confusing. It distracts attention from the question raised by Section 60(1)(a), which is whether the defendant has made the patented product. As a matter of ordinary language, the notions of making and repair may well overlap. But for the purposes of the statute, they are mutually exclusive, the owner’s right to repair is not an independent right conferred upon him by license, express or implied. It is a residual right, forming part of the right to do whatever does not amount to making the product.”<sup>294</sup>

As addressed in the decision, the courts no longer follow the rule in *Sirdar Rubber* which had considered to the notion of implied license to answer the question of: to what the extent should the act of repair be permissible. Instead, the question of whether the allegedly infringing act falls within the scope of making which is expressed to be an infringement was sought.

Furthermore, the test of distinguishing ‘genuine repair’ from an infringing act of ‘making’ the product was clarified by the court’s decision in *Schütz (UK) Limited v Werit UK Limited*.<sup>295</sup> The court indicated that, when the part in question is removed but the whole of the inventive concept of the claim still remains, the replacement can be held as genuine repair. Were the inventive concept even partially in the replacement part, the use of that part in repair would be considered as a patent infringement.<sup>296</sup>

#### 3.4.4.2 Germany

Due to no provision of exhaustion doctrine in the German Patent Act. The doctrine had to be recognized as customary law and scholarly work, especially Kohler’s Theory which is highly persuasive for court when deciding the case with respect to this

---

<sup>294</sup> [1986] RPC 279, [2001] RPC 439 at [71], HL.

<sup>295</sup> [2010] EWHC 660 (Pat) at [197], Floyd J.

<sup>296</sup> Roughton, *supra* note 6, at 305.

matter.<sup>297</sup> Kohler proposed that the replacement of an individual part should be permitted as long as the uniformity of the body or identity of the product still remains unchanged.<sup>298</sup>

In addition, Judge Lindenmaier stated that patent exhaustion relates to the mere product being put into circulation on the market. The exhaustion comprises all actions of the intended use of the patent product. The use also includes the maintenance of the fitness of the patented product, *e.g.*, using oil or grease, and the restoration by supplying items necessary to operate the product.<sup>299</sup> It is therefore permissible in context of exhaustion doctrine to repair the patented product of which the operability and functional capacity is impaired or eliminated by wear or damage. In distinguishing reconstruction from repair, the former is thus not defined as a use in accordance with the intended use.

Later, the Federal Supreme Court in *Förderrinne*<sup>300</sup> mentioned the extent the purchaser should be able to use his patented product without permission by the patentee. The scope of use depends on as follows:<sup>301</sup>

1. The significance of the inventive idea to the repaired part: if the repaired part is an ‘individualization of the inventive function’ because of its technological importance, the part is granted patent protection.
2. The type of correction or addition to the product: it should be determined from an objective point of view in each case whether the alteration could be held as ‘intended use’ under the doctrine of patent exhaustion within the lifespan of the product.

---

<sup>297</sup> Mohri, *supra* note 68, at 38.

<sup>298</sup> Josef Kohler, *handbuch des deutschen patentrechts* 456 (1900) cited in *id.*

<sup>299</sup> Fritz Lindenmaier, *Wiederherstellung, Ausbesserung und Ersatz durch Sachpatent geschützter Gegenstände* 505 (1939) cited in *id.*

<sup>300</sup> Federal Supreme Court, 21 Nov. 1958, Case No. I ZR 129/57, 1959 GRUR 232 – *Förderrinne*.

<sup>301</sup> Mohri, *supra* note 68, at 40-41.

The court also concluded that it is permissible if a repair or alteration prolongs the lifespan of the product as it is ‘normally expected’.<sup>302</sup>

In 2004, the Federal Supreme Court’s decision in *Flügelradzähler*<sup>303</sup> suggested that the replacement of expendable parts shall be admirable repair because the parts can be expected to be replaced within the lifespan of the product. However, if the expendable parts incorporated essential elements of the inventive concept, it shall be held as impermissible because the replacement causes new realization of the technical or economic advantage of the invention.<sup>304</sup> The act interferes with the patentee’s exploitation of the invention.

Furthermore, the Federal Supreme Court in *Pipettensystem*<sup>305</sup>, the latest case concerning the issue in 2007, which involved the replacement of a syringe in a pipette system, developed the criteria in *Flügelradzähler*.<sup>306</sup> The syringe was not an expandable part. The customary replacement of the syringe during the lifespan of the patented pipette system, however, was not reconstruction. Because the syringe did not incorporate the technical effects of the invention other than the mere object of the improved function of the entire patented pipette system, the replacement was insufficient to qualify as a reconstruction.<sup>307</sup>

In several decisions, the courts have determined effects and advantages of the invention, whether the alleged acts maintain the identity of the patented product or created a new product implementing the invention. As well as taking into account the individual nature of the patented product, it is also important to weigh the interest of

---

<sup>302</sup> Mohri, *supra* note 68, at 41.

<sup>303</sup> Federal Supreme Court, 4 May 2004, Case No. X ZR 48/03, 2004 GRUR 758, 36 IIC 963 (2005) – *Flügelradzähler*.

<sup>304</sup> *Id.* at 761-762.

<sup>305</sup> Federal Supreme Court, 27 Feb. 2007, Case No. X ZR 38/06, 2007 GRUR 769 – *Pipettensystem*.

<sup>306</sup> Mohri, *supra* note 68, at 71.

<sup>307</sup> *Pipettensystem*, *supra* note 234, at 769-772.

the patentee in commercially exploiting the invention against the interest of consumer in freely using the product.<sup>308</sup>

In sum, the replacement of parts regularly needed to be replaced or repaired typically means that it is the intended by the patented product, which is permissible under exhaustion doctrine. The exclusive rights of a patentee are therefore exhausted in this circumstance. Should the technical effects of the invention be apparent in the part to be replaced, an inadmissible reconstruction which is not comprised in the exhaustion, however, can emerge. Repair or reconstruction in context of exhaustion doctrine is determined on a case-by-case basis. In making this determination, the court evaluates the technical achievement based on the description and the prior art described therein.<sup>309</sup>

Moreover, in the case of recycling, the process of recycling, which is economically the same as the creation of a new product according to the invention, shall be deemed as impermissible reconstruction. The court also concluded that recycling the patented product or the patented substance from parts of one or several objects which had turned useless or waste constitutes reconstruction.<sup>310</sup>

#### **3.4.4.3 The Netherlands**

The Dutch Patent Act does not provide for a specific definition of the term repair or recycling but the case law deals with the extent which repair can be permissible in context of patent exhaustion.<sup>311</sup>

To distinguish permissible repair from manufacturing, which constitutes patent infringement, the part to be repaired or replaced must not be a significant part that is considered essential to the claimed invention. Repair by replacing all parts is deemed

---

<sup>308</sup> Klaus Haft et al., *Germany Group Report*, Question Q205 Exhaustion of IPRs in cases of recycling or repair of goods, available at <https://www.aippi.org>

<sup>309</sup> Mohri, *supra* note 68, at 41.

<sup>310</sup> Haft, *supra* note 308.

<sup>311</sup> J.B.C.W. Van Dijk et al., *Netherlands Group Report*, Question Q205 Exhaustion of IPRs in cases of recycling or repair of goods, available at <https://www.aippi.org>

as infringing manufacturing. Repair by replacement of an essential part can be possibly held as infringing manufacturing as well, depending on the circumstances.<sup>312</sup>

In addition, the sale of parts essential to the claimed invention is typically determined as indirect infringement; whereas, applying the said parts in repair of the products constitutes an act of tort.<sup>313</sup>

For recycling of the patented product, the suggested considerations are as follow. First, breaking down the product into original parts and using the parts to remanufacture the product possibly constitutes infringement. Second, the act of recycling the product that is no longer functional, the process of which involves replacing parts essential to the claimed invention, would constitute an indirect infringement. Third, should recycling of the product's components be limited to normal repairs or a recycled product fall outside the scope of patent protection, it is basically permissible.<sup>314</sup>

#### 3.4.4.4 'Repair Clause' Proposal

In 2004, the European Commission introduced a proposal of a 'repair clause' to amend Article 14 of Directive 98/71/EC on the legal protection of designs<sup>315</sup> which allows member states to introduce changes to their own legal systems to liberate the spare parts market, so-called a freeze-plus clause. Even if the proposal will deal with

---

<sup>312</sup> District Court The Hague 23 June 1999, *Impro/Liko* cited in *id.*

<sup>313</sup> *Id.*

<sup>314</sup> *Id.*

<sup>315</sup> Directive 98/71/EC of the European Parliament and of the Council (13 October 1998) on the legal protection of design, Article 14:

*“Until such time as amendments to this Directive are adopted on a proposal from the Commission in accordance with the provisions of Article 18, Member States shall maintain in force their existing legal provisions relating to the use of the design of a component part used for the purpose of the repair of a complex product so as to restore its original appearance and shall introduce changes to those provisions only if the purpose is to liberalise the market for such parts.”*

design law, patent law may be influenced in some aspect.<sup>316</sup> The new Article 14 in proposal states that:

- “1. Protection as a design shall not exist for a design which constitutes a component part of a complex product used within the meaning of Article 12 (1) of this Directive, for the purpose of the repair of that complex product so as to restore its original appearance.
2. Member States shall ensure that consumers are duly informed about the origin of spare parts so that they can make an informed choice between competing spare parts.”

As proposed by the Article, the purpose of repair clause is to enable the independent manufacturers and third party vendors to produce and sell visible spare parts of complex products; it is also protected by industrial design rights, for repair purposes. In the sale of parts, the vendors, however, must inform consumers about the commercial origin of the parts. This proposal promotes competition in the spare part market. In parallel, it might unreasonably impede the normal exploitation of the right owners. This proposal also might be effective for consideration in patent field of recycling and repair of patented goods and can lead to liberalization of it.

Nonetheless, the European Parliament adopted and forwarded this proposal, but regarding the amendments to the Council, it currently has neither been taken in nor even scheduled a decision. Major car-manufacturing countries in the EU, *i.e.*, Germany and France are probably opposed to the proposed liberalization of the spare parts market.<sup>317</sup>

---

<sup>316</sup> Friedrich-Karl Beier, *Protection for Spare Parts in the Proposals for a European Design Law*, 25 IIC: Int'l Rev. Intell. Prop. & Competition L. 840, 860 (1994) cited in Mohri, *supra* note 68, at 133.

<sup>317</sup> Bardehle Pagenberg, *European Commission: proposal for amending the Designs Directive and harmonizing the aftermarket by introducing a “repair clause” withdrawn*, available at <http://www.lexology.com/library/detail.aspx?g=f22c828c-3beb-471e-8c67-3ad27b15ec8b>

### 3.4.5 Singapore

Statutory law of Singapore provides the non-derogation of grant doctrine, or ‘repair exception’, which recognizes that a person may repair an article as part of the original grant of the original design,<sup>318</sup> and a right holder is not permitted to bring an infringement action against that person. The application of the doctrine however must be carefully applied because recent cases have shown a judicial reluctance to extend the exception to other situations. For instance, in *Saphena v Allied Collection Agencies [1995] FSR 616*, the defendants who use source code even in sole purpose of repair were not entitled to copy the source programs in the absence of a license.<sup>319</sup> The defendants therefore could not rely on the doctrine to justify its activities. And, in *Canon v Green Cartridge [1997] FSR 817*, the Privy Council refused to hold that the repair exception can apply to cartridge designs replaced regularly in laser printers and copiers.<sup>320</sup>

At a glance to national decisions in EU and Singaporean law, no country is allowed to a full extent to which the acts of recycling and repair can be committed on the patented goods. The standards of distinguishing among repair/recycling and reconstruction have been formulated in various approaches varying from country to country. In general, most countries emphasize the importance of a part which is essential to or a heart of the invention. Or, at least, the exception of infringement has been provided for the act of repair.

---

<sup>318</sup> Singapore Commercial Law, Ch. 13, § 11 Specialised Topics – Rights to Repair

<sup>319</sup> *Id.* at ¶ 13.11.2.

<sup>320</sup> *Id.* at ¶ 13.11.4.



## CHAPTER 4

### EXHAUSTION OF PATENT RIGHT REGARDING RECYCLING AND REPAIR OF GOODS IN THAILAND

#### 4.1 Patent Protection

##### 4.1.1 Brief History of Thai Patent Law

Thailand has attempted to enact patent law at very early day. It appears the draft of “Law on Patents” in 1913 (B.E. 2456) which was meticulous at that time. After the Department of Commercial Registration was established in 1923 (B.E. 2466), Phra Komarakul Montri (Cheun Komarakul Na Nakorn), the first Director thereof, proposed to consider the draft in 1915 (B.E. 2468). However, it was suspended and there was not any effort to bring it through to the process of enactment. In 1965 (B.E. 2508), patent law draft was brought again by Field Marshal Thanom Kittikachorn before the Constitution Drafting Committee, but it was rejected because the Committee believed that patent law would be an obstacle to the development of national industries.<sup>321</sup>

About a decade later, patent law draft was initiated again by the Ministry of Commerce to the Cabinet of Thailand and passed to be considered by the National legislative Assembly in June 1978. The first Thai patent law, named the Patent Act B.E. 2522, came into effect on September 12th, 1979.<sup>322</sup> The reasons for the enactment of the first patent law in Thailand were to foster industrial and economic development, and to facilitate the transfer of technology with other countries.<sup>323</sup>

In 1992, the first Amendment to the Patent Act took effect so as to avoid trade sanctions under s.301 of the Omnibus Trade and Competitiveness Act 1988.<sup>324</sup> The

---

<sup>321</sup> ชรรยง พวงราช, *คำอธิบายกฎหมายสิทธิบัตร* (2542), น. 19

(Yanyong Puangrat, *the Comprehension on Patent Law* (1999), 19)

<sup>322</sup> *Id.*

<sup>323</sup> Christophe Bellman et al., *Trading on Knowledge: Development Perspectives on TRIPS, Trade and Sustainability* 47 (2003).

<sup>324</sup> Jakkrit Kuanpoth, *Major Issues in the Thai Patent System*, available at <http://www.thailawforum.com/articles/jakpat1.html>

Patent Act (No.2) B.E. 2535 (1992) has revised several provisions in the previous law. It expanded the scope of patentable subject-matter to cover drug and agricultural machinery, and extended the term of patent rights.<sup>325</sup> Also, a drug price review committee was established and the process for the grant of compulsory licenses was modified.<sup>326</sup>

The second Amendment to the Patent Act, which passed Parliament in October 1998, was published in the Royal Gazette on March 21, 1999 and took effect on September 27, 1999, the 181st days after publication in the Royal Gazette. It, being called the Thai Patent Act (No.3) B.E. 2542 (1999), has amended six areas of the Patent Act: national treatment, priority filings, patent rights, petty patents, compulsory licensing and the Drug Patents Board in order to comply with the Agreement of TRIPs.<sup>327</sup>

#### 4.1.2 Patent Right

After having filed patent application for and subsequently obtained a patent for the invention by satisfying the patentability requirements comprising of novelty, non-obviousness and industrial application; an inventor or an applicant becomes a patentee and has exclusive rights over such invention for twenty years from the date of filing of the application in Thailand.<sup>328</sup> Since the definition of invention granted protection by Thai Patent Act includes a product or process, a characteristic of invention patent protection is also different relying on types of patent subject matter as follows:

“No other person except the patentee shall have following rights:<sup>329</sup>

---

<sup>325</sup> Puangrat, *supra* note 321.

<sup>326</sup> Kuanpoth, *supra* note 324.

<sup>327</sup> Supatra Watanavorakitkul, *Thailand: Amendment to the Thai Patent Act 1979 (As Amended 1992)*, available at <http://www.mondaq.com/x/12804/Patent/Amendment+To+The+Thai+Patent+Act+1979+As+Amended+1992>

<sup>328</sup> Thai Patent Act B.E. 2522 (1979) as amended by the Patent Act (No.2) B.E. 2535 (1992) and the Patent Act (No.3) B.E. 2542 (1999), § 35.

<sup>329</sup> Thai Patent Act B.E. 2522 (1979) as amended by the Patent Act (No.2) B.E. 2535 (1992) and the Patent Act (No.3) B.E. 2542 (1999), § 36.

- (1) where the subject matter of a patent is a product, the right to produce, use, sell, have in the possession for sale, offer for sale or import the patented product;
- (2) where the subject matter of a patent is a process, the right to use the patented process, to produce, use, sell, have in the possession for sale, offer for sale or import the product produced by the patented process.”

Basically, subject matters of patent on invention can be broken down into 3 types: (1) product, (2) process and (3) improvement of a known product or process.<sup>330</sup> However, when considering Section 3 of Thai Patent Act precisely,<sup>331</sup> there are 2 subject matters of patent recognized in Thai patent law, a product patent and a process patent, whilst, the improvement penetrates into both subject matters. A product patent might be divided into 2 types as follows:<sup>332</sup>

- (1) Creation of a new product, and
- (2) Improvement of a known product, which is possible to be further divided, even not explicitly referred to in the Act, into:<sup>333</sup>
  - (2.1) adding something to an existing product or incorporating new technology into an old product, and
  - (2.2) finding a new use for an existing product.

---

<sup>330</sup> ไชยยศ เหมะรัชตะ, ลักษณะของกฎหมายทรัพย์สินทางปัญญา (พิมพ์ครั้งที่ 6 ปี 2550). (Chaiyos Hemarajata, *Principle of Intellectual Property Law*, (6th ed. 2007).) cited in วลัย วิเศษสุวรรณ, ความแตกต่างระหว่างสิทธิบัตรการใช้ใหม่ (New Use Patent) และสิทธิบัตรการใช้กรรมวิธีใหม่ (New Use of a Known Process). (Wan Wisetsuwan, *Difference between New Use Patent and New Use of a Known Process*), available at <http://www.sattaban.com>.

<sup>331</sup> Thai Patent Act, § 3

“*In this Act:*

‘*invention*’ means any innovation or invention which creates a new product or process, or any improvement of a known product or process;

‘*process*’ means any method, art or process of producing, maintaining or improving the quality of a product, including the application of such process;”

<sup>332</sup> Wisetsuwan, *supra* note 330.

<sup>333</sup> *Id.*; See <http://www.nolo.com/legal-encyclopedia/improvement-patents-new-use-patents-30250.html>

Also, a process patent literally can be divided into 4 types as follows:<sup>334</sup>

- (1) Process of producing,
- (2) Process of maintaining or improving the quality of a product,
- (3) New use of a known process or the application of the process, and
- (4) Improvement of a known process.

Nevertheless, there was the case involving finding new use for existing product in (2.2) or ‘new use patent’. In the fact, there was a case that the plaintiff argued that an issuance of the defendant’s patent for new use of the reed mat to absorb humidity of and to protect cargo containerized on vessels was unlawful. The Supreme Court affirmed Intellectual Property and International Trade (IP & IT) Court’s decision stating that a new way to use an existing product providing an unexpected result could not be patentable. The Court reasoned that the Thai Patent Act did not provide protection for ‘new use’ patents since the provision under Section 3 of the Act regarding the definition of invention did not expressly state to new use of existing product. And, the provision of rights conferred on a patentee under Section 36 did not specify the right to exclude others from new use of existing product.<sup>335</sup> Moreover, Srila Thongklang and Suebsiri Taweepon, IP practitioners, had a discussion on the court’s decision that, due to the lack of novelty, a discovery of a new use of a known product was not patentable. Nevertheless, a discovery of a new method of utilizing an existing product or chemical substance, which was often used especially in medical industries, was still open to be patentable under process patent in Thailand.<sup>336</sup>

The provision under Section 36 of Thai Patent Act expressly addressed the protection of both patented products and patented processes. A patentee who obtained a patent for his product can prevent others from producing, using, selling, having in the possession for sale, offering for sale or importing patented product, whereas, a patentee

---

<sup>334</sup> Wisetsuwan, *supra* note 330.

<sup>335</sup> Supreme Court Judgement No. 7119/2552

<sup>336</sup> Srila Thongklang and Suebsiri Taweepon, *Patentability of “New Use” Patents in Thailand*, available at <http://www.tilleke.com/resources/patentability-%E2%80%9Cnew-use%E2%80%9D-patents-thailand>

who obtained process patent can preclude others from using patented process to produce, use, sell, have in the possession for sale, offer for sale or import the product produced by patented process. Therefore, any person who commits, without permission from a patentee, the prohibited activities, with respect to a patented invention that the law has intended to protect the idea of inventor, shall be liable for patent infringement.

It should be noted that, in the case of process of producing, the provision under Section 36 (2) of the Act protects mere using of patented process to produce a product, but does not protect the product itself. Therefore, if any person discovers a method to produce the same product using a differently essential process, it amounts to an act beyond the scope of patent protection.<sup>337</sup> Consequently, the act does not constitute patent infringement. In addition, the person may choose to file an application for product patent instead. When the basic requirement for patentability under the Patent Act Section 5 have been satisfied, a person receiving the product patent is more favorable than a producing process patentee. In comparison between both of patentable subject matters, a patent granted for process of producing has less protection than a patent granted for product since the purpose of a product patent is to protect an innovation in form of item or substance, regardless of what the process used for producing is. Even using different processes to produce a product, a producer thus shall be liable for product patent infringement if the outcome of the process is identical or equivalent to the product prior protected by a product patent.<sup>338</sup>

#### **4.1.3 Patent Infringement**

In general, as the patent law granting the set of exclusive rights to a patentee to exploit a patented invention during the protection period, any person committing those acts without authorization from a patentee shall be liable for the infringement. Even not explicitly stating what the acts of infringement are, Section 85 and 86 of the Patent Act provides that committing one of those six activities; consisting of (1) producing (including using a patented process to produce), (2) use (including using a patented

---

<sup>337</sup> Supreme Court Judgement No. 2079-2084/2553

<sup>338</sup> Supreme Court Judgement No. 3523/2537

process), (3) sale, (4) having in the possession for sale, (5) offering for sale or (6) importation of a patented product; without the permission are criminal.<sup>339</sup> Procedurally, a plaintiff must prove the validity of his ownership in patent and patented claims in defendant's product. With respect to defendant's intention, the Supreme Court applied strict liability to patent infringement, ruling that even if the defendant allegedly lacked of knowledge to infringement because of possessing patents on the disputed product in other countries, his activities could constitute infringement of patent which the plaintiff obtained in Thailand.<sup>340</sup> From this, it is able to imply that in Thailand any person can be liable for patent infringement although his activities are committed without intention.

A patentee, however, may not be required to show that each element of his claim is present in the allegedly infringing invention. Even not literally identical to patented invention, any equivalent invention can constitute patent infringement under the doctrine of equivalent. Section 36 Bis paragraph two states that the scope of patent protection covers to the characteristics of invention which have substantially the same properties, functions and effects as stated in the claims.<sup>341</sup> Moreover, the scope of patent protection is not limited only to the claims written in the specification but extended to the other characteristics indicated in the description and the drawings.<sup>342</sup> In other words, an equivalent invention means an invention having essential feature which "performs

---

<sup>339</sup> Puangrat, *supra* note 321, at 92.

<sup>340</sup> Supreme Court Judgement No. 6572/2550

<sup>341</sup> Thai Patent Act, § 36 Bis, ¶ 2:

*"...The scope of protection for a patented invention shall extend to the characteristics of the invention which, although not specifically stated in the claims, in the view of a person of ordinary skill in the pertinent art, have substantially the same properties, functions and effects as those stated in the claims."*

<sup>342</sup> Thai Patent Act, § 36 Bis, ¶ 1:

*"The scope of the rights of the patentee under Section 36 in respect of a patented invention shall be determined by the claims. In determining the scope of the claimed invention, the characteristics of the invention as indicated in the description and the drawings shall be taken into account."*



substantially the same function in substantially the same way to obtain the same result.”<sup>343</sup>

However, Thai Patent Act does not have any clear provision on indirect infringement that the court’s decisions acknowledged. Other provisions of the Criminal Code and Civil and Commercial Code may be applicable for indirect infringement.<sup>344</sup> Under Section 420 of the Civil and Commercial Code which is a basic tort provision states very broadly. Therefore, a patentee may show that he has a lawfully IP rights and allegedly indirect infringing commission damaged his rights.<sup>345</sup> Also, one might assert that an accused person who allegedly commits contributory infringement is a joint actor under Section 432 of the Code and jointly liable with a direct infringer.<sup>346</sup> Furthermore, under Section 84 and 86 of Thai Criminal Code, an accused indirect actor who induces other to infringe may be held as a criminal instigator<sup>347</sup> and an accused indirect actor who offered or supplied means for committing an infringement may be held as a criminal supporter.<sup>348</sup>

---

<sup>343</sup> Kirin-Amgen, Inc. v Hoechst Marion Roussel Ltd. [2004] UKHL 46 (21 October 2004) cited in Kuanpoth, *supra* note 56, at 287-288.

<sup>344</sup> Tilleke and Gibbins International, Ltd., *Thailand Group Report*, Question Q204 Liability for Contributory Infringement of IPRs, available at <https://www.aippi.org>

<sup>345</sup> Thailand Civil and Commercial Code, § 420:

*“A person who, willfully or negligently, unlawfully injures the life, body, health, liberty, property, or any right of another person, is said to commit a wrongful act and is bound to make compensation therefore.”*

<sup>346</sup> Thailand Civil and Commercial Code, § 432:

*“If several persons by a joint wrongful act cause damage to another person, they are jointly bound to make compensation for the damage. The same applies if, among several joint doers of an act, the one who caused the damage cannot be ascertained. Person who instigate or assist in a wrongful act are deemed to be joint actors. As between themselves the persons jointly bound to make compensation are liable in equal shares unless, under the circumstances, the Court otherwise decides.”*

<sup>347</sup> Thailand Criminal Code, § 84:

*“Whoever, whether by employment, compulsion, threat, hire, asking as favour or instigation, or by any other means, causes another person to commit any offence is said to be an instigator...”*

<sup>348</sup> Thailand Criminal Code, § 86:



## 4.2 Exhaustion of Patent Right in Thailand

### 4.2.1 Implementation of Exhaustion Doctrine

Thai Patent Act B.E. 2522 (1979) had never had any provision associated with exhaustion of patent right until this Act was amended by the Patent Act (No.3) B.E. 2542 (1999). In the incident before the amended Patent Act (No.3) introduced exhaustion issue. Thai Patent Act, including other intellectual property laws, *i.e.*, Copyright Act and Trademark Act, had not literally provided exhaustion doctrine. Legislators at that time perhaps thought that a mere principle of wrongful act in general provisions under Thai Civil and Commercial Code was sufficient to determine intellectual property infringement cases.<sup>349</sup> For instance, given in despite of no provision in Thai Trademark Act referring to the exhaustion of right, the Supreme Court affirmed the IP & IT Court's decision in 1997 holding in the trademark infringement case that once the trademark owner put a product bearing his trademark on the market anywhere in the world, his right had become exhausted.<sup>350</sup> Therefore, the trademark owner could no longer exercise his trademark right over sold product for preventing the importation in Thailand, and therefore the defendant's act of importing of products legitimately purchased from the authorized dealer in Singapore into Thailand was not held constitute the unlawful exercise of right in accordance with Section 421 of Thailand Civil and Commercial Code.<sup>351</sup>

However, although neither Copyright Act nor Trademark Act refer to the exhaustion of rights, the provision of exhaustion doctrine was already added to Thai Patent Act under Section 36 paragraph two (7) in order to harmonize the domestic law with international obligation under TRIPs that is one of WTO agreements applying to

---

*“Whoever, by any means whatever, does any act to assist or facilitate the commission of an offence of any other person before or at the time of committing the offence, even though the offender does not know of such assistance or facilities, is said to be a supporter to such offence, and shall be liable to two thirds of the punishment provided for such offence.”*

<sup>349</sup> Indananda, *supra* note 91, at 13-14.

<sup>350</sup> Supreme Court Judgement No. 2817/2543

<sup>351</sup> Thailand Civil and Commercial Code, § 421: *“The exercise of a right which can only have the purpose of causing injury to another person is unlawful.”*

Thailand as a WTO State Member. In addition, the provision is beneficial to promote researches on inventions of new products and processes.<sup>352</sup>

The amended Patent Act (No.3) B.E. 2542 (1999) introduced the exhaustion of patent right considering the provision under Article 6 of TRIPs Agreement that exactly does not explicitly refer to the doctrine of exhaustion of intellectual property rights. It merely states that measure of the exhaustion of intellectual property rights cannot be scrutinized under provision of TRIPs Agreement.<sup>353</sup> Owing to the difference in economic levels of State Members, it seems likely to affirm that each State Member is free to establish its own regime for exhaustion of IP rights. The footnote to Article 28, moreover, addressed that the right conferred by Article 28 of TRIPs Agreement<sup>354</sup> to use, sell, import or other distribute goods shall be subject to the provision of exhaustion of intellectual property rights under Article 6.<sup>355</sup> In sum, the exhaustion doctrine pursuant to Section 36 paragraph two (7) of Thai Patent Act conforms with the provision under Article 6 and 28 and the footnote to Article 28 of TRIPs Agreement.

“The preceding paragraph [exclusive rights] shall not apply to...the use, sale, having in possession for sale, offering for sale or importation of a patented product when it has been produced or sold with the authorization or consent of the patentee.”<sup>356</sup>

Interpreted under the plain meaning rule, the provision prescribes that exclusive rights of a patentee owning a product patent to use, sell, have in the possession for sale, offer for sale or import his patented product is exhausted once it has been sold by a patentee, sold or produced by others to whom a patentee consent or authorized a license. In the other hand, in the case where the subject matter of a patent is a process, the provision is not clearly invoked to what types of processes – (1) process of producing, (2) process of maintaining or improving the quality of a product, (3) new use of a known

---

<sup>352</sup> 116 Royal Thai Government Gazette 22 Gor., March 31, B.E. 2542 (1999).

<sup>353</sup> TRIPs art. 6 Exhaustion, *supra* note 158.

<sup>354</sup> TRIPs art. 28 Rights Conferred, *supra* note 85.

<sup>355</sup> Footnote to the TRIPs art. 28, *supra* note 161.

<sup>356</sup> Thai Patent Act B.E. 2522 (1979) as amended by the Patent Act (No.2) B.E. 2535 (1992) and the Patent Act (No.3) B.E. 2542 (1999), § 36, ¶ 2 (7).

process or the application of the process, and/or (4) improvement of a known process – are exhausted. Even not explicitly stated, it might be implied that merely process of producing a product is exhausted because the provision prescribes only the set of rights which may be exercised concerning a product and authorizing other to produce a product. Besides the process of producing, the other patented processes might inherently never be exhausted. Thus, any patentee owning a process of producing exhausts the exclusive rights to use, sell, have in the possession for sale, offer for sale or import the product produced by using patented process of producing, when it has been sold by a patentee or others with his consent, or when it has been produced by others to whom a patentee authorized a license of using patented process of producing.

In other words, once patented product has been legitimately sold by a patentee or others with his permission or produced by other authorized persons, a patentee can no longer exercise his rights to exclude others from using, selling, possessing for sale, offering for sale, or importing of the product covered by product patent or produced using process patent. Nevertheless, the rights to exclude others from producing patented product or using patented process to produce is not exhausted in accordance with the provision but still remains to a patentee. Similarly, granting others a license to produce patented product, a patentee basically cannot exercise his exclusive rights over the product produced by a licensee other than the rights to produce and sell product himself competing against his licensee, unless a patentee may voluntarily waive his right to produce and/or sell patented product by specifying a covenant not to compete in the exclusive license agreement.

Influenced by the UK patent law, Professor Jakkrit Kuanpoth, however, argues that the doctrine of exhaustion should not be provided as an exclusion provision of infringing acts as it currently exists under Section 36 paragraph two (7) of Thai Patent Act. Procedurally, it should not be invoked as affirmative defense against patent infringement, distinguishable from U.S. patent law which exhaustion doctrine is treated as a defense against infringement claim. To consider as a defense, there should be some activities which constitute patent infringement, but the law provides a person who commits those acts with an excuse against liability for that patent infringement based on some particular policy to a desirable social or economic result. But, in the case of

exhaustion of patent rights, once patented product has been legitimately sold, purchasers and downstream users are free to use, sell or import the product since exclusive rights of a patentee are exhausted. Those activities should not be even treated as allegedly infringing acts which the law excludes any accused person from liabilities. In logical reasoning, those activities committed after the patent rights over the product are exhausted cannot constitute infringement of patent rights since no patent right over the product is available to be infringed at that time. He points out that patent infringement and exhaustion doctrine should be separately considered.<sup>357</sup>

Different in the implementation of exhaustion of patent right, the legal consequences, nevertheless, are selfsame that a purchaser is not liable for patent infringement. One might argue that these are not substantially to be considered. In the case of recycling and repair of patented product after a legitimate sale, the difference in approaches of determination, however, may lead to distinguishable outcomes as discussed throughout this study.

#### 4.2.2 Geographical Scope of Patent Exhaustion

For geographical scope of patent exhaustion, the provision under Section 36 paragraph two (7) does not expressly state what the regime; national, regional, or international exhaustion; is applied for invention patent and there is no Supreme Court ruling on related issue. On the other hand, Thai legal professionals literally construed the phrase, “produced or sold with the authorization or consent”, under the provision as activities of authorization or consent of a patentee to produce or sell the patented anywhere in the world because there is no words in the provision stating about the limitation.<sup>358</sup> Moreover, many developing countries have chosen to adopt standards of

<sup>357</sup> Interview with Jakkrit Kuanpoth, Counselor of Tilleke & Gibbins’s IP Group, in Bangkok, Thailand (June 29, 2015) [hereinafter Kuanpoth Interview].

<sup>358</sup> Puangrat, *supra* note 321, at 91; กิตติศักดิ์ ปรกติ, แนวคิดเกี่ยวกับหลักการสินสิทธิในทรัพย์สินทางปัญญา: บทเรียนจากเยอรมันและสหภาพยุโรป, วารสารกฎหมายทรัพย์สินทางปัญญาและการค้าระหว่างประเทศ ฉบับครบรอบ 3 ปี ศาลทรัพย์สินทางปัญญาและการค้าระหว่างประเทศ (2543), น. 129. (Kittisak Prokati, *the Concept of Exhaustion Doctrine of Intellectual Property Rights in German and European Union*, Intellectual Property and International Trade Journal (3<sup>rd</sup> Year Anniversary of the Central Intellectual Property and International Trade Court Edition

international exhaustion that is most beneficial for them.<sup>359</sup> It is able to comprehend that Thai patent law adopted the international exhaustion doctrine for invention patent. Any patentee, thus, cannot prevent others from using, selling in, and importing to Thailand a patented product sold by a patentee or others with his permission in foreign countries since his right has been already exhausted.

### 4.3 Post-Sale Restriction on Use of Patented Goods

Under Section 39 of the Thai Patent Act, a license to exercise exclusive right conferred upon a patentee under Section 36 and 37 can be granted to a licensee with conditions or restrictions unless the terms are unjustifiably anti-competitive. The provision allows a patentee to grant a licensee his patent rights with conditions or restrictions. On the other hand, the question whether the post-sale restrictions to avoid exhaustion of patent rights can be imposed upon purchasers by a patentee has never been clarified by the statutory laws.

Professor Chavalit Uttasart and Nanadana Indananda, in the name of Thailand group, did not explicitly report to AIPPI that the intention of a patentee expressed in the post-sale restriction plays a role in determining exhaustion concerning repair and recycling of a product covered by an invention patent. On the other hand, they gave their opinions from another aspect by indicating that restriction on post-sale use of patented goods should not be considered whether recycling or repair of goods constitutes an infringement of patent under patent law. It should be considered under principle of contract law instead. In the case where a purchaser fully agrees with post-

---

2000), 129); คู่วัส ดิงสมิตร, สิทธิบัตร พร้อมข้อสังเกตเรียงมาตราและคำพิพากษาศาลฎีกา (2542), น. 37-38. (See Wat Tingsamit, Patent Act Ordered Section with Remark and Supreme Court Judgement (1999), 37-38) cited in สรียา กาฬสินธุ์, หลักการระงับสิ้นไปของสิทธิในทรัพย์สินทางปัญญา: สิทธิในการจำหน่าย (วิทยานิพนธ์ปริญญาโทบริหารธุรกิจ, คณะนิติศาสตร์, มหาวิทยาลัยธรรมศาสตร์, 2544), น. 121. (Sareeya Galasintu, Exhaustion of Distribution Rights (Master's Thesis, Faculty of Law, Thammasat University, 2001), 121)

<sup>359</sup> Galasintu, *supra* note 358, at 122.

sale restrictions, violation of such restrictions may constitute a breach of contract.<sup>360</sup> In other words, according to the report, it is possible to imply that patent exhaustion cannot be overridden by patentee's intention. Even if recycling and repair of patented product may breach the post-sale restrictions, there is no legal consequence with respect to the doctrine of patent exhaustion. However, this matter is probably dealt with the provision of contract law.

Nevertheless, Professor Jakkrit Kuanpoth's opinion<sup>361</sup> addressed that the post-sale restrictions on use of patented goods is void because such clause is contrary to patent exhaustion provision under Thai Patent Act Section 36 paragraph two (7) which is taken into account of public order in general view of contract law.<sup>362</sup> Even though, both parties of the contract fully agrees with, the post-sale restrictions are therefore ineffective. In comparison with Professor Chavalit's report aforementioned, this Professor Jakkrit kuanpoth's opinion is different from the former, since the latter believed that the post-sale restrictions, even agreed by all parties is void in contract law aspect, while, in the former opinion, a full agreement with the post-sale restrictions may still bind both parties to that clause of agreement.

It should be noted that even made by the reputable patent lawyers, the legal opinions which attempts to clarify and interpret the scarcely existent law have merely persuasive authority but nothing in the current statutory law gives any binding provision on this matter. Currently, Thai patent law and judicial decisions are still silent on this matter and probably insufficient to predict what the exact consequence for the issue will be. To decide whether exhaustion of patent right is mandatory or default rule, the courts may face the difficulty of determining since the statutory law is ambiguous rendering interpretation to vary from one reader to another. Moreover, it might be difficult for any person engaging on this sort of business to provide a certain business judgment.

---

<sup>360</sup> See Chavalit Uttasart and Nandana Indananda, *Thailand Group Report*, Question Q205 Exhaustion of IPRs in cases of recycling or repair of goods, available at <https://www.aippi.org>

<sup>361</sup> Kuanpoth Interview, *supra* note 357.

<sup>362</sup> Thailand Civil and Commercial Code, § 150: "An act is void if its object is expressly prohibited by law or is impossible, or is contrary to public order or good morals."



Comparing with foreign laws, the exhaustion provision of Thai Patent Act does not state whether the law allows a patentee to contract out exhaustion of his patent rights, which is distinguishable with patent laws in the United States and Japan. Case law in the United States, however, has clarified that violation of valid post-sale restrictions may make the sale from being authorized to being unauthorized which the doctrine of patent exhaustion is not triggered, whereas, the court's decision in Japan concluded that exhaustion of patent rights should not be allowed to be restricted by any contract. In Thailand, from my points of view, the legal opinion made by Professor Jakkrit kuanpoth is more reasonably persuasive than Professor Chavalit Uttasart's legal opinion because the provision of patent exhaustion, legislated in Thai Patent Act under Section 36 paragraph two (7), is an exclusion provision which is generally treated as an unavoidable public order.

#### **4.4 Distinctions between Permissible Repair/Recycling and Infringing Reproduction**

According to Thai Patent Act Section 36 paragraph two (7), when patented product has been sold, a purchaser, who become a proprietor of the product, can exercise his proprietary right over patented product as he wants. A purchaser, however, shall not have right to produce a new product identical or equivalent to patented product that he has purchased. Probably extended, exclusive rights of a patentee to produce might be interpreted to include the act of reproduction of the product to be usable again. In the case of patented process, a purchaser has proprietary rights to use, sell or import the product but producing product by using patent process without consent of a patentee shall be prohibited by patent law. Also, such exclusive rights may be extended to the use of patented process for reproducing the product to make it reusable. A person who reproduce a product embodying patent, therefore, shall be liable for patent infringement. Roughly, these seem simple by common sense, but how much an act in question is permissible repair/recycling or infringing reproduction should be discussed in multidimensional aspects.



Whether or not purchaser's activities of repair and recycling of patented product once legitimately sold are permissible, the patent exhaustion provision under Section 36 paragraph two (7) of Thai Patent Act is not sufficient since no statutory definitions of the term 'repair' and 'recycling' are legislated under the Patent Act.<sup>363</sup> Both repair and recycling of goods might be considered as the right to use patented product that a patentee can no longer exercise when it has been sold by himself or others with his consent. However, the term use of patented product and the scope of use which is permissible under the exhaustion doctrine are not laid down under the law likewise. The absence of definitions of 'repair' and 'recycling' is not only in Thai Patent Act and subsequent legislation, *e.g.*, The Ministerial Regulations, but there is also no Supreme Court's decision ruling their definition or any permitted condition of the acts because the Supreme Court has never heard the case in regard to repair or recycling of patented product legitimately sold.

Comparing with foreign countries, Thai Patent Act and foreign laws, *i.e.*, the United States and Japan are much of a muchness due to no statutory law which provides any clear definition of repair or reconstruction. Nonetheless, there are a number of cases in these foreign countries regarding repair and recycling of patented goods decided by the courts that provide the case laws or highly persuasive guidelines for distinguishing among permissible repair and infringing reconstruction as mentioned in Chapter 3, whereas the Thai courts have never considered such related cases.

Nevertheless, Professor Jakkrit Kuanpoth, a professional expert in patent law, proposed that to distinguish among permissible repair/recycling and infringing production, instead of considering the exhaustion doctrine, the court should consider the following steps: (1) what the scope of the patent claims of the invention is, (2) whether the accused activity constitutes patent infringement, and (3) whether there is any exception for the liability of patent infringement.<sup>364</sup> The proposed determination is traditional patent infringement analysis. It is similar to the rule developed by the United Kingdom Court in *United Wire* that the notion of an implied license had been rejected to determine whether the act in question was the right to repair conferred by a

---

<sup>363</sup> Uttasart, *supra* note 360.

<sup>364</sup> Kuanpoth Interview, *supra* note 357.

license, as described in 3.4.4.1. The Court analyzed whether the defendant's act, even with intention to make patented product reusable, constituted patent infringement instead. As described in 3.4.2.1, this concept is also analogous to "manufacturing approach" introduced by Professor Hisayoshi Yokoyama that determines whether the activity in question shall be evaluated as manufacturing. This approach focuses solely on patent protection aspect but may not consider whether the act is foreseeable under normal social convention.

Additionally, Professor Jakkrit Kuanpoth authored his legal opinion on the related matter in the book, *Patent Law: Concept and Analysis*, and exemplified his point with illustration. He discussed in the case where a purchaser restores patented product – which had been legitimately sold and subsequently became damaged or broken – into its original condition suitable for being usable again, whether the repair or modification of patented products can be held an infringing production.<sup>365</sup>

On the issue, he has an opinion that the act of repair of damaged patented product in order to put back into its old condition again may go far beyond the scope of production, which constitutes infringement of patent rights. By considering capability of a patentee to exploit patented invention, he reasoned that the act of repair does not interfere the commercial exploitation of patent other than making the product usable again. For instance, Mr. A purchased an electronic wheelchair embodying an invention patent but afterwards, it got damaged. Mr. A, therefore, fixed it to be usable again. Such repair of patented product committed by Mr. A without any permission of a patentee is not constitute patent infringement.<sup>366</sup>

Professor Jakkrit Kuanpoth, moreover, specified the conditions of permissible repair that firstly, the product repaired must not be an original infringing product since it is inherently infringing.<sup>367</sup> Repair does not change infringing device to the lawful device, such as, repair of infringing electronic wheelchair embodying an invention

---

<sup>365</sup> Kuanpoth, *supra* note 56, at 293.

<sup>366</sup> Kuanpoth, *supra* note 56, at 293.

<sup>367</sup> Kuanpoth, *supra* note 56, at 293.

patent that had produced by others without consent of Mr. A, a patentee, cannot legally change it to be non-infringing product.

Secondly, permissible repair of patented product must not create new product or alter any essential feature of patented product. Activities beyond the scope of repair including alternation of patented product to be different product can be considered as a production of a product that constitutes patent infringement. For example, if Mr. A modifies his patented electronic wheelchair to be driven faster with less battery power consumption, the alteration is held production, which constitutes infringement of the patent rights.<sup>368</sup>

On the other hand, in case where patented product has already become used as a whole or so much worn out to be useless but a purchaser reproduces it to be usable as the same original product again, Professor Jakkrit Kuanpoth determined that such activity cannot be considered as repair but a production of patented invention, which constitutes patent infringement, *e.g.*, reproduction of patented electronic wheelchair which was burnt as a whole and cannot be used again.<sup>369</sup>

Under that patent infringement analysis, the courts generally construe the patent's scope of protection defined in the claims in patent specification and determine whether the accused device or process is literally identical or equivalent to the claims. From my points of view, recycling and repair of patented product are vulnerable to be determined to constitute patent infringement. Because such recycling and repair are committed solely with intention to make the damaged or used product useable as its initial purpose again. These are inherently inevitable to be determined identical to or equivalent to the prior product. By analogy to the doctrine of equivalent, recycling and repair that sometimes involve some part of incorporating or recreating essential feature of patented product, which are normally needed to be replaced, are probably considered as reproduction which constitutes patent infringement. Roughly, this might be a good standard because the heart of invention of the product is firmly protected. Nevertheless, the scope of patent protection extended by the doctrine of equivalent might be over

---

<sup>368</sup> Kuanpoth, *supra* note 56, at 293.

<sup>369</sup> Kuanpoth, *supra* note 56, at 293.

broad and possible to conflict with purchaser's acts of using product under normal convention. For instance, repair of improperly working electronic wheelchair by replacing some parts which incorporate essential feature of its invention is probably constitute patent infringement. That part of product might be necessary to be replaced to make it usable again. Otherwise, a purchaser must buy a new one in order not to be liable for patent infringement.

The determination of distinguishing among repair/recycling and reproduction solely under patent infringement analysis may be lack of balancing between interest of a patentee and right of a purchaser to use patented goods. It should be noted that the acts are committed over the product which a patentee has enjoyed the reward for his creation. The interest of a patentee outweighs the right of a purchaser to use patented goods. Instead, the matter should be jointly considered on what extent the acts of repair and recycling should be acceptable as a foreseeable act of using the product under normal convention and does not so much intervene exploitation of a patentee.

#### **4.5 Recycling and Repair Businesses in Thailand**

In this modern era, not only developed countries get concerned with environmental problems but developing countries including Thailand pay heed to the problems as well. For example, an inkjet or toner cartridge of which the body is made from plastic takes around 1,000 years for decomposition.<sup>370</sup> In each year, millions of these used cartridges are just discarded as waste.<sup>371</sup> To reduce the amount of solid waste generation and raw materials consumption including energy needed to produce a new product, consumers may choose to buy or take on a service of recycling cartridge instead of buying a new cartridge. In Thailand, there are many repair shop spreading over the country which can recycle an ink cartridge. Not merely in response to environmental concern, consumers will receive financial benefit since a recycled cartridge costs much cheaper than a new ink cartridge sold by a patentee or other authorized dealers. A recycled ink cartridge costs a consumer approximately one

---

<sup>370</sup> See <http://www.benefits-of-recycling.com/recyclinginkcartridges/>

<sup>371</sup> *Id.*

thousand baht. The process of recycling consists of boring, refilling, and resealing the cartridge, plus fully refilled ink. Some type of recycling ink cartridge has been modified by installing a refillable tank. On the contrary, a new ink cartridge costs approximately one thousand and five hundred baht depending on the compatible model and its quality.<sup>372</sup> Moreover, not only a recycled cartridge is capable to print considerably more amount of documents than an original cartridge because of its higher ink containing capacity, but there is also, in some types of recycled cartridges, the ink-refillable function.

Some recycling cartridge business does not provide such service but purchases the used cartridge from patentee's consumers to recycle and resell them again, in competing with a patentee.<sup>373</sup> Furthermore, there is a refurbishing business that involves with reconditioning defective or used goods and selling them again as a new product, *e.g.*, a refurbished laptop or electronics goods. The refurbished goods generally have been returned to and reconditioned by a patentee itself. However, sometimes defective goods are refurbished and resold by third parties. That might be questioned whether it constitutes both patent and trademark infringements or is permitted under the doctrine of exhaustion.

Furthermore, in order to use a device or a machine efficiently and effectively as much as possible for preventing waste generation and for economic reasons, activities of repairing or replacing parts of products are inevitable. Especially in industrial sectors, such activities are typical work tasks of every maintenance engineers who are responsible for the continuous running duty of equipment and machinery. Moreover, not merely is the act of repair of patented articles often performed in the industrial sector but also in repair businesses spreading over Thailand, *e.g.*, automobile repair shops (also known as garages), electronic repair shops, or etc. In the case where a repaired product is protected by an invention patent, a repairer may need to know to what extent his acts are permissible under the doctrine of exhaustion.

---

<sup>372</sup> See <http://www.thaitoponer.com/th/toner-pricelist>

<sup>373</sup> See <https://oasistoner.wordpress.com/tag/เช็คราคาคัดลับหมึกเปล่า/>

During the growth of environmental and sustainability awareness, the goods made from recycled materials and green businesses have become more and more popular. Creating and designing new products, manufacturers need to consider not only how to put products together, but also how to take apart and reuse materials as well. Additionally, in future trend of business, recycling is expected to be more sophisticated that manufacturers and retailers inject “return, recycle, and reuse” into product production and sales.<sup>374</sup> Affecting the rights of third parties to recycle the product covered by an invention patent, patent law should be clear and concrete to support and not to bar that trend of business.

Moreover, the Draft Act on the Management of the Waste of Electrical and Electronic Equipment and Other Products was proposed to parliament on May 19, 2015 and presently is pending. The Act is aimed to increase the recycling and reuse of used electrical and electronic goods.<sup>375</sup> Once the Act is in effect, some aspect of patent law might be considered because many electrical and electronic goods are covered by patent, such as, computers, television, refrigerators, mobile phones and etc. The uncertainty of patent law with respect to the rights of purchasers or others obtaining the product to use the product covered by patent may affect the compliance of the Act. For instance, the waste management factory might be reluctant to recycle waste products protected by an invention patent into new products.

#### **4.6 Problems of the Thai Patent Act**

1. The existing provision of patent exhaustion under Section 36 Paragraph two (7) of Thai Patent Act is insufficient to certainly answer on what extent shall the recycling and repair of patented product be permitted to. These activities may collide with exclusive right to produce conferred by patent law upon a patentee. This uncertainty makes purchasers and recycling businesses reluctant to repair and recycle goods embodying patent because of being afraid of liability for patent infringement.

---

<sup>374</sup> See <http://www.fastcompany.com/1612136/future-continued-growth-green>

<sup>375</sup> See [http://thaipublica.org/wp-content/uploads/2015/11/Draft\\_WEEE-law-580319-เสนอกรม-19-พค-58.pdf](http://thaipublica.org/wp-content/uploads/2015/11/Draft_WEEE-law-580319-เสนอกรม-19-พค-58.pdf)



Recycling and repair might be vulnerable to be determined constitute patent infringement because, with intention to make damaged or used goods to be usable as its initial utility, the item is surely identical to the set of claims of patented invention. Roughly, repair might be considered, simply by common sense, that it is the independent right of a purchaser to do without permission. However, it is still questioned on what extent repair and recycling would not be deemed as production, which any person doing so shall be liable for the infringement.

Also, patentees may hesitate to exercise their exclusive rights over goods. In cases where a patentee cannot commercially exploit his invention as desirable because the existence of recycling businesses has derived purchasers from a patentee, a patentee may want to claim his exclusive right granted by patent against the act of recycling businesses. Without certainty of patent law, the current exhaustion provision might be extended to be an affirmative defense for any act committed after authorized sale of that goods against exclusive rights of a patentee. It may have a negative impact on inventor interest and incentive to invent.

In addition, such impact does not merely cause inconvenience to practice goods, but also obstructs environmental conservation activities. Repair and recycling normally have environmental benefits as described in 2.1.2. The unclear patent law is inconvincible for third parties to create any plans or do anything in order to respond environmental concerns.

2. In Thailand, the Patent law does not provide any provision to answer the question whether the intention of a patentee can be considered to override exhaustion of exclusive rights covering the product embodying patent, even if it has been sold. In foreign countries, post-sale restrictions are treated differently. In the counties that implement the principle of implied license, a patentee may create a conditional use or sale of the product in the sale contract. Conversely, in countries, which recognize doctrine of exhaustion, a post-sale restriction might be set as a conditional sale that patent over goods does not exhaust if that restriction has been violated. It may be the loophole of law which is open for a patentee to unduly exploit the invention subject to



his patent in post-sale. Moreover, without inconsistency, recycling and repair of products can be barred by freely patentee's intention.

Should exhaustion doctrine in Thailand be treated as a mandatory rule, the marketing plan created by a patentee is limited. A patentee cannot impose any restriction on the use of goods. That may be environmentally beneficial because purchasers and downstream users are capable of repairing and recycling patented products as they desire. However, there probably are some marketing plans which are beneficial for environmental conservation, for example, "Return Program Cartridges" in *Lexmark v. Impression* which the manufacturer did not allow purchasers to reuse the products because it itself intended to recycle the cartridges marketed under the program. In some situations, the allowance to impose restrictions on post-sale use of goods is able to enhance the environmental responsibility of a patentee.

## CHAPTER 5

### CONCLUSION AND RECOMMENDATIONS

#### 5.1 Conclusion

Owing to population growth, economic prosperity and globalization; the need of resources, especially raw materials, continues to increase. Adversely, the existence of resources in the world is likely to be scarce. Efficient and effective use by repairing damaged goods rather than discarding and by recycling used but reusable goods will be desirable resolutions to reduce raw materials consumption. Plus, their economic benefits entice consumers to repair and recycle goods during the period of economic recession.

In case where goods are protected by invention patent, the provision under Section 36 paragraph two (7) of Thai Patent Act legislated that the patentee exhausts rights to exclude other from “sale, having in possession for sale, offering for sale or importation of a patented product when it has been produced or sold with the authorization or consent of the patentee.” This Section, however, is insufficient to clearly the answer to the question whether and to what the extent which the acts of recycling and repair of goods should be permitted in the scope of use under the doctrine of patent exhaustion.

Moreover, neither law nor guideline explains whether patentees can or cannot avoid patent exhaustion by imposing restrictions on post-sale use of patented goods. These restrictions, if enforceable, are capable to prevent purchasers or downstream users from recycling and repair of the product embodying patent. Otherwise, one who commits without any consent of a patentee might be liable for patent infringement.

After analyzing patent laws in the United States and Japan, even though no legislation specifically prescribed for the relevant issues, the volume of cases in both countries have established diverse approaches for interpretation of their own national patent laws to apply to and have formulated criteria for the facts at issue. On the one hand, the case laws in the United States which has binding authority have ruled that a

patent right is not exhausted when recycling or repair of patented goods violated a valid restriction on post-sale use imposed by a patentee. If there is no such conditional sale, the acts of recycling and repair committed after the entity of goods had already used as a whole without any permission from a patentee does not exhaust a patent right, but constitutes patent infringement under the repair and reconstruction dichotomy. On the other hand, IP high Court's decision in Japan which has highly persuasive authority that the courts in subsequent cases generally follow laid down a guideline concerning this issue by holding that patentee's intention could not control exhaustion of patent. Also, the court formulated that a patent right covering a product was basically exhausted once it had been sold, unless the product had been reused or recycled after its lifespan expired under Category 1 of the repair-reconstruction test or unless its component corresponding to an essential part of patented invention had been altered or replaced under Category 2 thereof.

Whereas the awareness of environment and sustainability is growing increasingly, Thai Patent law remains silent. There are neither provision of the law nor guideline which ensure that purchasers or downstream users can recycle and repair patented goods or what the extent thereof is permissible under the doctrine of exhaustion. This uncertainty is probably an underlying problem because it renders any person obtaining patented product reluctant to exercise their rights of ownership to recycle or repair the product. It also renders any private enterprise afraid to engage in recycling business, and any patentee able to extend exclusive rights granted by patent to limit the right to use the product which a patentee has already enjoyed the exploitation.

## **5.2 Recommendations**

The acts of recycling and repair of goods meet the need for ecological development and sustainable economic in modern trend. Nonetheless, in case of patented product, the doctrine of patent exhaustion should not be absolutely applied to all extent to which the acts of recycling and repair are done to goods covered by invention patent. At least, patentee interest should be considered because it affects the

incentive to invent in the country. However, any patentee should not be allowed to override exhaustion of patent since the exhaustion doctrine is a purely legal concept that is not the primary function to reward inventors. If patent law allows patentees to impose a post-sale restriction on the use of patented goods as a conditional sale, they surely always impose so as to prevent any person obtaining the products from recycling and repair. Since the restriction affects the increase of probability of purchasing new products from patentees, they can gain more profits from that result. It would be expanded beyond the purposes and objectives of patent law that patent law system is mainly aimed to encourage the disclosure of value information to society. As described by Professor Jakkrit Kuanpoth, the patent exhaustion provision under Section 36 Paragraph two (7) should be considered as mandatory rule. The use condition clause in a sale contract of patented goods should be void, for instance, if the indication on a product surface or its package imposing purchasers to use it only one time meaning repair and recycling are prohibited, this clause should be void.

This study also proposes that Thailand should amend Thai Patent Act through adding the provision that defines the terms permissible repair and recycling of products protected by invention patent in order to clarify the patent exhaustion provision. Additionally, the amendment can ensure the right of purchasers or third parties to repair and recycle patented products and to ensure the right of a patentee to claim for compensation against any person who commits the acts which fall outside the scope of permissible repair and recycling under the provision. Not yet provided in foreign countries' written laws, it might seem early for Thailand to codify the measure dealing with the matters of patent exhaustion in recycled and repaired goods in the Patent Act. Aside from the U.S. which the court's precedent has binding authority, Japan court's decision in patent field is distinguished from others as described in 3.4.2 since it has very highly authority to form reliable and certain rules. To avoid unpredictability of law interpretation and to ensure all person's rights, advancing the Patent Act, the binding authority, is the most appropriate proposal rather than waiting for the court's decision concerning these matters which may not be desirable due to the inadequacy of current patent law before the court and the court's interpretation power confined to what the provision was legislated.

After analysis of the governing laws and the court decisions in the United States, one might realize that the repair and reconstruction dichotomy in the U.S. provide the broad scope of permissible repair and recycling of patented goods. It may have a negative impact on the incentives for inventors because patentees cannot protect their interests from potential interference. However, the U.S. patent law generally permits patentees to control patent exhaustion by post-sale restrictions as conditional sale. This implementation that treats the exhaustion doctrine as a default rule goes far beyond the purpose of exhaustion doctrine that exploitation of invention is allowed only once. On the other hand, in Japan, the Grand Panel of the IP high court applied patent exhaustion in cases of recycling and repair of patented product by formulating the strict repair-reconstruction test which has a strong bias favoring reconstruction. As a result of this holding, public interest to freely use patented goods is interfered and it might cause an obstacle for others to engage in recycling businesses, even if post-sale restriction is not effective in respect with patent law system.

The test of spentness of a whole product taken into the consideration of distinguishing among permissible repair and infringing reproduction in the U.S. and in the First Category of the test in Japan might redundantly spoil purchasers or others obtaining goods. As long as the product has not physically used, proprietors are free to repair, maintain or recycle the product. Patentees may deliberately manufacture unendurable patented products to confine the capability of products to be repaired and recycled. This test, moreover, has never been adopted solely: for example, in the U.S., patentees are allowed to impose against purchasers the restriction on post-sale use of goods with respect to patent law.

The International Association for the Protection of Intellectual Property or *Association Internationale pour la Protection de la Propriété Intellectuelle* (AIPPI) has suggested a practice guideline for this matter,<sup>376</sup> considering the overlap among the freedom of a proprietor to use the product which he purchases and the right of a patentee to exclude others from producing the product. The degree of activities committed by a proprietor and the importance of the product's component, therefore, should be the

---

<sup>376</sup> AIPPI, *Resolution*, Question Q205 Exhaustion of IPRs in case of recycling and repair of goods, available at <http://www.aippi.org>

main factors taken into consideration of the distinction. The replacement or reprocess of the important component that implements technical problem based on inventor's description of the claimed invention in the patent application should fall within the scope of reproduction. This measure also harmonizes with patent infringement analysis. The exhaustion doctrine, moreover, privileges a proprietor to sell, use or import patented product once it has been sold but not to interfere the heart of invention which is still protected by patent law throughout the term of patent. Such measure might limit some extent to which the acts of repair and recycling are committed especially over a part incorporating essential feature of invention. However, it is necessary to weight in favor of patentee interest, at least, in order not to cease the incentive for development of new inventions.

Attempting to balance between the incentive for inventors affecting encouragement of new technology development and the public interest on free trade and the use of patented goods, this study further deliberated that in case of technological invention, a household sector is not the main field for reproduction of patented product that drastically decreases the interest of a patentee. The acts of recycling and repair of patented product with the intention for private use probably do not have enormously negative impact on the incentive for investment, even some extent to which such acts may fall within the scope of reproducing. This study would like to propose that changing or reproducing an essential component of patented product for private use should be provided as another affirmative defense to the acts which may otherwise not be permitted under the doctrine of exhaustion. This exclusion provision should be available for any person who commits such activities for private purpose. This proposed measure is generally aimed to be pro-consumers. In addition, this consumer-oriented rule does not merely provide economic benefits for consumers moderately, but also promotes environmental sustainability that affects the community at large. Even being in favor of a proprietor, the proposed measure reasonably protects the interest of a patentee in market opportunity to commercialize his patented invention.

The provision under Section 36 Paragraph two of the Thai Patent Act should be amended by adding new Subsection (8) which contains the following detail:

“The preceding paragraph [exclusive rights] shall not apply to... (8) The act of recycling or repair of a patented product, unless such an act involves replacement or reproduction of an essential component of the product in a commercial manner or for profits.”

Plus, so as to clarify the scope of both activities, Section 3 of the Act should be amended by including the definition of recycling and repair as follows:

“Repair” includes maintenance work and minor interventions.

“Recycling” means the act whereby the product embodying patent that have served the use for which they were conceived are reused without being reduced to their constituent ingredients.

Applying of this amended Act to the facts can lead to desirable consequences. For instance, the newly amended Act can apply to any person engaging in recycling business who has collected used ink cartridge embodying patent from patentee’s customers, then bored the hole on cartridge body, refilled ink through that hole, resealed the cartridge and put them in market again. That recycling process has probably recreated its components corresponding to the essential features of patented invention. The activities are probably held involve replacement or reproduction of an essential component of the product. The exhaustion doctrine shall not be applied and that person shall be liable for patent infringement because he has committed so for commercial purpose, unless there is a consent or authority from the patentee.

On the other hand, the act of recycling or repair cartridge by a purchaser himself for enabling the product to be usable again for households purpose shall not constitute patent infringement even if the patent exhaustion does not apply to such product and the act may be held constitute patent infringement. Also, the measure should be applicable to any person or business who has been hired by or given consent from a purchaser to recycle or repair such damaged cartridge. Pursuant to general provisions of agency in the Civil and Commercial Code, if a purchaser as the principal has authorized a person as his agent to act on behalf of him, such person who does not act in excess of the authority is not personally liable to a patentee. Additionally, in term of



criminal matters, such person can allege the private use as a circumstance relating to the nature of the offence to exclude from punishment of patent infringement in accordance with the provisions of principals and supporters prescribed in the Criminal Code.

In a nutshell, according to the amendment, any person who obtained patented goods or had authority to act can repair or recycle it for private use without any permission of a patentee even if the act has changed or reproduced its essential components. For recycling businesses, the act of recycling of patented goods collected or purchased from patentee's customers, by which its essential components are replaced or reproduced, shall be found committed in a commercial manner or for profits that constitutes patent infringement unless there is a consent of a patentee. However, as specified in the scope of acts considered under patent exhaustion in 2.1.3, the type of recycling by reducing goods to their constituent ingredients and truly producing new product therefrom is not determined in context of the exhaustion doctrine since the entity of the goods no longer exists, as long as such product is not identical or equivalent to the prior patented product, otherwise it would constitute patent infringement. For a patentees, their exclusive rights protected by patent law are not exhausted when there is an act by which an essential component of the product, which is the heart of invention, has been replaced or reproduced. Patentees can control such acts, *e.g.*, prohibits or claims for license fee, unless the allegedly infringing acts have been committed by any person for private use.

## REFERENCES

### 1. Books

#### 1.1 English

- Bellman, Christophe *et al.* **Trading on Knowledge: Development Perspectives on TRIPS, Trade and Sustainability**, New York: Earthscan Publications Ltd, 2003.
- Chisum, Donald. **Chisum on Patents**, London: LexisNexis, 2005.
- Delaney, Tim. **The march of unreason: science, democracy, and the new fundamentalism**, New York: Oxford University Press, 2005.
- Fisher, Matthew. **Fundamentals of Patent Law: Interpretation and Scope of Protection**, Oregon: Hart Publishing, 2007.
- Hansen, Hugh C. **Intellectual Property Law and Policy**, Oregon: Hart Publishing, Vol. 12, 2013.
- Knight, H. Jackson. **Patent Strategy for Reserchers and Reserch Managers**, 3rd ed. West Sussex: John Wiley & Sons Ltd, 2013.
- Macroy, Patrick F. J. et al. **The World Trade Organization: Legal, Economic and Political Analysis**, New York: Springer Science+Business Media, Inc., 2005.
- Madu, Christian. **Handbook of Environmentally Conscious Manufacturing**, Massachusetts: Kluwer Academic, 2001.
- Miller, Arthur, & Davis, Michael. **Intellectual Property – Patents, Trademarks, and Copyright in a Nutshell**, Michigan: West Publishing Company, 1990.
- Mills, John Gladstone. **Patent Law Fundamental**, 2nd ed. St. Paul: West Group, 2002.

- Mohri, Mineko. **Maintenance, Replacement and Recycling – Patentees’ Rights in the aftermarket**, Munich: Herbert Utz Verlag GmbH, 2010.
- Mueller, Janice. **An Introduction to Patent Law**, 2nd ed. New York: Aspen, 2006.
- Pearson, Hillary, & Miller, Clifford. **Commercial Exploitation of Intellectual Property**, London: Blackstone Press Pvt. Ltd., 1990.
- Phillip, Jeremy, & Firth, Alison. **Introduction to Intellectual Property Law**, 2nd ed. London: Butterworth, 1990.
- Pires de Carvalho, Nuno. **The TRIPS Regimes of Patent Rights**, 2nd ed. London: Kluwer Law International, 2005.
- Roughton, Ashley et al. **The Modern Law of Patents**, 2nd ed. London: LexisNexis, 2010.
- Scherer, Frederic. **Industrial Market Structure and Economic Performance**, 2nd ed. Boston: Houghton Mifflin Harcourt, 1980.
- Taubman, Anthony et al. **A Handbook on the WTO TRIPS Agreement**, New York: Cambridge University Press, 2012.

## 1.2 Thai

กาฬสินธุ์, สรียา. **หลักการระงับสิ้นไปของสิทธิในทรัพย์สินทางปัญญา: สิทธิในการจำหน่าย**, วิทยานิพนธ์

ปริญญาโทบริหารธุรกิจ, คณะนิติศาสตร์, มหาวิทยาลัยธรรมศาสตร์, 2544.

(Galasintu, Sareeya. **Exhaustion of Distribution Rights**, Master’s Thesis, Faculty of Law, Thammasat University, 2001)

ควรวจน์, จักรกฤษณ์. **กฎหมายสิทธิบัตร: แนวคิดและบทวิเคราะห์**, กรุงเทพมหานคร: นิติธรรม, พิมพ์ครั้งที่ 3

กรุงเทพมหานคร, 2556.

(Kuanpoth, Jakkrit. **Patent Law: Concept and Analysis**, 3rd ed. Bangkok: Nititham Publishing, 2013)

อินทนนท์, นันทน. ปัญหากฎหมายเกี่ยวกับหลักการสิ้นสิทธิในทรัพย์สินทางปัญญา, วิทยานิพนธ์ปริญญา

มหาบัณฑิต, คณะนิติศาสตร์, มหาวิทยาลัยรามคำแหง, 2540.

(Indananda, Nandana. **Legal Problems Regarding the Exhaustion Doctrine of Intellectual Property Rights**, Master's Thesis, Faculty of Law, Ramkhamhaeng University, 1997)

## 2. Articles

### 2.1 English

Clugston, Christopher J. "International Exhaustion, Parallel Imports, and the Conflict between the Patent and Copyright Laws of the United States", **Beijing Law Review**, Vol.4, No.3, 2013.

Himanshu, Vijay Kumar. "Patent Monopoly and Doctrine of Exhaustion: Limits on Exclusive Right", **Journal of Intellectual Property Rights**, Vol. 16, 453, November 2011.

Janis, Mark. "A Tale of the Apocryphal Axe: Repair, Reconstruction, and the Implied License in Intellectual Property Law", **Maryland Law Review**, Vol. 58, Issue 2, 1999.

Kobak Jr., James. "Exhaustion of Intellectual Property Rights and International Trade", **Global Economy Journal**, Vol. 5, Issue 1, 2005.

Kuroda, Kaoru, & Katayama, Eiji. "Efforts to Establish Clear Standards for Exhaustion in Japan", **Washington Journal of Law, Technology, & Arts**, Vol. 7, Issue 4, Spring 2012.

Machlup, Fritz. "An Economic Review of the Patent System", **Study of the Subcommittee on Patents, Trademarks, and Copyrights of the Committee on the Judiciary**, Study No. 15, 85th Cong., 2d Sess., 1958.

- Machlup, Fritz, & Penrose, Edith. "The Patent Controversy in the Nineteenth Century", **The Journal of Economic History**, Vol. 10, No. 1, 1950, pp. 1-29.
- Malone, Dennis, & Schmalz, Richard L. "Peripheral Definition Theory v. Central Definition Theory in Patent Claim Interpretation: A Survey of the Federal Circuits", **George Washington Law Review**, Vol. 32, No. 609, 1963-1964.
- Nakada, Hirohito. "Patent Exhaustion and the Recycling Business in the United States and Japan", **Center for Advanced Study & Research on Intellectual Property Newsletter**, Vol. 14, Issue 3, Summer 2007.
- Osborne, John W. "A Coherent View of Patent Exhaustion: A Standard Based on Patentable Distinctiveness", **Santa Clara High Technology Law Journal**, Vol. 20, Issue 3, Article 3, 2003.
- Rovner, Amber Hatfield. "Practical Guide to Application of (or Defense against) Product-Based Infringement Immunities under the Doctrines of Patent Exhaustion and Implied License", **Texas Intellectual Property Law Journal**, Vol. 12, No. 227, Winter 2004.
- Smith, Rinechart Amelia. "Contracting Patent: A Modern Patent Exhaustion Doctrine", **Harvard Journal of Law and Technology**, Vol. 23, No. 2, pp. 486-535, Spring 2010.
- Tobias, Scott. "No Refills: the Intellectual Property High Court Decision in Canon v. Recycling Assist Will Negatively Impact the Printer Ink Cartridge Recycling Industry in Japan", **Pacific Rim Law & Policy Journal**, Vol. 16, No. 3, 2007.
- Yina, Dong. "A Patent Exhaustion Exposition: Situating Quanta v. LGE in the Context of Supreme Court Jurisprudence", **Stanford Technology Law Review**, No. 2, 2010.
- Zheng, Wentong. "Exhausting Patents", **UCLA Law Review**, Vol. 63, No. 122, 2016.

### 3. Electronic Media

Andersen, Birgitte. “The Rationales for Intellectual Property Rights: The Twenty-First Century Controversies”, <[http://www.druid.dk/conferences/summer2003/Papers/B\\_ANDERSEN.pdf](http://www.druid.dk/conferences/summer2003/Papers/B_ANDERSEN.pdf)> (last visited June 6, 2015).

Bania, Doug. “Rational Damages: Understanding Patent Infringement Criteria in IP Litigation”, <<http://www.consor.com/intellectual-property-advice/understanding-patent-infringement-criteria-in-ip-litigation.html>> (last visited May 31, 2016)

Bartleby, “Columbia World of Quotations No. 41418”, <<http://www.bartleby.com/66/18/41418.html>> (last visited March 6, 2015).

Benefits of Recycling, “Recycling Ink Cartridges”, <<http://www.benefits-of-recycling.com/recyclinginkcartridges/>>, (last visited June 7, 2015).

Boardman & Clark Intellectual Property Group, “This Tomayto Is Not A Tomahto: Differentiating Monopolies and Exclusive Patent Rights”, <[http://www.boardmanclark.com/ip\\_blog\\_posts/this-tomayto-is-not-a-tomahto-differentiating-monopolies-and-exclusive-patent-rights/](http://www.boardmanclark.com/ip_blog_posts/this-tomayto-is-not-a-tomahto-differentiating-monopolies-and-exclusive-patent-rights/)> (last visited June 5, 2015).

Boudreau, John. “Japan's once mighty tech industry has fallen far behind Silicon Valley”, <[http://www.mercurynews.com/ci\\_21760621/japans-once-mighty-tech-industry-has-fallen-far](http://www.mercurynews.com/ci_21760621/japans-once-mighty-tech-industry-has-fallen-far)>, (last visited August 4, 2015).

Carney, Alicia. “Patent Exhaustion 1 Year After Kirtsaeng”, <<http://www.law360.com/articles/578419/patent-exhaustion-1-year-after-kirtsaeng>>, (last visited June 7, 2015).

City-Yuma Partners, “Introduction to Japanese Patent Litigation”, <[http://www.city-yuwa.com/english/ip\\_group/ip\\_japanesepatent/index.html](http://www.city-yuwa.com/english/ip_group/ip_japanesepatent/index.html)> (last visited June 2, 2016)

- Conserve Energy Future, “Advantages and Disadvantages of Recycling”,  
<<http://www.conserve-energy-future.com/advantages-and-disadvantages-of-recycling.php>> (last visited June 5, 2015).
- Cosimo, Classic Authors”, <[http://www.cosimobooks.com/classics\\_author.php?author=4214](http://www.cosimobooks.com/classics_author.php?author=4214)> (last visited June 6, 2015).
- Cremers, Katrin et al. “Patent Litigation in Europe”, <<http://ftp.zew.de/pub/zew-docs/dp/dp13072.pdf>> (last visited June 4, 2016)
- Florida, Richard. “The World’s Leading Nations for Innovation and Technology”,  
<<http://www.citylab.com/tech/2011/10/worlds-leading-nations-innovation-and-technology/224/>>, (last visited August 4, 2015).
- Freyer, William. “Comments to the U.S. Patent and Trademark Office on Pending Legislation H.R.5638 (110th Congress, 2d Session) and Design Protection”,  
<<http://www.uspto.gov/sites/default/files/web/offices/pac/dapp/opla/comments/designstownhall/fryer.pdf>> (last visited May 26, 2016)
- Geetha, Maddala. “Claim Chart - An Useful Patent Tool”, <<http://ezinearticles.com/?Claim-Chart---An-Useful-Patent-Tool&id=1146685>> (last visited June 1, 2016)
- International Association for the Protection of Intellectual Property (AIPPI),  
“Exhaustion of IPRs in cases of Recycling and Repair of Goods”,  
< <https://www.aippi.org/?sel=questions&sub=listingcommittees&viewQ=205#205>> (last visited June 5, 2015).
- ISWA, “Key Issue Paper on The Definition of Recycling”, <[http://www.beacon-cph.dk/fileadmin/user\\_upload/documents/16\\_June/1200\\_\\_Bjoern\\_Appelqvist.pdf](http://www.beacon-cph.dk/fileadmin/user_upload/documents/16_June/1200__Bjoern_Appelqvist.pdf)> (last visited March 12, 2015).
- ISM Waste & Recycling, “Types of Recycling”, <[http://www.ismwaste.co.uk/recycling\\_services/recycling.html](http://www.ismwaste.co.uk/recycling_services/recycling.html)> (last visited June 5, 2015).



Kagan, David. “Honey, I Shrunk the Patent Rights: How Implied Licenses and the Exhaustion Doctrine Limit Patent and Licensing Strategies”,  
 <<http://c.ymcdn.com/sites/www.lesusacanada.org/resource/collection/B2D9101A-F6BA-4E58-AC7E-A805EA0E9B6E/Exhaustion-Implied-License.pdf> >  
 (last visited June 6, 2015).

Kuanpoth, Jakkrit. “Major Issues in the Thai Patent System”,  
 <<http://www.thailawforum.com/articles/jakpat1.html>> (last visited June 3, 2016)

Mayer, Russ. “The Future: the Continued Growth of Green”,  
 <<http://www.fastcompany.com/1612136/future-continued-growth-green>>,  
 (last visited June 7, 2015).

Oasis Toner. “Purchase of Used Cartridge” <<https://oasistoner.wordpress.com/tag/ซื้อเครื่องพิมพ์>>  
 ราคาตลับหมึกเปล่า/> (last visited June 7, 2016)

Okuyama, Shoichi. “Patent Infringement Litigation in Japan”, <<http://quon-ip.jp/30e/Patent%20Infringement%20Litigation%20in%20Japan.pdf>> (last visited June 2, 2016)

Pagenberg, Bardehle. “European Commission: proposal for amending the Designs Directive and harmonizing the aftermarket by introducing a “repair clause” withdrawn”, <<http://www.lexology.com/library/detail.aspx?g=f22c828c-3beb-471e-8c67-3ad27b15ec8b>> (last visited July 5, 2015)

Population Reference Bureau, “2014 World Population Data Sheet”,  
 <[http://www.prb.org/pdf14/2014-world-population-data-sheet\\_eng.pdf](http://www.prb.org/pdf14/2014-world-population-data-sheet_eng.pdf)> (last visited January 26, 2015).

Quinn, Gene. “The Constitutional Underpinnings of Patent Law”,  
 <<http://www.ipwatchdog.com/2011/05/11/the-constitutional-underpinnings-of-patent-law/id=16865/>>, (last visited June 7, 2015).

- United Nations Conference on Trade and Development (UNCTAD), “Project on Dispute Settlement in International Trade, Investment and Intellectual Property”, <<http://unctad.org/en/Pages/DITC/DisputeSettlement/Project-on-Dispute-Settlement-in-International-Trade,-Investment-and-Intellectual-Property.aspx> > (last visited June 7, 2015).
- Seidenberg, Steven. “Patent Predicament”, <<http://www.insidecounsel.com/2008/09/01/patent-predicament->>, (last visited June 7, 2015).
- Some Texts from Early Modern Philosophy, “Second Treatise of Government”, <<http://www.earlymoderntexts.com/pdfs/locke1689a.pdf>> (last visited June 6, 2015).
- Sommer, Andrew R. “Indirect Patent Infringement - ABA YLD 101 Practice Series”, <[http://www.americanbar.org/groups/young\\_lawyers/publications/the\\_101\\_201\\_practice\\_series/infringement.html](http://www.americanbar.org/groups/young_lawyers/publications/the_101_201_practice_series/infringement.html)> (last visited June 2, 2016)
- State of California, “Ink and Toner Cartridges”, <<http://www.calrecycle.ca.gov/reducewaste/Electronics/InkAndToner.htm>> (last visited June 5, 2015).
- State of California, “Waste Prevention Terms and Definitions”, <<http://www.calrecycle.ca.gov/reducewaste/Define.htm>> (last visited June 5, 2015).
- Taylorwessing, “Q&A - Unitary Patents”, [http://united-kingdom.taylorwessing.com/uploads/tx\\_siruplawyermanagement/UPC\\_QandA\\_What\\_is\\_the\\_UPLS.pdf](http://united-kingdom.taylorwessing.com/uploads/tx_siruplawyermanagement/UPC_QandA_What_is_the_UPLS.pdf)> (last visited June 3, 2016)
- Teska, Kirk. “What Are Improvement Patents and New Use Patents? ”, <<http://www.nolo.com/legal-encyclopedia/improvement-patents-new-use-patents-30250.html>>, (last visited June 7, 2015).
- Thaipublica, [http://thaipublica.org/wp-content/uploads/2015/11/Draft\\_WEEE-law-580319-เสนอกรม-19-พค-58.pdf](http://thaipublica.org/wp-content/uploads/2015/11/Draft_WEEE-law-580319-เสนอกรม-19-พค-58.pdf) (last visited June 8, 2016)

- Thaitoptoner. “Table of cartridges’ prices”, <<http://www.thaitoptoner.com/th/toner-pricelist>>, (last visited June 7, 2016)
- Thongklang, Srila and Taweepon, Suebsiri. “Patentability of “New Use” Patents in Thailand”, <<http://www.tilleke.com/resources/patentability-%E2%80%9Cnew-use%E2%80%9D-patents-thailand>>, (last visited June 7, 2015).
- United Nations Centre for Regional Development, “Reduce, Reuse and Recycle (the 3Rs) and Resource Efficiency as the basis for Sustainable Waste Management”, <[https://sustainabledevelopment.un.org/content/dsd/csd/csd\\_pdfs/csd-19/learningcentre/presentations/May%209%20am/1%20-%20Learning\\_Centre\\_9May\\_ppt\\_Mohanty.pdf](https://sustainabledevelopment.un.org/content/dsd/csd/csd_pdfs/csd-19/learningcentre/presentations/May%209%20am/1%20-%20Learning_Centre_9May_ppt_Mohanty.pdf)> (last visited January 26, 2015).
- United States Environmental Protection Agency, “Spotlight on Waste Prevention”, <<http://www.epa.gov/epawaste/consERVE/pubs/spotlight.pdf>> (last visited June 5, 2015).
- Watanavorakitkul, Supatra. “Thailand: Amendment to the Thai Patent Act 1979 (As Amended 1992)”, <<http://www.mondaq.com/x/12804/Patent/Amendment+To+The+Thai+Patent+Act+1979+As+Amended+1992>> (last visited June 3, 2016)
- World Intellectual Property Organization, “Exceptions and Limitations to Patent Rights: Private and/or Non-Commercial Use”, [http://www.wipo.int/edocs/mdocs/patent\\_policy/en/scp\\_20/scp\\_20\\_3.pdf](http://www.wipo.int/edocs/mdocs/patent_policy/en/scp_20/scp_20_3.pdf) (last visited May 31, 2016)
- World Intellectual Property Organization, *International Exhaustion and Parallel Importation*, <[http://www.wipo.int/sme/en/ip\\_business/export/international\\_exhaustion.htm](http://www.wipo.int/sme/en/ip_business/export/international_exhaustion.htm)> (last visited May 1.2016)
- World Intellectual Property Organization, “Interface Between Exhaustion of Intellectual Property Rights and Competition Law”, <[http://www.wipo.int/edocs/mdocs/mdocs/en/cdip\\_8/cdip\\_8\\_inf\\_5\\_rev.pdf](http://www.wipo.int/edocs/mdocs/mdocs/en/cdip_8/cdip_8_inf_5_rev.pdf)> (last visited June 7, 2015).

World Intellectual Property Organization, “WIPO Intellectual Property Handbook: Policy, Law and Use”, <[http://www.wipo.int/edocs/pubdocs/en/intproperty/489/wipo\\_pub\\_489.pdf](http://www.wipo.int/edocs/pubdocs/en/intproperty/489/wipo_pub_489.pdf)> (last visited June 5, 2015).

วิเศษสุวรรณ, วัลภ์. ความแตกต่างระหว่างสิทธิบัตรการใช้ใหม่ (New Use Patent) และสิทธิบัตรการใช้กรรมวิธีใหม่ (New Use of a Known Process)

Wisetsuwan, Wan. “Difference between New Use Patent and New Use of a Known Process”, <<http://www.sattaban.com.>>, (last visited June 7, 2015).

### **Other Materials**

European Commission, Waste Framework Directive 2008/98/EC, 19 November 2008.

Royal Thai Government Gazette, Vol.116, Chap.22 Gor., 31 March 1999.

Thai Patent Act

Thailand Civil and Commercial Code

Thailand Penal Code



**APPENDICES**

**APPENDIX A**  
**THAI PATENT ACT B.E. 2522 (1979)**

As Amended by the Patent Act (No.2) B.E 2535 (1992)  
And the Patent Act (No.3) B.E. 2542 (1999)

-----  
BHUMIBOL ADULYADEJ, REX.  
Given on the 11th day of March, B.E. 2522 (1979);  
Being the 34th year of the present Reign.

His Majesty King Bhumibol Adulyadej has been graciously pleased to proclaim that.

Whereas it is deemed expedient to grant protection for inventions and designs;

BE IT, THEREFORE, ENACTED BY THE KING, by and with the advice and consent of the National Legislative Assembly, acting as the National Parliament, as follows:

**Section 1** This Act shall be called the "Patent Act B.E. 2522."

**Section 2** This Act shall come into force after the expiration of one hundred and eighty days following the date of its publication in the Government Gazette.

**CHAPTER I**  
**PRELIMINARY**

**Section 3** In this Act:

"patent" means a document issued to grant protection for an invention or a design under the provisions in Chapters 2 and 3 of this Act;

"petty patent" means a document issued to grant protection for an invention under the provisions in Chapter 3 bis of this Act;

"invention" means any innovation or invention which creates a new product or process, or any improvement of a known product or process;

"process" means any method, art or process of producing, maintaining or improving the quality of a product, including the application of such process;

"design" means any form or composition of lines or colors which gives a special appearance to a product and can serve as a pattern for a product of industry or handicraft;

"patent owner" includes the transferee of a patent;

"petty patent owner" includes the transferee of a petty patent;

"Board" means the "Board of Patents";

"Competent Officer" means a person appointed by the Minister to act under this Act;

"Director-General" means the Director-General of the Department of Intellectual Property, including any person who is designated by him;

"Minister" means the Minister having charge and control of the execution of this Act.

**Section 4** The Minister of Commerce shall have the charge and control of the execution of the Act and shall have power to appoint competent officers and issue Ministerial Regulations prescribing fees not exceeding those fixed in the list attached to this Act, exempting any part or whole fee and prescribing other procedures for the execution of this Act.

The Ministerial Regulations shall become effective upon their publication in the Government Gazette.

## **CHAPTER II PATENT FOR INVENTIONS**

### **Part I Applications for Patents**

**Section 5** Subject to Section 9, a patent may be granted only for an invention in respect of which the following conditions are satisfied:

- (1) the invention is new;
- (2) it involves an inventive step; and
- (3) it is capable of industrial application.

**Section 6** An invention is new if it does not form part of the state of the art.

The state of art also includes any of the following inventions:

- (1) an invention which was widely known or used by others in the country before the date of application for the patent;
- (2) an invention the subject matter of which was described in a document or printed publication, displayed or otherwise disclosed to the public, in this or a foreign country before the date of the application for a patent;



(3) an invention for which a patent or petty patent was granted in this or a foreign country before the date of application;

(4) an invention for which a patent or petty patent was applied in a foreign country more than eighteen months before the date of the application and a patent or petty patent has not been granted for such invention;

(5) an invention for which a patent or petty patent was applied for in this or a foreign country and the application was published before the date of application.

A disclosure which was due to, or made in consequence of, the subject matter having been obtained unlawfully, or a disclosure which was made by the inventor, or made in consequence of, the inventor displaying the invention at an international exhibition or an official exhibition if such disclosure was done within twelve months before the filing of an application for the patent, shall not be deemed to be a disclosure under subsection (2) above.

**Section 7** An invention shall be taken to involve an inventive step if it is not obvious to a person ordinary skilled in the art.

**Section 8** An invention shall be taken to be capable of industrial application if it can be made or used in any kind of industry, including handicrafts, agriculture and commerce.

**Section 9** The following inventions are not protected under this Act:

(1) naturally occurring microorganisms and their components, animals, plants or extracts from animals or plants;

(2) scientific or mathematical rules or theories;

(3) computer programs;

(4) methods of diagnosis, treatment or cure of human and animal diseases;

(5) inventions contrary to public order, morality, health or welfare.

**Section 10** The inventor shall have the right to apply for a patent and to be named as such in the patent.

The right to apply for a patent may be assigned or transferred by succession.

The assignment of the right to apply for a patent must be in writing and shall require the signatures of the assignor and assignee.

**Section 11** The right to apply for a patent for an invention made in the execution of an employment contract or a contract for performing a certain work shall belong to the employer or the person having commissioned the work, unless otherwise provided in the contract.

The provision of the first paragraph shall apply in the circumstance where an employment contract does not require in employee to exercise any inventive activity, but the employee has made the invention using any means, data or report that his employment has put at his disposal.

**Section 12** In order to promote inventive activity and to give a fair share to the employee in the circumstances provided for in the first paragraph of Section 11, the employee-inventor shall have a right to remuneration other than his regular salary if the employer benefits from the invention.

In the circumstances provided for in paragraph 2 of Section 11, the employee-inventor shall have a right to remuneration.

The right to remuneration may not be prevented by any contractual provision.

A request for remuneration under paragraph one and paragraph two of this Section shall be submitted to the Director-General in accordance with the rules and procedures prescribed in the Ministerial Regulations. The Director-General shall have the power to fix such remuneration as he deems fit taking into account his salary, the importance of the invention, benefits derived and expected to be derived from the invention and other circumstances and prescribed by the Ministerial Regulations.

**Section 13** In order to promote inventive activity among government officials and employees of the government organization or enterprises, a government official or an employee of a government organization or enterprise shall have the same right as that of the employee under Section 12, unless otherwise provided by the Rules or Regulations of such department of the government or organization or enterprise.

**Section 14** An applicant for a patent shall possess one of the following qualifications:

(1) being a Thai national or a juristic person having its headquarters located in Thailand;

(2) being a national of a country party to a convention or an international agreement on patent protection to which Thailand is also a party;

(3) being a national of a country which allows Thai nationals or juristic persons having their headquarters to apply for patents in that country;

(4) being domiciled or having a real and effective industrial or commercial establishment in Thailand or a country party to a convention or an international agreement on patent protection to which Thailand is also a party.

**Section 15** When an invention is made by two or more persons jointly, they shall apply for a patent jointly.

If a joint inventor refuses to join in an application for a patent or cannot be found or reached or is not entitled to make an application for a patent, the application may be made by the other inventor on behalf of himself.

A joint inventor who did not join in an application for a patent may subsequently make a request to join in the application at any time before a patent is granted. Upon receipt of such request, the competent officer shall notify the applicant and the joint inventor of the date on which an investigation will take place. The applicant and each of the joint applicants shall be furnished with a copy of the request.

In the investigation under the preceding paragraph, the competent officer may require the applicant and joint applicants to appear before him and answer any question or hand any document or other items to him. After such investigation and when the Director-General has made his decision, the applicant and the joint inventor shall be notified of such decision.

**Section 16** If two or more persons have separately and independently made the same invention and each of them has made an application for a patent, the applicant who is the first to file shall be entitled to a patent. If the application have been filed on the same date, the applicants shall agree whether a patent should be granted to one of them or all of them jointly. If no agreement has been reached within the period prescribed by the Director-General, they shall bring the case to the Court within ninety days after the expiration of the prescribed period. If they fail to do so within such period, they shall be deemed to have abandoned their applications.

**Section 17** The application for the patent shall comply with the rules and procedures as prescribe in the Ministerial Regulations.

The application for a patent shall contain:

- (1) the title of the invention;
- (2) brief statement of its nature and purposes;
- (3) a detailed description of the invention in such full, concise and clear and exact terms as to enable any person ordinarily skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention and setting forth the best mode contemplated by the inventor to carry out his invention;
- (4) one or more clear and concise claims;
- (5) other items prescribed in the Ministerial Regulations

In cases where Thailand acceded to an international agreement or cooperation on patents, the patent application which is in compliance with the requirements of such international agreement or cooperation shall be deemed to be a patent application under this Act.

**Section 18** The application for patent shall relate to only one invention or to a group of inventions which are so linked as to form a single inventive concept.

**Section 19** A person who has exhibited his invention in an exhibition which has been sponsored or authorized and held in Thailand by the government and applies for a patent for such invention within twelve months following the opening date of that exhibition shall be deemed to have filed his application on the opening date of the exhibition.

**Section 19 bis** A person under Section 14 who has filed a patent application for an invention in a foreign country may claim the first foreign filing date as the filing date in the country if the application is filed in the country within twelve months following the first filing date in the foreign country.

**Section 20** The applicant may amend his application for a patent in accordance with the rules and procedures prescribed in the Ministerial Regulations, provided that such amendment does not enlarge the scope of the invention.

**Section 21** All officers whose duties are connected with patent applications shall refrain from disclosing any detailed description of the invention or permitting any person to inspect to make a copy of the detailed description of invention by any means before the publication of such application under Section 28, unless it is authorized in writing by the applicant.

**Section 22** Before the publication of a patent application under Section 28, all persons who know that the application has been filed shall refrain from disclosing any information contained in the detailed description of the invention or committing any act which is likely to cause damage to the applicant, unless it is authorized in writing by the applicant.

**Section 23** When secrecy is required for inventions which in the opinion of the Director-General are of interest to the national security, the Director-General shall order the applications for patents therefore to be kept in confidence unit it is otherwise ordered by him.

All persons, including the applicant, who know that the application has been ordered by the Director-General to be kept in confidence under the preceding paragraph, shall refrain from disclosing the subject matter or the detailed description of the invention to any other person, unless it is authorized by law.

## **Part II Grant of Patent**

**Section 24** Before granting a patent to the applicant, the competent officer shall:

- (1) examine the application as to its conformity with Section 17; and
- (2) examine the application as to its conformity with Section 5, in accordance with the rules, procedures and conditions prescribed in the Ministerial Regulations.

**Section 25** In order to facilitate the examination of a patent application, the Director-General may request any government department, unit or organization or any foreign or international patent office of organization, to examine the application as to its conformity with Section 5, 6, 7, 8, and 9, or the detailed description of the invention as to its conformity with Section 17 (3). The Director-General may treat such examination as having been done by the competent officer.

**Section 26** In the examination of an application if it appears that the application relates to several distinct inventions which are not so linked as to form a single inventive concept, the competent officer shall give a notice to the applicant requiring him to separate the application into a number of applications, each of which relates to a single invention.

If the applicant files any of the separated applications within one hundred and eighty days following the receipt of such notice under the preceding paragraph, he shall be deemed to have filed that application on the filing date of his first application.

The application shall be separated in accordance with the rules and procedures provided by the Ministerial Regulations.

If the applicant does not agree with the requirement to separate the application, he shall appeal to the Director-General within one hundred and twenty days. The decision of the Director-General shall be final.

**Section 27** In the course of examination of an application, the competent officer may instruct the applicant to appear before him in order to answer any question, or to hand over to him any document or item.

If the applicant has filed an application for a patent in any foreign country, he shall submit a report of the examination of the application in accordance with the rules and procedures prescribed by the Ministerial Regulations.

If any document to be filed is in a foreign language, the applicant shall file such document accompanied by translation in Thai.

If the applicant fails to comply with the instruction of the competent officer under the preceding paragraph, or fails to submit the examination report within ninety days in accordance with the second paragraph of this Section, he shall be deemed to have abandoned his application. In case necessity, the Director-General may extend such period as he deems appropriate.

**Section 28** Where the competent officer has submitted the examination report to the Director-General,

(1) if it appears to the Director-General that the provisions of Section 17 have not been complied with, or the invention is not patentable under Section 9, the Director-General shall reject the application and the competent officer shall notify the applicant

of the rejection by a return registered mail or by any other method prescribed by the Director-General within fifteen days from the date of rejection by the Director-General; or

(2) if it appears to the Director-General that the provisions of Section 17 have been complied with and it is not an unpatentable invention under Section 9, the Director-General shall, in accordance with the rules and procedures in the Ministerial Regulations, order the application to be published. Before the publication is made, the competent officer shall, by any method prescribed by the Director-General or by a return registered mail, notify the applicant to pay the publication fee. If the applicant fails to pay the fee within sixty days from the date of receipt of the notice, the competent officer shall once again notify the applicant by a return registered mail. If the applicant fails to pay the publication fee within sixty days from the date of receipt of such notice, he shall be deemed to have abandoned his application.

**Section 29** After the publication of the application under Section 28, the applicant may request the competent officer to proceed with the examination as to its conformity with Section 5 either within five years after the publication of such application or, in cases where there is an opposition and an appeal is taken, within one year after the final decision has been made, depending on which period expires last. If the applicant fails to make such a request within said period, he shall be deemed to have abandoned his application.

If the Director-General requests any governmental department, unit or organization or any foreign or international patent office or organization to examine the application under Section 25, and there is some expense derived from such examination, such expense shall be paid by the applicant within sixty days after he has been notified by the competent officer. If the applicant fails to pay the expense within the said period, he shall be deemed to have abandoned his application.

**Section 30** Where an application for a patent has been published under Section 28, if it appears that it does not comply with the provisions of Section 5, 9, 10, 11 or 14, the Director-General shall refuse the grant of a patent. The Director-General shall refuse the grant of a patent. The applicant as well as the other party to the opposition proceedings under Section 31 shall be notified of such decision. The decision of the Director-General shall be published in accordance with the rules and procedures prescribed by the Ministerial Regulations.

**Section 31** Where an application for a patent has been published under Section 28, any person who thinks that he, not the applicant, is entitled to a patent, or that the application does not comply with the provisions of Section 5, 9, 10, 11 or 14 may give notice to the competent officer of opposition to such application within ninety days following the publication of the application under Section 28.

Where an opposition has been made in accordance with the preceding paragraph, the competent officer shall send a copy of such notice to the applicant. The applicant shall file with the competent officer a counterstatement within ninety days following the receipt of the copy of the notice. If the applicant fails to file such



counterstatement within said period, he shall be deemed to have abandoned his application.

A notice of opposition and counterstatement shall be supported by buttressing evidence.

**Section 32** In an opposition proceeding, the opposing party and the applicant may introduce any evidence or make any additional statement to support the ground on which they rely in accordance with the procedures prescribed by the Director-General.

Where the Director-General has made his decision under Section 33 or Section 34, the applicant and the opposing party shall be notified of the decision with the reasons on which it is based.

**Section 33** Where a request for examination is made under Section 29 by the applicant for an examination and the competent officer has made examination under Section 24, the competent officer shall submit his examination report to the Director-General.

When the Director-General has considered the examination report and sees no reason to refuse the grant of a patent, and there has been no opposition under Section 31 or there has been an opposition but the Director-General has decided that the invention belongs to the applicant, the Director-General shall order that the invention is to be registered and granted to the applicant. The competent officer shall notify the applicant that the fee must be paid for the grant of a patent within sixty days from the receipt of such notice.

When the fee has been paid in accordance with the preceding paragraph, the invention shall be registered and a patent granted to the applicant within fifteen days following the payment of the fee, but not before the expiration of period prescribed in Section 32. If the fee is not paid within the period prescribed in the preceding paragraph, the applicant shall be deemed to have abandoned his application. The patent shall be in the form prescribed by the Ministerial Regulations.

**Section 34** Where there is an opposition and the Director-General has decided that the invention belongs to the opposing party, the Director-General shall reject the application.

Where the decision of the Director-General rejecting the application is not appealed by the applicant or is appealed and the Board or the Court has made a final decision, if the opposing party has filed an application for a patent within one hundred and eighty days after the rejection by the Director-General or from the date on which the final decision is made, as the case may be, he shall be deemed to have filed his application on the filing date of the applicant, and the publication of the application for a patent of the applicant made under Section 28 shall be deemed to be the publication of the application of the opposing party. In the latter case, no person may oppose the application of the opposing party on the ground that he has better rights in the invention than the opposing party.



Before granting a patent to the opposing party, the competent officer shall examine the application in accordance with Section 24. The provisions of Section 29 are also applicable to the application of the opposing party.

### **Part III Rights Conferred by the Patent**

**Section 35** An invention patent shall have a term of twenty years from the date of filing of the application in the country. The term of a patent shall not include the period during which court proceedings are taken under Section 16, 74 or 77 sexies.

**Section 35 bis** Any act in violation of Section 36 committed before the grant of a patent shall not be deemed to be an infringement of the patentee's rights unless the act is in respect of the invention under the pending application already published under Section 28, the person so acting knowing of the filing of the patent application or having been informed in writing that a patent application has been filed for the invention, in which case the applicant shall be entitled to damages from the infringer. A complaint for such damages shall be filed with the court after the patent is granted.

**Section 36** No other person except the patentee shall have following rights:

(1) where the subject matter of a patent is a product, the right to produce, use, sell, have in the possession for sale, offer for sale or import the patented product;

(2) where the subject matter of a patent is a process, the right to use the patented process, to produce, use, sell, have in the possession for sale, offer for sale or import the product produced by the patented process.

The preceding paragraph shall not apply to:

(1) any act for the purpose of study, research, experimentation or analysis, provided that it does not unreasonably conflict with a normal exploitation of the patent and do not unreasonably prejudice the legitimate interests of the patent owner;

(2) the production of the patented product or use of the patented process, provided that the producer or user, in good faith and without knowing or having no reasonable cause to know about the patent application, has engaged in the production or has acquired the equipment therefore prior to the date of filing of the patent application in Thailand, Section 19 bis not applicable hereto;

(3) the compounding of a drug specifically to fill a doctor's prescription by a professional pharmacist or medical practitioner, including any act done to such pharmaceutical product;

(4) any act concerning an application for drug registration, the applicant intending to produce, distribute or import the patented pharmaceutical product after the expiration of the patent term;

(5) the use of a device forming the subject of a patent in the body of a vessel or other accessories of a vessel of a country party to an international convention or

agreement on patent protection to which Thailand is also party, when such a vessel temporarily or accidentally enters the waters of Thailand, provided that such a device is used there exclusively for the needs of the vessel;

(6) the use of a device forming the subject of a patent in the construction or other accessories of an aircraft or a land vehicle of a country party to an international convention or agreement on patent protection to which Thailand is also party, when such aircraft or land vehicle temporarily or accidentally enters Thailand;

(7) the use, sale, having in possession for sale, offering for sale or importation of a patented product when it has been produced or sold with the authorization or consent of the patentee.

**Section 36 bis** The scope of the rights of the patentee under Section 36 in respect of a patented invention shall be determined by the claims. In determining the scope of the claimed invention, the characteristics of the invention as indicated in the description and the drawings shall be taken into account.

The scope of protection for a patented invention shall extend to the characteristics of the invention which, although not specifically stated in the claims, in the view of a person of ordinary skill in the pertinent art, have substantially the same properties, functions and effects as those stated in the claims.

**Section 37** The patentee shall have the right to use the word "Thai Patent," its abbreviation or any foreign word of the same meaning on the product, the container or package of the product, or in the advertisement of the product.

The indication under the first paragraph shall be accompanied by the patent number.

**Section 38** The patentee may authorize any other person, by granting a license, to exercise the rights conferred to him under Section 36 and 37, and may assign his patent to any other person.

**Section 39** In granting a license under Section 38,

(1) the patentee shall not impose upon the licensee any condition, restriction or any royalty term which is unjustifiably anti-competitive. Conditions, restrictions or terms which is unjustifiably anti-competitive shall be prescribed in the Ministerial Regulations;

(2) the patentee shall not require the licensee to pay royalties for the use of the patented invention after the patent has expired in accordance with Section 35. Conditions, restrictions or terms concerning royalties which are contrary to the provisions of this Section are null and void.

**Section 40** Subject to Section 42, in the absence of any provision to the contrary between the parties, a joint owner of a patent may, separately, exercise the rights

conferred under Section 36 and 37 without the consent of the other joint owner, but he may grant a license or assign the patent only when it is consented to all joint owners.

**Section 41** The license contract and the assignment of a patent under Section 38 shall be in writing and registered in compliance with the requirements and procedures prescribed by the Ministerial Regulations.

If it appears to the Director-General that a clause in a license contract is contrary to the provisions of Section 39, the Director-General shall submit such contract to the Board. If it is held by the Board that the contract is contrary to the provisions of Section 39, the Director-General shall refuse the registration of such contract, unless it may be assumed under the circumstances of the case that the parties intended the valid part of the contract to be severable from the invalid part. In the latter circumstances, the Director-General may order the registration of the valid part of the contract.

**Section 42** The transfer of a patent by succession shall be in compliance with the rules and procedures prescribed by the Ministerial Regulations.

#### **Part IV Annual Fees**

**Section 43** A patentee shall pay annual fees as prescribed by the Ministerial Regulations beginning the fifth year of the term of the patent. The payment of the fees shall be made within sixty days following the beginning of the fifth year of the term of the patent and of every year thereafter.

If a patent is granted after the beginning of the fifth year of the term of the patent, the first annual fee shall be paid within sixty days following the grant of the patent.

If the patentee does not pay the annual fees within the period as prescribed in the first or second paragraph, the patentee shall be liable to pay a surcharge of thirty percent of the unpaid annual fee by paying the annual fee together with the surcharge within one hundred and twenty days following the expiration of the payment period prescribed in the first or second paragraph.

If the patentee fails to pay the annual fee and the surcharge within the period prescribed in the third paragraph, the Director-General shall prepare a report to the Board for canceling the patent.

If the patentee files within sixty days from the date of receipt of the cancellation order, a request to the Board that the failure to pay the annual fee within the period prescribed in the third paragraph and the surcharge was due to a cause of necessity, the Board may extend the payment period or cancel the patent as they deem appropriate.

**Section 44** The patentee may request to pay all annual fees in advance by paying all of the annual fees in one payment instead of paying annually. In cases where all of

the annual fees have been paid in advance by the patentee, and subsequently the list of the annual fees is revised or the patent is surrendered or cancelled, the patentee shall not be obliged to pay for any increase in the annual fees or shall not be entitled to refund the fees already paid by him.

## **Part V**

### **Licenses of Right Compulsory Licenses and Government Use**

**Section 45** Any patentee may, in accordance with the rules and procedures as prescribed in the Ministerial Regulations, apply to the Director-General for an entry to be made in the register to the effect that any other person may obtain a license.

At any time after an entry has been made, the Director-General shall grant a license under the patent to any person who applies for such a license on such conditions, restrictions and royalty terms as agreed upon by the patentee and the applicant. If the patentee and the applicant cannot agree within the period as prescribed by the Director-General, the Director-General shall grant a license on such conditions, restrictions and royalty terms as he deems appropriate.

Any of the parties may appeal the decision of the Director-General made under the preceding paragraph to the Board within thirty days from the receipt of the decision. The decision of the Board shall be final.

The application for and grant of a license under the second paragraph shall comply with the rules and procedures as described by the Ministerial Regulations.

Where an entry is made pursuant to the first paragraph, the annual fees in respect of the patent after the date of the entry shall be reduced as prescribed by a Ministerial Regulations, by at least one half of the annual fees which would be payable if the entry had not been made.

**Section 46** At any time after the expiration of three years from the grant of a patent or four years from the date of application, whichever is later, any person may apply to the Director-General for a license if it appears, at the time when such application is filed, that the patentee unjustifiably fails to exercise his legitimate rights as follows:

(1) that the patented product has not been produced or the patented process has not been applied in the country, without any legitimate reason; or

(2) that no product produced under the patent is sold in any domestic market, or that such a product is sold but at unreasonably high prices or does not meet the public demand, without any legitimate reason.

Whether it is an application under (1) or (2), the applicant for a license must show that he has made an effort to obtain a license from the patentee having proposed conditions and remuneration reasonably sufficient under the circumstances but unable to reach an agreement within a reasonable period.

The application for a license shall comply with the rules and procedures prescribed in the Ministerial Regulations.

**Section 47** If the working of any claim in a patent is likely to constitute an infringement of a claim in a patent of any other person, the patentee, desiring to exploit his own patent, may apply to the Director-General for a license under the patent of the other person under the following criteria:

(1) the invention of the applicant involves an important technical advance of considerable economic significance in relation to the invention for which the license is applied;

(2) the patentee shall be entitled to a cross-license on reasonable terms;

(3) the applicant shall not assign his right in the license to other persons except with the assignment of his patent.

The applicant for a license must show that he has made an effort to obtain a license from the patentee having proposed conditions and remuneration reasonably sufficient under the circumstances but unable to reach an agreement within a reasonable period.

The application for a license shall comply with the rules and procedures prescribed by the Ministerial Regulations.

**Section 47 bis** If the working of any claim in the patent having obtained a license under Section 46 is likely to constitute an infringement of a claim in a patent of any other person, the applicant for a license under Section 46 may apply to the Director-General for a license under the patent of the other person under the following criteria:

(1) the invention of the applicant involves an important technical advance of considerable economic significance in relation to the invention for which the license is applied;

(2) the applicant shall not assign his right in the license to other persons.

The applicant for a license must show that he has made an effort to obtain a license from the patentee having purposed conditions and remuneration reasonably sufficient under the circumstances but unable to reach an agreement within a reasonable period.

The application for a license shall comply with the rules and procedure prescribed by the Ministerial Regulations.

**Section 48** Where a compulsory license is granted under Section 46, 47 or 47 bis, the patentee shall be entitled to remuneration.

The licensee under Section 38 shall be entitled to remuneration where a compulsory license is granted under 46, 47 or 47 bis, provided that he has the exclusive

right to grant licenses to other persons. In such circumstances, the patentee shall not be entitled to such remuneration.

**Section 49** In an application for a license made under Section 46, 47 or 47 bis, the applicant shall set forth the amount of remuneration, the conditions for the exploitation of the patent and the restrictions on the rights of the patentee and the exclusive licensee under paragraph 2 of Section 48, and a request for a license. In the application for a license under Section 47, the applicant shall also offer a license under his patent to the other party.

Where an application for a license is filed pursuant to Section 46, 47 or 47 bis, the competent officer shall notify the applicant the patentee and the exclusive licensee under paragraph 2 of Section 48 of the date on which the application shall be considered. The patentee and the exclusive licensee shall be furnished with a copy of the application.

In the consideration of an application for a license under the preceding paragraph, the competent officer may require the applicant, the patentee or the exclusive licensee under paragraph 2 of Section 48 to appear before him to give any statement, or to hand over to him any document or any other item. When the application has been considered by the competent officer and the Director-General has made his decision, the applicant, the patentee and the exclusive licensee shall be notified of the decision.

The decision of the Director-General made under the preceding paragraph is appealable to the Board within sixty days of receipt of the notice.

**Section 50** Where it is decided by the Director-General that a license shall be granted to the applicant under Section 46, 46 bis or 47, the Director-General shall set forth the royalty and the conditions for the exploitation of the patent and the restrictions on the rights of the patentee and the exclusive licensee under Section 48 paragraph 2 as agreed upon by the patentee and the applicant. If no agreement has been reached by the parties within the period prescribed by the Director-General, the Director-General shall fix the royalty and prescribed the conditions and restriction as he deems appropriate subject to the following requirements:

- (1) the scope and duration of the license shall not be more than necessary under the circumstances;
- (2) the patentee shall be entitled to further license others;
- (3) the license shall not be entitled to assign the license to others, except with that part of the enterprise or goodwill particularly of the part under the license;
- (4) the licensing shall be aimed predominantly for the supply of the domestic market;
- (5) the remuneration fixed shall be adequate for the circumstances of the case.



The decision of the Director-General made under the first paragraph of the Section is appealable to the Board within sixty days from the date on which such decision is received.

The issuance of a licensing certificate shall comply with the form, rules and procedures prescribed in the Ministerial Regulations.

**Section 50 bis** A license issued under Section 46 may be terminated if and when the circumstances which led to it cease to exist and are unlikely to recur provided that the termination does not affect the rights or interests of the licensee under the license.

The application for termination of a license under the first paragraph shall be in accordance with the forms, rules and procedures prescribed in the Ministerial Regulations, the provisions of Section 49 paragraphs two and three and Section 50 applying mutatis mutandis.

**Section 51** In order to carry out any service for public consumption or which is of vital importance to the defense of the country or for the preservation or realization of natural resources or the environment or to prevent or relieve a severe shortage of food, drugs or other consumption items or for any other public service, any ministry, bureau or department of the Government may, by themselves or through others, exercise any right under Section 36 by paying a royalty to the patentee or his exclusive licensee under paragraph 2 of Section 48 and shall notify the patentee in writing without delay, notwithstanding the provisions of Section 46, 46 bis and 47.

In the circumstances under the above paragraph, the ministry or bureau or department shall submit its offer setting forth the amount of remuneration and conditions for the exploitation to the Director-General. The royalty rate shall be as agreed upon by the ministry or bureau or department and the patentee or his licensee, and the provisions of Section 50 shall apply mutatis mutandis.

**Section 52** During a state of war or emergency, the Prime Minister, with the approval of the Cabinet, shall have the power to issue an order to exercise any right under any patent necessary for the defense and security of the country by paying a fair remuneration to the patentee and shall notify the patentee in writing without delay.

The patentee may appeal the order or the amount of remuneration to the court within sixty days from the receipt of the order.

## **Part VI**

### **Surrender of Patent or Claims and Cancellation of Patent**

**Section 53** Any patentee may surrender his patent or any claim or claims thereof in accordance with the rules and procedures prescribed in the Ministerial Regulations.

In order to surrender a patent or any claims under the preceding paragraph, if the patent is jointly owned by two or more persons, the surrender shall be made with



the consent of all patentees. If licenses have been granted under Section 38, 45, 46, 47 or 47 bis such surrender shall be made with the consent of all licensees.

**Section 54** Any patent granted not in compliance with the provisions of Section 5, 9, 10, 11 or Section 14 shall be invalid.

The invalidity of a patent may be challenged by any person. A petition to cancel an invalid patent may be submitted to the Court by any interested person or the public prosecutor.

**Section 55** The Director-General may request the Board to cancel a patent in any of the following circumstances:

(1) when a license has been issued under Section 50 and a period of two years has lapsed from the date of issuance of the license, the patentee, the licensee of the patentee or the holder of the license fails to produce the patented product or use the patented process without any legitimate reason, or no patented product or product derived from the patented process is sold or imported into the country or such a product is held at unreasonably high price, and the Director-General thinks that there is a good cause to cancel the patent;

(2) the patentee has licensed another person to use the rights contrary to the provisions of Section 41.

Before requesting the Board to cancel a patent, the Director-General shall order an investigation to be held, and notify the patentee and licensees of the order so that they may be given an opportunity to submit their statements. The submission of the statements shall be made within sixty days from the receipt of the order. The Director-General may require any person to appear before him to answer any question or to hand over any document or any other item to him.

After the investigation and where it appears that there is good ground to cancel the patent, the Director-General shall submit his report of the investigation to the Board to cancel the patent.

### **CHAPTER III PATENTS FOR DESIGNS**

**Section 56** A patent may be granted under this Act for a new design for industry, including handicrafts.

**Section 57** The following designs are not new:

(1) a design which was widely known or used by others in this country before the filing of the application for a patent;

(2) a design which was disclosed or described in a document or a printed publication in this or a foreign country before the filing of the application for a patent;

(3) a design which was published under Section 65 and Section 28 before the filing of the application for a patent;

(4) any design so nearly resembling any of the designs prescribed in (1), (2) or (3) as to be an imitation.

**Section 58** The following are unpatentable:

(1) designs that are contrary to public order or morality;

(2) designs prescribed by a Royal Decree.

**Section 59** The application for a patent shall comply with the requirements and procedures as prescribed by the Ministerial Regulations.

Every application for a patent shall contain:

(1) a representation of the design;

(2) an indication of the product for which the design is to be used;

(3) a clear and concise claim;

(4) other items prescribed in the Ministerial Regulations.

**Section 60** An application for a patent shall relate to a design to be used with only one product.

A list of products shall be prescribed by the Ministerial and published in the Government Gazette.

**Section 60 bis** A person under Section 14 who has filed a patent application for a design in a foreign country may claim the first foreign filing date as the filing date in the country if the application is filed in the country within six months following the first filing date in the foreign country.

**Section 61** When an application is published under Section 65 and 28, but before the registration of and grant of a patent for the design, if it appears that the application does not comply with the provisions of Section 56, 57 or Section 65 and 10, 11 and 14, the Director-General shall reject the application. The competent officer shall notify the applicant and the opposing party under Section 65 and 31 of that decision, and a copy of the decision shall be displayed at the place where the application is filed.

Where the Director-General rejects an application and the application is opposed under Section 65 and Section 31, the Director-General shall proceed to consider the opposition in accordance with section 65 and Section 32.

**Section 62** A design patent shall have a term of ten years from the date of filing of the application in the country.

The term of a patent shall not include the period during which the court proceedings are taken under Section 65 and Section 16 or 74.

**Section 62 bis** Any act in violation of Section 63 committed before a grant of a patent shall not be deemed to be an infringement of the patentee's rights unless the act is in respect of the design under the pending application already published under Section 65 and Section 28, the person so acting knowing of the filing of the patent application or having been informed in writing that a patent application has been filed for the design, in which case the applicant shall be entitled to damages from the infringer. A complaint for such damages shall be filed with the court after the patent is granted.

**Section 63** No other person except the patentee shall have the right to use the patented design in the manufacture of a product or to sell, have in possession for sale, offer for sale or import a product, embodying the patented design, except the use of the design for the purpose of study or research.

**Section 64** Any patent granted which is not in compliance with the provisions of Section 56, 58 or 65 and Section 10, 11 and 14 shall be invalid.

The validity of a patent may be challenged by any person. A petition to cancel an invalid patent may be submitted to the Court by any person who has an interest in the patent or by the public prosecutor:

**Section 65** The provisions of Sections 10, 11, 12, 13, 14, 15, 16, 19, 20, 21, 22, 27, 28, 29, 31, 32, 33, 34, 37, 38, 39, 40, 41, 42, 43, 44, and 53 in Chapter II concerning patents for inventions shall apply, mutatis mutandis, to patents for designs in Chapter III.

### **CHAPTER III BIS PETTY PATENTS**

**Section 65 bis** A petty patent may be granted for an invention in respect of which the following conditions are satisfied:

- (1) the invention is new;
- (2) it is capable of industrial application.

**Section 65 ter** No person shall apply for both a petty patent and a patent for the same invention.

**Section 65 quarter** The applicant for a petty patent or the applicant for an invention patent may request to convert his application for a petty patent to an application for an invention patent or an application for an invention patent to an application for a petty patent before the registration of the invention and the grant of the petty patent or before the publication of the application under Section 28, as the case may be. The applicant may claim the date of filing of the original application to be the filing date of the converted application in accordance with the rules and procedures prescribed in the Ministerial Regulations.

**Section 65 quinquies** Before the registration of an invention and grant of a petty patent, the competent officer shall examine the application for a petty patent as to its conformity with Section 65 decies and 17 and examine that the claimed invention is protectible under Section 65 decies and 9 and submit a report to the Director-General.

(1) If it is seen by Director-General that the application for a petty patent does not comply with Sections 65 decies and 17 or the claimed invention is not protectible under Section 65 decies and 9, the Director-General shall refuse the grant of a petty patent. The competent officer shall notify the applicant of such decision, by an acknowledgement registered mail or by any other method prescribed by the Director-General, within fifteen days from the date of the decision.

(2) If it is seen by the Director-General that the application for a petty patent is in compliance with Sections 65 decies and 17 and the claimed invention is protectible under Section 65 decies and 9, the Director-General shall order that the invention is to be registered and a petty patent granted to the applicant. The competent officer shall notify the applicant to pay for the fees for the grant of a petty patent and for the publication in accordance with the procedures and period of time prescribed in Sections 65 decies and 28 (2).

The petty patent shall be in the form prescribed by the Ministerial Regulations.

**Section 65 sexies** Within one year from the publication of the registration of the invention and the grant of a petty patent, any interested person may request the competent officer to examine whether or not the invention for which a petty patent has been granted satisfies the conditions under Section 65 bis.

After the receipt of the request under the first paragraph, the competent officer shall examine the application as to substance and submit the examination report to the Director-General.

When the Director-General has considered the examination report and thinks that the invention satisfies the conditions under Section 65 bis, he shall so inform the person requesting for the examination and the owner of the petty patent within fifteen days from the date of such decision.

In cases where the Director-General thinks that the invention does not satisfy the conditions under Section 65 bis, he shall order an examination of the case and notify the owner of the petty patent to submit a statement supporting his application within

sixty days from the date of receipt of the order. The Director-General may summon any person to answer any question or to hand over to him any document or item. After the examination of the case if the Director-General thinks that the invention does not satisfy the conditions under Section 65 bis, he shall submit his report to the Board to cancel the petty patent and shall notify the person requesting for the examination and the owner of the petty patent within fifteen days from the date on which the order is made by the Board.

**Section 65 septies** A petty patent shall have a term of six years from the date of filing of the application in the country. The term shall not include the period during which the court proceedings are taken under Sections 65 decies and 16, 74 or 77 sexies.

The owner of a petty patent may request that the term of his petty patent be extended for two periods, each period shall be valid for two years, by submitting a request to the competent officer within ninety days before the expiry date. If the request is submitted within the said period, the petty patent shall be regarded as validly registered until it is otherwise ordered by the competent officer.

The request for extension of the term of a petty patent shall be in accordance with the rules and procedures prescribed by the Director-General.

**Section 65 octies** The owner of a petty patent shall have the right to use the word "Thai Petty Patent", its abbreviation or any foreign word of the same meaning on the product, the container or package of the product, or in the advertisement of the product.

The indication under the first paragraph shall be accompanied by the number of the petty patent.

**Section 65 novies** Any petty patent granted not in compliance with the provisions of Section 65 bis, 65 decies and Section 9, 10, 11 or 14, shall be invalid.

The invalidity of a petty patent under the first paragraph may be challenged by any person. A petition to cancel an invalid patent may be submitted to the court by any interested person or the public prosecutor.

**Section 65 decies** The provisions of Sections 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 19 bis, 20, 21, 22, 23, 25, 26, 27, 28, 35 bis, 36, 36 bis, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 47 bis, 48, 49, 50, 50 bis, 51, 52, 53, and 55 in Chapter II concerning patents for inventions shall apply, mutatis mutandis, to Chapter III bis concerning petty patents.

## **CHAPTER IV BOARD OF PATENTS**

**Section 66** There shall be a "Board of patents" composed of the Under-Secretary of State for Commerce as Chairman, and not more than twelve qualified members in the fields of science, engineering, industry, industrial design, agriculture, pharmacy, economics and law appointed by the Cabinet. At least six qualified members shall be from the private sector.

The Board may appoint any person to act as Secretary and as Assistant Secretary.

**Section 67** The members of the Board appointed by the Cabinet shall hold office for a term of two years.

When a member of the Board vacated his offices before the expiration in the term of office or more members are appointed by the Cabinet where the term of office of the existing appointed members has not expired, the newly appointed members shall remain in office only for the term of office of the incumbent.

A member whose term of office has expired may be reappointed by the Cabinet.

**Section 68** A member appointed by the Cabinet vacates his office upon:-

- (1) death;
- (2) resignation;
- (3) being discharged by the Cabinet;
- (4) becoming bankrupt;
- (5) becoming an incompetent or a quasi-incompetent person; or
- (6) being imprisoned under a final judgement, except for a petty offense or an offense committed through negligence.

**Section 69** At every meeting of the Board, there must be in attendance of not less than one half of the total number in order to constitute a quorum. If the chairman is absent from any meeting, the Board shall elect one of its members to preside over the meeting.

Any decision of the meeting shall be taken by a majority of votes. In voting, each member shall have one vote. In case of equality of votes, the presiding chairman shall have one additional vote as the casting vote.

**Section 70** The Board shall have the following powers and duties:-

- (1) to give advice or consultation to the Minister in issuing the Royal Decrees and Ministerial Regulations under this Act;



(2) to decide any appeal made against any order or decision of the Director-General on patents or petty patents under sections 41, 45, 49, 50, 55, 65 sexies or Section 65 decies and Section 72;

(3) to act on other matters as stipulated in this Act;

(4) to consider any other matter on patents or petty patents as assigned by the Minister.

**Section 71** The Board shall have the power to appoint subcommittees to consider and advise the Board. The provisions of Section 69 shall apply, mutatis mutandis, to the meeting of subcommittees.

**Section 72** Where an order or a decision is made by the Director-General under Sections 12, 15, 28, 30, 34, 49, 50 or Section 61, or Section 65 and Sections 12, 15, 28, 33, or 34 and Section 65 quinquis or 65 sexies or 65 decies and Section 12, 15, 49 or 50, any interested person under the said Section may make an appeal to the Board within sixty days following the receipt of such order or decision. If he fails to do so within such period, the order or decision of the Director-General shall be final.

An appeal under the preceding paragraph must be submitted to the competent officer. If there are two parties, a copy of the appeal must be sent to the other party.

**Section 73** In considering an appeal against the order or decision of the Director-General or a report of the Director-General made under Section 55 or 65 sexies or a report of the Director-General under Section 43 or 65 decies and Section 43 suggesting a cancellation of patent or a petty patent, the Board may require the opposing party, the applicant, the patentee, the owner of a petty patent, the applicant for examination of a petty patent, or the licensee, as the case may be, to submit any evidence or additional statement in accordance with the rules prescribed by the Board.

**Section 74** Where a decision or an order is made by the Board under Section 41, 43, 49, 50, 55 or 65 sexies, 65 decies and Section 41, 43, 49, 50, 55 or 72, the appellant and the other party, the patentee, the owner of a petty patent or the licensee, as the case may be, shall be notified of such decision or order. Any party dissatisfied with the decision or order may appeal to the Court within sixty days from the receipt of such notification. If he fails to do so, the decision of the Board shall be final.

In considering or giving a judgement under this Act, the Court shall not order the Board or the Director-General to pay for any fee on behalf of the other party.

## **CHAPTER V MISCELLANEOUS**

**Section 75** No person without the rights under this Act shall use the words "Thai Patent", "Thai Petty Patent" or its abbreviation or foreign words of the same meaning



on any product, container or package of a product or in advertising any invention or design.

**Section 76** No person except a person who has filed an application for a patent or a petty patent that is pending, shall use the words "Patent Pending", "Petty Patent Pending" or any other word of a same meaning on any product, container or package of a product or in advertising any invention or design.

**Section 77** In a civil case in respect of the infringement of the rights of the owner of the owner of a patent or petty patent where the subject matter of the patent or petty patent is a process for obtaining a product, if the owner of the patent or petty patent can prove that the defendant's product is identical or similar to the product obtained by the process under the patent or petty patent, it shall be presumed that the defendant has used the process under the patent or petty patent unless the defendant can prove otherwise.

**Section 77 bis** In case there is clear evidence that any person is committing or about to commit any act in infringement of the rights of the owner of a patent or petty patent under Section 36, 63 or Sections 65 decies and 36, the owner of the patent or petty patent may request the court to order the person to stop or refrain from committing such infringement. The order of the court shall not deprive the owner of the patent or petty patent to claim damages under Section 77 ter.

**Section 77 ter** In case of an infringement of the rights of the owner of a patent or petty patent under Section 36, 63 or Sections 65 decies and 36, the court shall have the power to order the infringer to pay the owner of the patent or petty patent damages in an amount deemed appropriate by the court, taking into consideration the gravity of the injury including the loss of benefits and expenses necessary to enforce the rights of the owner of the patent or petty patent.

**Section 77 quarter** All goods in the possession of the infringer which infringe the rights of the owner of a patent or petty patent under Section 36, 63 or Sections 65 decies and 36 shall be confiscated. If the court thinks fit, it may order the destruction of the goods or other measures to prevent further distribution of the goods.

**Section 77 quinquies** Any person who applies and jointly applies for both a patent and a petty patent for the same invention not in compliance with Section 65 ter shall be deemed to have applied for a petty patent.

**Section 77 sexies** If two or more persons have separately or independently made the same invention and one of them has made an application for a patent while the other person has applied for a petty patent:

(1) the applicant who is the first to file for a patent or petty patent shall be entitled to a patent or petty patent;

(2) if the applications for a patent and petty patent have been filed on the same date, the competent officer shall notify the applicants to agree whether the grant should

be made to one of them or all of them jointly and whether it should be an application for a patent or petty patent. If no agreement is reached within the period prescribed by the Director-General, they may bring the case to the Court within ninety days to do so within such period, they shall be deemed to have abandoned their applications.

**Section 77 septies** Within ninety days following the date of publication under Section 28 or the date of publication of the registration of an invention and the grant of a petty patent for any invention, the applicant for a petty patent, the owner of a petty patent, the applicant for a patent or the patentee who thinks that the registration of the invention and the grant of the patent or petty patent may not be in conformity with the provisions of Section 65 ter for the reason that the invention is the same invention belonging to him and he has applied for a petty patent or a patent on the same date on which such application for a patent or a petty patent was filed may request the competent officer to examine whether or not such application for a patent or a petty patent is in compliance with the provisions of Section 65 ter.

After the receipt of the request under the first paragraph, the competent officer shall make the examination and submit his examination report to the Director-general. When the Director-General has considered the examination report under the second paragraph and sees that the registration of the invention and the grant of a patent or a petty patent is not in compliance with the provisions of Section 65 ter due to the fact that it is the same invention and the application for a patent or a petty patent was filed on the same date with the date of application of the person requesting for the examination, the Director-General shall notify the applicant for a patent or the owner of the petty patent and the person requesting for the examination to agree on the person who would solely have the rights in the invention or they would jointly hold the rights. If no agreement is reached within the period prescribed by the Director-General, they shall be regarded as jointly holding the rights in the invention.

**Section 77 octies** Any patent or petty patent granted not in compliance with the provisions of Section 65 ter shall be invalid.

The invalidity under the first paragraph may be challenged by any person.

If the registration of an invention and the grant of a patent or petty patent is not in compliance with the provisions of Section 65 ter and the application for a patent and a petty patent for the invention were filed on the same date, the patentee, the owner of the petty patent, any other interested person or the public prosecutor may request the Director-General to notify the patentee and the owner of the petty patent to agree that the invention is to be the subject of either a patent or a petty patent. If no agreement is reached within the period prescribed by the Director-General, the patentee and the owner of the petty patent shall be regarded as the joint owners and the invention is the subject of a petty patent.

**Section 78** The owner of a patent, a petty patent or a licensing certificate may apply for a substitute thereof in accordance with the requirements and procedures as

prescribed in the Ministerial Regulations if the patent, petty patent or certificate is lost or substantially damaged.

**Section 79** All applications, oppositions, answers to oppositions and appeals made under this Act shall be in the forms and in the required number of copies as prescribed by Director-General.

**Section 80** A fee as prescribed by the Ministerial Regulations shall be paid for each application for a patent, an application for a petty patent, the publication of an application for a patent, request for examination of patent, opposition to the grant of a patent, patent, application for the registration of a license contract, application for the assignment of a patent, or petty patent, application for conversion of a patent or a petty patent, application for the extension of the term of a petty patent, application for an entry to be made in a patent or petty patent that any person may apply for a license under the patent or petty patent, application for a license, a licensing certificate, appeal against an order or a decision of the Director-General, duplicate of a patent or a patent or a licensing certificate, any other request or application and the making or a copy of any document and certification of any document.

## CHAPTER VI OFFENSES

**Section 81** Any official who violates Section 21 or Section 23 paragraph two or Section 65 and 21 or Sections 65 decies and 21 or 23 paragraph two of this Act shall be punished with imprisonment not exceeding two years or a fine not exceeding two hundred thousand baht or both.

**Section 82** Any person who violates Section 22 or Sections 65 and 27 or Sections 65 decies and 22 punished with imprisonment not exceeding six months or a fine not exceeding twenty thousand baht or both.

**Section 83** Any person who violates Section 23 paragraph two or Section 65 decies and 23 paragraph two of this act shall be punished with imprisonment not exceeding one year or a fine not exceeding fifty thousand baht or both.

**Section 84** Any person who violates Section 75 or Section 76 of this Act shall be punished with imprisonment not exceeding one year or a fine not exceeding two hundred thousand baht or both.

**Section 85** Any person who commits any act under Section 36 or 63 without the permission of the patentee shall be punished with imprisonment not exceeding two years or a fine not exceeding four hundred thousand baht or both.

**Section 86** Any person who commits any Act under Sections 65 decies and 36 without the permission of the owner of a petty patent shall be punished with

imprisonment not exceeding one year or a fine not exceeding two hundred thousand baht or both.

**Section 87** Any person, in order to obtain a patent, applies for a patent for an invention or design or a petty patent, presents or gives a false statement shall be punished with imprisonment not exceeding six months or a fine not exceeding five thousand baht or both.

**Section 88** Where an offender punishable under this Act is a juristic person, the persons in charge or representatives of the juristic person, except those who can prove that such offense was committed without their knowledge or consent, shall also be liable to the penalties prescribed by law for the offence.



### LIST OF THE MAXIMUM FEES

	Baht
(1) An application for a patent	1,000
(2) Applications for design patents for the same design which are filed at the same time in a number of ten or more applications	10,000
(3) Publication of a patent application	500
(4) A request for patent examination	500
(5) An opposition to a patent application	1,000
(6) A patent or petty patent	1,000
(7) Annual fees for invention patents:	
fifth year	2,000
sixth year	4,000
seventh year	6,000
eighth year	8,000
ninth year	10,000
tenth year	12,000
eleventh year	14,000
twelfth year	16,000
thirteenth year	18,000
fourteenth year	20,000
fifteenth year	30,000
sixteenth year	40,000
seventeenth year	50,000
eighteenth year	60,000
nineteenth year	70,000
twentieth year	80,000
or payment of all annual fees in one payment	400,000
(8) Annual fees for design patents:	
fifth year	1,000
sixth year	2,000
seventh year	3,000
eighth year	4,000

ninth year	5,000
tenth year	6,000
or payment of all annual fees in one payment	20,000
(9) Annual fees for petty patents:	
fifth year	2,000
sixth year	4,000
or payment of all annual fees in one payment	6,000
(10) Fees for the extension of the term of petty patents:	
first extension	14,000
second extension	22,000
(11) An application for the registration of a License	500
(12) An application to record the assignment of a patent or petty patent	500
(13) An application for conversion of a patent or petty patent	500
(14) A licensing certificate	1,000
(15) A substitute of a patent, petty patent or licensing certificate	100
(16) An appeal against an order or decision of the Director-General	1,000
(17) Copies of documents, each page	10
(18) Certifying copies	
of documents of more than ten pages, each page	100
of not more than ten pages, each page	10
(19) Any other application	100

## APPENDIX B

### Interview Session with Dr. Jakkrit Kuanpoth

Interview Session with Dr. Jakkrit Kuanpoth  
The Counselor of Tilleke & Gibbins's Intellectual Property Group  
June 29, 2015 8.30-9.00am at Supalai Grand Tower, 26th Floor

1. Question: Should a lawsuit about recycling or repair of patented products be brought before a Thai court, what is a provision of Thai Patent Act probably considered to apply to the case?

Answer: The court will traditionally (1) interpret and consider what the scope of the patent claims of the invention is, (2) consider whether the accused activity of recycling or repair of patented products constitutes patent infringement, and (3) whether there is any exception for the liability of patent infringement.

2. Question: Is an exhaustion provision under Section 36 Paragraph 2 (7) of Thai Patent Act an affirmative defense for patent infringement?

Answer: Exhaustion doctrine is not invoked as affirmative defense against patent infringement. Generally, to consider as the defense, there should be some activities which constitute patent infringement, but a law provides a person who commits those acts with an excuse against such liability for that patent infringement based on some particular policy to a desirable social or economic result. But, in the case of exhaustion of patent rights, once patented product has been legitimately sold, purchasers are free to use, sell or import the product since exclusive rights of a patentee are exhausted. Those activities should not be even treated as infringing acts which the law excludes any accused person from liabilities. The activities committed after the exhaustion of patent rights cannot constitute infringement of patent rights since no patent right over the product is available to be infringed. Therefore, patent infringement and exhaustion doctrine should be separately considered.

3. Question: Are patentees in Thailand able to impose any restriction on post-sale use of patented product and what is the effect thereof?

Answer: An exhaustion provision under Section 36 Paragraph 2 (7) of the Thai Patent Act should be treated as public order or good moral. Thus, any patentee cannot impose any clause in a sale agreement to control use of patented products. Pursuant to general provisions of the Thailand Civil and Commercial Code, such a restriction will be void since it differs from the provision which relate to public order or good moral.

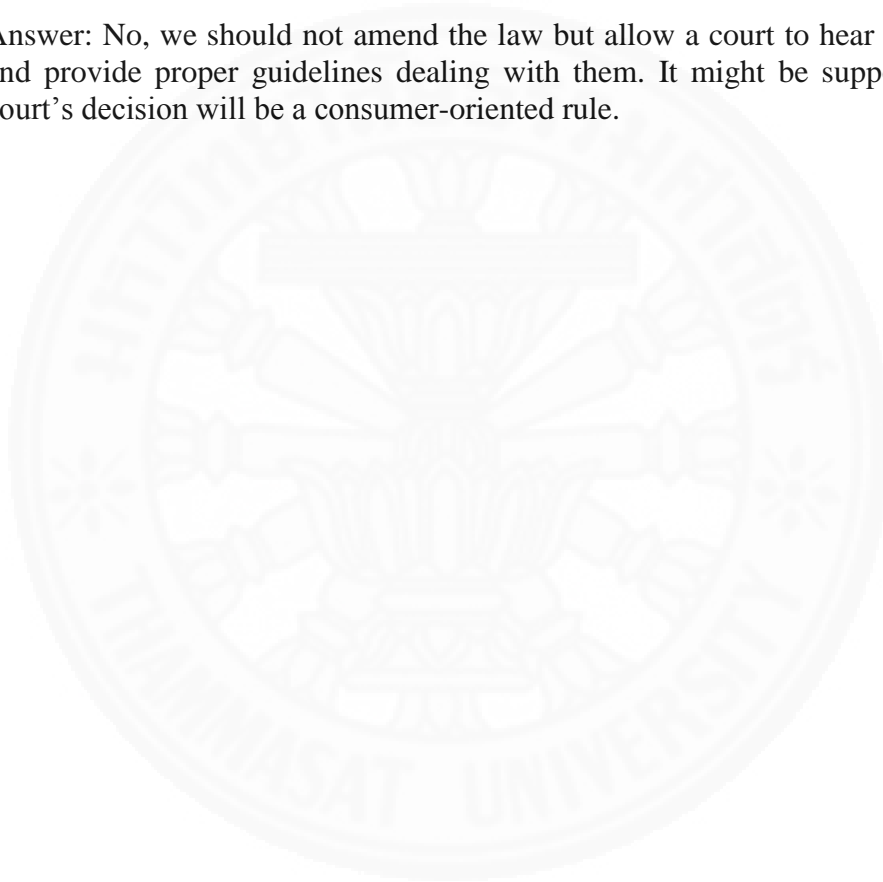


4. Question: Is Thai Competition Act considered when business enterprises exercise exclusive rights conferred by patent?

Answer: Exercising patent rights may not be considered under the Competition Act since Section 25 thereof prescribes prohibited manners committed by any business operator which has market domination. The law emphasizes merely market domination and not all of patentees reaches such a position.

5. Question: Should the Thai Patent Act be amended or any guideline be provided to advance patent law in Thailand?

Answer: No, we should not amend the law but allow a court to hear these matters and provide proper guidelines dealing with them. It might be supposed that the court's decision will be a consumer-oriented rule.



**BIOGRAPHY**

Name	Mr. Anirut Somboon
Date of Birth	September 13, 1989
Educational Attainment	2016: Master of Law -Legal Institution, the University of Wisconsin–Madison, USA 2011: Bachelor of Laws, Thammasat University, Thailand
Work Experiences	2014: Legal and Tax Consultant RSM Advisory (Thailand) Ltd 2011: Legal Trainee Bangkok Airways Co., Ltd

