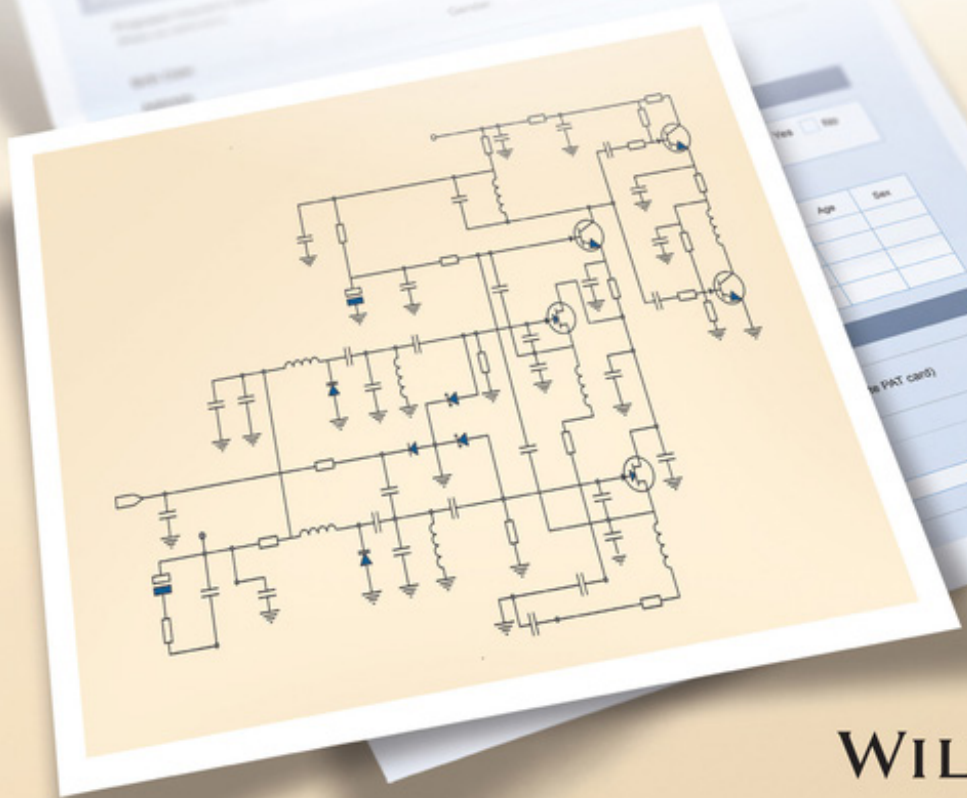
FROM INVENTION TO PATENT

A Scientist and Engineer's Guide

Steven H. Voldman



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A Scientist and Engineer's Guide

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To Betsy H. Brown

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About the Author

Dr Steven H. Voldman is the first IEEE Fellow in the field of electrostatic discharge (ESD) for "Contributions in ESD protection in CMOS, Silicon On Insulator and Silicon Germanium Technology." He received his B.S. in Engineering Science from University of Buffalo (1979); a first M.S. EE (1981) from Massachusetts Institute of Technology (MIT); a second degree EE Degree (Engineer Degree) from MIT; a MS Engineering Physics (1986), and a PhD in electrical engineering (EE) (1991) from University of Vermont under IBM's Resident Study Fellow program.

Voldman was a member of the semiconductor development of IBM for 25 years from 1982 to 2007. He was also a member of the development team of Qimonda and Intersil Corporations. He was a consultant for Taiwan Semiconductor Manufacturing Corporation (TSMC) in Hsinchu, Taiwan, and for the Samsung Electronics Corporation in Dongtan, South Korea.

Steve Voldman was one of the first to be designated as an IBM Master Inventor. Dr Steven H. Voldman was also awarded the title of IBM Top Inventor for three consecutive years for being one of the top 10 inventors in the IBM Corporation. He is presently a recipient of 260 issued US patents and has written more than 150 technical papers. At IBM, Dr Voldman achieved over 67 IBM Invention Achievement Award plateaus.

Steven H. Voldman provides tutorials and lectures on inventions, innovations, and patents in Malaysia, Sri Lanka, Senegal, Swaziland, Benin, and the United States. He initiated a lecture program to provide lectures and interaction to university faculty and students internationally, and has lectured to over 45 universities in the United States, Korea, Singapore, Taiwan, Malaysia, Philippines, Thailand, India, China, Senegal, Benin, and Swaziland.

Since 2007, he has served as an expert witness in patent litigation and has also founded a limited liability corporation (LLC) consulting business supporting patents, patent writing, and patent litigation. In his LLC, Voldman served as an expert witness for cases on DRAM development, semiconductor development, integrated circuits, and electrostatic discharge in over 10 cases. He was an expert witness for Hogan Lovells LLP, Dechert LLP, Quinn Emanuel Urquhart and Sullivan LLP, Sydney and Austin LLP, and Latham and Watkins LLP.

Dr Voldman is presently working on patent searches, patent drafting, office actions response, and preliminary amendments. He is presently writing patents for law firms in the United States. He provides consultation on patents, patent drafting, and patent portfolio development for small corporations in the United States.

Dr Voldman also has written for *Scientific American* and is an author of 10 books on technology.

Preface

Invention and patents continue to be an important issue in technology and a factor driving our global economy. The Internet of Things (IoT) continues to grow, as well as the Internet of Everything (IoE). In the future, inventions and patents will drive the global economy and trade. The future will witness a flourish of the field of electronics, medicine, energy, transportation, and other areas. At present, the entire world is competing or desires to compete within the same areas of interest.

In today's work environment, there is a higher expectation that scientists and engineers not only do their work but also innovate. In early years, companies or governments did not expect innovations.

In the early 1980s, the expectation within the IBM Corporation was that an engineer or scientist would produce one patent in their 30-year career. Why? Because that was the level of what an average employee produced! After the 1990s, the expectation started to change. Individual and organizational goals were established with annual expectations. Attitudes about innovation and patents changed for an average employee.

From Invention to Patent: A Scientist and Engineer's Guide provides a clear picture of how to be a prolific inventor, understanding patents and the patent process. It provides illuminating insights into the writing of invention disclosures to patents from the submission process to final drafts. The book will teach you how to communicate effectively with patent lawyers and patent examiners, teaching the language of "legalese." The book is unique in covering both the early invention process and final patent drafting to provide high-quality patents in technologies.

This text consists of multiple goals, which are discussed in what follows.

The first goal of the text is to teach the reader how to become an inventor and what invention is. The first step is to stimulate the reader to start inventing. This will require some suggestions about acquiring the confidence to proceed as an inventor. Additionally, the concept of what invention is and what defines invention. Secondly, one needs to prepare to be an inventor.

The second goal of the text is how to do patent searches. Today, there are many search engines that can be used to study patents and provide patent searches. The text will point out the pros and cons of different search engines.

The third goal of the text is to teach the patent structure. It is important to understand the requirement of the patent offices.

The fourth goal is explaining how to draft a patent. In order to draft a patent, the format, the text, and the figures have specific requirements.

The fifth goal is to teach the terms and language of patents. In order to communicate with the patent attorney, it is helpful to understand the language used in patent law.

The sixth goal is how to understand and write a response to the patent office. To understand how to respond to the patent office is important for the process of invention.

And, the last goal is how to become a prolific inventor. How does one go from writing his first patent or invention disclosure to many patents?

This book, *From Invention to Patent: A Scientist and Engineer's Guide*, is organized as follows:

In Chapter 1, the foundation for discussion of invention and patents is laid out for the rest of the text. The first chapter addresses basics of patents, copyrights, and trademarks as an introduction. Examples of patents, copyrights, and trademarks that influence today's society are discussed. Examples will be drawn from IBM, Apple, Intel, Samsung and Levi Strauss. Modern examples such as laptops and cell phones are used. These examples provide relevance to modern-day life. The primary focus is on the electronic industry and software engineers. The secondary focus is on biotechnologists, biologists, chemistry, and pharmaceutical groups.

Chapter 2 addresses how to become an inventor and the process of becoming a prolific inventor. Examples on how well-known inventors worked and how they displayed themselves as both creative and prolific are included. Individuals from Edison to Steve Jobs are discussed. Examples from the course "Inventing, Innovating, and Patenting" in Sri Lanka and Penang Malaysia are given.

In Chapter 3, patent search engines and the language of patents are discussed. In order to understand the process, it is important to understand the patent language. Patent offices, patent search engines, patent examination, and patent books and courses are discussed.

Chapter 4 addresses how to write patents. Different patent applications are offered by the patent offices globally. In the UnitedStates Patent and Trademark Office (USPTO), three types of patents are offered: utility patents, design patents, and plant patents, which are discussed in the chapter, by highlighting the distinctions between those patent types.

Chapter 5 focuses on patent drawings. Examples of different types of drawings are shown. Utility drawings, design, and plant drawings are shown as examples. The rules and requirements of drawings are discussed with regards to how they relate to the specification and the claims.

Chapter 6 addresses patent claims. This chapter discusses different types of claims, as well how to write independent and dependent claims and also utility claims, design claims, and plant claims.

Chapter 7 addresses the subject of Office Actions and the response. The chapter first discusses the Office Action (OA) from the USPTO. Understanding how to read the Office Action from the patent examiner and how to write a response is the key to the invention process. The chapter also focuses on the basics of how to write a USPTO OA response. The chapter also discusses the European Union (EU) Office Action and how this differs from the USPTO OA.

Chapter 8 discusses different methods used by corporations to generate patents. A practice used by some corporations to generate patents is known as the creative problem-solving (CPS) sessions. CPS sessions are discussed extensively to demonstrate how to use them for patent generation, corporate goals, and training ground for training

new inventors. The rules of the CPS session and process are shown. Utilization of the CPS session method was integrated into parts of invention courses in Malaysia and Sri Lanka. A second practice is the use of systematic inventive thinking methods known as TRIZ, SIT, and USIT.

Chapter 9 addresses corporate invention strategies. Examples of corporate patent strategies, software systems, invention disclosures, and incentives are provided. The patent process inside a large corporation is discussed. Specifics on the software system, tracking systems and goals and incentives are highlighted. Examples of corporate strategies such as IBM, TSMC, and Samsung are discussed. Additionally, AT&T and Intel are reviewed. Examples and templates of invention submission are provided in the appendices.

Chapter 10 addresses being an expert witness. In this chapter, different types of expert witnesses are discussed. The chapter opens discussions on patent litigation practices.

This introductory text will hopefully open your interest in the field of invention and writing patents.

Enjoy the text and enjoy beginning the journey of inventing, innovating, and patenting.

Baruch HaShem B"H
Dr Steven H. Voldman
IEEE Fellow

Acknowledgments

I am thankful for the years of support and the opportunity to provide lectures, invited talks, and tutorials on invention and writing patents.

I would like to thank the IBM Intellectual Property Law Department in Burlington, Vermont, for teaching me patent drafting, invention disclosures, and claim writing.

I would like to thank Jerry Walters, Richard Kotulak, James Leas, and Mark Chadurjian, as well as the staff working with me on the 258 issued patents, as well as for the award from IBM Intellectual Property Law Department in August 2007, the "Better Mouse Trap Award" with citation "In Appreciation of 25 years of Helping IBM Create The Better Mouse Trap."

I would like to thank IBM Corporation for allowing me to lecture on constructing a creativity and patenting course. My first course was constructed as a request by a manager who wanted to increase the productivity of his IBM team of 60 employees to submit more inventions.

I would like to thank Dreamcatcher Malaysia and Dreamcatcher Asia for launching the first external course in 2007; this was taught from 2007 to 2014. Government of Malaysia desired to increase its number of patents and knowledge of patent drafting. It was an honor for me to present the course to the staff of the Ministry of Science Technology and Innovation (MOSTI) Malaysia with the Prime Minister of Malaysia in Putrajaya in 2008. Additionally, creativity and invention courses were taught for Intel U (Malaysia), Institut Farmaseukital Dan within Universiti Sains Malaysia (USM), and other Malaysian corporations and institutions. Providing lectures to chemists, biotechnologists, and agriculture specialists enhanced my understanding of plant patents.

I would like to thank Shanta Yapa of EPIC Lanka (Sri Lanka). It was an honor for me to offer a first course on invention called "Inventing, Innovating, and Patenting" for the Federation of Information Technology Industry Sri Lanka (FITIS). This was followed by a more advanced course focusing on writing patents. The FITIS attendees were primarily software engineers, which allowed us to focus on software and system patents. This course was taught annually from 2008 to 2015. In Sri Lanka, it was suggested to write a book based on the patenting courses. It was a pleasure to travel to Sri Lanka every year.

I would like to thank Stephen Ackerman of Saile Ackerman LLC for allowing me to learn the fine details in patent searching, patent drafting, and office action response writing.

I thank the law firms Dechert LLP, Hogan Lovells LLP, Quinn Emanuel Urquhart and Sullivan LLP, Thompson and Knight LLP, and, lastly, Akin Gump, Strauss, Hauer and

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I would like to thank the corporations of IBM Corporation, Qimonda, Taiwan Semiconductor Manufacturing Corporation (TSMC), Intersil Corporation, and Samsung Electronics Corporation to work as a member of the technology team. I was fortunate to work in a wide number of technology teams and with a wide span of customers and very fortunate to be a member of talented technology and design teams that were innovative, intelligent, and inventive. Working with the development teams of IBM Burlington stimulated my interest in invention.

I would like to thank the institutions that allowed me to teach and lecture at conferences, symposiums, industries, and universities; this motivated me to develop the texts. I would like to thank faculty at the following universities: MIT, Stanford University, University of Central Florida (UCF), University of Illinois Urbana-Champaign (UIUC), University of California Riverside (UCR), University of Buffalo, National Chiao Tung University (NCTU), Tsinghua University, National Technical University of Science and Technology (NTUST), National University of Singapore (NUS), Nanyang Technological University (NTU), Beijing University, Fudan University, Shanghai Jiao Tung University, Zhejiang University, Huazhong University of Science and Technology (HUST), UESTC, Korea University, Universiti Sains Malaysia (USM), Universiti Putra Malaysia (UPM), Kolej Damansara Utama (KDU), Chulalongkorn University, Mahanakorn University, Kasetsart University, Thammasat University, and Mapua Institute of Technology (MIT).

I would like to thank universities in Africa which allowed me to teach the invention course. A special thanks to University Cheikh Anta Diop in Dakar, Senegal, Limkokwing University of Creative Technology, in Mbabane, Swaziland, CERCO Group and Universite Abomey-Calavi in Cotonou, Benin.

I would also like to thank John Wiley and Sons and staff for the approval to publish this book.

To my children, Aaron Samuel Voldman and Rachel Pesha Voldman, good luck to both of you in the future.

To Betsy H. Brown, for her support during the writing of this text.

And to my parents, Carl and Blossom Voldman.

B"H

Dr Steven H. Voldman

IEEE Fellow

1

Introduction

1.1 Introduction

Intellectual property (IP) is a key goal of corporations across the entire world to achieve success. Inventions and patents are part of the path to build and innovative corporation in today's world. This shared goal is not of just interest in the United States and Europe but is a goal across South America, Asia, the Middle East, to Africa. With this increased interest, there are more intellectual property organizations [1–7], books [8–17, 23–27], search engines [18, 19], and patent short courses [20–22].

In 2006, I was requested by an IBM management team to build a two-hour lecture on how to invent [20, 21]. A manager adjacent to my office noted that my productivity in the invention submission process exceeded his sixty-man team of software developers for supply-chain software. I provided a two-hour lecture to his team on how to invent and how to become an inventor. We set corporate goals for the team. The manager asked what the goal should be for his team. I kept it simple. I said you have 60 employees, and 52 weeks per year; I said one invention submission a week, which is approximately one submission per employee per year. Prior to establishing this goal, there were three submissions for the entire team; after establishing the goal, the team was submitting above the target.

In 2007, I was requested to build an invention course in Malaysia. It was stated that the Malaysian government wanted to improve its IP portfolio. I built an all-day invention course with 80 attendees of the Ministry of Science and Technology (MOSTI) in the convention center in Putrajaya, Kuala Lumpur, Malaysia [20, 21]. The course was expanded into a two-day course for I Pham, at Universiti Science Malaysia (USM) with attendees from pharmaceuticals, university faculty, bio-technologists, and chemists. This also acquired interest in Colombo, Sri Lanka, where the course was brought the following year to software developers. This was expanded into a second advanced course [22].

During that time, there were many attendees who requested a text be written based on the course. And, here it is!

1.1.1 Intellectual Property

What is intellectual property?

Formally, intellectual property is creations of the mind. A creation of the mind is creative works or ideas embodied in a form that can be shared or can enable others to

From Invention to Patent: A Scientist and Engineer's Guide. First Edition. Steven H. Voldman.

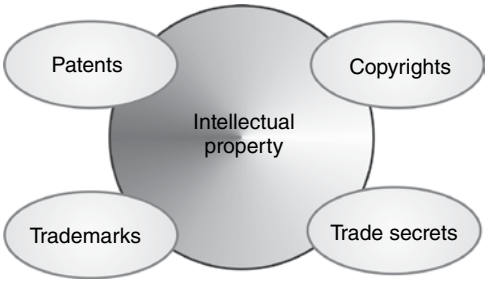

Figure 1.1 Intellectual property.

re-create, emulate, or manufacture them. There are four ways to protect intellectual properties (Figure 1.1) [1]:

- Patents
- Trademarks
- Copyrights
- Trade secrets.

1.2 Patent

In this section, patents will be discussed, addressing what a patent is and why you should patent your innovations, ideas, and inventions.

1.2.1 What Is a Patent?

What is a patent?

A patent is a property right granted by a government to an inventor "to exclude others from making, using, offering for sale, selling or importing" the invention.

The U.S. definition is " A patent is a property right granted by the Government of the United States of America to an inventor "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" for a limited time in exchange for public disclosure of the invention when the patent is granted [1].

1.2.2 Patents and the US Constitution

The concept of providing protection for the inventors is contained within the U.S. Constitution. The U.S. Constitution states the following [1]:

Congress shall have the power …. To promote the progress of science and useful art by securing limited times to authors and inventors the exclusive right to their respective writings and discoveries. (U.S. Constitution, Article 1, Section 8, 1790).

The idea of protection of intellectual property is built into the U.S. Constitution for patents, copyrights, trademarks, and trade secrets.

1.2.3 Why Patent?

A common question that people have is why they should patent an invention.

A patent is a means in which a government can protect your rights as a citizen to your invention.

A patent is a means in which a government can protection your rights as a corporation to your invention as well [1].

The patent office is a way for the government to protect your creative works. In many cases, an investment to develop or manufacturing your invention has occurred, and one would like to recover the return on investments that occurred.

Patenting an invention protects you from other people or businesses to copy or duplicate your idea. As a business, a business would like to protect its investment and protect its employees as well.

By not patenting an invention, there is a risk that your idea is taken, copied, or reproduced for sale in your country. Corporations such as Coca-Cola Corporation did not patent the Coke syrup recipe but chose to keep it as a trade secret.

1.2.4 What Is Patentable?

What is patentable?

A common question that people ask is whether their invention is patentable. There are different categories of patents of ideas or inventions that are patentable (Figure 1.2) [1]:

- Utility patents
- Design patents
- Plant patents.

Utility patents: A utility patent is a patent that "protects useful processes, machines, articles of manufacture, and composition of matter [1]."

Design patents: A design patent is a "patent that protects new, original, or ornamental designs for articles of manufacture [1]."

Plant patents: A plant patent is a "patent that protects invented or discovered asexually reproduced plant varieties [1]."

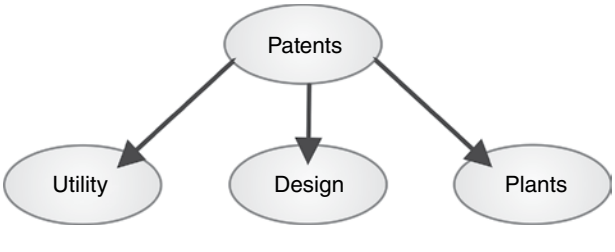

Figure 1.2 Patents.

1.3 Copyrights

A copyright is a type of intellectual property. A copyright protects the expression of ideas of literary, artistic, and musical works [1]. Examples of items that need copyrights are books, plays, records, and albums. With a copyright, usage of books, plays, or music requires approval from the owner and at times payment of royalties for their usage. This is common practice to collect royalties for usage of plays and music in today's society. When the copyright is violated, it is regarded as piracy.

1.4 Trademarks

Trademarks are a form of intellectual property. We are not always conscience of the trademarks that surround us.

Trademarks are words, names, symbols, devices, and/or images associated with goods and services to identify the source of goods or services [1]. An example of a trademark is the Nike "swoosh." A second is the red tag on the back pocket of a Levi-Strauss jeans. On computers, Intel has a trademark for "Intel Inside." These are to protect the corporation from copycats and piracy. But, even with the red tag on the pocket, many jean corporations did copy the Levi-Strauss jean design.

A "service mark" is same as a trademark but distinguishes the source of goods. A service mark dose not distinguish the product.

1.5 Invention

People use the word invention quite often, but what is invention ? Who is an inventor? In this section, we will formalize the discussion.

1.5.1 What Is Invention?

In the following sections, we discuss what is invention and inventors.

1.5.1.1 Are You an Inventor?

Are you an inventor [20–22]? Who is an inventor and what makes you an inventor?

Is it required to have a patent to call yourself an inventor? Do you need to have a patent in order to be an inventor? How many patents are required until you call yourself an inventor?

I found that we resist calling ourselves an inventor due to cultural and societal attitudes. We have a fear of admitting we are an inventor and worry about being judged. It is if we are unwilling to admit it due to the opinion of others.

I found that having a single patent does not alleviate that fear since people question the value of the patent or whether you are an "inventor." How do you judge the value of a patent? In many cases, if a company uses the patent in products, it is redeemed as having value [20–22].

In my own case, I did not admit that I can use the title "inventor" until I achieved one hundred patents. When I was teaching an invention course in Malaysia, I told the class

that they have to go into the bathroom and look at the mirror and tell themselves that they can be an inventor.

1.5.1.2 Did You Know They Were Inventors?

Many individuals from all walks of life have patents. Here are a few examples of people who hold a U.S. patent [20–22]:

- Abraham Lincoln
- Mark Twain
- Thomas A. Edison
- Benjamin Franklin
- Thomas Jefferson
- Orville and Wilbur Wright
- Albert Einstein
- George Eastman
- George Westinghouse
- Richard Gatling
- Nikolai Tesla.

It is hard to believe that even U.S. presidents such as Abraham Lincoln to Thomas Jefferson had the time and interest to invent and hold U.S. patents. Equally, Mark Twain took an interest in the US patent office and submitted inventions.

We all know the Wright Brothers invented the airplane, but they also hold a patent for the concept titled "Flying Machine."

Albert Einstein worked in a patent office and took an interest in inventions and patenting.

And, some inventors were very prolific, such as Thomas A. Edison, who held 1069 U.S. patents. We will discuss the work habits of Edison when we discuss how to become a prolific inventor. And there were others such as George Eastman, George Westinghouse, Richard Gatling, to physicist Nikolai Tesla [20–22].

1.5.1.3 Who Are Young Inventors?

A key question is whether there is an age limit to hold a U.S. Patent?

There is no age limit to hold a U.S. patent. On June 27, 1989, a child had a patent issue as USPTO 4,842,157 [20–22]. In order to have your name on the patent, you have to be the inventor of what is submitted. Jonathan Stone-Parker was about 4 or 5 years old. The boy was frustrated that when he drank a glass with ice in the glass, that the ice would come out when he tipped the cup. So, he needed to invent a retainer to be placed in the cup to avoid the ice from falling out.

Retainer for drinking container
A drinking container has a retainer device to retain relatively large objects such as ice cubes there beneath. The retainer device has a central portion, which may contain printed indicia and a plurality of resilient arms extending radially outwardly to resiliently engage the container. A porous pouch adapted to receive an additive for the release of an ingredient into the liquid may be mounted at the bottom of the central portion.

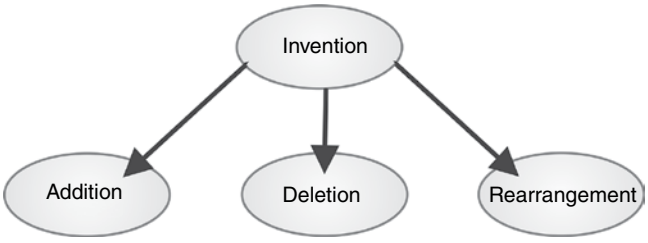

Figure 1.3 Invention.

1.6 Defining the Processes of Invention

There is a formal definition of what process is regarded as an invention. Many of us do not have a clear definition, so this assists your understanding of what the invention process is and what makes an action invention (Figure 1.3).

1.6.1 Invention – Addition

One of the three processes of invention is known as "addition." Addition is when you join two similar units together to form invention. In other words, taking a first item and combining it with a second item is a process of invention [1, 20–22].

Addition is a formal process of combining two items.

Invention can be combining a first item with a second item. Invention occurs when there is an advantage of combining a first item with a second item that was not possible without the combination [1, 20–22].

Invention does not occur where there is not an additional advantage of a first item and a second item.

1.6.2 Invention – Deletion

A second process of invention is known as "deletion." Deletion is the removal of a feature to form invention, which is also referred to as "subtraction," or "removal." By removing, or deleting, a feature, a structure can be simplified. Simplification can also be a form of invention [1, 20–22].

1.6.3 Invention – Rearrangement

A third process for invention is "rearrangement" [1, 20–22]. Adjustment is a form of rearrangement as well as orientation. Hence, orientation difference of a first item and a second item serves as a form of invention.

1.6.4 Invention – when 1 + 1 = 3

Where the three processes are formal processes for invention, there is something else that is missing. For something to have value as an invention, it has to have an advantage

over prior art. Taking a first item and combining with a second item is not valuable to society if there is not advantage. Removal of an item or rearrangement is also not creative or novel, if there is no advantage. Hence, if one takes a first item and combines with a second item, and there is an advantage, then the addition of one plus one is three [20, 21].

1.7 Finding Invention in Your Work

For scientists and engineers, we perform creative acts as part of our daily work. The creative acts within our work can become invention. It is important to develop the skill of recognizing the invention within our work. Sometimes, it is not able to see the invention in your work and that you are not the best judge [20, 21].

I had an office mate at IBM who was doing a creative work, but could not see the invention in his own work. He was not convinced to submit his work to the invention board since he could not visualize the novelty of contribution.

Some of this ability comes from your training.

MIT had a unique method of teaching. They would pose a problem and come up with a solution. But, at MIT, this was not the end but the beginning. The MIT faculty member would then say "OK, now that we have a solution, what can we do with it?" Where many teaching disciplines end with the answer, at MIT, this was the beginning of the creative process.

Using this thought, a lot of laboratory discoveries that I had at IBM became invention. I believe my best invention came from my own work and discoveries. Some of the best discoveries were accidents in the laboratory or factory. One day, a process technician had three wafers in front of him for high-energy MeV implantation. By accident, he grabbed the wrong wafer and ended up leaving the MeV implant out of one of the wafers; as a result, we had a "split" of no MeV implant, the normal MeV implant dose, and double of the MeV implant dose. From this work, we were able to study the effect of the implant dose on the device characteristics of a 4 Mb dynamic read access memory (DRAM) chip. So, some of the best process accidents turn into the best experiments leading to invention.

1.8 Invention Time

In a work environment, it was a common belief that it is not possible to invent and/or find the time to work on invention because they are too busy. Engineers are part of development teams always seem overworked and overpressured. It was common from my coworkers to believe they did not have time to write down their ideas, inventions, or thoughts [20, 21].

It was very common for engineers to say "I do not have time to invent." They also felt they did not have time to write an invention disclosure, attend committees, and work with a patent attorney for the patent submission process.

Part of this problem was because they did not establish a dedicated time to invent. One way to make this happen is to establish an "Invention Time."

There are different means to establish an "Invention Time [20, 21]:"

- Carry a note pad to record inventions during the work day.
- Establish a daily morning practice.
- Establish a time put into your calendar.
- Establish an invention day or afternoon in your calendar.
- Establish an invention think tank at lunch.

In my case, I did all of the above.

At IBM, we had little leather note pad holders with paper pads that fit into our white shirt pocket. It was called a Think pad. The front cover had one word…. THINK.

1.8.1 When Is the Best Time to Invent?

Many engineers and scientists ask when is the best time to submit a patent. I found that it is best to be aggressive about submission since there are many individuals around the world working on the same subject [20, 21].

I know a chemist who was working for a small pharmaceutical corporation that was developing a very important medication. Her small company was working one shift a day, whereas their competitor that was working for a large corporation was working three shifts a day. The small corporation did not complete its patent submission first and lost to the larger corporation. The large company makes millions of dollars for this medication.

In my own case, I was not aggressive about submission of my own idea and was beat to the patent office by three weeks from another research group within my company.

When my coworkers and I thought of an idea, I suggest to my coworkers not delay submission but to do it the day we thought of it.

People ask me when is the best time to submit and invention, and my answer is "yesterday" [20, 21].

1.9 From Invention to Productization

The process of transforming an invention into a product is an important step in the success of a corporation. Some corporations that are very successful have learned how to do this. This will be discussed in length in future chapters.

1.10 Value of Patenting

The value of patenting has value to both the inventor and the corporation. In the next section, we provide examples for an individual and a corporation.

1.10.1 What will you Gain as an Inventor?

What will you gain as an inventor? These advantages include as shown in Figure 1.4 [20, 21].