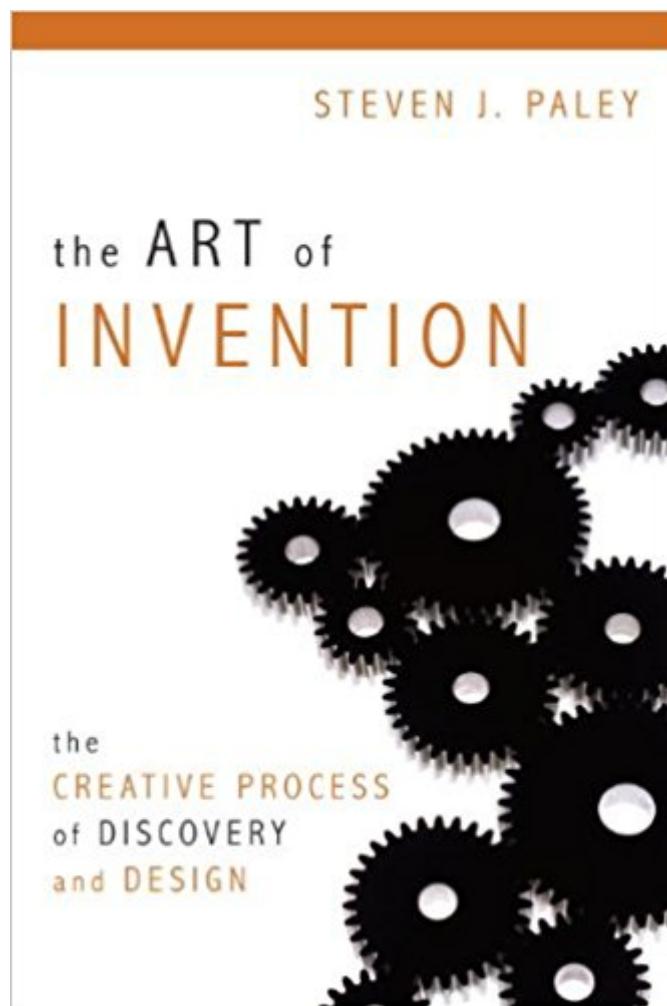


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# The Art Of Invention: The Creative Process Of Discovery And Design



## **Synopsis**

In this entertaining and insightful exploration of the process of invention, an experienced inventor vividly illustrates how great inventions embody three crucial characteristics--simplicity, elegance, and robustness. Whether you're an aspiring inventor or an experienced designer, the author's expertise, personal examples, and case studies offer detailed guidance on conceptualizing your ideas and turning them into reality. The author shows how ideas can come from a variety of sources such as the natural world, basic physical principles, life experience, or even chance observations. He examines how intuition and the harnessing of subconscious information are key ingredients for the inventive process. He concludes with an in-depth look at the business of invention and the typical inventor's toolkit. He addresses the real-world challenges of turning a good idea into a practical, marketable application, including patents, marketing, and entrepreneurship. He is candid about the realities of hard work and the need to learn from the inevitable mistakes along the way. Full of insights and practical guidance from a successful inventor and entrepreneur, this book will open new avenues of creativity for budding and accomplished inventors alike.

## **Book Information**

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## **Customer Reviews**

"Steven Paley's Art of Invention tells it like it is. This is an excellent introduction to the psychology of the inventor and to the nature of the inventive process." --Henry Petroski, author of *The Essential Engineer: Why Science Alone Will Not Solve Our Global Problems* "A must-have for any inventor. Easy to read and understand with simple, clear examples. The Art of Invention teaches creative

thinking in a way that inspires us to invent. Through numerous practical examples and fascinating case studies, Steven Paley guides us on a journey through the world of creativity in engineering. This is the first book that I have ever seen that shows both the aspiring and experienced inventor a clear path to successfully fulfill their goals." --Ronald D. Fellman, Ph.D., former professor of electrical and computer engineering at the University of California at San Diego, a life-long inventor, founder of several high-tech start-ups including QVidium and Path1 Network Technologies. "Steven Paley gets it exactly right. Invention is both an art and a science and it starts with an appreciation for technology, a keen sense for business opportunities, and above all a deep understanding human need. It also requires a childlike curiosity, a sense of wonder, and the optimism to believe that you can make a difference. Read this book and be inspired." --Bill Burnett, executive director of the Product Design Program and consulting assistant professor of mechanical engineering at Stanford University "We live in a time when young people seem increasingly disinclined to explore possible careers in engineering. Even those who do choose to enter the field often do not realize its tremendous creative potential. Paley does a brilliant job of communicating both the process and the joy of invention in a way that reaches both professionals and newcomers equally well. While making it clear that the inventive process can not be reduced to a menu of tasks, he properly asserts that simplicity, elegance, and robustness are key components of the successful design process. By looking at items most of us take for granted (the paper clip, velcro, etc.), we get to see the beauty in these designs - a simple beauty that can be found in numerous other artifacts in common use, as well as in those yet to be invented. This book goes far beyond cataloging the inventions of others, and explores the process by which you can unlock your own creativity for the solution of challenges facing us both as individuals, and in the broader context of the marketplace. Before long, you will have your own sketchpad out and be coming up with your own ideas! The idea of the 'mad inventor' is elegantly replaced with invention as a skill within the grasp of us all. If you are willing to give yourself the freedom to tinker, to observe, to mess around with ideas, some of which may not work the first time, this book should be in your hands - not resting on a shelf somewhere. Steve has nailed it - Invention is an art we can all appreciate and experience for ourselves." --David Thornburg, PhD, director, Thornburg Center for Space Exploration

Steven J. Paley (Paramus, NJ) holds nine US patents and numerous international patents. He is the founder of Arise Technologies, Inc., which teaches robotics and engineering to special needs and gifted children. From 1985 to 2001, he was the CEO and Chief Technical Officer of the Texwipe Company, which manufactured and sold specialized consumable products for the control of

microcontamination in semiconductor fabrication, disk drive manufacture, biotechnology, and aerospace.

This is an amazing book! I wasn't looking for a book on how to invent as I can't imagine that someone who couldn't invent naturally could learn to invent, it's just a very different thinking process. Anyway the creative process and I already "naturally" thought this way such as being able to build things in my mind. But there are many other aspects of creativity that I have not thought of, that this book mention's. I'm looking forward to finishing the book!

Incredible! Very impressed and extremely helpful! He provides many examples of his own experience and explains everything very well. He gives great information on everything. All the chapters are relevant to his topics and is well put together. I highlight helpful sentences, and with his book, I'm constantly highlighting!

Eloquent and perceptive, Paley presents a complicated topic in an enjoyable manner. This work is especially authoritative as it was written by one who has successfully achieved his goals, and is constantly providing innovative solutions to intricate problems. A good read- Bravo!

This book is more of a collection of/history of fun facts and inventions. As such it can be inspiring when the "inventor" is stuck and ready to give up. If you are looking for a "how to" book, this isn't it. As the author notes, however, a "how to" book for this subject may not really be possible!

Their are many current books on Design and Product Development, as well as a few guides to the Patent and Intellectual Property Process; Steven Paley as Entrepreneur, Inventor, Graduate of the Stanford Product Design Program and former Technical Staff Member of Bell Laboratories gives a complete Heuristic Guide to Thinking and Acting as an Inventor. He describes in detail and from personal experience (while illustrating with extensive case studies such as the invention of the Paper Clip, Velcro, the Xerox Copier, etc.) the process of getting and growing a non-obvious idea and developing a commercially successful invention. Paley, both a trained Engineer and Product Developer as well as a second-generation independent Innovator and Entrepreneur stresses a structured conscious and sub-conscious Heuristic process of Inventive Problem Solving; in one formulation [page 39] he describes this process as: "1. Active Awareness 2. Technological Fluency 3. Seeing the Flower from the Seed 4. Desire to Create 5. Courage

This is a book that needed to be written. The main thesis of the well-written book, "The Art of Invention" is as much about unlearning as it is about learning. Invention is about freeing the mind, breaking down constraints, as it is about the art of inventing, of not going down the road well-traveled. Paley writes in an engaging and easy to read style about the creative process and about how to get from needs and raw ideas to finished products. It's chock-full of engaging stories. The book is divided into three sections: creative problem-solving, the embodiment of invention (simplicity, elegance, and robustness) and the practical matters of taking an idea from concept to reality and commercializing invention. Paley begins by explaining what made the humble paper clip such a great invention. He starts out with properly defining a problem. No "design a tooth brush for elephants," which is self-limiting, but "Prevent elephants from getting cavities" which better defines the objective and does not limit the possibilities. Faulty problem statements lead to ineffective solutions. He speaks of the "hidden obvious" and being "confidently naive." Many times, a novel product can be created by translating from one domain to another. For example, George de Mestral devised "Velcro" by noticing how cockleburs cling to whatever moves past them. He saw that this mechanism (a hooked material and a loosely-woven cloth) could temporarily become attached with considerable force. But he also notes that you need perseverance. For Velcro, the time from initial insight to product was ten years. There are separate chapters each devoted to simplicity, elegance, and robustness. Another chapter focuses on problem-solving and the importance of the KISS method (Keep It Simple, Stupid). The last part of the book is devoted to the "business of invention." I would have preferred more detail here. All in all, it's a valuable, readable, and "must-have" book for the inventor and prospective inventor.

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