



## **The Tinkerers: The Amateurs, DIYers, and Inventors Who Make America Great**

*Alec Foege*

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From its earliest years, the United States was a nation of tinkerers: men and women who looked at the world around them and were able to create something genuinely new from what they saw. Guided by their innate curiosity, a desire to know how things work, and a belief that anything can be improved, amateurs and professionals from Benjamin Franklin to Thomas Edison came up with the inventions that laid the foundations for America's economic dominance. Recently, Americans have come to question whether our tinkering spirit has survived the pressures of ruthless corporate organization and bottom-line driven caution. But as Alec Foege shows in *The Tinkerers*, reports of tinkering's death have been greatly exaggerated.

Through the stories of great tinkerers and inventions past and present, Foege documents how Franklin and Edison's modern-day heirs do not allow our cultural obsessions with efficiency and conformity to interfere with their passion and creativity. Tinkering has been the guiding force behind both major corporate-sponsored innovations such as the personal computer and Ethernet, and smaller scale inventions with great potential, such as a machine that can make low-cost eyeglass lenses for people in impoverished countries and a device that uses lasers to shoot malarial mosquitoes out of the sky. Some tinkerers attended the finest engineering schools in the world; some had no formal training in their chosen fields. Some see themselves as solo artists; others emphasize the importance of working in teams. What binds them together is an ability to subvert the old order, to see fresh potential in existing technologies, and to apply technical know-how to the problems of their day.

As anyone who has feared voiding a warranty knows, the complexity of modern systems can be needlessly intimidating. Despite this, tinkerers can – and do – come from anywhere, whether it's the R&D lab of a major corporation, a hobbyist's garage, or a summer camp for budding engineers. Through a lively retelling of recent history and captivating interviews with today's most creative innovators, Foege reveals how the tinkering tradition remains, in new and unexpected forms, at the heart of American society and culture.

## The Tinkerers: The Amateurs, DIYers, and Inventors Who Make America Great Details

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## **From Reader Review The Tinkerers: The Amateurs, DIYers, and Inventors Who Make America Great for online ebook**

### **terry says**

Fun and educational. I made copies of some pages for future reference.

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### **Andrew says**

The premise of this book looked fascinating and played to my biases (long live the generalist!), but while the read didn't disappoint, neither did it inspire. The opening story of the author fixing his Blackberry himself is great and, having fixed my own dishwasher and rewired a thermostat recently, I identify with his sense of accomplishment. The focus, however, on modern "tinkering" schools and workshops purposely, even aimlessly, inventing something, especially in the advanced technological realm, was too far removed from my notion of tinkering as simply trying to fix, improve, or jerry-rig household items. The book isn't bad - the author successfully builds and defends his own definition of tinkering - it's just that his definition and my definition are not the same. People interested the history of American invention, and particularly the its place in the construction of America's national identity, will certainly find a worthy read. If I had come to this book with different preconceptions or expectations, I likely would have enjoyed it even more than I did.

I'm on Twitter: @Dr\_A\_Taubman

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### **Wellington says**

I like the premise of the book and it started strong. Tinkerers are cool! Hey, I'm a tinkerer, too! It brought back memories of my mom pushing me to be more mechanically inclined and tinker with electronics (instead of watching television)... I still consider myself a tinkerer - a tinkerer of spreadsheets.

I did enjoy some of the histories of some of the tinkerers. Maybe I just had different expectations but I don't have a grasp of really what the book is trying to tell me.

It's an OK book. Just one I'm likely to forget in a couple days.

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### **Carl says**

The great story about how so few people "Tinker" anymore to make new products and improve existing ones. The premise of the book is that kids should be ripping apart their old Ipods to see what is inside, tinkering in the garage on projects, etc -- instead of being mindless consumers.

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## **Michael Tierney says**

I really wanted to like this book, but the more I read, the more I found fault in it.

A history and examination of the DIY or Maker movement was what I thought this book would be, but it soon devolved into a number of mostly disconnected chapters with little overarching theme. The chapters on financial derivatives and patent trolls seem to be from a different book entirely. Overall, the book seems like an extended version of a journalism assignment, rather than a work of an expert in the field.

There are some interesting facts throughout the book, but not enough to save it.

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## **Gerard Brown says**

"The Tinkerers" raises an interesting question - what do you expect when you sit down to read a book (as opposed to a magazine article or newspaper feature). Foege was a contributing editor at Rolling Stone and senior writer at People and it shows in this under-researched book about a fascinating idea. When he's writing profile pieces - as in chapters on Dean Kamen and Gever Tulley - he's entertaining and pleasantly readable. But when he tries to write about the historical sweep of the topic, his weak storytelling skills get in the way. The chapter contrasting Washington and Franklin and setting them up as paradigms of American tinkering is so meandering as to be pointless.

But more disappointingly, the book suffers from the common sins of the genre of business literature - it's fixation on validating an idea or term (in this case, tinkering) prevents and serious, critical examination of that idea. A quick review of the notes confirms that Foege got most of his information from business journalism, Wired magazine, the New York Times and the New Yorker. This explains why the book reads like a second-hand analysis of ideas that have been discussed in these magazines and newspapers.

So what *should* one expect from a book rather than a magazine article or newspaper feature? A book can go into greater depth and engage more complex sources than these other forms, and I think readers are right to expect such depth and criticality from books. We've seen some very thoughtful writing like that in the last few years, from authors like Glenn Adamson and Richard Sennett (on crafts) and Matthew Crawford (on how changes in the education have affected ideas about work). Sadly, "the Tinkerers" reads like something you'd read on a long flight - a largely superficial attempt to identify a new trend that is principally about trying to stake out that new trend, not thoughtfully analyze it. It's something someone will mention in a meeting or when griping about the state of education in the 21st century, but there's no 'there' there.

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## **Frans Saxén says**

Alec Foege's book provides praise for the tinkerer and the USA, and the combination of the two. Through the stories of the founding fathers, Thomas Edison, the inventor of the Segway and others, here the achievements of those who tinker are chronicled, mapping them out as the route to future prosperity. While the book at times is interesting and brief, it is somewhat shallow.

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## **Birgit says**

When I first heard about *The Tinkerers* by Alec Foege I had to think back to my own childhood days when my grandpa would tinker around on all kinds of gadgets and our TV set got repaired by a tinkering friend at least a dozen times.

In this spirit the author sets out from the tale of his own tinkering experience of repairing his smartphone, before delving deeper into history and technology, exploring tinkering from the birth of the nation straight to the hope of recovering the tinkering spirit through respective changes in the educational system.

Written in a sweeping and entertaining way, Foege certainly understands to pull you right in with his opening chapter. Then, however, I found myself faced with the sudden realization that the author and I have a completely different understanding about what tinkering means. A promising introduction is followed by, more or less, inventing things, and while this is certainly interesting it's neither what I had expected nor what I had been looking to read about.

Despite the misleading title the book is certainly rich in content and opens a fascinating perspective on the tinkering mind-set of the American people. Especially the emphasis on how Americans may, and should, rediscover their tinkering spirit, and the important part that education plays in this regard, was well worth the read and made up a little for what I conceived as missing the point of the topic.

In short: Manifest for reviving the American tinkering spirit!

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## **Jeff says**

It was a good enough read, and held my attention to the end. But by the end it was uninspiring, so only 3 stars. It contains some interesting profiles of tinkerers, modern and old. I think the root of the problem with the book became clear in the acknowledgements, when he admits that the idea for the book came from a publisher. It feels a lot like an assigned research project, rather than someone with something to say on the topic.

All that said, I'd still suggest it to anyone interested in reading it, because I do agree strongly with the thesis; we have a society in which far too many people have no idea how most of the world around them functions, and no interest in learning.

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## **Tony says**

We would probably agree that Thomas Edison qualified as a tinkerer. The essence of most "inventing" is messing around with stuff, playing around with what already exists, trying to get it to do something else. But George Washington? He was a tinkering farmer, scientifically playing with different crops, fertilizers, cultivation techniques and tools. Determining that this works well in combination with that, discovering combinations unknown to farmers at the time.

We would agree that Benjamin Franklin was a tinkerer. He invented bifocal glasses, among other things. Do we also recognize that his tinkering also gave us the US Postal Service? That he instituted daily pickup and delivery to homes? And, in the 18th century, before the advent of railroads, could get letters from Philadelphia to New York in a single day? He's tinkering with processes and logistics. Do we recognize the

inventiveness involved in that?

Kinda opens up the definition of tinkering.

We revere Steve Jobs for his vision and ability to bring interesting products to market. Do we recognize that, like Edison and Franklin before him, this was no solo act? The Graphical User Interface that made the Macintosh such a game-changer was created by a bunch of visionaries at Xerox. Unfortunately, Xerox's management had no clue what to do with the things this group (the Palo Alto Research Center; PARC) was coming up with, which is why Jobs gets the reverence instead of someone at Xerox. The iPod was a combination of existing components (battery, storage, CPU and digital audio hardware), and others had tried such devices before. But it took the right combination of hardware, software and legal wrangling (otherwise, there's no legal music for the device to play) to make it a success. Which of these things did Steve invent? None. But he got all the appropriate pieces moving in all the right directions, at the same time. Innovative, certainly. But not a solo act. So much tinkering and inventing IS NOT a solo act.

This book expands the definition of tinkering and demolishes some of the myths around it. It introduces us to some modern-day tinkerers, hacking technology and ... education? And introduces us to someone who tinkered with information, organization and government funding to build the highway system we enjoy today.

Enjoy. And see if you can read this without feeling inspired to do some tinkering of your own. 'Cuz its not JUST for brilliant, if somewhat eccentric, individuals working on technology.

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### **Gregory Ofiara says**

**Excellent.**

What an eye opener. Every business in America should contribute a very small percentage to the future of this cause. A great example that small seed can lead to big things happening. Good case for business and thinkers working together. What's revealed in these pages is blue print for the future if we want embrace it.

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### **Beckey says**

United States, in its earlier years and still is today, a nation of great thinkers that tinker around with one thing or another to make it better than it was before. Especially when most items that are created to be a) expensive and B) trash after it has fulfilled its life expectancy or simple breaks too easily or C) simple becomes an ineffective and useless item after short timeframe.

In the beginning of the book the author described about his blackberry screen being broken and how the cellular company store tried to sell him another phone. I was able to relate with that since my screen on my iPhone was shatter, attempted to fix it on my own only to crack the LCD part too (Not a great tinker myself in some aspects and it's a project left up to the professionals ).

I go on with what this book has in it. I found the book an easily enjoyable read that made me want to go work on some projects that I can do successfully without destroying or making a mess.

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### **Hali says**

This book held my attention to the end. I don't tinker as much as I'd like (since I'm afraid to make things worse). It inspired me to tinker more. The author talked about past tinkering along with how tinkering has changed along with areas that tinkering is being discouraged (schools) since the focus is more on standardized testing. I'd recommend this book to anyone that is a tinkerer or wants to get out of your comfort zone & start tinkering.

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### **James Campbell says**

I suppose I was expecting something more like a series of essays and investigations into the decline and rise of the current DIY/Maker culture. It starts interestingly, but then ambles off to a mini-biography of Thomas Edison then wanders into another mini-biography of Steve Jobs and another rambling mini-biography of Nathan Myhrvold which inexplicably turns into a plaintive defense of Intellectual Ventures and other horrible patent trolls.

"Tinkerers" would have been a lot of fun if it kept the spirit of discovery and self-reliance from first chapter, but it lost focus quickly and became little more than the world's longest Wired article.

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### **Mloy says**

I didn't care for the section in the book that talked about political tinkering because contrary to the author's opinion, I feel that's not "tinkering" in the purest sense. I enjoyed the sections of the book that discussed real inventors like Edison, Bell and of course Gates but my favorite parts were learning about the more modern inventors like Gever Tulley who created an entire tinkering camp (at first) and then a school devoted to encouraging kids to think outside the box; Dean Kamen, the inventor of the "AutoSyringe", and "Segway"; as well as many other inventions, Dr. Karlheinz Brandenburg who creator of the MP3 Technology and Niklas Hed who one of the pioneering minds that created the wildly popular Angry Birds App. I was hoping that this book had more examples of people who were tinkerers, especially the more obscure ones and it would have been great to see images accompanying their stories. If this book was published more like a coffee table book, like illustrated version of The Da Vinci Code, I can see this book in Elementary, Middle and High school libraries and would make a great assigned reading for students; and maybe even inspire a few of them to become future inventors and tinkerers.

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