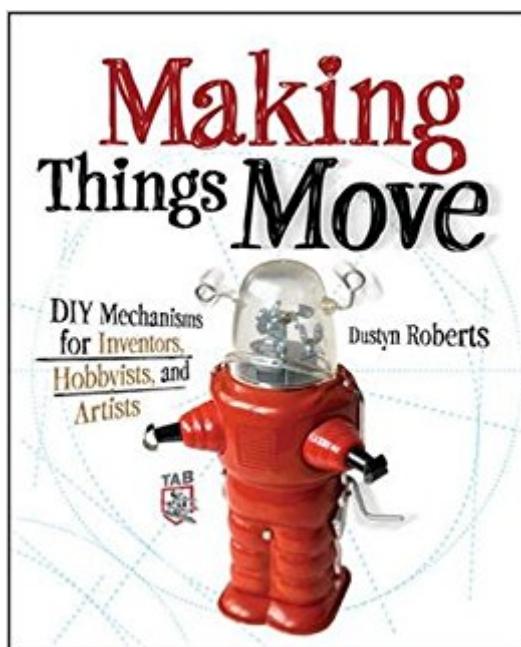


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# Making Things Move DIY Mechanisms For Inventors, Hobbyists, And Artists (Electronics)



## Synopsis

A unique guide to practical mechanical design principles and their applications In Making Things Move, you'll learn how to build moving mechanisms through non-technical explanations, examples, and do-it-yourself projects--from art installations to toys to labor-saving devices. The projects include a drawing machine, a mini wind turbine, a mousetrap powered car, and more, but the applications of the examples are limited only by your imagination. A breadth of topics is covered ranging from how to attach couplers and shafts to a motor, to converting between rotary and linear motion. Each chapter features photographs, drawings, and screenshots of the components and systems involved. Emphasis is placed on using off-the-shelf components whenever possible, and most projects also use readily available metals, plastics, wood, and cardboard, as well as accessible fabrication techniques such as laser cutting. Small projects in each chapter are designed to engage you in applying the material in the chapter at hand. Later in the book, more involved projects incorporate material from several chapters. Making Things Move: Focuses on practical applications and results, not abstract engineering theories Contains more than a dozen topic-focused projects and three large-scale projects incorporating lessons from the whole book Features shopping lists and guides to off-the-shelf components for the projects Incorporates discussions of new fabrication techniques such as laser cutting and 3D printing, and how you can gain access Includes online component for continuing education with the book's companion website and blog ([makingthingsmove.com](http://makingthingsmove.com)) Hands-on coverage of moving mechanisms Introduction to Mechanisms and Machines; Materials and Where to Find Them; Screwed or Glued? On Fastening and Joining Parts; Forces, Friction and Torque (Oh My); Mechanical and Electrical Power, Work, and Energy; Eeny, Meeny, Miny, Motor? - Creating and Controlling Motion; The Guts: Bearings, Bushings. Couplers, and Gears; Rotary vs. Linear Motion; Automatons and Mechanical Toys; Making Things and Getting Them Made; Projects

## Book Information

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## Customer Reviews

Dustyn Roberts is a traditionally trained engineer with non-traditional ideas about how engineering can be taught. She started her career at Honeybee Robotics as an engineer on the Sample Manipulation System project for NASA's Mars Science Laboratory mission, scheduled for launch in 2011. In 2006 she founded Dustyn Robots after consulting for two artists during their residency at Eyebeam Art + Technology Center in NYC. She continued consulting projects for students and artists while working full time at Honeybee, and eventually moved to consulting full time on projects ranging from gait analysis to designing guided parachute systems. In 2007, she developed a course for NYU's Interactive Telecommunications Program called Mechanisms and Things That Move that led to the book you see here. She also participated in the pilot of Battle of the Geeks where her team designed and launched a rocket across a canyon in Africa, and has attracted media attention by Time Out New York, IEEE Spectrum, and local organizations. Dustyn holds a BS in Mechanical and Biomedical Engineering from Carnegie Mellon University with minors in Robotics and Business, an MS in Biomechanics & Movement Science from the University of Delaware, and is currently working on a PhD in Mechanical Engineering at the Polytechnic Institute of New York University. She currently lives in New York City with her partner, Lorena, and cat, Simba.

If you have a maker or aspiring maker in your life and they don't own this book, this should be your gift to them. You won't just be giving them a book, but a fundamental education in machines and fabrication techniques that they will be able to use for the rest of their life. No, that's not an exaggeration. In 'Making Things Move', Dustyn Roberts explains mechanical design principles and their applications in non-technical terms, using examples and a dozen topic-focused projects. The book is a wealth of information:

- \* Introductions to mechanisms and machines
- \* Finding and using materials such as metals, plastics, & wood
- \* Basic physics
- \* How to fasten and attach things in a bunch of different ways
- \* Info on different types of motors and how to use them
- \* Converting

between rotary and linear motion \* Using off-the-shelf components \* A wide variety of fabrication techniques \* How to have things made, if you can't do it yourself \* A primer on Arduino micro-controllers \* There is even a section on automata! This is an outstanding book with a ton of useful material presented in a very accessible way. I believe it to be a classic-in-its-own time for makers. I wish I had owned it years ago!

I haven't read this book yet. I've just flipped through the pages. That's all I needed to know that it is what I was looking for. It comes from a professional source, is well illustrated, and requires no engineering background to understand. I'm one of those people who are interested in doing many things but always had other things that took up my time. Business management, biology, and cancer detection paid the bills and was almost all I could handle. I'm retired now and too old to take on college level engineering courses, and I'm more interested in my photography hobby anyway. The reason I purchased this book is because all my life I've had a special invention circulating around in my brain. Problem was that each test unit I built broke as soon as I turned on the power. Still, maybe my brainstorm invention can actually be made. This book, *Making Things Move*, is more in line with what I can handle. Even if it doesn't help me make my brainstorm it's sure to provide fun activities.

OK. Relatively basic introductory book on "mechatronics". If you have never laid hands on a stepper motor, gear motor, or some kind of microcontroller such as Arduino or Raspberry Pi then this might be a great book for you. But if you are advanced past that level I would not recommend it.

Excellent book. I've an engineering background, but it was a long time ago. I'm happy to renew and even learn new things from the author. I prototype mechanical and electronic devices at home and this book helps a lot. Excellent teaching techniques make the book very easy to read to the depth you need and even further. The book is one of my favorite purchases, I made throughout the years of shopping online. Highly recommend to others.

I haven't had this much fun since receiving my first erector set as a child. I have always loved machines and computers, but my career took a less technical path and I lacked critical skills and knowledge to build the machines that integrated the two. Dustyn Roberts helped me fill in the gaps with instruction and inspiration in a format that is thoroughly entertaining. The projects in this book are fun, clearly described and acquaint the reader with general principles that can be applied in

many contexts. *Making Things Move* would be a great gift for an inquisitive mind, young or old.

This book is a must-have for electronic hobbyists who want to transform circuits into mechanical motion for work or play. It covers everything from basic electronics to fabricating metal and wood parts for your projects. Salted through the text are notes on where to buy necessary parts, including part numbers for suppliers such as [allelectronics.com](http://allelectronics.com). The concepts are explained in detail, and they can be mixed and matched to come up with your own mechanisms. Some reviewers here thought the book too basic and, indeed, it does cover entry-level techniques such as soldering. Some folks will need that. Others won't. But the book also ranges to complicated projects that even seasoned hobbyists would find challenging (such as fabricating a solar-powered drawing machine that interacts with passers-by).

Three years ago, I had an idea for a kinetic sculpture. I had never made anything involving motion before, and figuring out how to build my piece became a long, arduous process. Then a friend of mine pointed me to this book, and all I could think was how much easier my art life would have been if I had had this from the get-go. I learned so much that I decided to re-build the mechanism I had originally constructed, and I ended up with a quieter, smoother, sturdier, battery-powered, and altogether better one. This book is tremendously helpful, especially to kinetic-art newcomers. It is a well-written, well-organized, and altogether useful resource. Highly recommended!

This should be the M.E.S.A. adviser's manual, and they should share it with their students. (Math, Engineering, Science, Achievement, MESA). Ms. Roberts brought me up to speed on loads of things I've only tangentially encountered over the years. It's a great, end to end, reference for anyone that needs or wants to make things move, elegantly, so elegantly that others will think you're a savant. Buy one for yourself, and for your school library, and for your students.

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