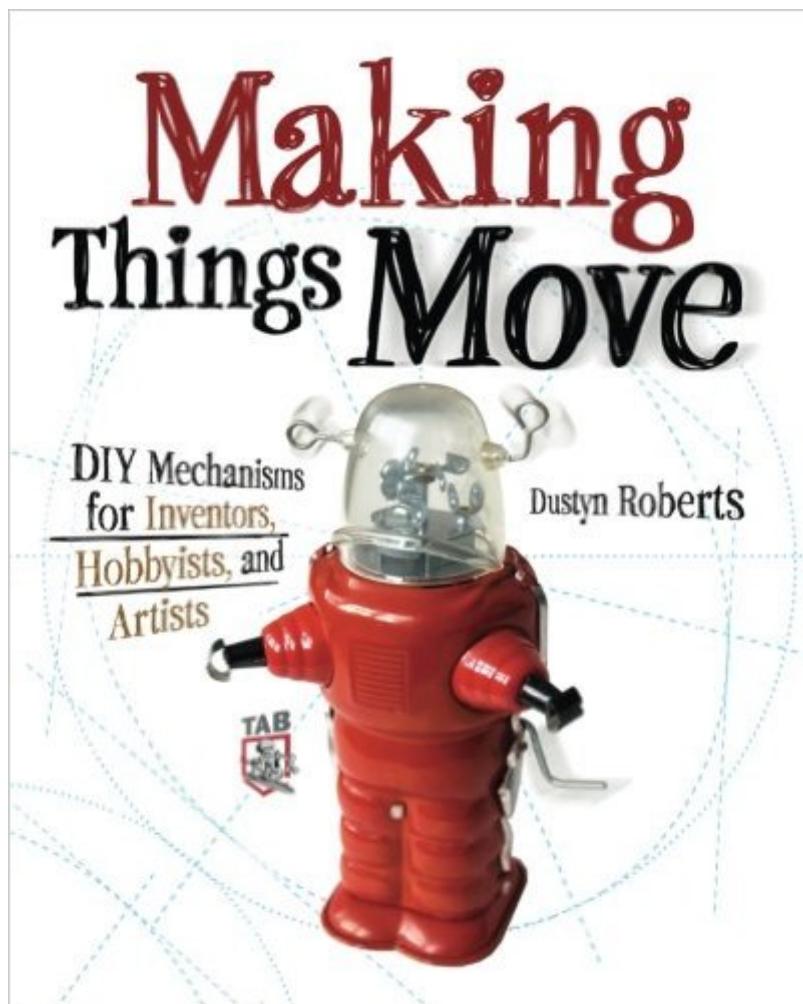


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# Making Things Move DIY Mechanisms For Inventors, Hobbyists, And Artists



## 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

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## Customer Reviews

As a paper engineer and artist with some electronic experience, I have found that learning about gears, pulleys, motors, and the actual mechanics of getting things to move somewhat daunting. There are basic books geared towards beginners as well as books filled with inspiring complex examples that are impossible to navigate unless you already have a high level of expertise. This book is the book I've been looking for. It is really useful and very comprehensive in its approach and scope. It starts with the basics, but, takes you through a wide array of materials, techniques, and examples. Its section on motors (and arduino control) is great. I think its a fantastic book for students and individuals with varying skills, experience, and interests. Highly recommend it.

I'm sure the way you respond to this book will depend heavily on your experience level as a mechanical and electronics tinkerer. I happen to be right in the bullseye of the author's target audience: this book is perfect for where I am in my informal education in those areas. My favorite part is that Ms. Roberts makes specific recommendations for tools and for parts and materials sources. The information is presented in a very logical order. It is intentionally not too deep - just the bare essentials to get you started experimenting. But with plenty of information about how to go further. If you want to learn how to build machines that move, this is a great place to start.

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 have been waiting for this book! I teach product design at a local university, and my students often have questions that I can't answer about topics discussed in *Making Things Move*. The language here is perfectly suited for this purpose, the information is very clear and the example projects are nicely explained and documented. The hand sketches are great, because they capture the excitement of making things, and put one in the mood to start sketching and inventing! Thanks to this author for producing a needed book that will help many non-professional people as they try their hand at mechanical design and robotics.

I have a PhD and teach Electronics at a university and this is a great introduction to mechanical movements. Most of my students are interested in robots and this book provides easy to understand explanations and sources for the materials. I have also helped FIRST Robotics teams and again this is a great reference. I was also impressed with the projects in the book. These would make great starting points for science fair projects or class room demonstrations. Each of the many topics is covered in enough depth to cover the basics with references listed to find more information. Many examples are given of actual parts with detailed descriptions of the specification sheets. I did notice one mistake. On page 101 of the paperback version, it says that alternating current fluctuates between 0V and 120V. It actually fluctuates from about 169 V below ground to 169 V above ground. It supplies the same average power as a 120 V DC source, which is why it is called 120 V AC. This is a minor mistake in an otherwise great book.

This is an amazing book that really delivers what it promises. Excellent reference material. I had never learned physics in a way as interesting as the one presented by the author. Recommend.

I deal mainly with the age groups of 8 to 15, so this book is a welcome addition to my library. While many of the concepts in the book do require some math skills and the language/style of the writing isn't geared towards the 8-12 age group, the concepts by themselves are explained fairly easily and in simple language that I believe most kids will be able to follow (or at least spark enough curiosity to hunt down a parent or teacher to ask for help). Starting out with a good discussion on the 6 basic

types of machines - lever, pulley, wheel and axle, inclined plane/wedges, screws, and gears - it just gets even better from there. She covers: \* materials \* Fastening techniques \* Friction and Torque (I learned a LOT in this chapter) \* Power/Work/Energy \* Types of motors and how to control them \* Bearings, couplers, etc... \* way much more... 10 chapters in all, with projects galore to test what you've learned... it's an outstanding book. (She even throws in a breadboard and Arduino summary/primer in the back of the book.) With lots of photos and great hand sketches, this book would make a great gift to any budding engineer, tinkerer, robot fanatic, and/or DIYer. I read it in a few days and am amazed at the amount of information packed into this book.

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