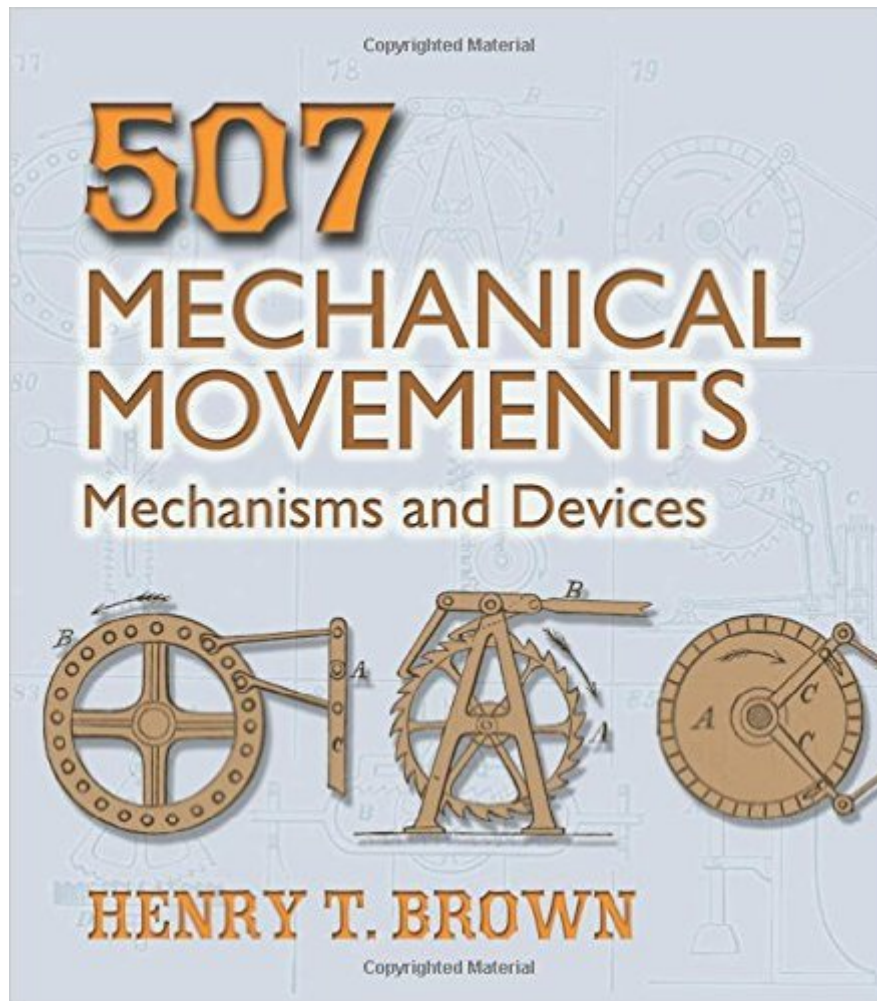


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# 507 Mechanical Movements: Mechanisms And Devices (Dover Science Books)



## Synopsis

Epicyclic trains, oblique rollers, trip hammers, and lazy-tongs are among the ingenious mechanisms defined and illustrated in this intriguing collection. Spanning the first century of the Industrial Revolution, this 1868 compilation features simplified, concise illustrations of the mechanisms used in hydraulics, steam engines, pneumatics, presses, horologes, and scores of other machines. The movements of each of the 507 mechanisms are depicted in drawings on the left-hand page, and the facing page presents a brief description of the item's use and operation. Ranging from simple to intricately complex, the mechanisms offer a fascinating view of the variety of small components that constitute complex machinery. A detailed index provides easy reference to specific mechanisms. Inventors, tinkerers, and anyone with an interest in the history of invention and technology will find this volume a treasury of information and inspiration.

## Book Information

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## Customer Reviews

Perfect for the basement tinkerer. This book may not be as comprehensive in its descriptions as "Ingenious Mechanisms for Designers and Inventors," but it is only 1/20th the price. The illustrations are simple and easy to understand. Often they show the isolated mechanism or mechanical movement independent of any other components. This is great because sometimes all the extra gobbledygook of a technical schematic can make understanding things a real chore. If you're an engineer looking for mathematical equations and formulas, this book is not going to help. The text is

made up of very simple generalizations, such as, "changes rotational motion into reciprocating motion."Great as brain exercise, great bathroom reader, and economically priced to boot!

If you are looking for mechanical inspiration and are short on shelf space, cash, or time, this book is a really good choice. The left hand page of each spread shows 6 to 9 mechanisms (or "Contrivances" as they were called). The Right hand page gives a short description of the mechanisms. Almost all of the mechanisms shown in this book are very practical and straightforward. I have no doubt that they represent tried-and-true solutions to real-world problems. You get a lot for the price with this book!

The full title of this book is *Five Hundred and Seven Mechanical Movements, Embracing All Those Which Are Most Important In Dynamics, Hydraulics, Hydrostatics, Pneumatics, Steam Engines, Mill and other Gearing, Presses, Horology, and Miscellaneous Machinery: and including Many Movements Never Before Published and Several Which Have only Recently Come into Use*. At least that was the full title of the seventeenth edition of 1893; the book itself dates back to 1868. This book is a joy to browse though. It is a little gold mine of ideas for the mechanical designer. Yet, anyone with mechanical aptitude should enjoy it. The many crisp line drawings are presented with a minimum of explanation and no dimensioning. You see, it was assumed back in those days that a person with natural mechanical aptitude could look at a diagram, or a machine, and figure it out. Not only that, but it was assumed that once you had the idea, then you could work out all the details for yourself without having to be told everything down to the last screw size. While there is a descriptive paragraph indexed to every drawing, most of the time you don't really need it. This book comes from an age when engineers and designers had to have the talent and the knowledge to use the mechanical principles of levers, linkages, cams, gears, etc. to produce a given motion- and to link together many such elegant little mechanisms to get a bigger job done- reliably. This isn't done much anymore. Now most machines are huge, cobbled-up, Rube Goldberg devices of pneumatic or hydraulic cylinders, screw actuators, or servo motors- all interconnected by electronic controllers. The whole thing is controlled by software of even more dubious reliability. Up to the "digital revolution", this book shows how it was always done- it's how I learned it. Of course, once upon a time, a mechanical designer actually had to understand machinery, and the basic principles of physics, and not just how to write code....

This book is primarily for experienced mechanical engineers or those with an innate talent for

looking at drawings of mechanical devices and grasping the theory of operation. It is not a textbook by any stretch of the imagination. There are no equations, analyses of operation, or vector-space drawings as you would find in modern mechanical engineering textbooks. However, as an idea book for mechanical engineers at its very low cost it cannot be beat. The title page says it is copyrighted 1995. However, the book was written in 1868 and its content remains unchanged from that date of publication. The language is therefore flowery and somewhat archaic as you can see from the book's complete title: "Five Hundred and Seven Mechanical Movements, Embracing All Those Which Are Most Important In Dynamics, Hydraulics, Hydrostatics, Pneumatics, Steam Engines, Mill and other Gearing, Presses, Horology, and Miscellaneous Machinery: and including Many Movements Never Before Published and Several Which Have only Recently Come into Use". The book's format is quite simple: On one page you will see 8-10 drawings of mechanical devices. On the opposite page you will have a paragraph or so each describing those 8-10 mechanical devices. If there are any equations being spelled out it is done via prose, so you may need paper and pencil in hand to write in equation form what the author is telling you about the theory of operation. I think it functions well both as a history book for mechanical engineers and as a source of ideas of how mechanical devices can be combined to create more complex machines. I highly recommend it, as long as you understand what you are getting.

This book is a collection of previously published thumbnail sized drawings. The book categorizes the drawings, but not clearly. The drawings are really quite inconsistent, and the explanations are minimal. There is only one drawing per mechanism... so really it should be called Five Hundred And Seven Odd Drawings Which You May Enjoy; However, You Will Never Reference One Of Them. When I say the drawings are inconsistent, I'm alluding to the fact that they were pulled from different sources, and it REALLY shows. This book is TINY. Wait... I shouldn't have made "tiny" so large. It might confuse you. I'm sure that the author put time into this book. And in all fairness, it is inexpensive. The value just isn't there though. This book is the antithesis of Macaulay's The Way Things Work. It is "Things: They Might Work, But Who Knows How?" There are other editions of this book, and maybe they are better.... but really we all know they're not.

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