

**FRICION AND LUBRICATION: A  
HAND-BOOK FOR ENGINEERS,  
MECHANICS, SUPERINTENDENTS  
AND MANAGERS**

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Friction and Lubrication: A Hand-Book for Engineers, Mechanics, Superintendents and Managers by William M. Davis

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**WILLIAM M. DAVIS**

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# FRICITION AND LUBRICATION

A HAND-BOOK

For Engineers, Mechanics, Superintendents and Managers

— BY —

WILLIAM M. DAVIS

Member of

National Association of Stationary Engineers, Engineers Society of Western Pennsylvania and Ohio Society of Mechanical, Electrical and Steam Engineers.

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TO MY FRIEND  
AND FORMER EMPLOYER,  
JOB ABLETT,  
OF ALLEGHENY, PENNA.  
THIS BOOK IS RESPECTFULLY  
DEDICATED.





## PREFACE.

The subject of lubrication and lubricants, from a practical, or rather a mechanical point of view, has not received the attention at the hands of experienced writers that it deserves.

A few books have been written on lubricants by chemists, treating these subjects wholly from a chemical standpoint; these are of great value to those who have a knowledge of chemistry, but have little of value to the mechanical man.

In these days of rigid economies, and close attention to details, the engineer or manager who desires to attain to the greatest efficiency and economy in the operation of the machinery in his charge must consider closely the cost, the quality, and the best methods of applying lubricants, as well as of fuel and the other elements which enter into operation of a steam plant.

The author, an engineer himself, has been for the past ten years in a position to make a close study of lubrication on many kinds of engines and machinery, and under all sorts of conditions. In presenting this book to the notice of those who have to do with the use of lubricants, while he has not endeavored to exploit any new theories, he has kept in mind the fact that engineers, managers and mechanics are busy men, and he has therefore tried to present the matter in a plain concise way, that will be readily understood by readers and be of practical value in their every day work.

#### PREFACE.

The thanks of the author are due to and are hereby acknowledged, to Mr. Charles Welsh, the author of "Publishing a Book," etc., Boston, Mass., for advice and assistance in preparing the manuscript for the publisher, correcting proofs, etc.; to Mr. Harrison W. Craver, librarian in charge of technical literature at the Carnegie Public Library, Pittsburg, Pa., for assistance in procuring information, data, etc., and to the manufacturers of appliances and devices and others who are mentioned by name in the body of the book, for information, use of cuts, etc.

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