

**PRINCIPLES OF MECHANICS, AND THEIR  
APPLICATION TO PRIME MOVERS,  
NAVAL ARCHITECTURE,  
IRON BRIDGES, WATER SUPPLY, &C.  
THERMODYNAMICS, WITH SPECIAL  
REFERENCE TO THE STEAM ENGINE**

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Principles of Mechanics, and Their Application to Prime Movers, Naval Architecture, Iron Bridges, Water Supply, &c. Thermodynamics, with Special Reference to the Steam Engine by W. J. Millar

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**W. J. MILLAR**

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PRIME MOVERS, NAVAL ARCHITECTURE, IRON BRIDGES,  
WATER SUPPLY, &c.

THERMODYNAMICS, WITH SPECIAL REFERENCE TO THE STEAM ENGINE.

BEING AN ABSTRACT OF LECTURES

DELIVERED TO

THE CLASS OF CIVIL ENGINEERING AND MECHANICS IN THE  
UNIVERSITY OF GLASGOW, SESSION 1872-73.

BY

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## P R E F A C E .

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As indicated on the title-page, the subjects treated of in this book constituted in a more extended form a series of Lectures delivered to the Class of Civil Engineering and Mechanics in the University of Glasgow during the latter part of session 1872-73.

Shortly after the death of Professor Rankine, the author was appointed to conduct the class referred to during the Professorial vacancy; and the various subjects treated of formed part of the complete course as entered in the syllabus of the class.

It having occurred to the author that a carefully-revised abstract of these Lectures might be of use to students and others studying the various subjects treated of, the work as contained in the following pages is the result.

The subjects have been treated of as concisely as possible, numerical illustrations being occasionally given to assist the reader.

Various authorities have been consulted in the preparation of the present work; amongst others,

Professor Rankine's Works;  
Moseley's Engineering and Architecture;  
Fairbairn's Mills and Millwork;

Deschanel's Natural Philosophy, by Prof. Everett;  
Shipbuilding in Iron and Steel (Reed);  
Transactions Inst. Civil Engineers;  
Transactions Inst. Engineers and Shipbuilders in  
Scotland;  
Transactions Inst. Naval Architects;  
Report (British Assoc.) Sea-going Qualities of  
Ships, 1869;  
Annual of the Royal School of Naval Architecture  
and Marine Engineering;  
and the various Engineering and Scientific periodicals, &c.

W. J. M.

GLASGOW, October, 1874.



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