

## PREFACE.

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THE present work treats of that portion of Applied Mechanics which has to do with the Design of Structures.

Free reference has been made to the works of other authors, yet a considerable amount of new matter has been introduced, as, for example, the Articles on "Surface Loading" by Carus-Wilson, "The Flexure of Columns" by Findlay, and "The Efficiency of Riveted Joints" by Nicolson; also my own Articles on "Maximum Shearing Forces and Bending Moments," "The Flexure of Long Columns," "The Theorem of Three Moments," etc.

I am much indebted to Messrs. C. F. Findlay and W. B. Dawson for valuable information respecting the treatment of Cantilever Bridges, Arched Ribs, and the Live Loads on Bridges.

To Messrs. J. M. Wilson, P. A. Peterson, C. Macdonald, and others, many thanks are due for data respecting the Dead Weights of Bridges.

I am under deep obligation to my friend Prof. Chandler, who has kindly revised the proof-sheets, and who has made many important suggestions.

I have endeavored so to arrange the matter that the student may omit the advanced portions and obtain a complete elementary course in natural sequence.

At the end of each chapter, a number of Examples,