

**ELEMENTARY  
MECHANICAL DRAWING;  
THEORY AND PRACTICE**

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Elementary mechanical drawing: theory and practice by Charles William Weick

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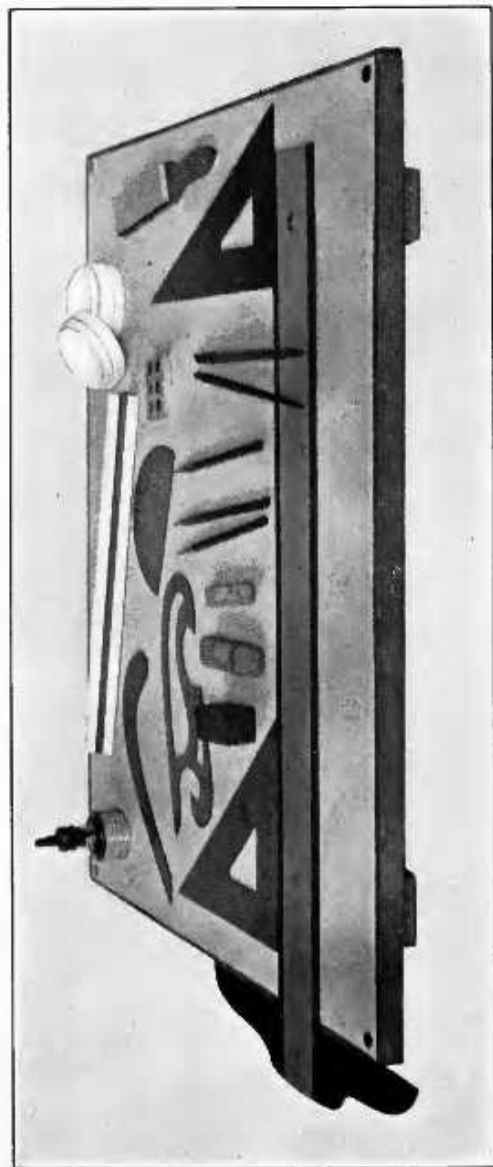
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**CHARLES WILLIAM WEICK**

**ELEMENTARY  
MECHANICAL DRAWING;  
THEORY AND PRACTICE**





FRONTISPECK.—Showing drawing board, T-square, etc.

# ELEMENTARY MECHANICAL DRAWING

THEORY AND PRACTICE

WITH CHAPTERS ON  
GEOMETRICAL DRAWING, MENSURATION  
AND  
REPRODUCTION OF DRAWINGS

A TEXT-BOOK FOR TECHNICAL, SECONDARY,  
TRADE AND VOCATIONAL SCHOOLS

BY

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TO THE  
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## PREFACE

This work aims to provide an elementary text-book for class use on the modern conventions, theory, and practice of mechanical drawing. In scope and purpose it is designed to offer a basic treatment of the subject. Beginning with the elements it develops instruction in regular progress till it covers the fundamental training needed for general practice in the drafting office.

Its object is to cover both theory and practice. The treatment of theory in the text is as brief as clearness permits, but it is expressed with all necessary fulness and elaboration by the aid of many illustrations in which the theory is implicit. The conventions of the drawing-room are duly explained. Emphasis, however, is laid on practice, for mechanical drawing is essentially a practical art, and copious examples and problems exemplify and enforce the theory at every stage of the instruction.

The fundamentals necessary for the intelligent study and prosecution of a course in mechanical drawing are contained in the Chapters I-VI, preceding the examples and problems. These chapters when used are best taken up in connection with the course in practice as it develops. The chapter on geometrical drawing contains many principles useful to the draftsman in practice. The student should review this chapter from time to time till he is familiar with these principles and can avail himself of their aid in the execution of appropriate problems in the course in drawing. The chapter on mensuration affords helpful material of instruction for such classes in mechanical drawing as include mensuration in the work of their course.

Instruction in practice given through the examples and problems, with the exception of those intended for preliminary instrument practice and those illustrating simple projection, are concrete and practical exercises. The problems are arranged in sequence to form a graded series beginning with the simplest object consisting of one piece and ending with an object consisting of a number of pieces. The series of problems constitutes two alternative parallel courses, one intended for those interested in wood construction, the other for those interested in metal work.



The allotted time stated for the solution of each problem is based on the average student's ability, and furnishes a standard of speed in the work of the class. Each example is accompanied by three problems of increasing difficulty; the teacher can make a selection to suit students of different ability and so keep the class together in their general advance through the subject.

In practice all problems of mechanical drawing involve the representation of an object and its parts on a sheet of paper. The placing and grouping of the various views of a drawing are important for the sake of clearness, convenience in use, or general neatness and workmanlike finish. The layout drawing, shown with each example, directs constant attention to this feature of good draftmanship, and offers a method by which the student may steadily gain facility in good composition.

The chapter on the reproduction of drawings is given to familiarize the student with the method of reproducing drawings in quantity, from one original, for commercial purposes.

Drawing from models has a certain value in the study of mechanical drawing, but never without the association of theory. The danger which besets drawing from models is that the student may acquire the habit of mere mechanical imitation. Such a habit is fatal to competency. It is only when the draftsman understands his subject analytically that his work becomes intelligent and creative. Such use as can be made of models may be safely left to the discretion of the teacher.

Traditional problems involving lines of intersection and developments of surfaces, and also problems in isometric drawing, belong to specialized branches of mechanical drawing and do not fall within the scope of the present work. The instruction offered by this volume aims at the production of what are commonly known as working drawings. The theory of the text can, however, be used in connection with any course which contains such problems.

In preparing the manuscript and drawings for this book the author has received many valuable suggestions from Mr. Frank C. Panuska, instructor of mechanical drawing, Teachers College; Mr. Arthur F. Hopper, supervisor of practical arts, Plainfield, N. J., and Mr. Charles H. Meeker, whose help is gratefully acknowledged.

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April, 1915

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