

**ECLECTIC EDUCATIONAL
SERIES. ELEMENTARY
MECHANICAL DRAWING,
FOR SCHOOL AND SHOP**

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Eclectic Educational Series. Elementary Mechanical Drawing, for School and Shop by Frank Aborn

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FRANK ABORN

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MECHANICAL DRAWING,
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ECLECTIC EDUCATIONAL SERIES

ELEMENTARY

MECHANICAL DRAWING

FOR SCHOOL AND SHOP

BY

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VAN ANTWERP, BRAGG & CO.

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1886

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PREFACE.

TO THE TEACHER.

In my endeavors to develop in the minds of pupils in grammar and high school classes a clear comprehension of the elementary principles of mechanical drawing, it was found that something more was needed than the copying of a few isolated problems into drawing-books. The student gained a better grasp of this subject by solving a limited number of written problems, illustrating a principle or method of mechanical drawing that had been previously explained by the teacher from the black-board.

The problems thus accumulated have been arranged in the following pages with a view to economizing the teacher's time as well as to furnish the student with facilities for independent work.

TO THE MECHANIC.

It has been my aim in the following pages to illustrate only one new principle or method of mechanical drawing in the same problem, and to

make no more problems in any given case than are necessary to sufficiently illustrate the particular point under discussion. By so doing, I have been enabled to present short problems, and thereby to make each point of interest stand out in bold relief, and at the same time greatly to economize the time of the student. But this plan has prevented making the problems, as a whole, to apply to any particular trade or profession. This is no detriment to the work, however, although the individual who is seeking to learn that part of mechanical drawing which most especially applies to a particular trade may at first glance be disappointed, and think there is nothing here for him. To such let me say that the principles of mechanical drawing are every-where the same. Master these, and their application to ship-building, stair-building, architecture, sheet-metal work, etc., etc., is an easy matter.

FRANK ABORN.

CLEVELAND, O.,
July, 1886.

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ELEMENTARY
MECHANICAL DRAWING.

DRAUGHTING TOOLS.

THE PENCIL.

For Geometrical and Constructive drawing, the pencil must be of such quality and hardness that it will take and hold a fine point.

The H grade Faber pencil is the best for school work.

Sharpening the Pencil.—For ruled lines, the pencil should be sharpened to a flat edge (Fig. 1), as with the common round point it is impossible to make the lines fine and of uniform width, which they must be if accuracy is to be secured.

For free-hand lines, nothing will do but a keen, common, round point.

As there are free-hand lines to be drawn, even in mechanical drawing, the student should have two pencils, one of which is sharpened to a flat, and the other to a round, point.



Fig. 1.