

**MECHANICAL
DRAWING
FOR PLUMBERS**

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Mechanical Drawing for Plumbers by R. M. Starbuck

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R. M. STARBUCK

**MECHANICAL
DRAWING
FOR PLUMBERS**

MECHANICAL DRAWING FOR PLUMBERS

A Concise, Comprehensive and Practical Treatise on the Subject
of Mechanical Drawing, in Its Various Modern Appli-
cations to the Work of All Who Are in
Any Way Connected With the
Plumbing Trade.

BY

R. M. STARBUCK

Author of "Modern Plumbing Illustrated," "Standard Practical Plumbing," etc.



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INTRODUCTION.

The writing of this series of articles for THE PLUMBERS' TRADE JOURNAL has been undertaken with a firm conviction that a knowledge of the subject of plumbing drawing has to-day become a most valuable and practical acquisition to the working tools of the plumber. In fact, no person who is connected with construction work of any kind can afford to be without a thorough knowledge of such drawing as applies particularly to his line of work.

Much that the author has to say in this little treatise is the result of his own experience gained in the pursuit of the plumbing business, and it is the thought of the personal benefit that he has derived from a knowledge of this subject that has led him to attempt the writing of this series.

The writer believes that his readers will appreciate with him the many difficulties that confront an attempt to give instruction of this nature by means of printers' ink rather than by word of mouth, for certainly personal oral instruction is the only method to bring fullest results.

In conclusion, the author would say that it is his sincere hope that this little book may prove of some real and practical benefit to the younger men of our trade, for whom it is especially intended.

R. M. STARBUCK.

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Mechanical Drawing for Plumbers

CHAPTER I

THE man who to-day does high-class plumbing or heating, and is worthy the name of doing that class of work, is as deserving of credit as is the lawyer who conducts his case in court successfully, or the physician who performs the duties that devolve on him in creditable manner. The trade, we must remember, is not in the crude state that it was years ago, and if the plumber keeps abreast of the times, he must educate himself along several lines in addition to the manual side of the question. He must be conversant to some extent with chemistry, and the subject of physics, that is, natural law, is more valuable to him than to any other man that we can think of. If he is to make the most of himself and his opportunities, the progressive man cannot do better than to take up the study of mechanical drawing, at least so far as it concerns the laying out of plumbing and heating work. A knowledge of the subject is valuable, not only to the man who is conducting a business and uses his knowledge in demonstrating his ideas to the prospective customer, but even the apprentice cannot afford to be ignorant of it, for on paper he can lay out work, run his lines of pipe and make his connections—all in a practical way—and gain experience thereby that he cannot gain in serving at the trade unless more fortunate than his brothers in the advantages that are given him.

The writer has in mind instances where

the obtaining of good work can be traced directly to the fact that a neat little sketch of the proposed work was submitted to the owner. The sketch showed that the one who presented it was up-to-date, and knew his business, and that thereby he gained a better place in the opinion of his customer than his competitor, was to be expected.

And it is these little points that count, not merely to-day, but always in the years to come.

In many sections of the country, particularly where the work is of a high grade, the master and the journeyman must as a part of the examination make a drawing of some system of plumbing. Another quite general custom nowadays is the demand by boards of health, that the plumber applying for a permit to do work, shall first submit drawings of the proposed work.

How convenient, and even profitable, to be able to submit work on such occasions as we have just cited, which shall be creditable. In visiting the different sections of the country, it has been impressed upon the writer's mind that there is a great demand for a knowledge of this subject, a demand which has not yet been met.

The correspondence school fills a long-felt want, and we believe it to be a valuable institution, but oftentimes a busy man does not feel that he can spare the time necessary to such a course as given by them, which necessitates the taking up of

several branches of study as a means of covering the whole ground. While we would not dignify our present series of articles as a "course in drawing," it is our intention to make it serve as such, as near as possible.

It will be appreciated that the subject is a difficult one to present, as it is best studied under an instructor who can correct an error on the spot, and explain fully wherein the error lies.

We would say, that in pursuing this series, it is with the idea of making it

As to instruments, unless it is desired to take up the inking of drawings, the only instruments actually needed are a pair of compasses for making large circles, and a pair of bow compasses for small circles. The latter instrument is of special value in making neat work.

In Fig. 1 we show the drawing board, with the tee square in position, also both triangles. In Fig. 2 the large compasses are shown, and in Fig. 3 the bow, or spring compasses.

The tee square and triangles may be of

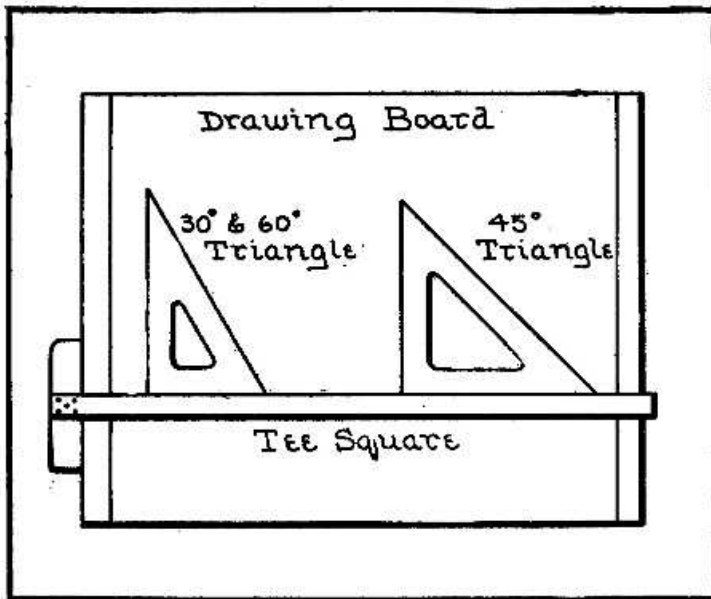


Figure 1

of real practical value to those of our readers who are interested in the subject, as we believe that every master plumber and steam fitter should thoroughly understand the manner to draw at least in a crude way the plans for work on which he may estimate.

As a preliminary to pursuing the subject of drawing, the student should provide himself with the necessary tools, which include the drawing board, tee square and triangles (30 deg. and 45 deg.) and a small set of instruments.

wood, for ordinary use. Celluloid triangles are especially good, as the work beneath shows through them.

It is no doubt well known to our readers that horizontal lines are made along the edge of the tee square and vertical lines are made along the edge of the triangle held against the edge of the tee square. With triangles which are true, this insures true work, but if the vertical lines are made by holding the tee square against the lower edge of the board, there is very little chance of the work being