W. KLIE.

RULE.

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924,671.

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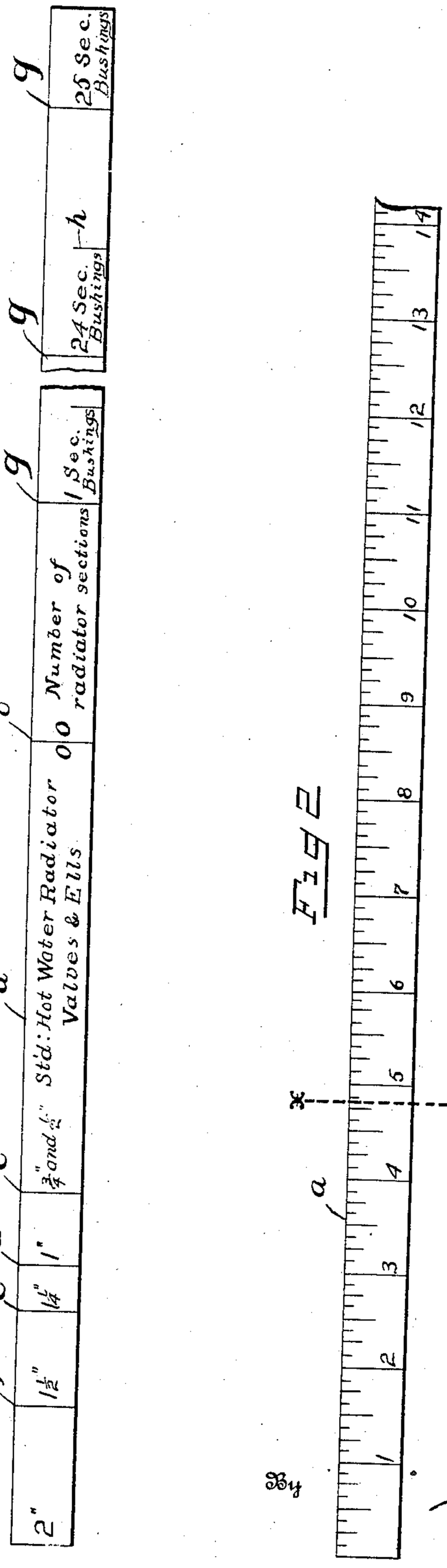

Witnesses

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RULE.

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To all whom it may concern:

Be it known that I, WALTER KLIE, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Rules, of which the following is a specification.

My invention relates to the improvement of rules of that class which are particularly adapted for the use of plumbers, architects and others in effecting a predetermined location of hot water radiator inlet and outlet pipes and the objects of my invention are to provide a rule of this class so divided and lettered as to admit of a plumber, architect or other person readily determining the points in the floor of a room through which the inlet and outlet pipes of a hot water radiator must pass and to so construct and divide said rule as to admit of these points being accurately located regardless of the number of sections which may be used in the radiator construction and to produce other improvements the details of which will be more fully pointed out hereinafter.

These objects I accomplish in the manner illustrated in the accompanying drawing, in which:

Figure 1 is a face view of one of my improved rules showing a portion thereof broken away, Fig. 2 is a view of the opposite face from that shown in Fig. 1, of a portion of one of said rules, and, Fig. 3 is a transverse section on line *x*—*x* of Fig. 2.

Similar characters refer to similar parts throughout the several views.

In carrying out my invention, I employ a rule body *a*, of the usual oblong form as indicated in Fig. 3 of the drawing. Toward one end of the rule body on the left of the center of the length thereof, I provide one face of the rule with a transverse division mark which is indicated at *b* and on opposite sides of said mark are printed on said rule face, two zero marks as shown. At a predetermined distance from and to the left of the division mark *b* is a division mark *c*, adjacent to which are printed or stamped the figures $\frac{3}{4}''$ and $\frac{1}{2}''$. To the left of the division mark *c* are other spaced division marks *d*, *e* and *f* adjacent to which are stamped respectively the figures and signs, $1''$, $1\frac{1}{4}''$, $1\frac{1}{2}''$ and $2''$, the later being, as shown, adjacent to the end of the rule. The division marks *c*, *d*, *e*, *f* and the end of the rule, are distanced respectively from the mark *b* on the full sized rule, $4\frac{5}{8}''$, $5\frac{1}{2}''$, $6''$, $7''$ and $8\frac{1}{2}''$, the length of these spaces being predetermined as essential in accomplishing the objects of my invention. The inch and fractional inch markings adjacent to the division marks above described, indicate various sizes of pipe valves and elbows which may be used and the distances between the division mark *b* and the division marks *c*, *d*, *e*, *f* and the end of the rule, represent respectively the lineal spaces occupied by the pipe valves and elbows of a radiator.

To the right of the division mark *b* are arranged successively properly distanced transverse division marks *g* and on the right of each one of these division marks *g* is a short division mark *h*. The distances between the division mark *b* and the first mark *g* and between the remaining marks *g*, indicate respectively the spaces occupied by one radiator section, while the distances between each of the marks *g* and the short mark *h* to the right thereof, indicates the combined spaces occupied by the bushings at each end of the radiator. For convenience the space on the rule between the mark *b* and the first mark *g* to the right, has printed thereon "Number of radiator sections" while the remaining spaces between the marks *g* and adjacent to the marks, have printed thereon "1 Sec. Bushings" "2 Sec. Bushings" "3 Sec. Bushings" and so on up to "25 Sec. Bushings."

As indicated in Fig. 2 of the drawing, the opposite or reverse face of the rule from that heretofore described, has printed or stamped thereon, the usual inch and fractional inch markings, thus permitting the use of the device after the manner of using an ordinary rule.

In order to illustrate the use of my improved rule, we will assume that it is proposed to set a hot water radiator composed of 24 sections and that the fittings or valves and elbows at the ends thereof are of the $1\frac{1}{4}$ inch size: By laying the rule on the floor or floor framework, the points where the inlet and outlet pipes at the respective ends of the radiator should pass through the floor or floor frame, can be accurately located by marking the floor opposite that division mark *g* adjacent to which is the indication "24 Sec." and again marking the floor opposite the division mark *e* adjacent to which are the figures and sign $1\frac{1}{4}''$. In order to include the space which will be occupied by the bush-

ing at both ends of the radiator, the floor should be marked opposite the short division mark *h* which is to the right of the "24 Sec." mark.

It will be understood that where other numbers of sections are to be employed than that indicated in the example above, or where other sizes of pipe fittings are to be used, the floor markings for the pipes will be made opposite the proper rule division marks.

From the construction and operation described, it will be readily seen that simple and effective means are provided for quickly and accurately determining the locations of the inlet and outlet pipes of a hot water radiator and that a rule constructed as described will be of great value to pipe fitters, architects, contractors and others, inasmuch as the use of the rule will obviate the necessity of learning and keeping in mind a table of distances relating to differently sized radiators and fittings therefor, or of making preliminary detail measurements of the various elements of the radiator.

What I claim, is:

A rule of the character described having on one side thereof an intermediate zero point and arranged upon one side of said zero point, a plurality of division marks, which, in conjunction with the intermediate zero point, indicate the space occupied by one or more radiator sections, said marks being designated by numbers which correspond to the number of radiator sections required to fill the space between said marks and the intermediate zero point, additional division marks arranged between the radiator section marks and indicating, in conjunction with the first named division marks, the spaces occupied by the bushings required for a radiator of the number of sections indicated by the adjacent radiator section mark, and a plurality of division marks upon the opposite side of the zero mark spaced to agree with the linear measurements of the radiator fittings but indicated by numerals corresponding to the different diametric sizes of said fittings.

In testimony whereof I affix my signature in presence of two witnesses.

WALTER KLIE.

Witnesses:

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