

(No Model.)

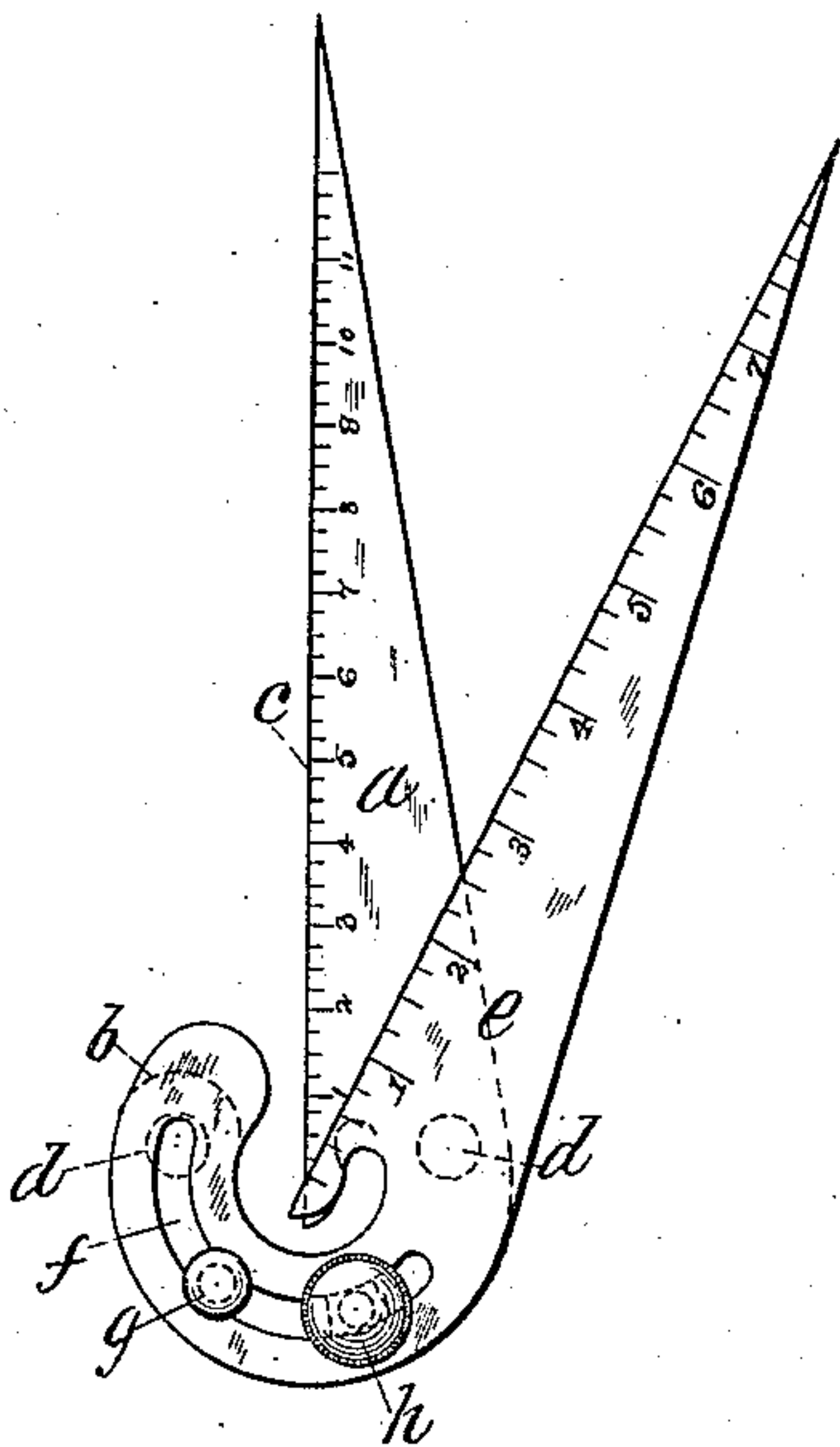
C. L. BELLAMY.

CENTERING, BEVEL, AND TRY SQUARE.

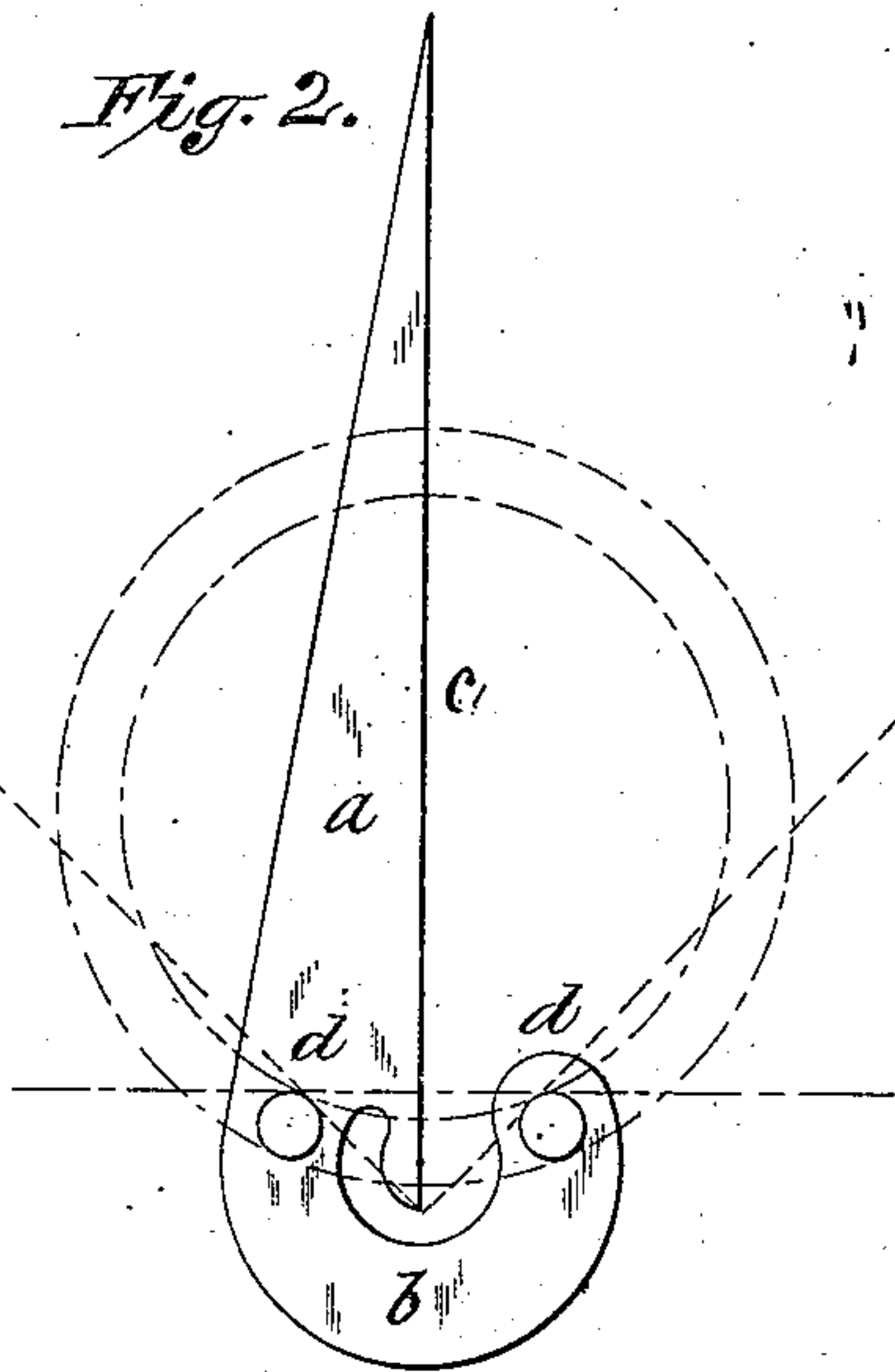
No. 267,481.

Patented Nov. 14, 1882.

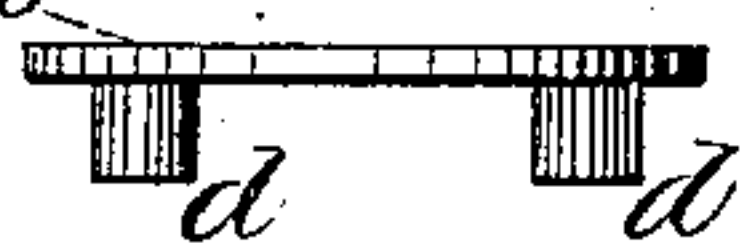
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

CHARLES L. BELLAMY, OF ARLINGTON, NEW JERSEY.

## CENTERING, BEVEL, AND TRY SQUARE.

SPECIFICATION forming part of Letters Patent No. 267,481, dated November 14, 1882.

Application filed July 27, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES L. BELLAMY, of Arlington, Hudson county, New Jersey, have made certain new and useful Improvements in Centering, Bevel, and Try Squares, of which the following is a specification.

My invention aims to provide a combination square for the use of machinists or others, which will combine a number of uses, and have greater range and capacity than those heretofore produced, while embodying a simple and inexpensive construction.

To these ends the instrument which I have devised may be employed either as a straight, bevel, or mitering square, or for centering circles, whether internal or external, and may be also used as dividers and gage.

The invention consists in the peculiar construction of the device, as more fully herein-after described and claimed.

Figure 1 of the annexed drawings presents a plan view of my complete square, embodying all the features of my invention, containing two oversliding blades adapted for beveling and dividing. Fig. 2 is an inverted plan view of a single-bladed square containing the more essential features of my invention. Fig. 3 is an end or edge elevation of the head end of the square.

In Figs. 2 and 3, *a* indicates the blade, and *b* the head, of the square, which are preferably made in one piece of flat sheet metal, as shown, the blade and head being thus level with each other. The head, as will be observed, is semicircular, and the blade tapers to a point, although these shapes are not essential, thus giving the square a form resembling the figure 6. The blade is formed with an accurate straight edge, *c*, which preferably radiates from the center of the semicircular head, and from one side of this head two isolated pins or posts, *d d*, project at right angles to the plane of the square, and are disposed each on a line which is at right angles to the straight edge and equidistant on either side thereof, as indicated by the horizontal dotted line in Fig. 2. These pins are preferably cylindrical; but they may be of any flat-sided form, provided their sides be placed in regular relation with the straight edge. It will now be seen that the pins *d d* constitute the raised head of the

square in lieu of the continuous raised ledge or head heretofore used, and impart several important properties not possessed by the common forms of squares. Thus, if the pins *d d* be abutted against one edge of the work, as indicated by the transverse dotted line in Fig. 2, the straight edge of the blade will lie at right angles to this edge, thus adapting the instrument for all straight or regular squaring. In addition to this, however, the square may be as readily used for centering circular work. Thus, if the pins be placed against the circumference of a circle, (see Fig. 2,) the straight edge will always give the diametrical line of the circle, and by scribing this line and shifting the square to a different part of the circle and scribing an intersecting line the center of the circle will be shown by the intersection of the lines in the usual manner of centering. In the construction shown, however, by reason of the isolated pins *d d*, it will be observed that the centers of circles, whether external and convex or internal and concave, may be readily found, as indicated by the two dotted circles in Fig. 2, thus presenting a great improvement over the usual V-headed centering-square, both in simplicity and scope. Furthermore, the square may be used for mitering or dividing a right angle, for it will be observed from Fig. 2 that the center of the head is recessed, and that the straight edge *c* is prolonged into the head past the line of the pins *d d*. Hence, if the corner of a right angle is brought into coincidence with the straight edge *c*, while the pins abut against either side, as shown by the right-angled lines in Fig. 2, the straight edge will of course divide or miter the right angle, as seen in Fig. 2. It may be also seen that by prolonging the straight edge past the line of the projections *d d* that the squaring-line of the straight edge may be scribed up to and past the base-line or abutting edge of the work, which is not the case with common squares, and this is often quite desirable in order to obtain a correct point on the base-line.

The square is thus not only of very simple and cheap construction, but has great scope, and combines a number of properties which the ordinary squares do not possess, thus presenting an important improvement over them.

In case a bevel-square is required, the instru-



ment is constructed with two plates of similar shape to that already described, placed one over the other, as seen in Fig. 1. The under or master plate, *a b*, is the same as already described, and shown in Fig. 2, carrying the pins *d d*, while upper plate, *e*, is of similar outline, but without the pins *d d*, and its head is provided with a curved slot, *f*, central to the straight edge *e*, and through this slot the stem of a headed pin or rivet, *g*, extends, and is fixed to the under or master plate *a b*. The stem of a binding-screw, *h*, also extends through the slot *f*, at a distance from the rivet *g*, and screws into the under plate, while the head of the screw bears upon the top plate. Hence by loosening the screw *h* the bevel-blade *e* may be shifted to any desired angle with relation to the master-edge *b c*, and this angle may be shown by graduations on the master-blade, if desired, and by tightening the clamp-screw *h* the blades will be held at this adjustment as long as required. The straight edge of each blade may also be graduated on both faces thereof with graduations of any desired kind—for instance, for nut and tap gages or other measurements—and as the instrument admits of four lines of graduations the value of the instrument may be thus readily extended. It may be also observed from Fig. 1 that as both blades are tapered to sharp points the instrument hence serves equally well for use as dividers, and if the points be slightly curved it may be also employed as calipers, thus combining several functions and the properties of several instruments in one simple instrument.

The plates of the instrument are preferably formed by being stamped by dies from sheet metal, and the pins *d d* are fixed by riveting, soldering, or other suitable means, thus rendering the construction very cheap. If desired, however, the square may be cast in one piece and finished to accurate lines afterward.

I am aware of Patent No. 78,770, dated June 9, 1868, and I do not claim the invention shown therein, my device differing therefrom in simplicity and economy of construction, and consequently in accuracy.

What I claim is—

1. A bevel or try and centering square consisting of a blade, *a*, and a head, *b*, made in a single piece of equal thickness throughout, and two isolated pins, *d d*, secured to said head on one side and so disposed that a line connecting them shall be at right angles to the straight edge of the blade, and one on either side thereof, substantially as and for the purpose specified.

2. A try and mitering square having its blade *a* and the head *b* made of a single piece of metal and formed on one side with a projection on either side of the straight edge of the blade and at right angles to the latter, said head being provided with a recess between the pins and having the straight edge projecting into but not entirely through said recess, substantially as and for the purpose specified.

3. The sheet-metal try, centering, and mitering square herein described, consisting of straight-edged blade *a* and recessed head *b*, of a single piece of metal and of even thickness throughout, the head being formed with a recess into which a prolongation of the straight edge projects, and provided on one side with two pins so disposed that a line connecting them shall be at right angles to the straight edge, substantially as described.

4. The pointed blade *a* and the head *b*, made in a single piece of metal of even thickness, said head being provided with two isolated pins, one on each side of the straight edge of the blade and so disposed that a line connecting them will be at right angles to the straight edge, in combination with the blade *e* and its head made of the same outline as the blade *a*, and secured to the same in such a manner that the straight edges of both blades, when separated, will radiate from a common center, substantially as described, and for the purpose specified.

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Witnesses:

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