(No Model.)

J. B. PRICE.

CENTER AND KEY SEATING SQUARE.

No. 477,959. Patented June 28, 1892.

Fig. 1.

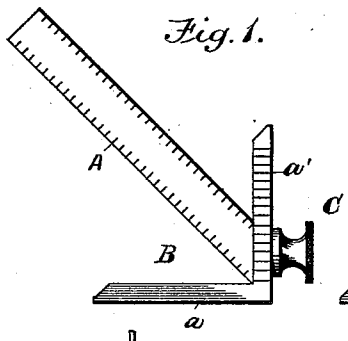


Fig. 2.

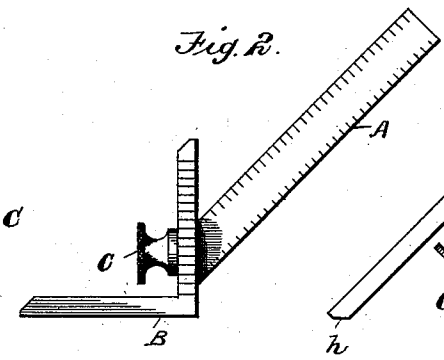


Fig. 3.

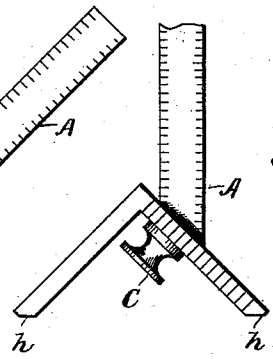


Fig. 4.

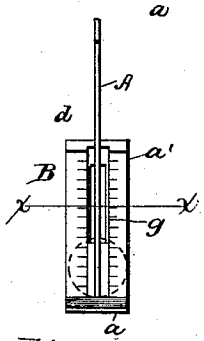


Fig. 5.

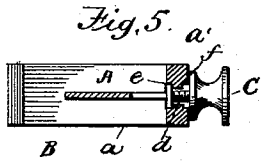


Fig. 6.

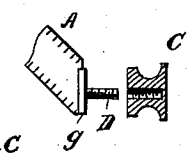


Fig. 7.

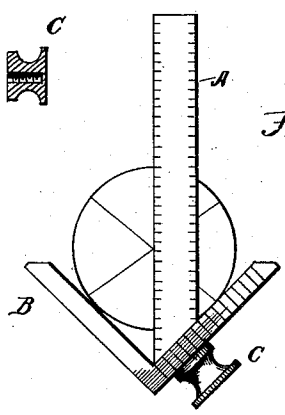


Fig. 9.

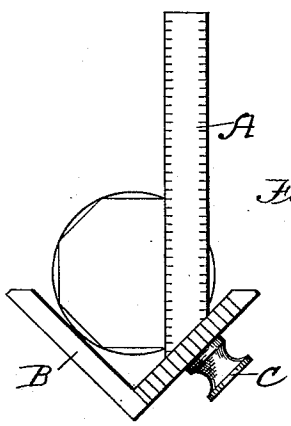
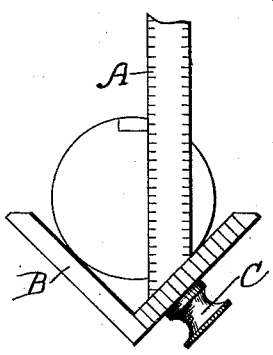


Fig. 8.



Witnesses

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JOHN B. PRICE, OF WOLLASTON, MASSACHUSETTS.

CENTER AND KEY-SEATING SQUARE.

SPECIFICATION forming part of Letters Patent No. 477,959, dated June 28, 1892.

Application filed March 30, 1892. Serial No. 427,111. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. PRICE, a citizen of the United States, and a resident of Wollaston, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Center-Squares; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to an adjustable center-square especially designed for use in lathe or machine work on cylindrical objects, such as shafts; and the object in view is to provide a simple and cheap implement which can be used to readily determine the lines for cutting a keyway or seat in a shaft, for finding the center of the shaft or cylindrical body, for determining the chords of a circle, and to indicate perpendicular lines through a cylindrical body, with the base resting on either a horizontal or cylindrical surface.

With these and other ends in view the invention consists of a base having its two arms arranged at right angles to each other, (or at an angle of ninety degrees,) and one of said arms having a longitudinal slot, which opens through both faces of the slotted arm, and a blade provided with an enlarged head lying at an angle of forty-five (45) degrees to the axis of said blade and adapted to be fitted in the longitudinal seat in either the inner or outer face of the slotted arm of the base, said head of the blade having a projecting threaded stud, which passes through the slot and receives a thumb-screw to bind against the slotted arm to hold the blade securely in its adjusted position on the slotted arm.

The invention further consists in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

In the accompanying drawings, Figures 1, 2, and 3 are side elevations of the center-square, showing the blade adjusted in different positions or angles. Fig. 4 is a front elevation with the blade adjusted as in Fig. 1. Fig. 5 is a horizontal sectional view on the line $x\,x$ of Fig. 4. Fig. 6 is a detail view of a part of the blade, showing its threaded stud and the thumb-nut. Figs. 7, 8, and 9 illustrate the method of using the bevel on a cylindrical shaft.

Like letters of reference denote corresponding parts in the several figures of the drawings.

The improved center-square consists of three parts—the base A, a blade B, and a thumb-nut C for holding the blade firmly in place on the slotted arm of the base. This base is made or cast in a single piece of metal, and it comprises two arms $a\,a'$, arranged at an angle of ninety (90) degrees to each other to form a right angle. One of the arms a of the right-angled base is provided with a central longitudinal slot d, which extends from the junction of the two arms nearly to the outer end of the arm a, as shown in Fig. 4, and in the opposite faces of the slotted arm a are formed or cut two seats $e\,f$, respectively.

The blade B is made of a single flat piece of metal of suitable length and width, and at one end the blade has an enlarged head g, formed by the two laterally-extending flanges, said head being of such width that it is adapted to fit snugly in either of the seats $e\,f$ in the opposite faces of the slotted arm a. The head g lies at an angle of forty-five (45) degrees to the longitudinal axis of the blade, and from the head projects a rigid threaded stud D, which is at a right angle, or an angle of ninety (90) degrees, to the head on said blade. The head g fits snugly in the seat on either the inner or outer face of the slotted arm a and the stud passes through the slot in said arm, the blade being held in position by the thumb-nut C, which is screwed on the threaded stud D and binds against the slotted arm of the base A.

The implement is designed for use particularly on cylindrical shafts, and in Figs. 1 and 7 I have shown the blade adjusted for use in determining the center of the shaft. The blade is adjusted or fitted between the arms of the base and the thumb-nut binds against the outer face of the slotted arm a. The blade is adjusted so that one edge thereof is at an angle of forty-five degrees with the inner angle formed by the arms $a\,a'$, and the imple-

ment is placed around the shaft or other cylindrical surface so that its arms rest upon the shaft, as shown in Fig. 7. By scribing the lines at right angles to others across the end of the shaft in the manner shown in Fig. 7 the intersection of the lines indicate the center of the shaft.

To determine the lines for cutting a key way or seat in the shaft, the blade can be adjusted on the slotted arm *a* for a distance from the angle eqnal to one-half the width of the key-seat. After the central line of the way or seat has been drawn the base is adjusted around the shaft, so that one side of the way can be drawn along the edge of the blade, and the base is then reversed and the other side of the way or seat can be scribed along the same edge of the blade, as will be readily understood by reference to Fig. 8. The inner and outer faces of the arm *a* and one edge thereof are suitably inscribed with the scale in inches and the subdivisions thereof, so that the space between the inner edge of the blade and the angular center of the base can be readily determined.

The blade can be adjusted on the slotted arm *a* a suitable distance from the angular center of the base and the implement moved around the shaft to draw or scribe chords of a circle, as indicated in Fig. 9.

To indicate an angle of forty-five (45) degrees from the horizontal, the blade should be fitted in the seat *f* on the outside of the arm *a*, and the arm *a* should be placed on a bevel surface, as shown in Fig. 2; but to indicate a perpendicular to the horizontal the blade should be reversed and the base inverted, so that the beveled ends *h h* of the arms *a a'* can rest true on the level surface.

The device is extremely simple in construction, can be manufactured very cheaply, and is reliable and efficient in service.

It is evident that changes in the form and proportion of parts can be made without departing from the spirit or sacrificing the advantages of the invention.

What I claim as new is—

1. A bevel consisting of a right-angled base having the two rigidly-joined arms and one of its arms slotted longitudinally, an adjustable blade fitted in said slotted arm, and means for clamping said blade rigidly to the arm, as and for the purpose described.

2. A bevel comprising a right-angled base having its two arms made in a single piece and with one of said arms provided with a longitudinal slot and a blade arranged or held at an angle of forty-five degrees to said slotted arm and adjustably clamped thereon, as and for the purpose described.

3. A bevel comprising a right-angled base having one of its arms slotted longitudinally and provided with parallel seats on both the inner and outer surfaces thereof, a blade adapted to be fitted in either seat of the slotted arm, and means for clamping the blade rigidly to said arm, as described.

4. A bevel comprising a right-angled base having one of its arms provided with a seat and a slot, a blade with an angular head which fits in the seat and carrying a stud that enters the slot, and a clamping-nut, as and for the purpose described.

5. A bevel comprising a right-angled base having one of its arms provided with a slot, a blade with a right-angled threaded stud adapted to pass through said slot and having a bearing against one side of the slotted arm, and a thumb-nut screwed on the stud to bear against the other side of the slotted arm, substantially as described.

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

JOHN B. PRICE.

Witnesses:
CHAS. F. THAYER,
HENRY J. THAYER.