

(No Model.)

W. E. PRATT.  
CENTER SQUARE, BEVEL, AND PROTRACTOR.

No. 405,432.

Patented June 18, 1889.

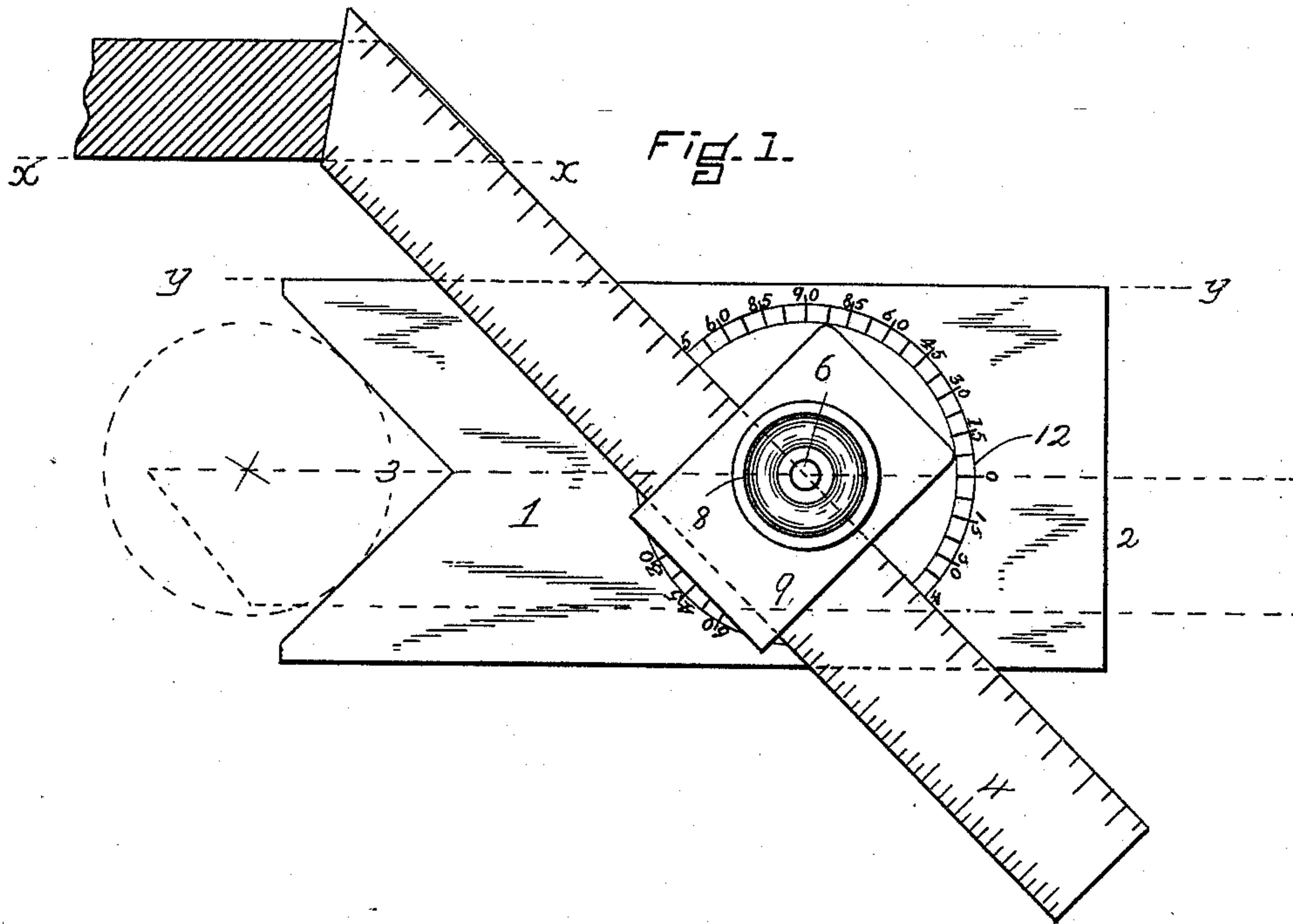


Fig. 2.

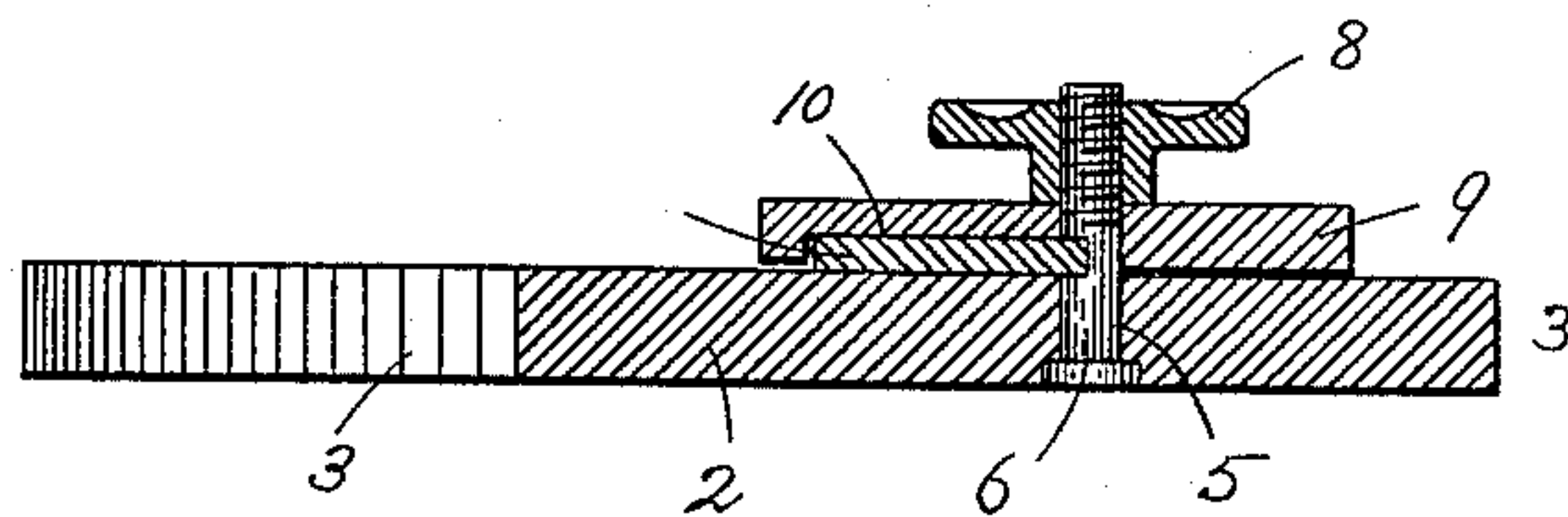


Fig. 4.

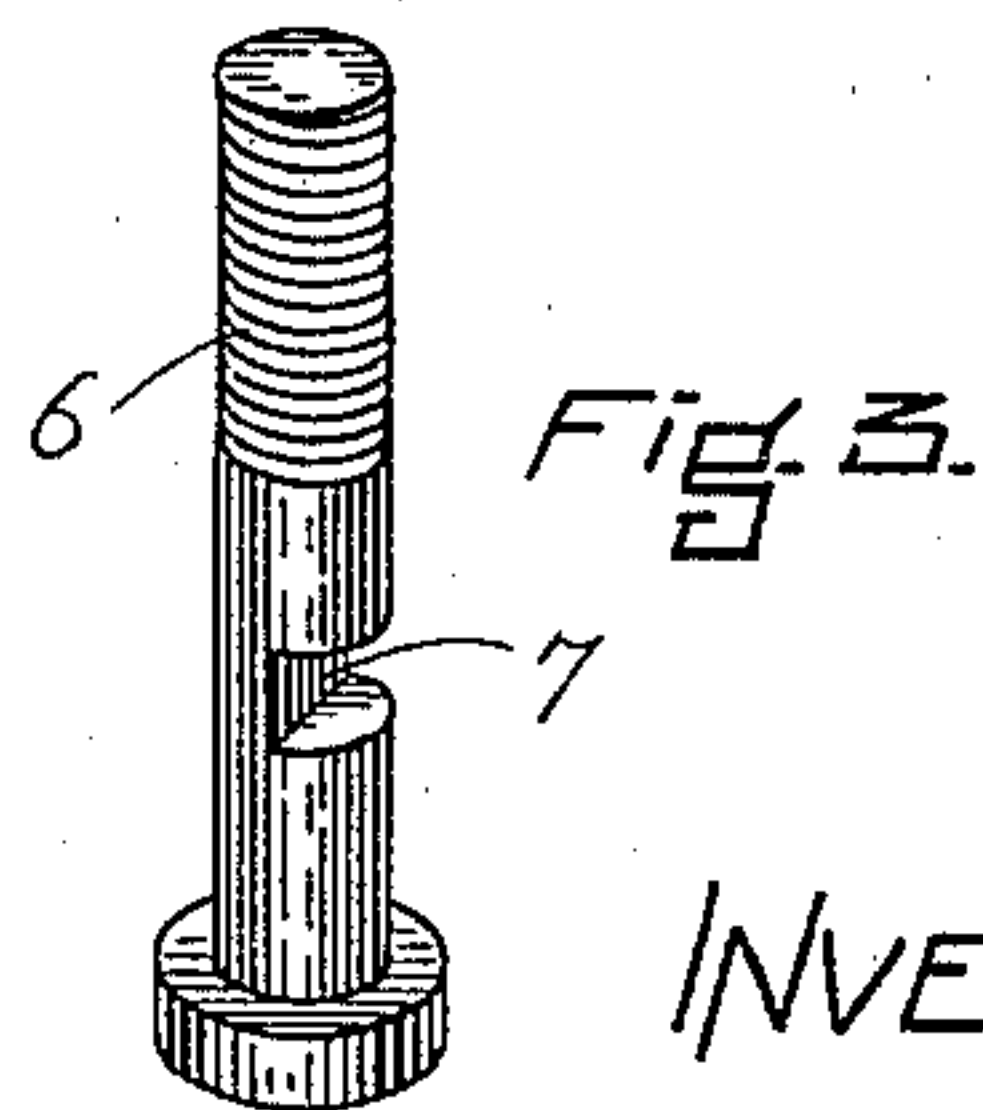
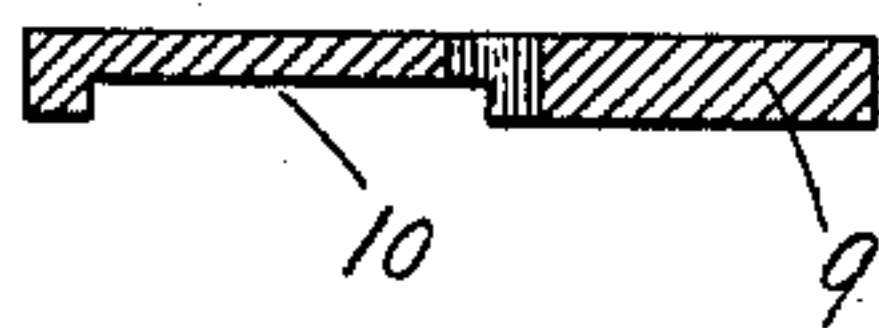


Fig. 3.

enlarged

WITNESSES.

*Albert Pratt.*

*Francis C. Stanwood*

INVENTOR.

*Wallace E. Pratt.*

*by H. E. Lodge Atty.*



# UNITED STATES PATENT OFFICE.

WALLACE E. PRATT, OF BOSTON, MASSACHUSETTS.

## CENTER-SQUARE, BEVEL, AND PROTRACTOR.

SPECIFICATION forming part of Letters Patent No. 405,432, dated June 18, 1889.

Application filed April 15, 1889. Serial No. 307,328. (No model.)

*To all whom it may concern:*

Be it known that I, WALLACE E. PRATT, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Bevel and Try 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to "try" and "bevel" squares, so called, the object being to produce an improved tool which will accomplish all the purposes incidental to the above class of instruments and yet be extremely simple, one not liable to become disarranged or easily injured, likewise one which will serve as a protractor. The general arrangement of the component parts and their particular functions will hereinafter be more fully described.

The drawings represent in Figure 1 a plan, and in Fig. 2 a vertical longitudinal section of the same, the blade being positioned at right angles to the stock lengthwise. Fig. 3 is a perspective view of the locking-bolt. Fig. 4 is a transverse vertical section of the clamp-plate through its bolt-hole.

In the annexed drawings, 1 represents the "stock," so called, of the tool, composed of a thick metallic plate formed with a straight end 2, while the opposite one 3 is constructed with an internal angle the sides of which are disposed at ninety degrees. Further, the apex of this angle is coincident with the central longitudinal axis of the stock, the sides of the latter being parallel therewith. Said stock is bored at 5 to receive a clamping-bolt 6. This bolt is transversely slotted at 7, said slot extending to the center of the bolt, the lower end of said slot being flush with the upper surface of the stock, while the extremity of said bolt is screw-threaded to receive a thumb-nut 8 thereupon. The blade of this tool, a thin straight piece of steel 4, preferably graduated, as shown, is adapted to fit in the slot 7. Thus it will be seen that one edge of the blade is always coincident with the

center of the bolt. The longitudinal axis of the latter, however, lies in the same vertical plane taken longitudinally and centrally of the stock; hence when the blade is in the position shown by the dotted lines in Fig. 1 one edge of the blade, the longitudinal axis of the stock, and the central axis of the clamping-bolt all lie in one and the same plane. By this means work can be accurately centered.

To enable any ordinary graduated blade to be used, I employ clamping mechanism which does not require any special construction of said blade; further, one which cannot injure or deface the graduations thereon, and yet will hold the said blade rigidly in any desired position. This mechanism consists, in brief, of a rectangular plate 9, provided with a bolt-hole to receive the clamping-bolt, about which it swings axially when occasion requires. Upon the under side of said clamp-plate I have cut a slot 10, which extends from side to side of the plate, one edge thereof, that nearest the center of said plate, coinciding with the center of the bolt 6. Moreover, this slot is less in depth than the thickness of the blade 4 and rests upon the blade; hence when the thumb-nut 8 is forced down upon the clamp-plate the latter presses the blade forcibly against the surface of the stock. The large bearing-surface presented by the blade upon the stock prevents the blade from moving and holds it rigidly fixed in any position where it may be placed. I propose to employ this instrument as a protractor, and in connection therewith I have inscribed upon the surface of the stock a circle 12, the center of which is the center of the bolt 6, and hence located upon the central longitudinal axis of the stock. The circumference of this circle is divided preferably into four quadrants, the graduations in degrees ranging from zero, or no angle, which graduation is coincident with the central longitudinal axis of the stock, up to ninety degrees, or in a line at right angles to said axis.

Since both sides of the stock are exactly parallel with the central longitudinal axis of the latter, the angle which the reading-edge of the blade subtends with said sides is identical with that made by the blade with the



longitudinal axis of the stock, both of which meet at the center of the graduated circle. Thus the result obtained by presenting one side of the stock to the object and then adjusting the reading-edge of the blade to the inclined surface to be tried will be exactly similar to that result accomplished by centering the graduated circle at the apex of the meeting surfaces to be tried. Thus, assuming that the lines  $xx$   $yy$ , representing certain surfaces, are parallel when the reading-edge of the blade is coincident with the beveled surface, as shown, then the reading upon the circle indicates the angle of said surfaces.

With this instrument the blade can be easily adjusted and readily slipped either way of the clamp-plate. The stock can be centered very quickly, angles measured, and bevels ascertained with little or no trouble, while the tool is of the simplest form, consisting of but five parts—viz., the stock, the blade, and the clamp-plate with its bolt and thumb-nut. This construction will recommend itself to all mechanics, since this tool will perform all the functions and serve the purposes of a protractor, a bevel, and a square.

What I desire to claim is—

1. As a new article of manufacture, a try and bevel square composed of a stock formed with an internal right angle at one end, a graduated circle inscribed upon its upper surface having its center coincident with the

central longitudinal axis of the stock, a pivotal blade thereon, and the clamping mechanism, as described, the reading-edge of the blade and the locking-bolt coinciding with the center of the graduated circle, substantially as herein set forth.

2. In combination with the stock of a bevel inscribed with a graduated circle centered upon the longitudinal central axis of said stock, the bolt slotted to its center transversely of said stock, the pivotal clamp-plate, and the blade moving axially with said bolt, the center of the bolt, the bottom of the bolt-slot, and the reading-edge of the blade all coinciding with the center of the graduated circle, substantially as and for purposes specified.

3. In a bevel and try square, the interiorly right-angled stock 1, the graduated circle 12 thereon, the transverse bolt 6, slotted at 7, and the clamp-plate 9 axially thereof, with its slot 10, combined with a blade 4, which engages said slots 7 10, movable axially and transversely through said bolt and held by the thumb-nut 8, substantially as herein stated.

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

WALLACE E. PRATT.

Witnesses:

H. E. LODGE,

FRANCIS C. STANWOOD.