

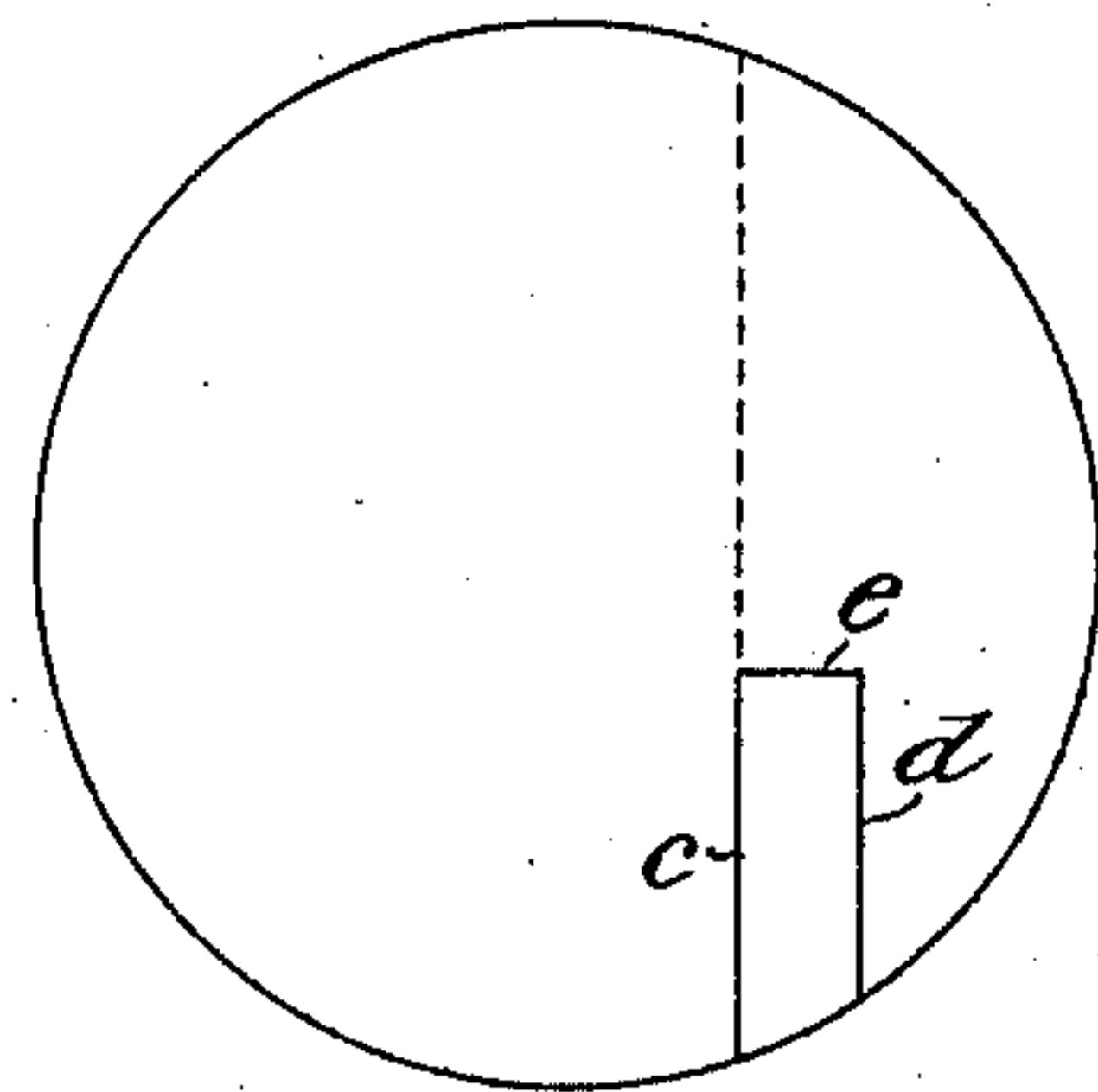
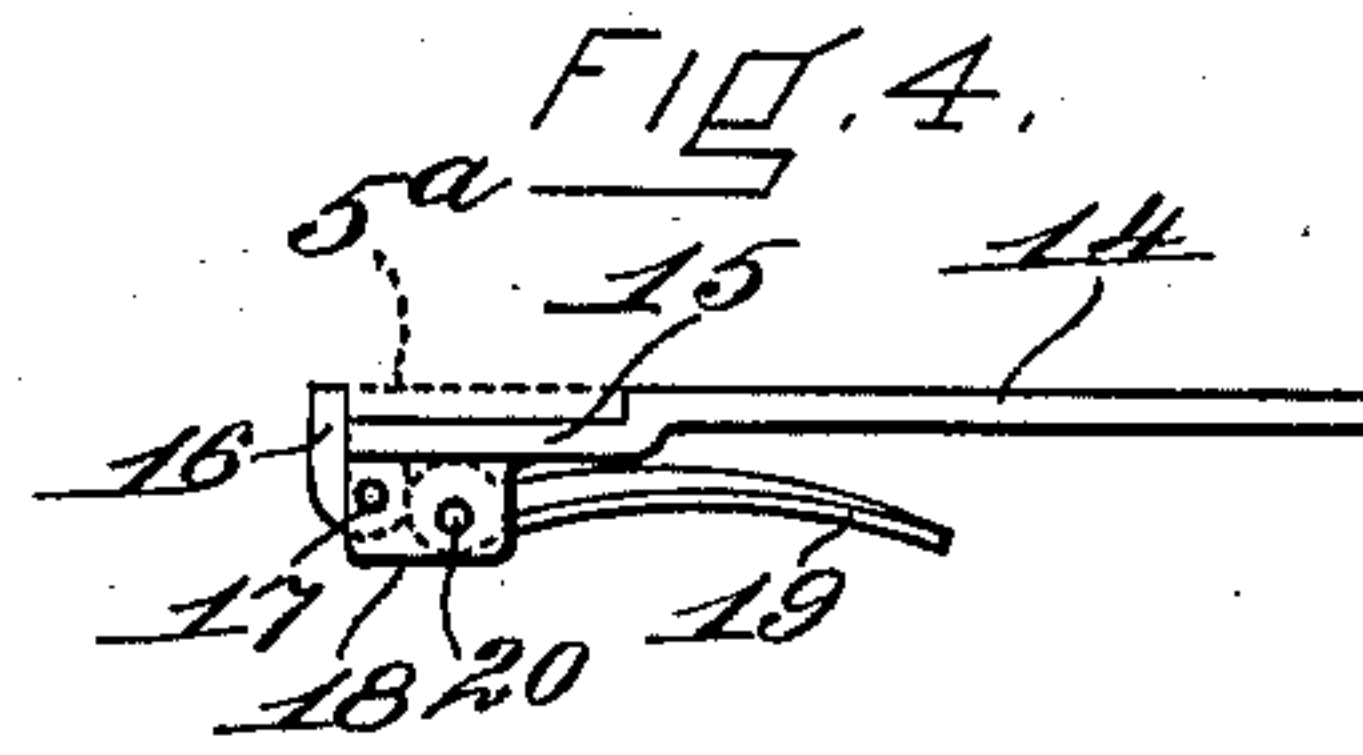
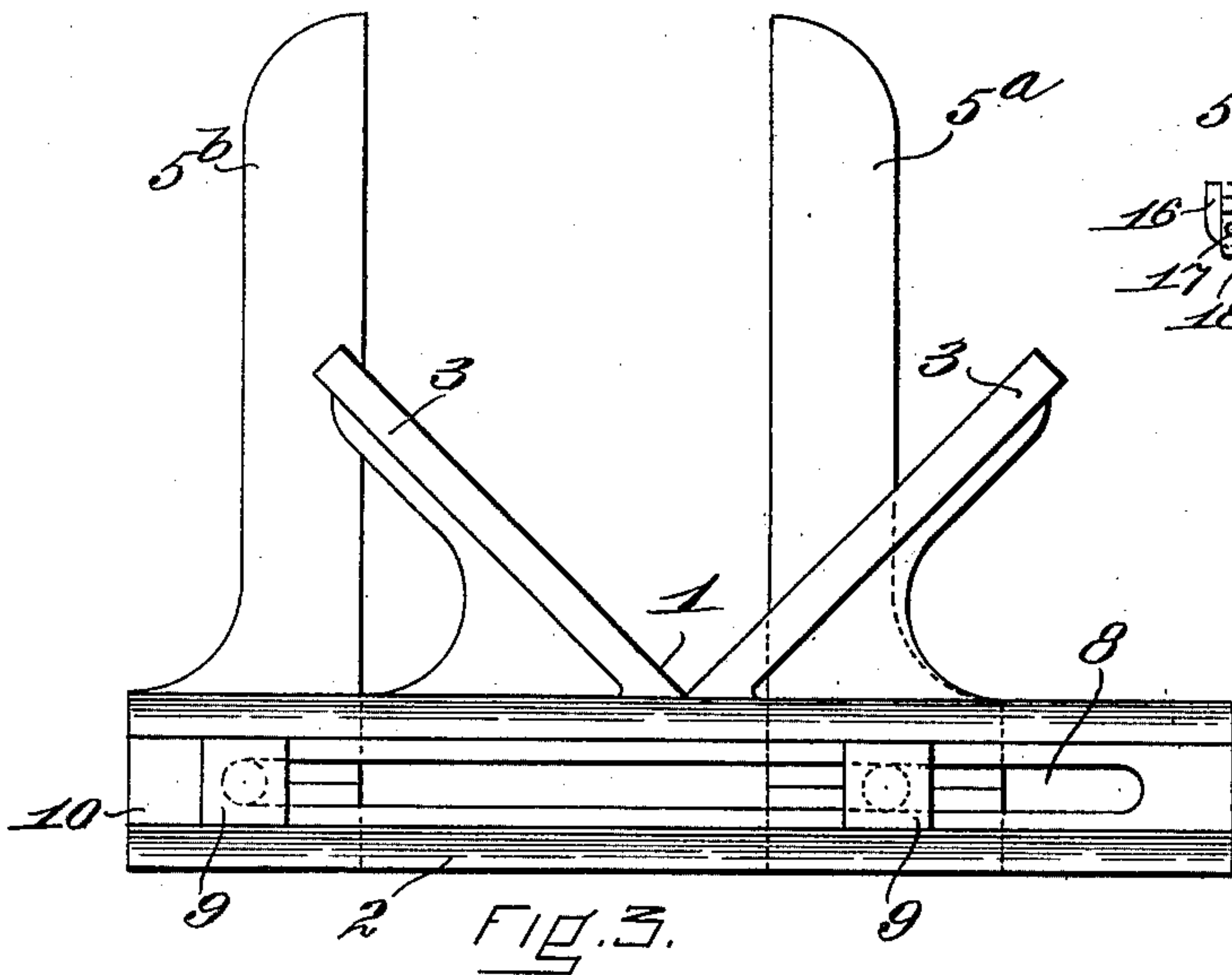
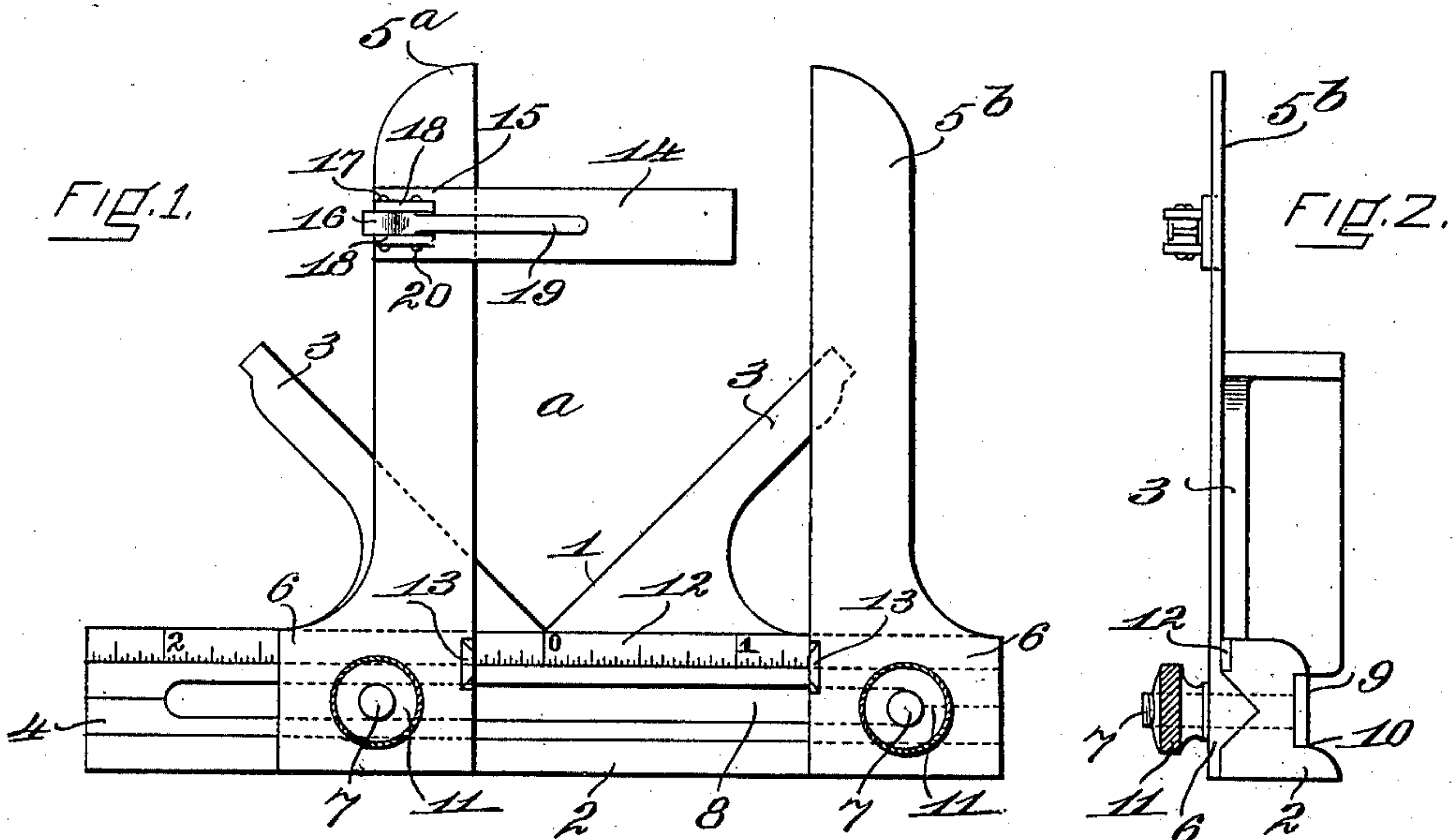
No. 686,891.

Patented Nov. 19, 1901.

W. A. DUNBAR.  
CENTER SQUARE.

(Application filed June 8, 1901.)

(No Model.)



WITNESSES

Edward S. Day  
Fred C. Fish

FIG. 5.

INVENTOR

William A. Dunbar  
by his Attorney  
Benjamin Phillips



# UNITED STATES PATENT OFFICE.

WILLIAM A. DUNBAR, OF LYNN, MASSACHUSETTS.

## CENTER-SQUARE.

SPECIFICATION forming part of Letters Patent No. 686,891, dated November 19, 1901.

Application filed June 8, 1901. Serial No. 63,827. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. DUNBAR, a citizen of the United States, residing at Lynn, in the county of Essex 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 improvement in center-squares.

The object of my invention is to improve the construction of center-squares in order to adapt them to a larger variety of work.

To the above end the present invention consists in the improved center-square hereinafter described and claimed.

In the accompanying drawings, illustrating the preferred form of my invention, Figure 1 is a front elevation, Fig. 2 a side elevation, and Fig. 3 a rear elevation, of my improved center-square. Fig. 4 is a detail view, and Fig. 5 is a diagrammatic view, hereinafter described.

The head 1 consists of a base 2, provided with arms 3 3, arranged preferably at right angles to each other and at angles of forty-five degrees to the base. The base is provided with a V-shaped groove 4 on its front side, arranged at right angles to the bisectrix  $a$  of the angle between the arms 3 3. The base is extended in both directions from the center and carries two or more blades  $5^a$   $5^b$ , provided with bases 6, having projections thereon which fit the groove 4. The blades  $5^a$  and  $5^b$  are provided with ruling edges extended parallel to the bisectrix  $a$ . The blades  $5^a$  and  $5^b$  are secured to the base 2 by means of bolts 7, which extend through the slot 8 in the base and are provided with heads 9, which engage the grooves 10 on the rear of the base 2. Thumb-nuts 11 are provided by means of which the blades may be fixed in desired position. The base 2 is provided with a scale 12, which is graduated in opposite directions from the center. The ruling edges of the blades  $5^a$  and  $5^b$  are beveled at 13 opposite the scale 12, so that the blades may be set with relation to the bisectrix  $a$  of the angle of the square. A right-angle blade 14 is provided which is adapted to be secured to

either one or the other of the blades  $5^a$   $5^b$  in order to draw lines at right angles to the bisectrix of the angle of the square or for any other purpose desired. The right-angle blade 14 (illustrated in detail in Fig. 4) has a blade proper and a base 15, which is adapted to rest upon the front side of one of the blades  $5^a$  and  $5^b$ . A clamp 16 is provided which is pivoted at 17 between the ears 18, secured to the base 15. A cam-lever 19, pivoted at 20 between the same ears, is provided to operate the clamp 16. It is to be noted that the blade 14 lies in the plane of the blade  $5^a$ . By setting one of the blades at the zero-point on the scale my improved center-square may be used in the same manner as the ordinary center-square in laying off the center of a piece of shafting or the like. By setting the two blades  $5^a$  and  $5^b$  at the distances from the center desired parallel lines may be ruled on the end of a piece of shafting or the like. Heretofore, so far as I am aware, it has never been proposed to provide a center-square with two blades, by means of which parallel lines may be ruled upon the work, and in order to accomplish this result it was necessary to move the blade from one position to another and parallel lines could not be accurately ruled without laying off measurements upon the work. According to my invention I am enabled to rule two parallel lines upon the work at one setting of the device thereon. Both of these lines may be upon the same side of the center of the work or upon opposite sides of the center, as desired. This is a valuable and important feature of my invention, and it flows directly from providing the center-square with a base and two parallel blades. The right-angle blade 14 enables me to scribe lines upon the work at right angles to each other. Heretofore, so far as I am aware, no center-square has been provided with means for scribing lines upon the work at right angles to each other without the use of measurements laid off upon the work. By the use of my improved center-square the dimensions are measured from the center without the necessity of previously determining such center. Thus if it were desired to lay off upon the end of the cylindrical piece of work the figure (indicated in Fig. 5) consisting of the two parallel lines  $c$  and  $d$ , distant, respectively,



from the center three-eighths and five-eighths of an inch and the line *e* at right angles to such line distant from the center one-quarter of an inch, one would proceed as follows: Set  
5 the blade  $5^a$  on the right of the bisectrix at a distance therefrom indicated on the scale by " $\frac{3}{8}$ ", set the blade  $5^b$  on the same side five-eighths of an inch from the center, and draw  
10 the two lines *c* and *d*, extending the line *c* across the whole width of the work, as indicated in broken lines. Then set the blade  $5^b$  on the right of the bisectrix at a distance of one-fourth of an inch therefrom and push the  
15 blade  $5^a$  to the left, securing it in position, and put on it the right-angle blade 14. Then apply the center-square to the work, bringing the edge of the right-angle blade 14 into coincidence with the line *c* extended. Then scribe the line *e* between the lines *c* and *d*.  
20 It will be noted that the parallel lines were drawn at one setting of the device upon the work and that the line *e* is drawn at right angles to these lines, all at their proper distances from the center of the work and without laying any measurements off on the work  
25 or determining the center of the work.

Having thus described my invention, I claim—

1. A center-square, having, in combination, a square provided with a base extended in 30 both directions from, and at right angles to, the bisectrix of the angle of the square, two adjustable independent blades provided with ruling edges parallel to each other and to the said bisectrix, said blades and base being 35 provided with cooperating grooves and projections to secure the correct parallelism of the blades to each other and to the said bisectrix, and independent fastening means for securing each blade in adjusted position to 40 the base, substantially as described.

2. A center-square, having, in combination, a square, a base at right angles to the bisectrix of the angle of the square, a blade having its edge parallel with the bisectrix of the 45 angle of the square adjustably mounted on said base and a right-angle blade adjustably secured to said blade, substantially as described.

In testimony whereof I affix my signature 50 in presence of two witnesses.

WILLIAM A. DUNBAR.

Witnesses:

HORACE VAN EVEREN,  
ALFRED H. HILDRETH.