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PATENTED MAY 16, 1905.

A. F. ROBBINS.  
CENTERING HOLDER FOR WATCH HANDS.

APPLICATION FILED OCT. 25, 1904.

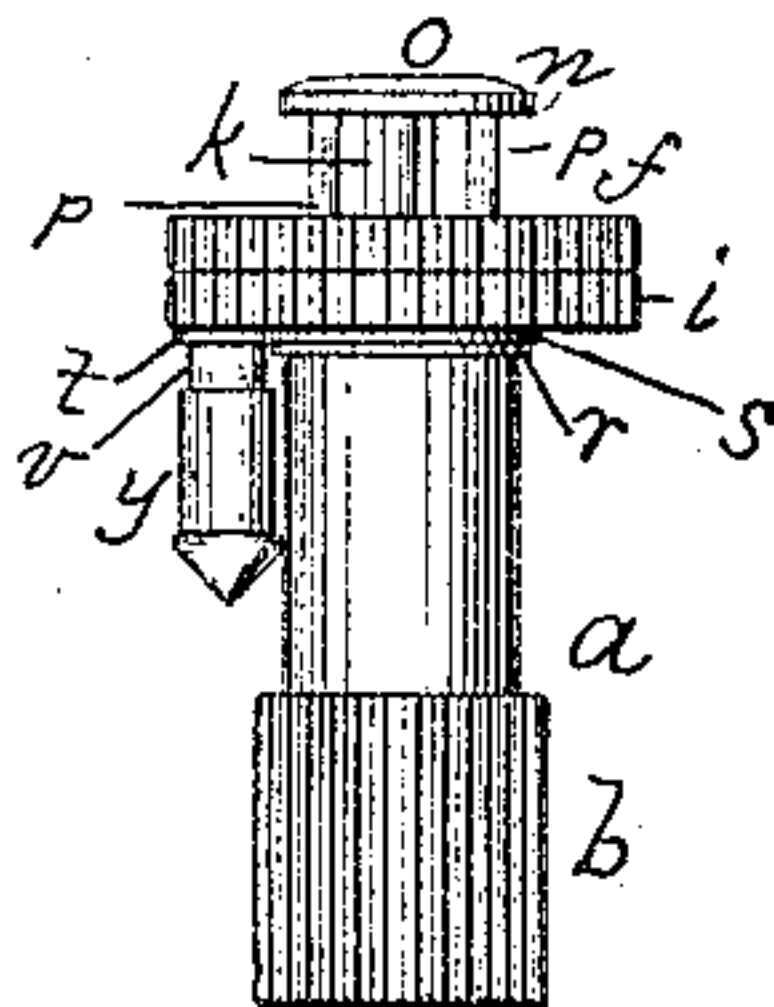


Fig. 1.

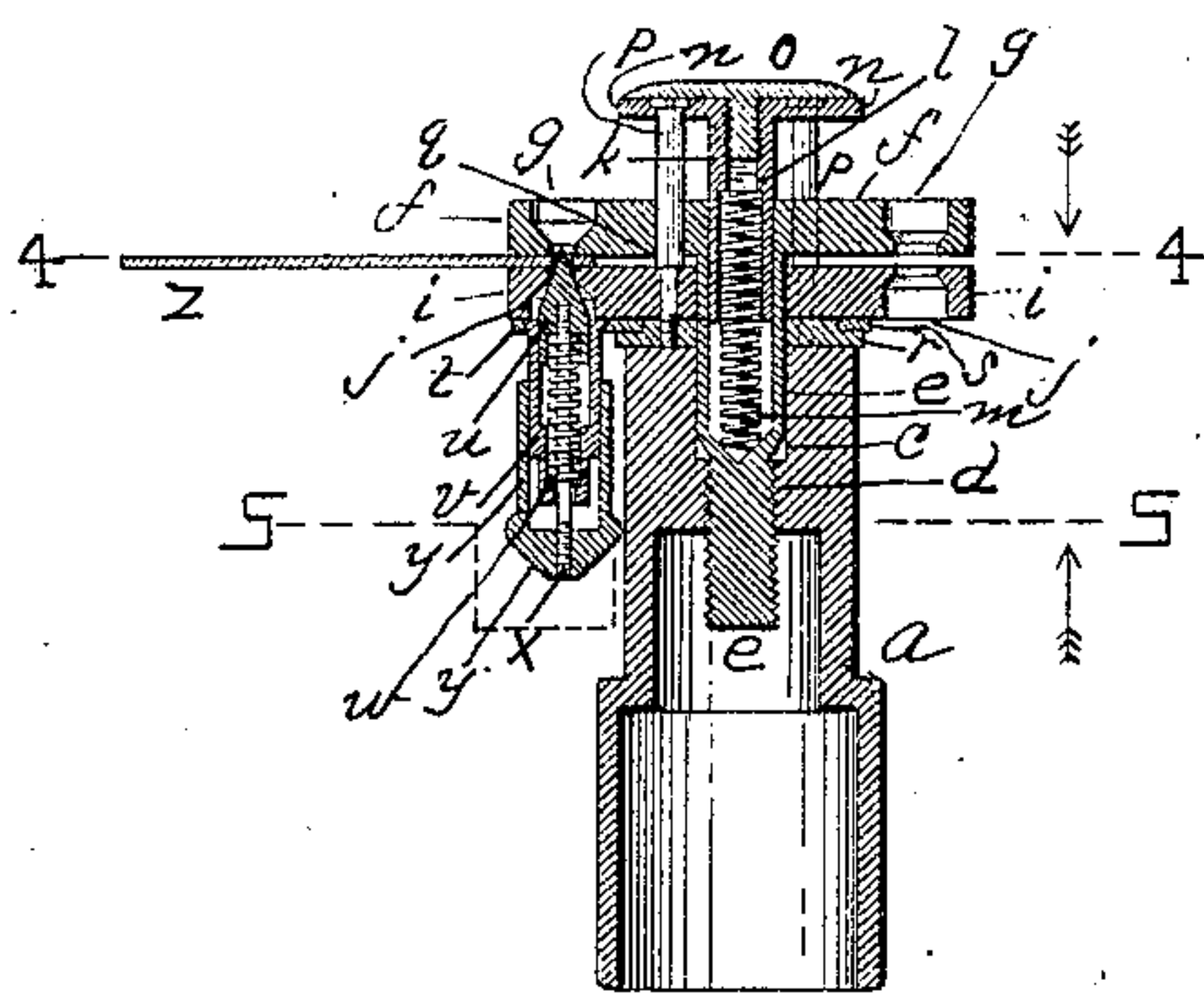


Fig. 2.

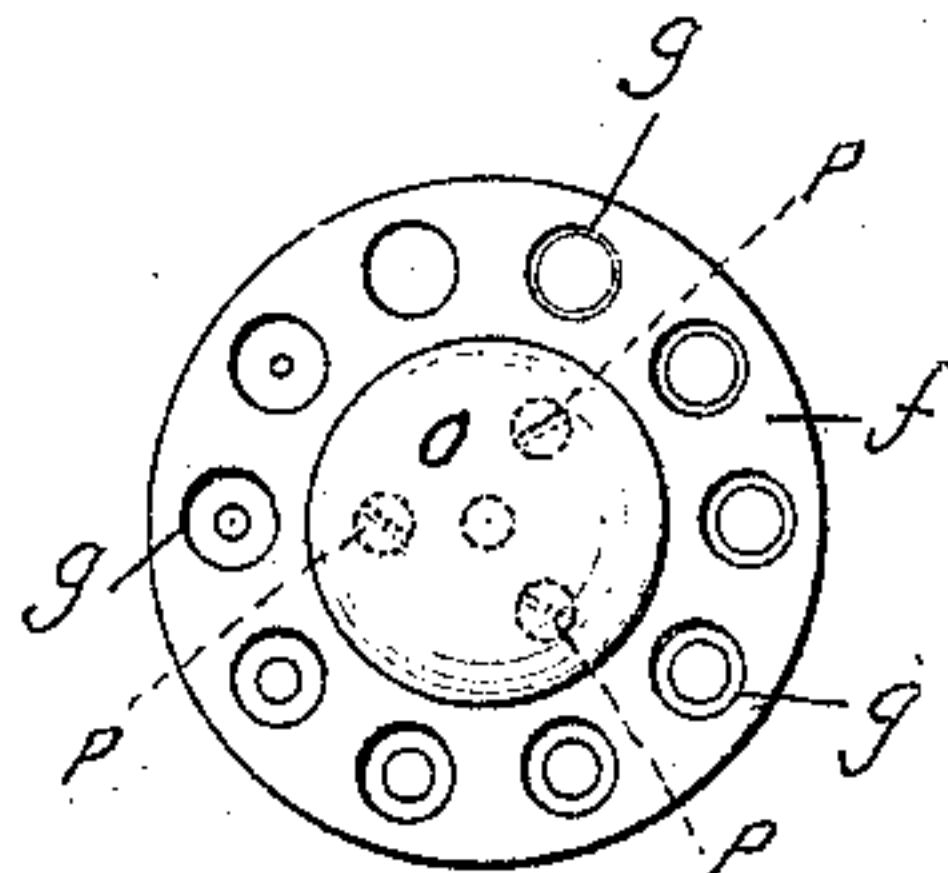


Fig. 3.

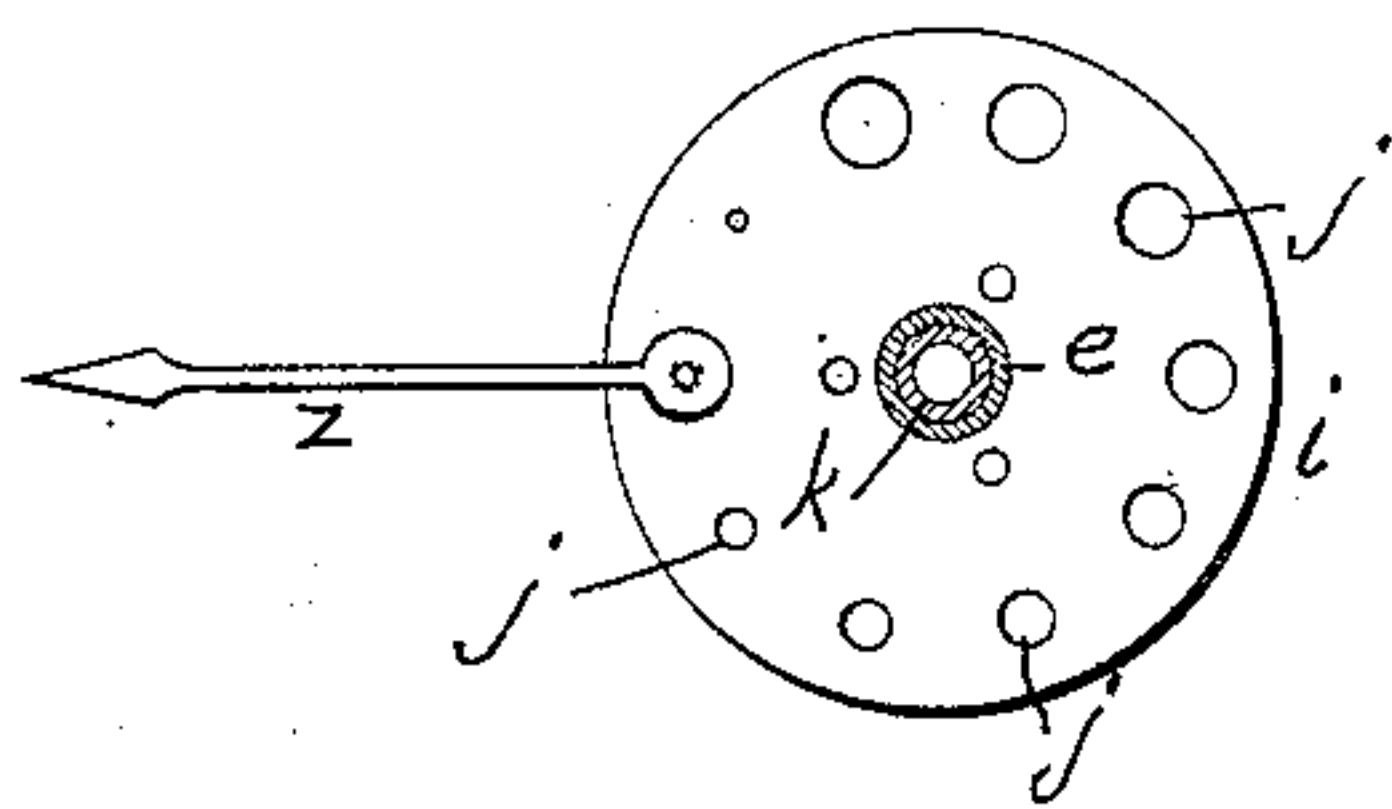


Fig. 4.

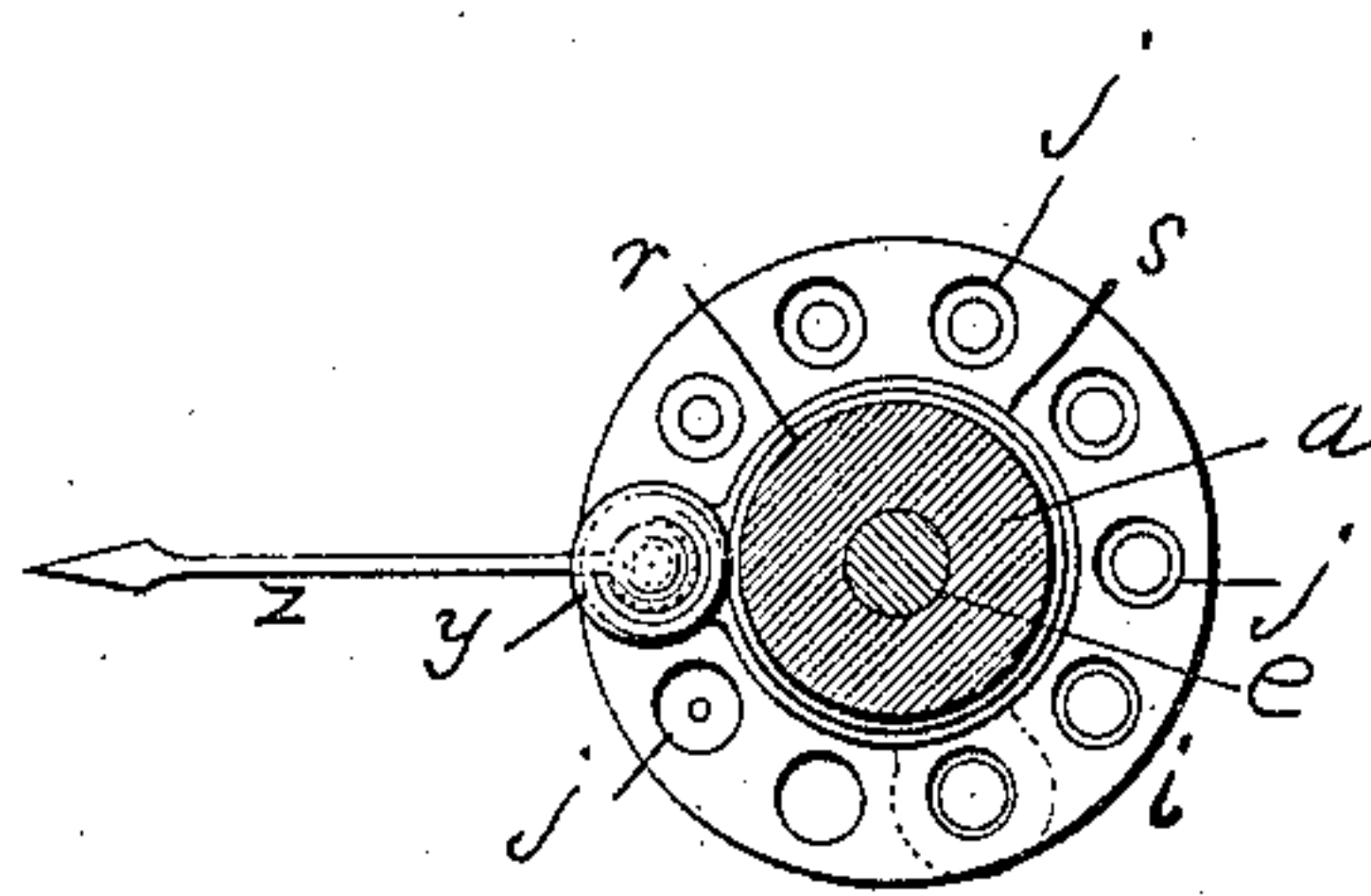


Fig. 5.

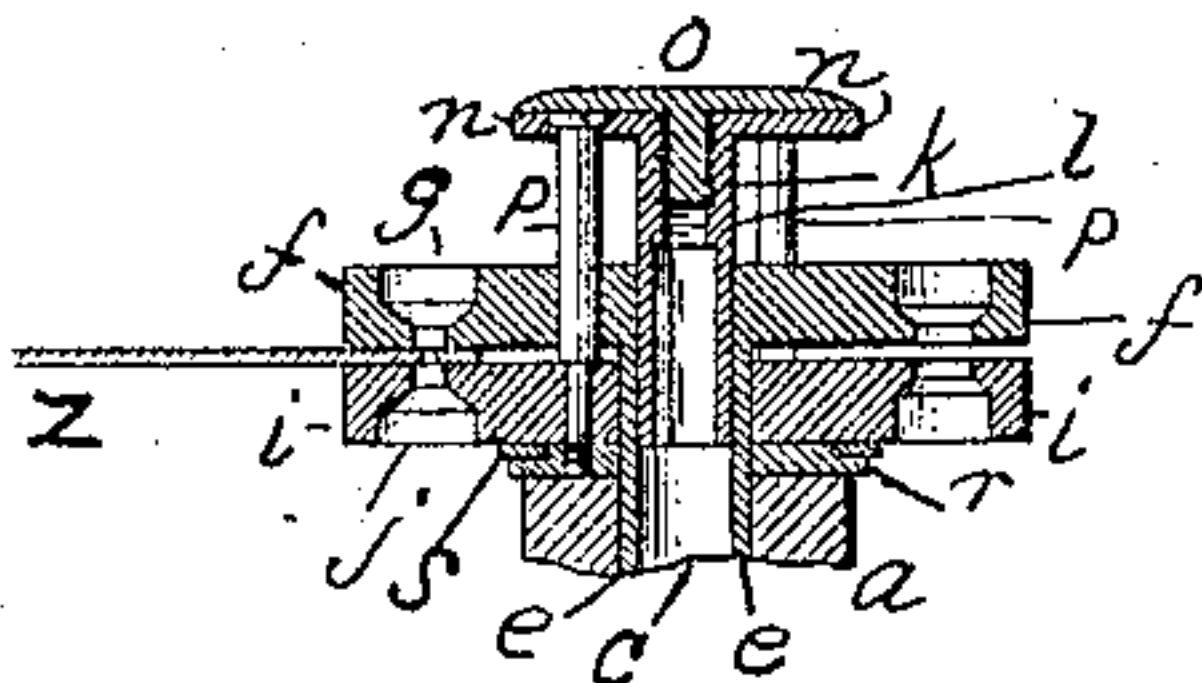


Fig. 6.

WITNESSES:  
A. L. Hood.  
C. L. Baker.

INVENTOR:  
Albert F. Robbins.  
By his Atty  
Sherry W. Williams



# UNITED STATES PATENT OFFICE.

ALBERT F. ROBBINS, OF WALTHAM, MASSACHUSETTS.

## CENTERING-HOLDER FOR WATCH-HANDS.

SPECIFICATION forming part of Letters Patent No. 789,882, dated May 16, 1905.

Application filed October 25, 1904. Serial No. 229,917.

*To all whom it may concern:*

Be it known that I, ALBERT F. ROBBINS, a citizen of the United States, residing in Waltham, in the county of Middlesex and State of Massachusetts, have invented a new and Improved Centering-Holder for Watch-Hands, of which the following is a specification.

This invention is intended particularly for centering watch-hands and holding them while they are being broached—that is, while the holes near their inner ends are being reamed out. Watch-hands are delivered provided with small holes at their rear or inner ends, and when the hands are to be applied to a watch these holes are reamed out or broached to the proper diameter or size, such size varying, of course, with the watches to which the hands are to be applied. It is found difficult in practice to hold these hands in such a manner that the broach will ream out the edges of the holes evenly and concentrically.

By means of this invention a watch-hand may be inserted between certain plates or disks provided with registering or coincident holes of different sizes, may be centered therein, so that its hole is placed centrically with relation to and between the proper pair of holes in the plates, and the hole in the hand then reamed out by means of a broach to the desired diameter with perfect accuracy.

While the invention is intended more especially for use in centering and broaching watch-hands, clock-hands or other small articles having holes required to be reamed out may be applied to my holder.

The nature of the invention is fully described below and illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of a centering-holder embodying my invention. Fig. 2 is a central vertical section of the same, the section being taken through the centering-tool, which is shown centering a watch-hand. Fig. 3 is a plan view of the device. Fig. 4 is a horizontal section taken on line 4, Fig. 2, looking down, the spring having been removed. Fig. 5 is a similar section taken on line 5, Fig. 2, looking up. Fig. 6 is a detail in vertical section showing the hand in its centered position, ready to be operated upon by the broach,

the centering-tool having been moved away from the hand.

Similar letters of reference indicate corresponding parts.

*a* represents a hollow supporting-post serrated or roughened at *b*, whereby its lower end is adapted to be used as a handle for rotating the post. The walls of the upper portion of the post are thickened, as illustrated in Figs. 2, 5, and 6, whereby a central well or chamber *c* is provided at its upper end, said well or chamber connecting at its lower end with the screw-threaded bore or passage *d*, leading to the chamber in the main portion of the post. A vertical screw *e* is engaged in the threaded portion *d*, and the upper or plain portion of this screw is hollow and is rigid or integral with a disk *f*, provided with holes *g* of different diameters, the majority or all of said holes being beveled or tapered, as shown in Fig. 2. This hollow portion of the screw *e* extends through a disk *i*, which is beneath the disk *g*, corresponds with it in size and shape, and is provided with holes *j*, which register with the holes *g* and correspond with them in size and also in shape, except that they are oppositely tapered, so that the small ends of the holes *g* and *j* meet or face each other. The edges of the disks are preferably serrated or roughened.

*k* represents a tubular post formed at *l* with an internal annular flange and extending slidingly down into the hollow upper end of the screw *e*. A spring *m* is confined in said screw and post between the flange *l* and the solid portion of the screw. Rigid or integral with the upper end of the post *k* is a head *n*, and from this head screws *p* extend down through the upper disk *f* and by means of shoulders *q* against the lower disk *i*, the smaller lower ends of the screws extending through the lower disk and screwing into a plate *r*, which lies between the disk *i* and the upper end of the post *a*. The lower disk can therefore be moved down against the power of the spring *m* by first partially unscrewing the post *a* from the screw *e*, as the plain portions of the screws *p*, above the shoulders *q*, slip in the upper disk *f*. Hence by partially unscrewing the post *a* the disks can be separated by pressing



down on the head *n*. The only portions of the screws *p* which are threaded are the parts in engagement with the plate *r*.

The upper side of the plate *r* is formed with  
 5 an annular step or ledge on which a ring *s* lies, said ring being provided with an extension *t*, through which a hollow centering bolt or tool *u*, having a conically-pointed upper end, extends. This centering-tool slides vertically in  
 10 a tubular case *v*, extending down from the extension *t* under the circular line of holes in the lower disk *i*, and is held normally up by a spring *w*, which is confined in the case *v* and surrounds a small rod *x*, extending up into the  
 15 case *v* from a hollow head or cap *y*, which is beneath and overlaps slidably the case *v*. In practice when it is desired to ream out the hole in a hand, as *z*, by means of a suitable broach the post *a* is lowered away from the  
 20 plate *r* by partially unscrewing it from the screw *e*, which supports the disk *f*, and the disk *i* is lowered by pressing down the head *n* with the finger while the thumb or other support lies under the post *a*, the lower disk  
 25 being forced down by the shoulders *g* on the screws *p*. A hole in the upper disk of suitable size having been selected, the pointed tool or bolt *u* is sprung into the corresponding hole in the lower disk, being moved into  
 30 position under said hole by drawing down the head *y* against the power of the spring *w* and moving the head *y* and the case *v*, which incloses the bolt around under the circular holes *j*, the ring *s* being rotated on the ledge  
 35 or step which makes a part of the plate *r*. The rear or blunt end of the hand *z* is then inserted between the disks *f* and *i*, with its hole over or around the pointed upper end of the tool or bolt *u*. The head *n* is then re-  
 40 leased, thus allowing the disks to close against the upper and under sides of the hand, and the post *a* is screwed up against the plate *r*, as illustrated in Fig. 2. The tool is then withdrawn from the hole in the hand and  
 45 from the registering hole *j* beneath the hand by drawing down the head *y* and moved around under the lower disk and allowed to be sprung into another hole. The hand whose hole has thus been accurately centered be-  
 50 tween holes *g* and *j* of the proper diameter, as indicated in Fig. 6, is then in condition to have its hole reamed out to the size of the meeting ends of the holes *g* and *j* by means of a suitable broach. The hand may then be  
 55 released by loosening the post *a* and pressing slightly on the head *n*. By this means the hole in a watch-hand may be absolutely and accurately centered, so that a suitable broach may be applied and a perfect hole reamed out  
 60 corresponding with any hole in the holder.

It is evident that clock-hands and other small articles provided with holes can have them centered and reamed out or broached by means of this device.

65 I prefer to mount a screw-cap *o* on the head

*n*, screwing into the tubular post *k*, in order to prevent the screws *p* from slipping up when the head is pressed down; but this screw-cap is not absolutely necessary.

Having thus fully described my invention, 70 what I claim, and desire to secure by Letters Patent, is—

1. In a centering-holder of the character described, a supporting-post; an upper disk provided with a series of holes adapted to receive 75 a broach or reaming instrument; mechanism intermediate of said post and upper disk whereby the disk is sustained in a fixed position; a lower disk provided with holes corresponding with the upper disk, disposed between said 80 upper disk and the post; mechanism for holding the lower disk normally against the upper or fixed disk; and a centering-tool sustained under the lower disk and pointed at its upper end, said tool being adapted to be 85 sprung up into one of the holes in the lower disk for the purpose of centering a hole in a watch-hand or other article held between the two disks.

2. In a centering-holder of the character de- 90 scribed, the post *a*; a screw extending up from said post; the upper disk *f* supported by said screw and provided with holes adapted to receive a broach or reaming instrument; the 95 lower disk *i* provided with holes registering with the holes in the upper disk and disposed between the upper disk and said post; the head *n*; a spring intermediate of said head and screw; the screws *p* extending down from the 100 head through the upper disk against and through the lower disk; a plate engaged by said screws and adapted thereby to support the lower disk; a centering-tool sustained under the lower disk and pointed at its upper 105 end; and mechanism whereby said tool may be sprung up into one of the holes in the lower disk, for the purpose set forth.

3. In a centering-holder of the character described, the post *a*; the hollow screw *e* extending up from said post; the upper disk *f* sup- 110 ported by said screw; the tubular post *k* extending slidably into the upper end of the screw *e*; a spring within and intermediate of said screw and tubular post; the head *n* supported by the tubular post; a plate on the up- 115 per end of the post *a*; the lower disk *i* on said plate and between it and the upper disk, said disks being provided with registering holes; the screws *p* extending down from said head through the two disks and screwing into said 120 plate, and provided with shoulders bearing against the upper side of the lower disk; and a centering-tool sustained by said plate and adapted to be sprung up into one of the holes in the lower disk, for the purpose set forth. 125

4. In a centering-holder of the character described, the post *a*; the hollow screw *e* extending up from said post; the upper disk *f* sup- 130 ported by said screw and provided with a series of flaring or tapered holes *g*; the lower



disk *i* disposed between the upper disk and the post *a* and provided with a series of oppositely tapered or flaring holes *j* registering with the holes in the upper disk, the smaller ends of the holes *g* and *j* meeting or facing each other; a yielding support for the lower disk whereby said lower disk may be pressed down and away from the upper disk after the post *a* has been partially unscrewed; a spring intermediate of said support and the hollow screw *e* whereby the lower disk is held normally against the upper disk; and a centering-tool sustained under the lower disk and adapted to be sprung up into one of the holes therein, for the purpose set forth.

5. In a centering-holder of the character described, the post *a*; the hollow screw *e* extending up from said post; the upper disk *f* supported by said screw and provided with a series of holes adapted to receive a broach or reaming instrument; the plate *r* on said post *a*; the lower disk *i* on said plate and under the upper disk and provided with a series of holes adapted to receive a pointed instrument

or tool from below; the tubular post *k* extending through the upper disk and into the hollow screw *e*; a head supported by said tubular post; the screws *p* extending from the head down through the upper disk and having shoulders which bear against the lower disk, said screws extending through the lower disk and into engagement with the plate *r*; a spring intermediate of and within the hollow screw *e* and tubular post *k*; the ring *s* supported by the plate *r*, provided with an extension *t*, and adapted to be rotated on said plate; and a pointed tool *u* supported by said ring and adapted to be sprung into and held normally in one of the holes in the lower disk, for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT F. ROBBINS

Witnesses:

HENRY W. WILLIAMS,  
A. K. HOOD.