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Patented Dec. 24, 1901.

C. E. BICKEL.
CALIPERS AND DIVIDERS.

(Application filed May 8, 1901.)

(No Model.)

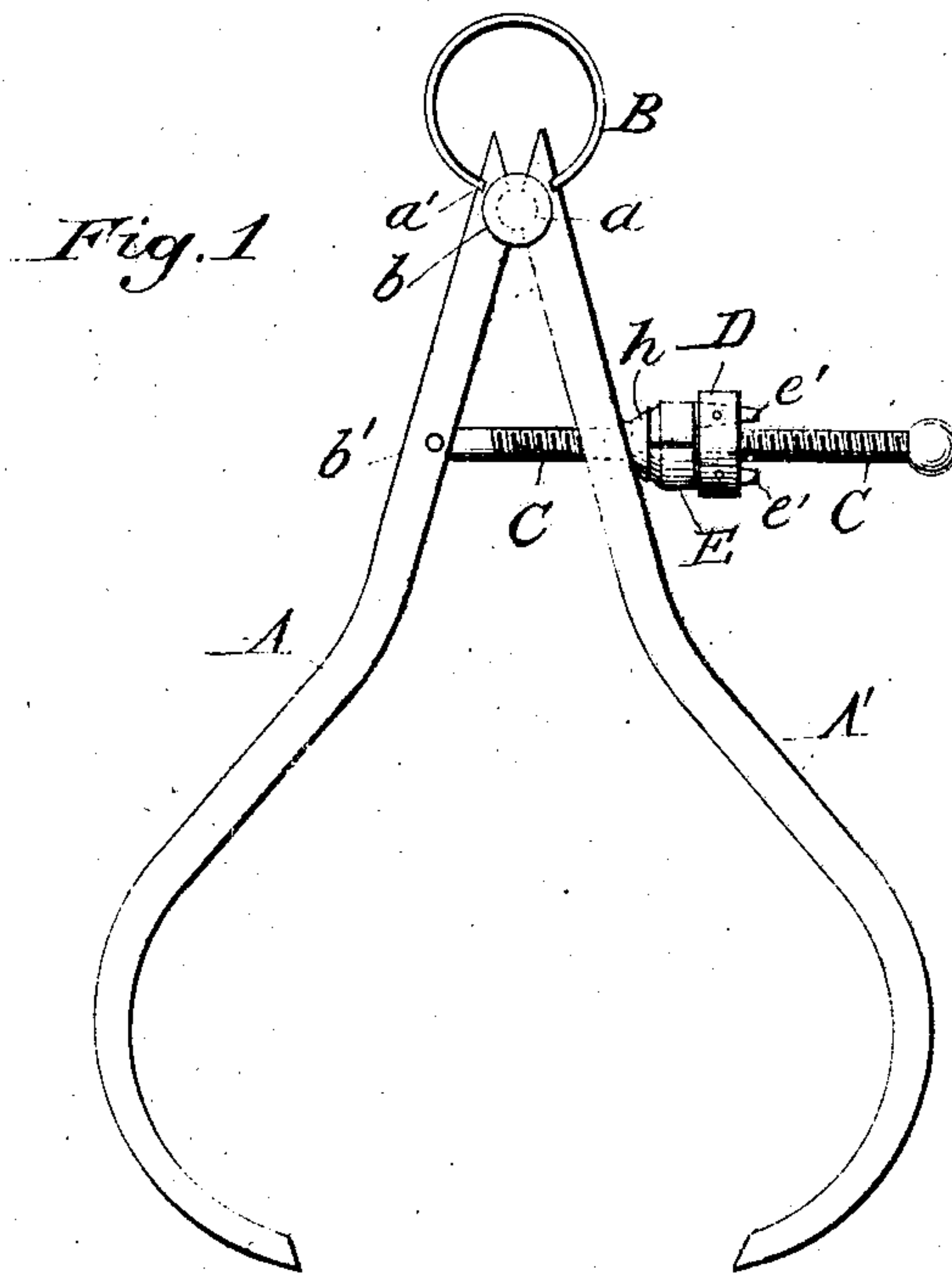


Fig. 2.

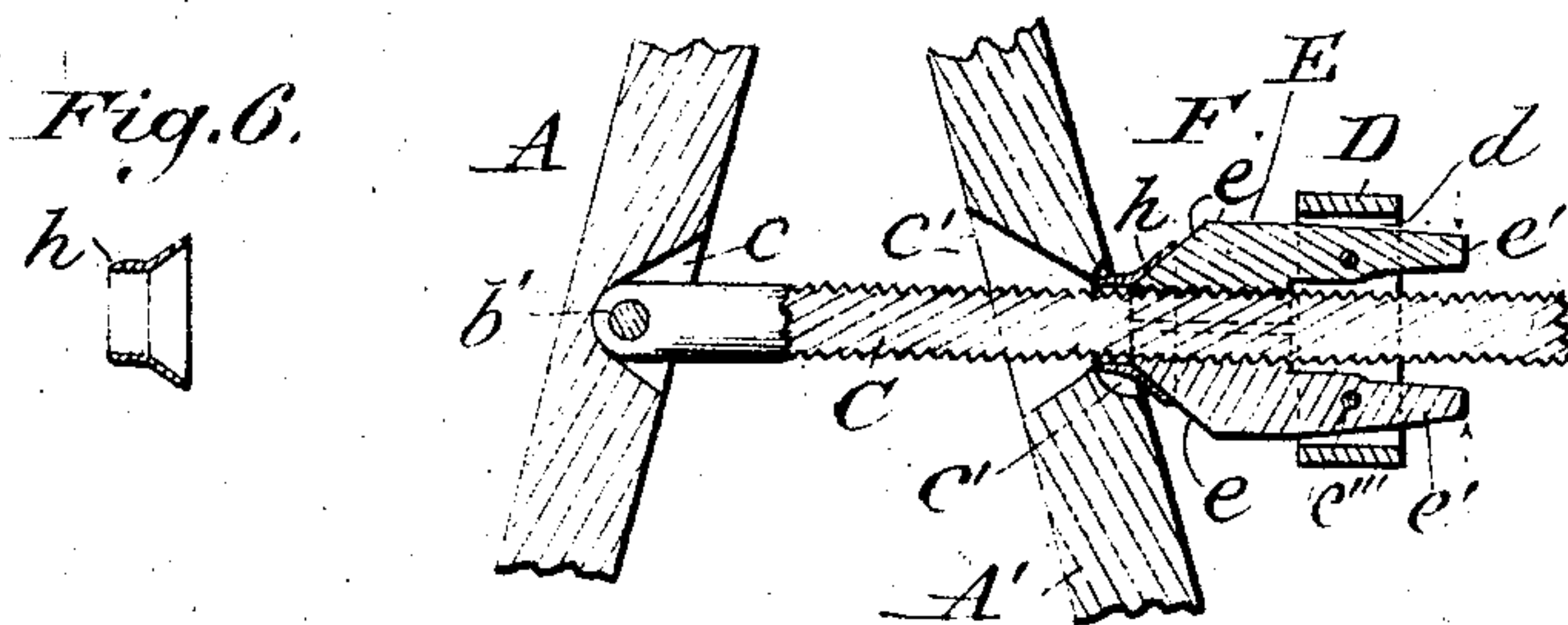


Fig. 3.

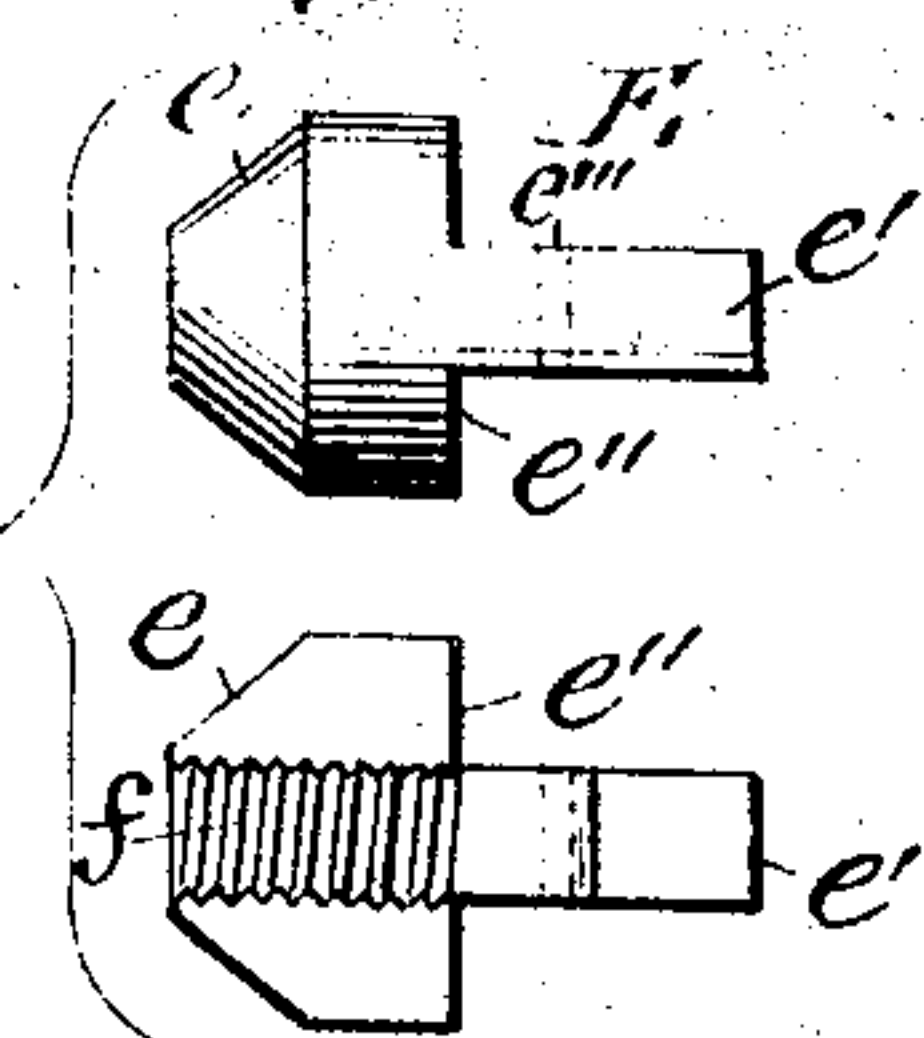


Fig. 4.

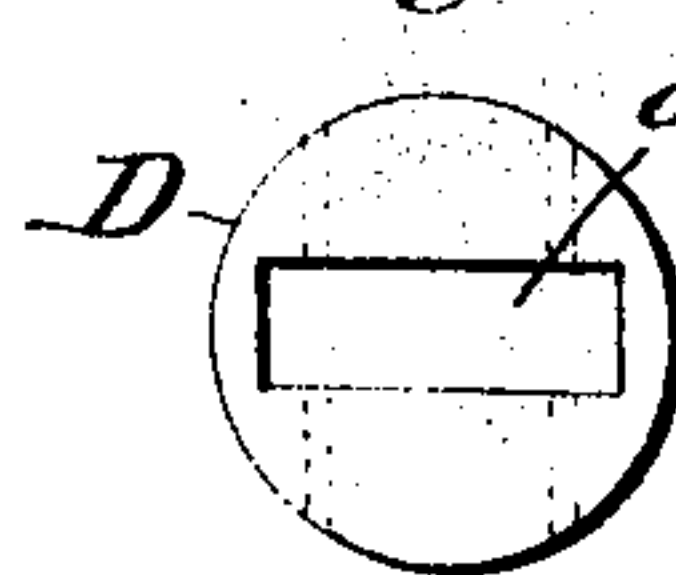
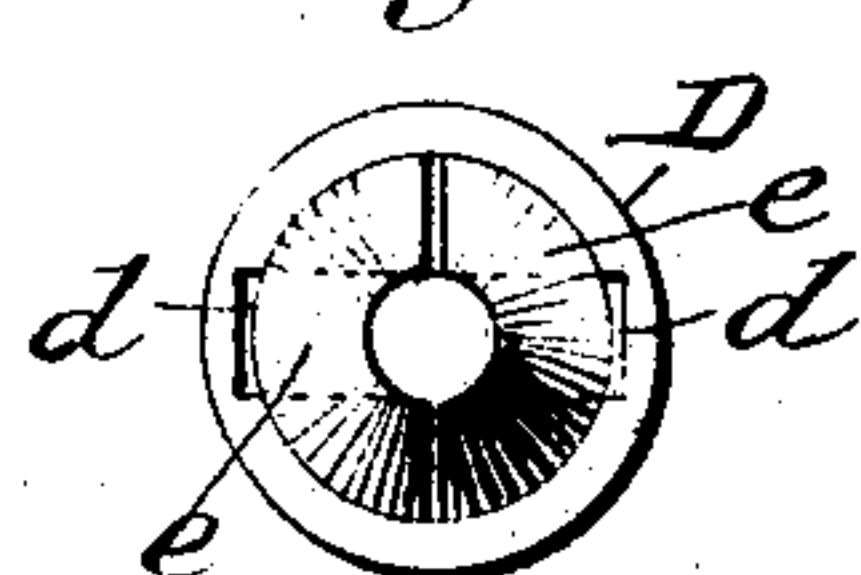


Fig. 5.



WITNESSES:

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CALIPERS AND DIVIDERS.

SPECIFICATION forming part of Letters Patent No. 689,781, dated December 24, 1901.

Application filed May 8, 1901. Serial No. 59,303. (No model.)

To all whom it may concern:

Be it known that I, CASPER E. BICKEL, a citizen of the United States, residing at Shelburne Falls, in the county of Franklin and State of Massachusetts, have invented certain new and useful Improvements in Calipers and Dividers; 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.

This invention relates to calipers, dividers, and similar measuring instruments.

The object of my invention is to provide for quickly and accurately adjusting and setting in position the legs of calipers, dividers, and the like.

A more especial object is to provide a quick-motion divided nut or device having pivoted jaws, made with interior screw-threaded portions, tapered or conical inner ends for bearing against a conical cup or washer and rearward extensions, said jaws being pivoted in a slotted disk for engaging with or sliding freely on a screw-threaded stem to quickly adjust the legs of the instrument either toward or from each other and hold them in the desired position.

The parts and combinations of parts constituting my invention will be set forth in the claims.

I will describe the details of construction of my improved device by reference to the accompanying drawings, in which—

Figure 1 represents an elevation of a pair of calipers. Fig. 2 represents a sectional detail view, on an enlarged scale, showing my improved devices. Fig. 3 represents a top plan view and an inner face view of one of the jaws of the divided nut. Fig. 4 represents a top plan view of the slotted disk. Fig. 5 represents a front end view of the divided nut with the jaws in position.

The calipers shown in Fig. 1 are constructed of the usual form and are composed of the two legs A A', having near their upper ends and inner faces suitable transverse grooves a for receiving the pivotal pin b. On their exterior faces and just above the pin b the legs are provided with transverse grooves a' for receiving the ends of the circular or crescent

shaped spring B, which always acts to force the legs A A' apart. In order that the legs may be spread apart, the upper ends thereof above the pivot are beveled or inclined outward, as shown. A short distance below the pivotal pin b the leg A is provided with a socket or opening c for receiving the end of the screw-stem C, which latter is pivotally connected in said socket by the transverse pin b'. The leg A' is provided with a transverse opening c', through which is passed the screw-stem C, said opening being reamed out for permitting free movement of the leg over the screw-stem. My divided quick-motion nut F is placed upon the outer free end of the screw-stem C and is so constructed as to permit of quick adjustment upon any part of said stem for quickly adjusting the legs of the calipers toward or from each other in any desired position. This quick-motion nut is constructed of a disk D, having a transverse central slot d, in which are pivotally connected the jaws E E. Each jaw forms one-half of the nut and is semicircular upon its outer surface and has an inner tapered or conical end e, a rearwardly-extending stem e', and two lateral shoulders e''. The inner face of each jaw E is provided with a screw-threaded groove f for engaging the screw-threads of the stem C. Just back of the shoulders e'' the stem is provided with a transverse pivotal hole e'''. The disk D is also provided with transverse holes for the pivotal pins, by means of which the jaws E are pivotally connected in the slot d. The stems e' of the jaws are set into the slot d very near to the shoulders e'', just so that the jaws may have a slight tilting movement in the disk D. The shoulders e'' serve to arrest the lateral motion of the jaws by bearing against the inner face of the disk. The inner ends of the two jaws may be readily pressed inward toward each other, so that their screw-threaded portion f will engage with the screw-stem C. This engagement of the parts is effected by means of the conical cup or washer h, which is made with a central opening and placed with its smaller end adjacent to the leg A' of the calipers, so as to slightly rest in the opening c'. Since the leg A' is always pressed outward by means of the spring B, it will press the cup h against the

conical or tapered ends *e* of the jaws *E*, causing said jaws to closely embrace the screw-stem *C* and automatically engage the screw-threaded parts *f* with the screw-threads of said stem. The rearwardly-projecting stems *e'* *e'* of the jaws project far enough beyond the disk *D* to be readily pressed by the thumb and finger for releasing the jaws from the screw-stem *C*.

10 Whenever it is desired to move the legs *A* *A'* of the calipers inward or outward and set them in a new position, the leg *A'* is slightly pressed inward, thereby releasing the cup *h* from the tapered ends of the jaws. Then the
15 stems *e'* are pressed together, thereby releasing the jaws from the screw-stem, when the nut may be slid along the stem into the desired position. The jaws are now released and the legs *A* *A'* allowed to press upon the
20 cup *h*, thus causing it to press upon the ends *e* of the jaws and engage them with the screw-stem. The divided nut being engaged with the screw-stem, it may be turned thereon either forward or backward for fine adjust-
25 ment of the legs of the calipers or dividers. By means of the rearwardly-projecting stems *e'* the screw-threaded portions of the jaws may be raised entirely free from the screw-threads of the stem *C*, so that the threads of
30 the jaws will not drag over the threads of the stem and wear them down, and also by means of such stems the divided nut can be more

quickly and conveniently manipulated for adjusting it in the desired position.

The parts are all simple in construction and 35 can be quickly and conveniently operated.

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

1. In a quick-motion nut, the combination 40 with a slotted disk, of jaws having conical outer surfaces and interior screw-threaded grooves at their inner ends, pivoted in said slot, and having stems *e'* projecting at the rear of said disk, substantially as described. 45

2. The combination with a screw-stem and a cup, of a quick-motion nut composed of a slotted disk, two jaws pivoted therein and having interior screw-threaded portions, and conical or tapered inner ends for bearing in 50 said cup, substantially as described.

3. In calipers or dividers, the combination with the screw-stem, of a conical cup or washer, and a divided nut consisting of a slotted disk, two jaws pivoted therein and having interior 55 screw-threads, conical inner ends for bearing in said cup, and rearward projections, substantially as described.

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

CASPER E. BICKEL.

Witnesses:

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J. C. WINTERHALDER.