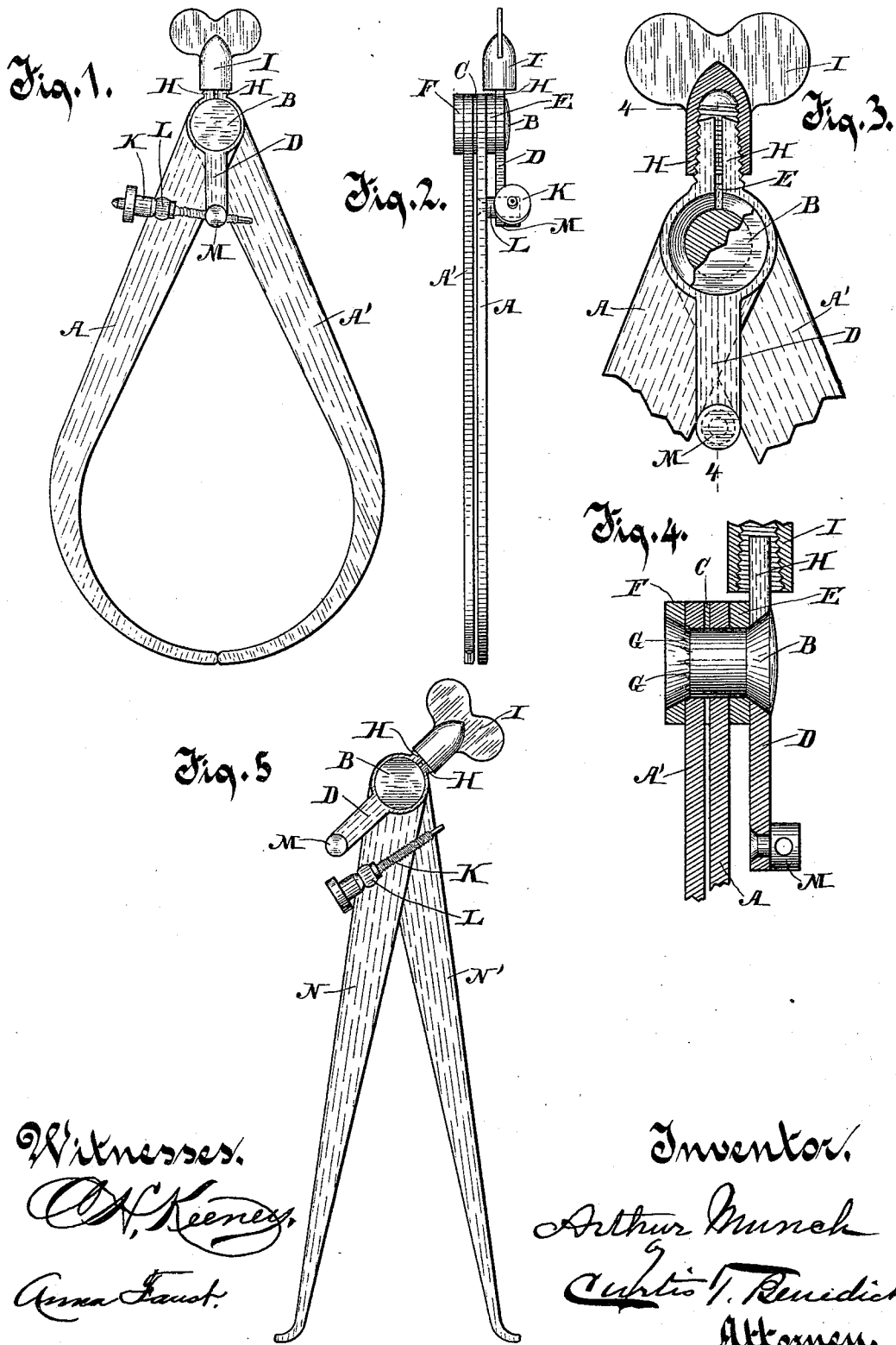


(No Model.)

A. MUNCH.  
CALIPER ADJUSTMENT.

No. 441,685.

Patented Dec. 2, 1890.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

ARTHUR MUNCH, OF MILWAUKEE, WISCONSIN.

## CALIPER ADJUSTMENT.

SPECIFICATION forming part of Letters Patent No. 441,685, dated December 2, 1890.

Application filed August 21, 1890. Serial No. 362,579. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR MUNCH, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Calipers, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

The object of my invention is to enable the user to obtain nice adjustments of the device and also to adapt it for obtaining a desired measurement of a part of an article beyond a larger or smaller part of the same article by means of a prearranged adjustment of the calipers.

In the drawings, Figure 1 is an elevation of the complete device. Fig. 2 is an edge elevation of the same device. Fig. 3 is an enlarged view of a portion of the device, parts being broken away to show interior construction. Fig. 4 is a transverse section on line 4 4 of Fig. 3. Fig. 5 is a modified form of the device.

The legs A A' of the calipers are hinged together alongside each other by a pivot B. A thin washer C is preferably interposed between the two legs about the pivot B. An adjusting-bar D is also pivoted medially on the pivot B. A washer E is preferably interposed between the bar D and the adjacent leg of the calipers, and another washer F is preferably placed about the pivot B on the outside of the leg A'. For securing the parts to each other movably the pivot B is countersunk in the bar D and in the washer F.

In constructing the device small channels or notches are made in the leg A' of the calipers, and the parts of the pivot B in upsetting it or riveting it in its seat are forced into the notches in the leg, forming little projections or keys G G, which secure the pivot B to the leg A', so that the two have concurrent rotary movement. The outer arm of the bar D is split longitudinally, forming two parallel parts H H, which normally are a little distance from each other, the outer longitudinal edges of which are slightly beveled inwardly toward their free ends and are screw-threaded. A winged cap-shaped nut I is adapted to draw the parts H H together, clamping the bar

tightly on the pivot B, and by reason of the beveled form of the aperture through the bar in which the countersunk end of the pivot B is inserted is also adapted to force the bar D tightly against the washer E, thus taking up any possible wear or play in the joints of the device. A small headed screw K is journaled so as to prevent endwise movement in a post L, swiveled in the leg A. The screw K enters and turns by its thread in a post M, swiveled in the inner end of the bar D. It will be understood that the screw K by turning in the post M is adapted to move the leg A toward and from the bar D, and as a consequence toward and from the leg A'.

In use the nut I is turned off the bar D sufficiently to allow the legs to swing freely toward and from each other, and when the points of the legs are arranged approximately at the distance apart desired the nut I is turned down firmly on the bar D, whereby the bar and the legs are clamped with considerable firmness to each other, and thereafter the free ends of the legs are adjusted at the exact distance from each other desired by turning the screw K in the post M, as before suggested.

In the modified form of device shown in Fig. 5 the points of the legs N N' are turned outwardly, thus adapting them more especially for inside measurements. The other parts of the device are the same in form and construction as in the device shown in Fig. 1.

The parts of the device in Fig. 5 are arranged with reference to each other to show another and convenient use of the calipers. The screw K being removed from the post M and the bar D being swung around so as to be on the outside of the post L, the device is adapted to be used as follows: The legs may be swung apart so as to indicate a desired measurement, and the bar D, being then swung up to and against the post L, is clamped in position by turning the nut I down thereon, so that the parts of the device are held together with considerable firmness, and thereafter the legs N N' may be swung toward each other, so that their points can enter a small aperture, the bar D in the meantime remaining with reference to the leg N' in the position in which it is set, and thereupon the legs N N'

may be again swung apart until the post L shall come in contact with the bar D, thus readjusting it at the desired angle.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a calipers, the combination, with the two legs hinged together on a pivot, of an adjusting-bar hinged on the same pivot and a screw journaled in a post swiveled in one of the legs and turning into a post swiveled on the bar, substantially as described.

2. In a calipers, an adjusting-screw, as K, journaled in a post, as L, swiveled in a leg of the calipers and turning by its thread into a post, as M, swiveled in an adjusting-bar, substantially as described.

3. In a calipers, the combination, with the two legs hinged on a common pivot, of an adjusting-bar D, hinged on the same pivot at the side of one of the legs, the pivot having a bev-

eled end which is countersunk in the bar, one end of the bar being split from the pivot outwardly, and a nut turning on the screw-threaded tapering split end of the bar, substantially as described.

4. In a calipers, the combination, with the two legs hinged alongside each other on a pivot, of an adjusting-bar hinged on the same pivot, which bar is split at one end and is provided with a screw-threaded nut turning on the tapering split end, and a screw journaled in a post on one of the legs of the calipers and turning in a post swiveled in the adjusting-bar, substantially as described.

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

ARTHUR MUNCH.

Witnesses:

C. T. BENEDICT,  
ANNA FAUST.