

(No Model.)

J. MOFFITT.
MICROMETER GAGE.

No. 369,357.

Patented Sept. 6, 1887.

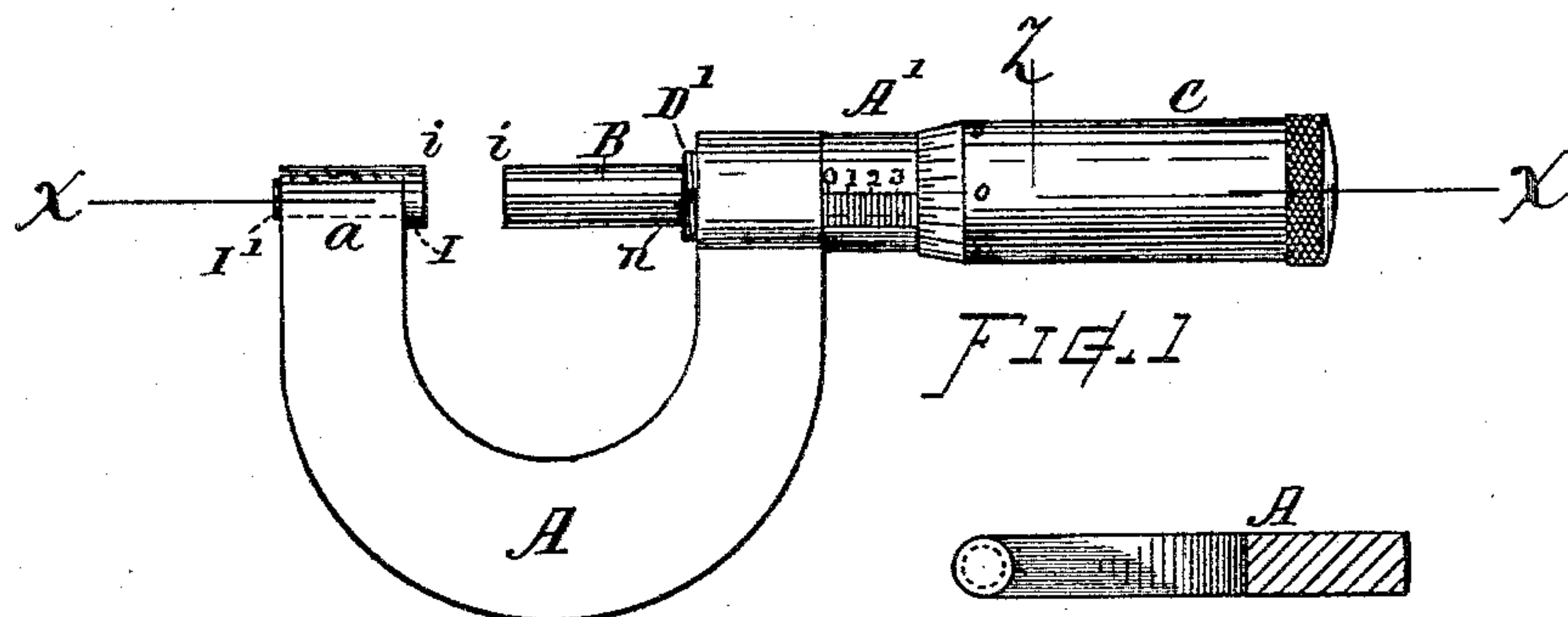


FIG. 1



FIG. 2

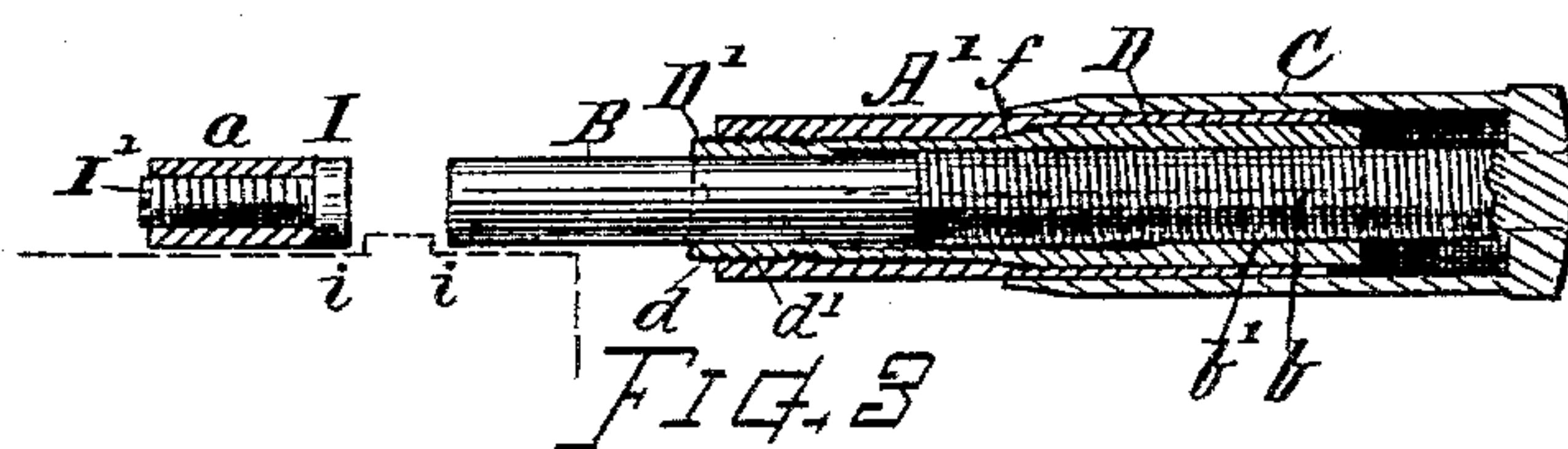


FIG. 3



FIG. 6

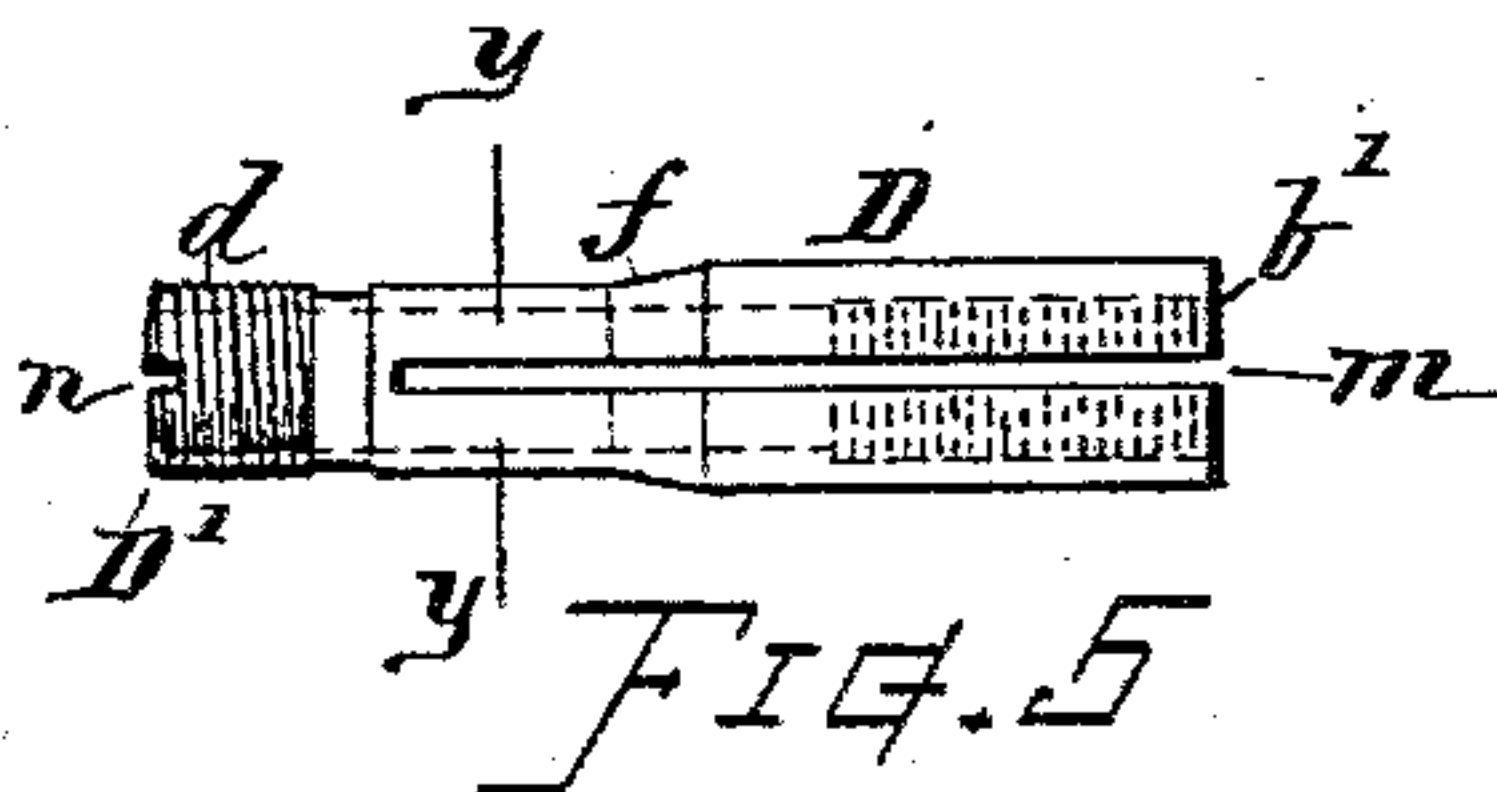


FIG. 5

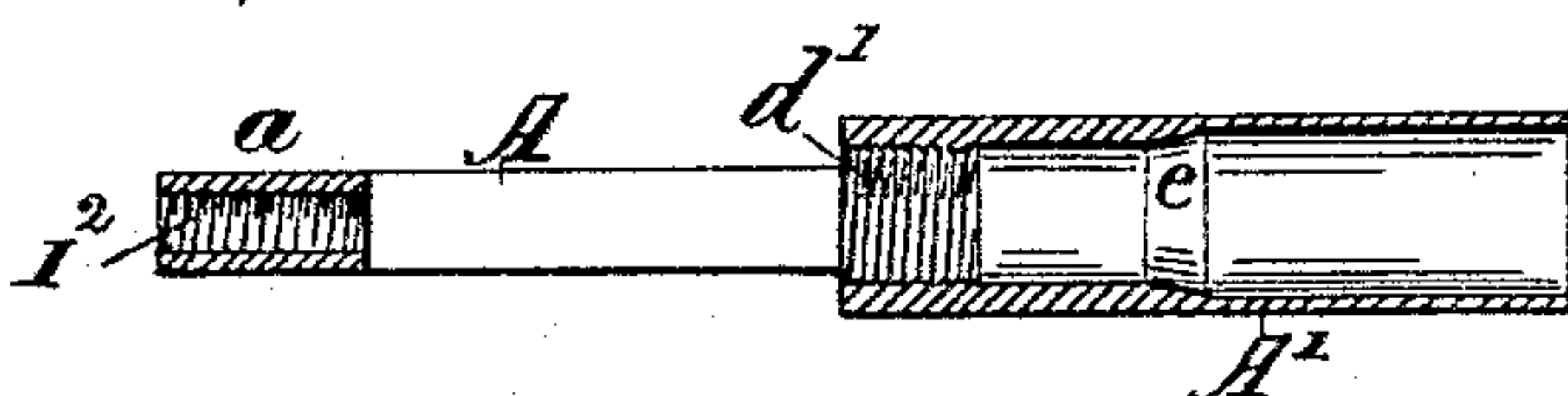


FIG. 4

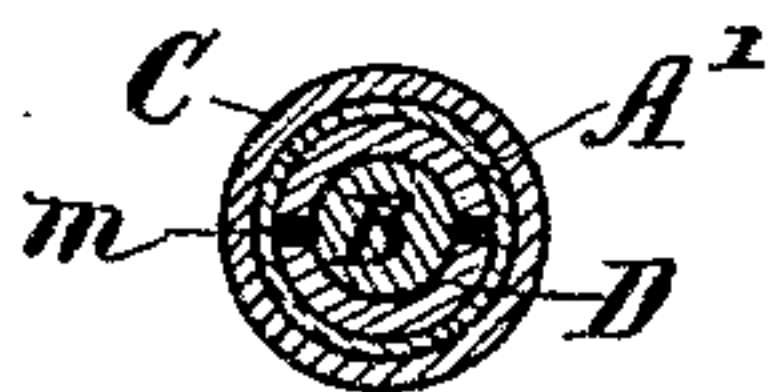


FIG. 7

WITNESSES

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JERREY MOFFITT, OF SOUTHBRIDGE, MASSACHUSETTS.

MICROMETER-GAGE.

SPECIFICATION forming part of Letters Patent No. 369,357, dated September 6, 1887.

Application filed April 2, 1887. Serial No. 233,531. (No model.)

To all whom it may concern:

Be it known that I, JERREY MOFFITT, a citizen of the United States, residing at Southbridge, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Micrometer-Calipers, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

The object of my present invention is to provide an adjusting device for the micrometer-screw which will overcome the objection heretofore found to the irregular wearing of the screw and the binding or cramping of the threads after the screw has been turned beyond the limit or point of its usual wear; also, to provide a practical adjusting device conveniently accessible for adjustment without the necessity of removing the outer sleeve and micrometer-screw from the frame. These objects I attain by an instrument constructed as shown in the drawings and as hereinafter described, the particular subject-matter claimed being hereinafter definitely specified.

In the drawings, Figure 1 is a side view of a micrometer-caliper constructed in accordance with my invention. Fig. 2 is a section showing the foot of the frame and the anvil or stud. Fig. 3 is a section at line *x x*, Fig. 1, looking upward. Fig. 4 is a section of the frame at line *x x*, with the other parts removed, looking downward. Fig. 5 is a side view of the adjusting-sleeve separate from the frame. Fig. 6 is a transverse section of the adjusting-sleeve at line *y y*, Fig. 5. Fig. 7 is a transverse section at the position of line *z z*, Fig. 1.

In referring to parts, A denotes the frame, which is provided with the projecting cylinder A', through which the micrometer screw or spindle B passes, and with a foot, *a*, for the anvil-stud.

C indicates the outer sleeve or cylinder, fixed to the head of the micrometer screw or spindle B, and provided with a milled head, by which it can be conveniently turned for rotating said screw and effecting adjustment of the caliper. The cylinder A' and the outer sleeve, C, are provided with a graduated scale for indicating the measurements in the usual manner.

D indicates an adjusting-sleeve for the purpose of taking up backlash and wear of the screw-thread. Said adjusting-sleeve is made, as indicated in Fig. 5, with a screw-thread, *d*, at its inner end, that matches with a corresponding thread, *d'*, formed at the inner end of the frame-cylinder, while within the opposite end of said adjusting-sleeve there is formed the screw-thread *b'*, that matches with the screw-thread *b* on the micrometer screw or spindle B. The sleeve D is also provided with the inclined or conical section *f*, that engages with a shoulder or opposite incline, *e*, formed within the frame-cylinder A' when the parts are together.

The screw-threads *d d'* for the adjusting-sleeve and the screw-threads *b b'* for the micrometer-screw are made of the same pitch—say forty to the inch—so that any adjustment or movement of the sleeve will not cause derangement of the graduated index, as the movement on one thread will compensate for the movement on the other when the sleeve D is revolved for effecting the adjustment. The sleeve D is slitted throughout the greater portion of its length, as indicated at *m*, (see Figs. 5 and 6,) and is provided at its inner end, D', with a nick, *n*, to facilitate turning it when inserted in the frame.

When the sleeve D is rotated, the action of the screw-threads *d d'* draws down the incline or coned surface *f* against the inclined surface *e*, and said surface *f* acts as a wedge for forcing together the outer ends of the slitted sleeve D, causing the screw-thread *b'* to more closely embrace the thread *b* of the micrometer-screw, the pressure being elastic by reason of the springing action of the sides of the slitted sleeve.

The sleeve D can be turned at any time for tightening or loosening the bearing upon the thread *b* by a suitable spanner or wrench applied to the end of the sleeve D' where it projects from the frame, the adjustment being conveniently effected without the necessity of unscrewing the cap-cylinder C or removing the micrometer-screw from its place.

This manner of constructing the adjusting-sleeve and adjacent parts is comparatively simple and convenient for manufacture. Another advantage is, that it leaves no opening or crevice in the exterior of the instrument to

become filled with dirt or grit and thereby interfere with the perfect operation of the instrument. This manner of constructing the sleeve and arranging the same in combination
5 with the frame and micrometer-screw is a feature of my invention.

The end or foot of the frame at *a*, I make of the same thickness as the diameter of the micrometer-screw B, and with its outer part
10 rounded off on a circle corresponding to the cylindrical circle of the screw. Into said end *a* of the frame I insert the anvil or step I in the manner shown. Said anvil has a square-faced head corresponding in size to the mi-
15 crometer-screw, and a screw-threaded shank, I', of smaller diameter, that is screwed into a threaded hole, I², formed through the foot *a* of the frame, the anvil-shank I' being inserted therethrough in outward direction, and
20 its outer end provided with a nick or means whereby the screw can be turned for adjusting the anvil.

The face of the anvil and micrometer-screw are made the full diameter or area of the screw,
25 so as to give square angles, as at *i i*. By thus forming the end of the frame A, the anvil-top, and end of the micrometer screw of the same diameter I produce an instrument which can be used for calipering the gage of slightly pro-
30 jecting ribs or flanges on the surface of solid bodies, since the square angles *i i* and the non-projection of the frame at *a* beyond the circumference of the anvil and screw permits of the caliper being worked close down to a flat
35 surface, as indicated in dotted line, Fig. 3.

I am aware that micrometer-calipers have heretofore been made in which devices for

taking up the wear on the screw-threads are employed, and I do not therefore claim, broadly, the employment of means for adjustment; but, 40 so far as I am aware, the means which I employ are different in construction and mode of operation from any devices heretofore employed for the purpose, while my device also gives elastic pressure on the threads of the 45 micrometer-screw, which is a desirable incidental feature.

What I claim as of my invention, and desire to secure by Letters Patent, is—

1. The combination, with the frame having 50 the projecting cylinder provided internally with an inclined or conical surface and a screw-thread at the inner end, the micrometer-screw, and the outer sleeve, of the internally-slitted adjusting-sleeve having an external thread, *d*, 55 at its inner end fitting to a thread in the frame, an internal thread, *b'*, at its outer end fitting the micrometer-screw, and an intermediate conical surface, *f*, engaging the conical sur-
60 face *e* of the cylinder, substantially as set forth.

2. The combination, with the micrometer-screw B, its supporting-cylinder A', and operating-sleeve C, of the adjusting-sleeve D, having an inclined surface and engaging 65 threads, with its end D' extending from the supporting-cylinder in convenient position to be turned by a wrench or spanner, substantially as set forth.

Witness my hand this 28th day of March, A. D. 1887.

JERREY MOFFITT.

Witnesses:

E. M. PHILLIPS,
WM. T. ROBINSON.