

No. 612,601.

Patented Oct. 18, 1898.

S. H. BELLOWS.
MICROMETER GAGE.

(Application filed Feb. 23, 1898.)

(No Model.)

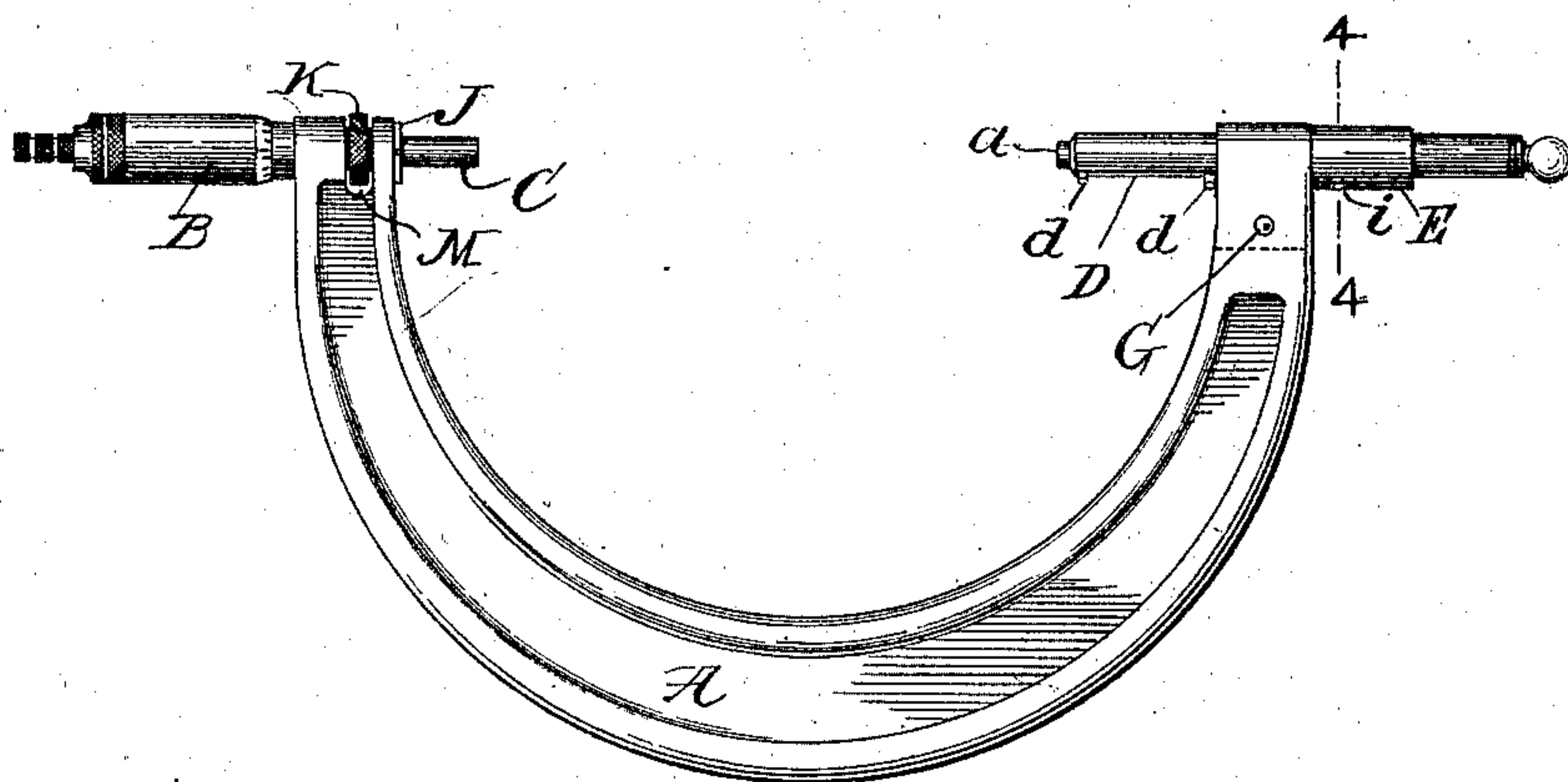


Fig. 1-

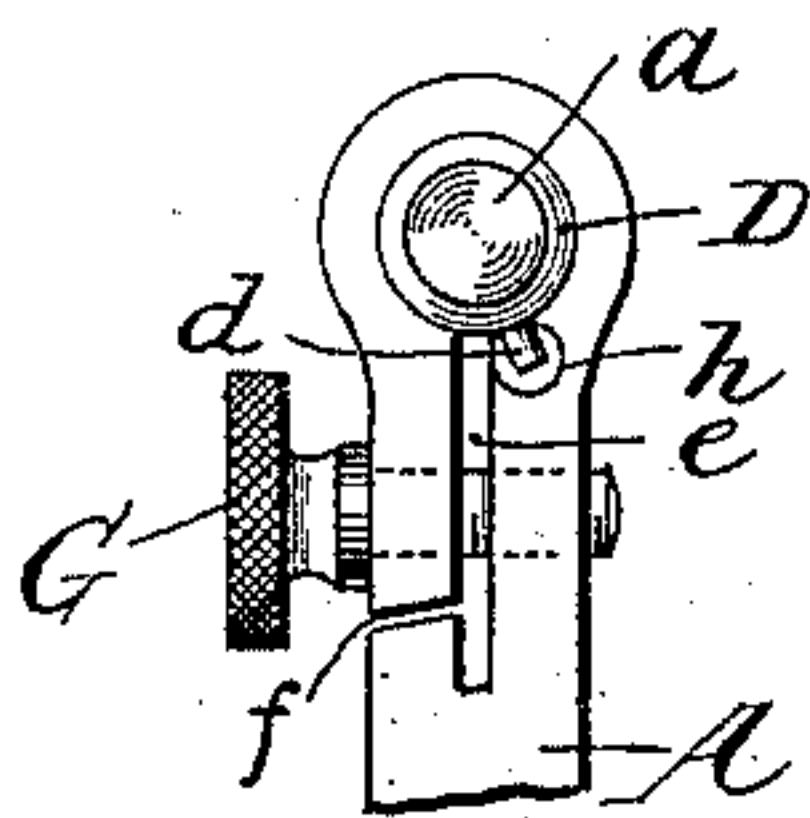


Fig. 2-

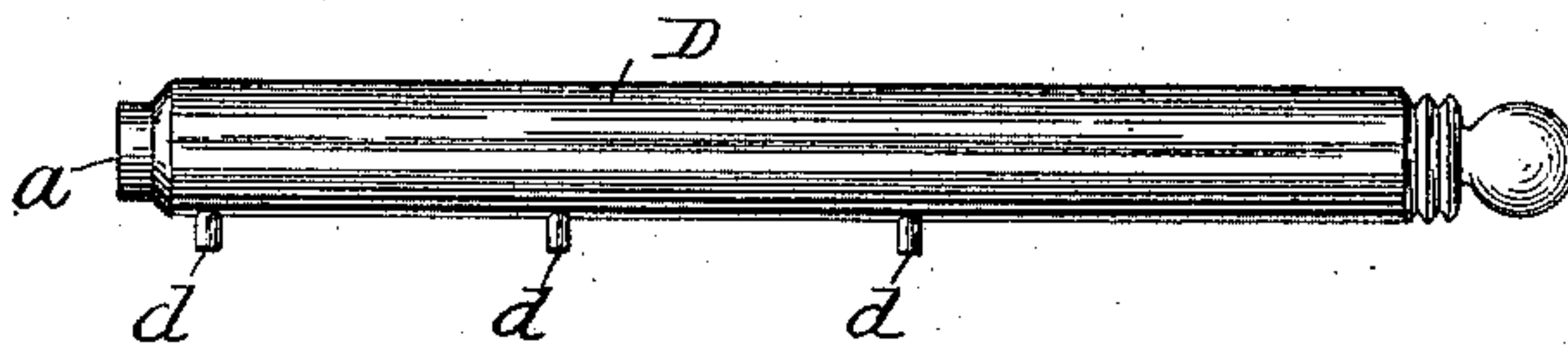


Fig. 3-

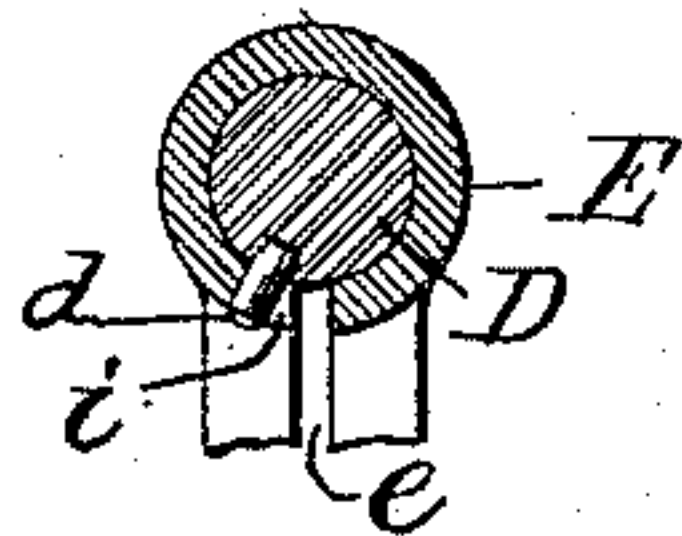


Fig. 4-

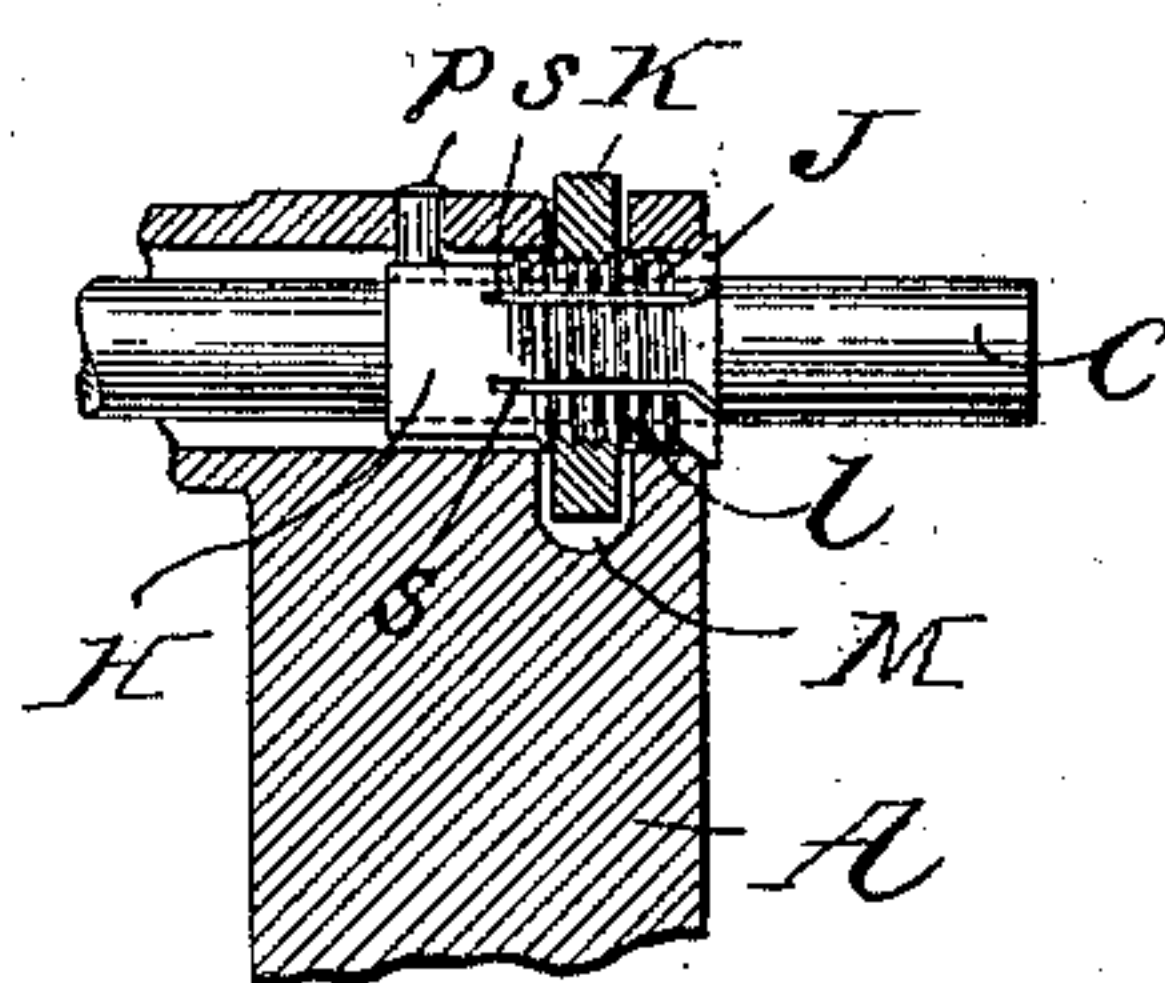


Fig. 5-

WITNESSES-

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UNITED STATES PATENT OFFICE.

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MICROMETER-GAGE.

SPECIFICATION forming part of Letters Patent No. 612,601, dated October 18, 1898.

Application filed February 23, 1898. Serial No. 671,265. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN H. BELLOWS, of Athol, in the county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Micrometer-Gages, of which the following is a specification.

The invention relates to that class of micrometer-gages in which the post or spindle, with its micrometric adjusting mechanism, is held in one end of the supporting-frame and the opposed anvil is held in the other end of said frame; and the improvements consist in fixed projections or stops upon the anvil-rod according to which definite adjustments of the anvil may be made and accurately maintained independently of the micrometric mechanism, and also in the improved construction and arrangement of devices for clamping the micrometric spindle in any position to which it has been adjusted.

These improvements will be readily understood from the description hereinafter contained and the references to the accompanying drawings, wherein—

Figure 1 is a side elevation of a micrometer-gage containing my improvements. Fig. 2 is a detail elevation of the anvil end of the gage viewed from the micrometer end. Fig. 3 is a side elevation of the anvil-rod, showing stops thereon at intervals of about an inch. Fig. 4 is a cross-section through the anvil-rod and its supporting-sleeve on line 4 4, Fig. 1. Fig. 5 is a vertical section through the micrometer end of the frame, showing the relative position of the spindle, clamping device, and its operating-nut.

Referring to the drawings by letter, A is the frame of the gage; B, the micrometer mechanism; C, the micrometer-spindle; D, the anvil-rod, which is adapted to slide longitudinally in the bearing or sleeve E.

$d\ d$ are the stops or projections secured in the rod D at desired intervals. a is the anvil at the end of the rod D.

The anvil end of the frame is slotted from the opening which contains the anvil-rod downward for a short distance, as at e , Fig. 2, and near the bottom of this slot e a slit f is made entirely through one side of the frame into the slot, thus rendering the portion of the frame above the slit capable of being

sprung inward slightly by means of a set-screw G, and thereby pinch and clamp the anvil-rod after it has been adjusted by pulling one of the stops d against a hardened bearing h , provided on the inner face of the frame A. The slot e extends out through the lower part of the sleeve E to permit the passage of the stops d when the anvil-rod is inserted into the sleeve, and a notch i is cut in said sleeve from one side of the slot e at the proper position to receive one stop d when another of them is in position to rest against the bearing h .

H is a sleeve having a smooth bore which fits closely upon the spindle C and is provided with a frusto-conical enlargement J at one end, and slits $s\ s$, which extend inward from that end. Upon a portion of this sleeve a screw-thread l is cut, which thread passes through and is engaged by an annular nut K, contained in a slot M in that end of the frame A. A pin p extends through the portion of the frame A around the spindle C and engages a notch in the inner end of the sleeve H, and thereby prevents it from turning when the nut K is turned. By turning the nut K in one direction the sleeve H is drawn into the socket in the frame and the frusto-conical end J is thereby forced against the frame at the outer end of the socket, and the several segments of the sleeve between the slits s are sprung inward and caused to press tightly against the spindle C and hold it securely in the position which it then occupies. The outer edge of the socket in the frame against which the beveled surface of the end J of the sleeve H comes into contact may be slightly beveled or countersunk to facilitate the operation of the beveled end J. By turning the nut in the opposite direction the sleeve H is moved outward and the spindle C is released.

Heretofore gages have been constructed in which the anvil-rod was adjustable longitudinally; but the security of its position was dependent entirely upon a clamping-screw which was not wholly reliable, and as it was necessary first to adjust the anvil-rod by hand, relying upon the eye for accuracy, such prior construction was found to be inaccurate and practically ineffective. In my improved construction, on the other hand, each adjust-

ment of the anvil is positive, accurate, and invariable and can be made with the least possible delay and without the exercise of extreme care or attention on the part of the user of the instrument.

I claim—

1. In a micrometer-gage, the combination of a post adjustable by micrometric mechanism, an opposed anvil adjustable longitudinally in its bearings in the frame, fixed stops upon said anvil which are adapted to make contact with the frame, and a slot in that end of the frame for the passage of said stops when the anvil is adjusted.

2. In a micrometer-gage, a frame, micrometric mechanism B, supported in one end thereof, an anvil-rod D, supported in the other end of the frame and a series of fixed pins or stops *d*, on said anvil-rod, and a hardened abutting surface on said frame against which said pins may bear and positively determine definite adjustments independently of the micrometric mechanism.

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Witnesses:

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