

No. 706,696.

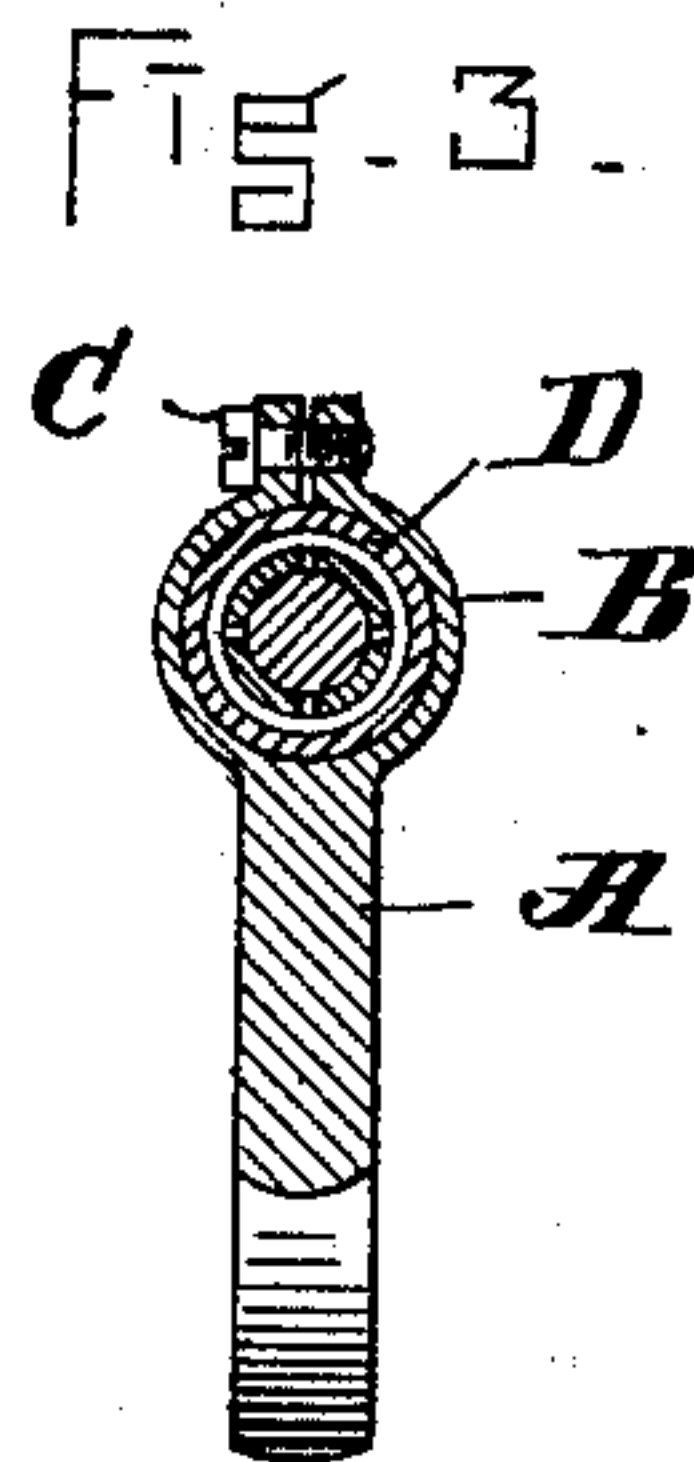
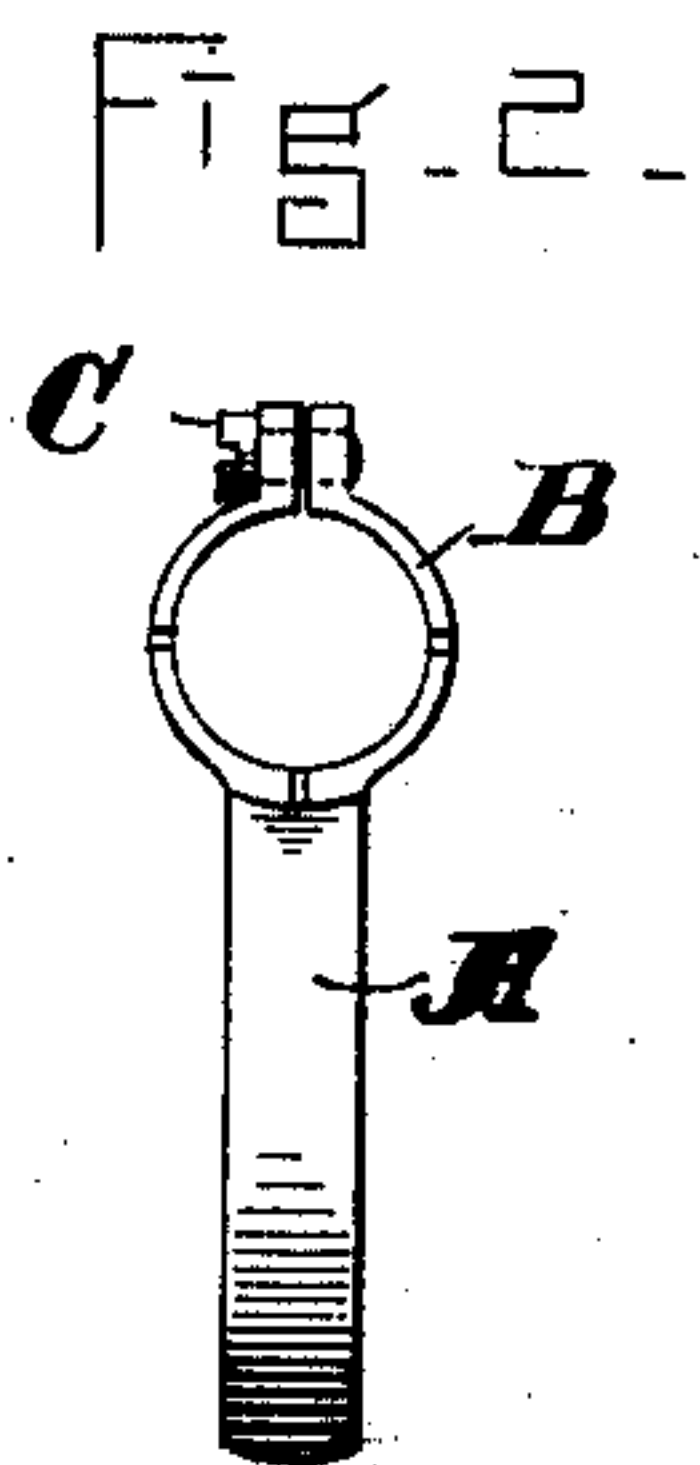
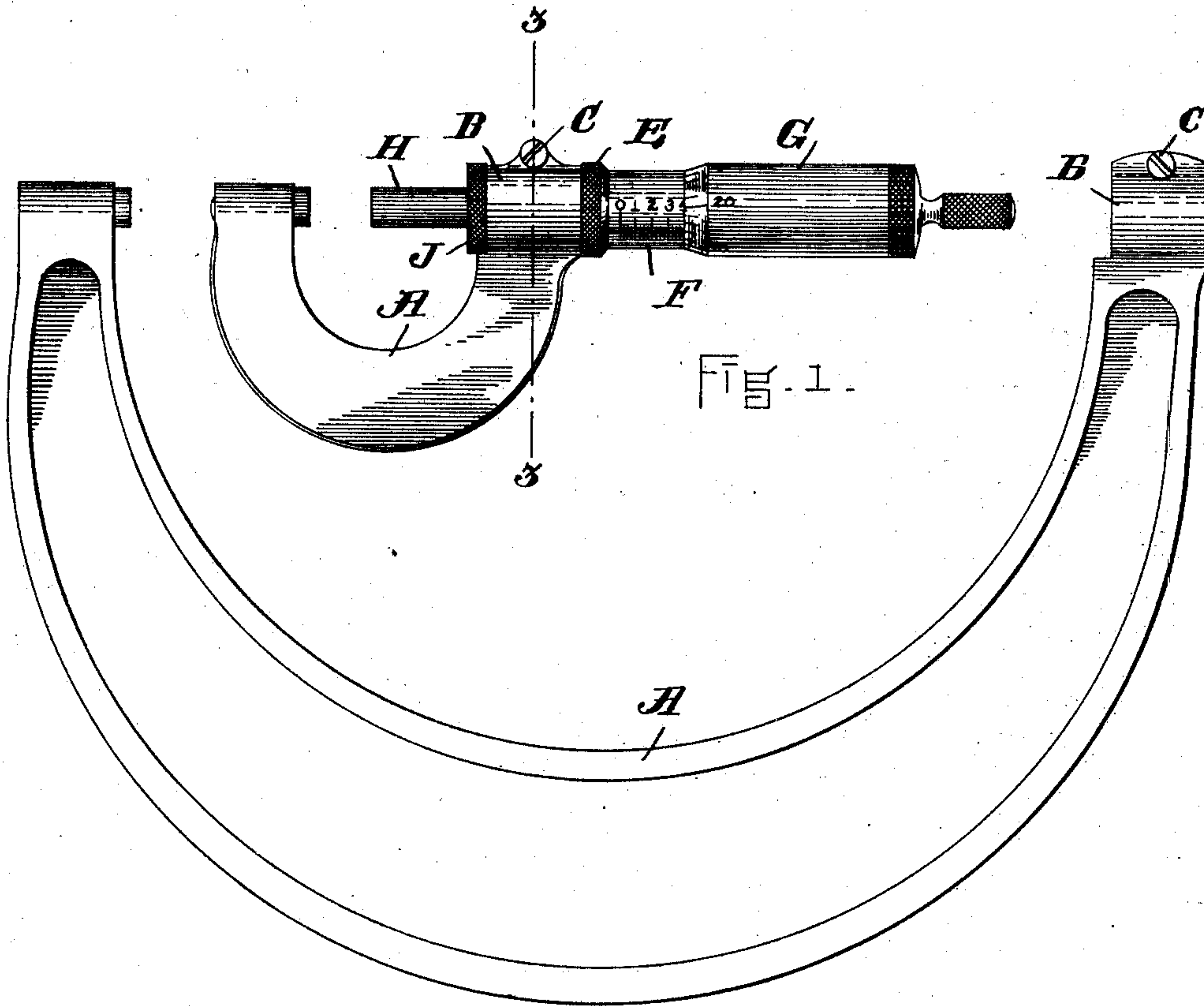
Patented Aug. 12, 1902.

R. J. SIMPSON.
MICROMETER GAGE.

(Application filed Apr. 5, 1900. Renewed Jan. 11, 1902.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES.

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2 Sheets—Sheet 2.

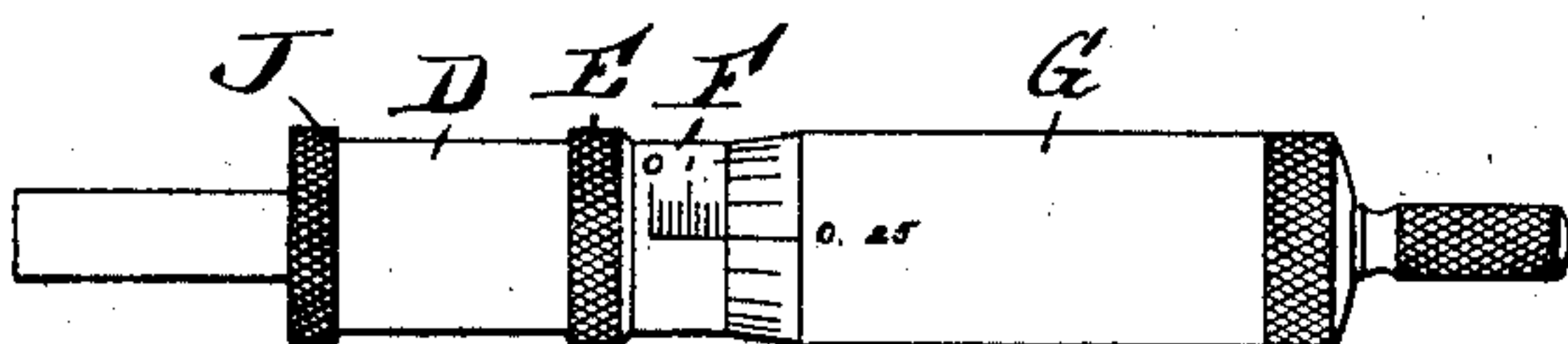


Fig. 4.

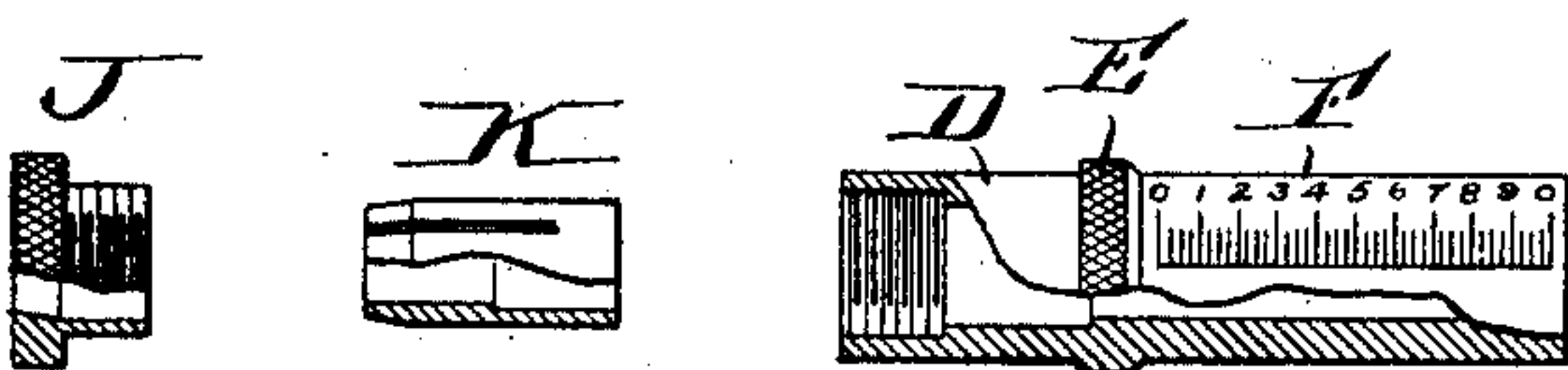


Fig. 5.

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UNITED STATES PATENT OFFICE.

ROBERT J. SIMPSON, OF ATHOL, MASSACHUSETTS, ASSIGNOR TO THE L. S. STARRETT COMPANY, OF ATHOL, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

MICROMETER-GAGE.

SPECIFICATION forming part of Letters Patent No. 706,696, dated August 12, 1902.

Application filed April 5, 1900. Renewed January 11, 1902. Serial No. 89,356. (No model.)

To all whom it may concern:

Be it known that I, ROBERT J. SIMPSON, of Athol, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Micrometer-Gages, of which the following is a specification.

The object of this invention is to provide a line of micrometer-gages of different sizes and shapes at a cost for the series of sizes much less than has heretofore been required. This I accomplish by making a series of frames or bodies of varying sizes each provided with a clamping-socket and then supplying a single finished graduated barrel fitting at one end into said socket and a rotatable graduated sleeve and screw-threaded spindle revolving around and within said barrel to indicate measurements of distance thereon. The barrel, sleeve, and spindle properly graduated are the most expensive and difficult parts to make in the manufacture of micrometers, and by furnishing one complete finished tool having these parts with a series of frames or bodies of different sizes and shapes each having a clamping-socket to receive the end of the barrel I provide apparatus adapted for wide variations in the dimensions of things to be measured at a mere fraction of the former cost for the several sizes. A screw is provided to hold the barrel firmly between the parts of the clamp, and a locking-nut surrounding the spindle screws into the inner end of the barrel to hold the spindle securely when adjusted to the desired measurement. By this construction the tool proper, shaped on one end to fit said socket, may be used interchangeably with frames of different sizes and shapes, thus obviating the necessity of many complete and expensive sizes, some of which are only occasionally required. My improved tool is therefore peculiar in that the barrel and parts revolving with relation thereto are made detachable from the stock or frame and adapted to be used interchangeably with frames of various sizes each having a clamping-socket arranged to securely hold the barrel and other parts in working position and to release them.

In the drawings, Figure 1 is a plan view of one of my improved tools, showing the several parts in operative position and repre-

senting also a much larger frame adapted for use with the same barrel and revolving parts. Fig. 2 is an end or edge view showing the body or frame with the barrel, spindle, and sleeve detached therefrom. Fig. 3 is a transverse section through the clamp on line 3 3 of Fig. 1. Fig. 4 represents the tool proper detached from the frame. Fig. 5 shows parts in partial section.

A represents the frame or body of the tool, made in the various sizes and shapes required, each frame having at one end the usual fixed anvil and at the other the circular socket B, consisting of two semicircular arms integral with the frame, the upper edges of which come almost into contact.

C is a clamping-screw passing through thickened ears formed at the free edges of the members of the clamp, with one of which the threads of the screw engage to tighten or loosen the clamp, as required.

The barrel of the instrument is composed of the parts D, E, and F. The part D is a cylindrical end portion which enters and is held by the circular clamp B C. The part E is an enlarged collar integral with the barrel, serving as a stop to correctly locate the barrel with relation to the anvil and clamp and milled at its periphery to facilitate turning or removing the barrel when desired on slackening the clamp. F is the cylindrical portion of the barrel, bearing the scale of longitudinal graduations denoting measurements of distance. This part F lies immediately within the rotating sleeve G and surrounding the spindle H, which engages with internal threads (not shown) within the barrel for longitudinal movement by rotation in the usual way.

J represents a locking-nut having a milled head and a threaded body engaging internal threads in the cylindrical end D of the barrel D E F. The head of this locking-nut is internally beveled to bear upon the inclosed yielding prongs K and press them inwardly against the spindle, so as to lock it in position when desired. The parts are so proportioned that when the end D is within the socket B with the collar E bearing as a stop against the end of the socket the enlarged head of the nut J, which has locked the spin-

dle in a given position, will be in substantial contact with the opposite end of the socket. When the barrel is to be removed from the socket, the clamp-screw C is slackened and
5 the lock-nut J unscrewed and withdrawn. The barrel being then only held frictionally may be instantly removed from the socket of one frame and applied to another.

I claim as my invention—

10 In a micrometer-gage, the rotatable spindle and sleeve and the tubular barrel adapted to receive them and formed with a cylindrical end portion D and collar E, in combination

with any one of a plurality of frames or bodies, each provided with a receiving-socket 15 and a clamping-screw, adapted to receive and hold said end portion of the barrel, whereby such frames or bodies may be interchangeably attached to and detached from the tool proper, substantially as set forth. 20

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

ROBERT J. SIMPSON.

Witnesses:

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