No. 645,838. Patented Mar. 20, 1900.

F. SPALDING.

MICROMETER GAGE.

(Application filed Mar. 16, 1899.)

(No Model.)

Fig. 1.

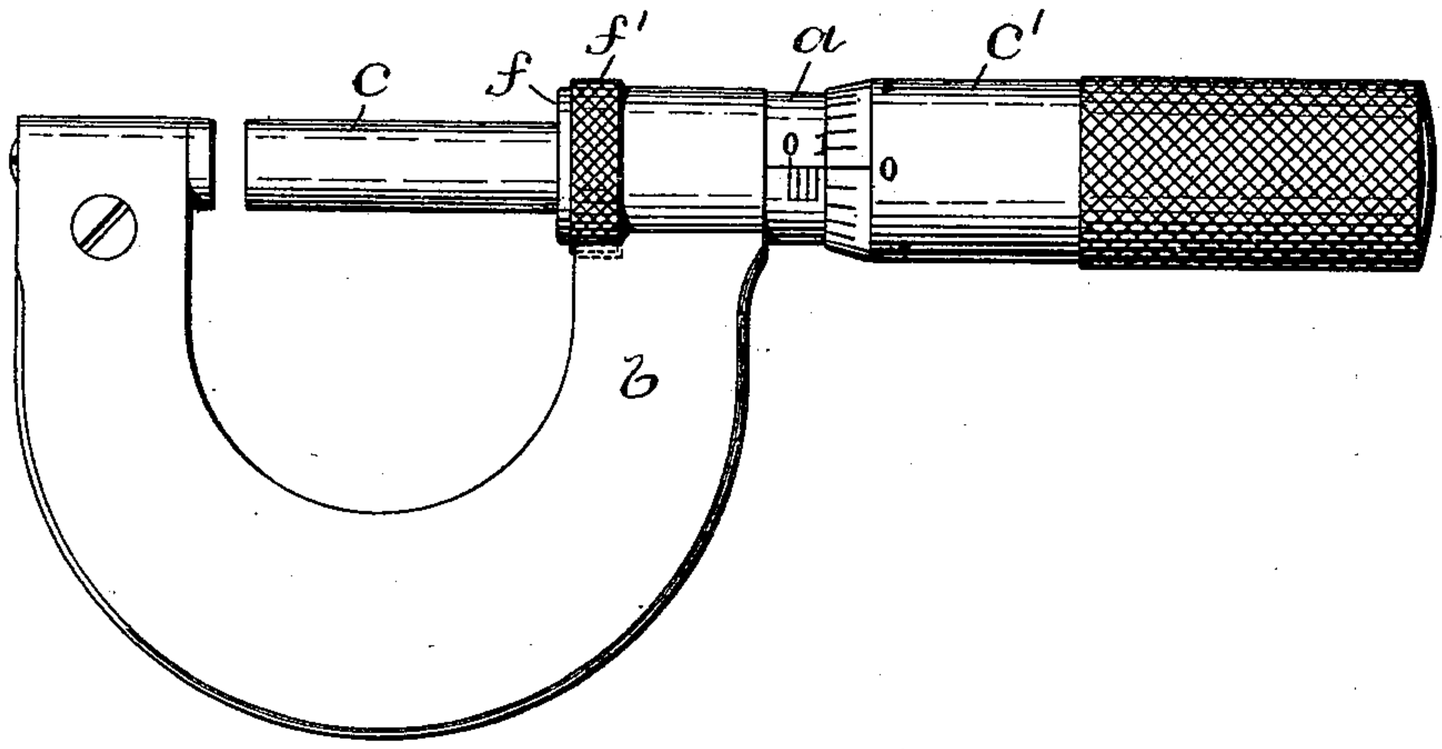


Fig. 3.

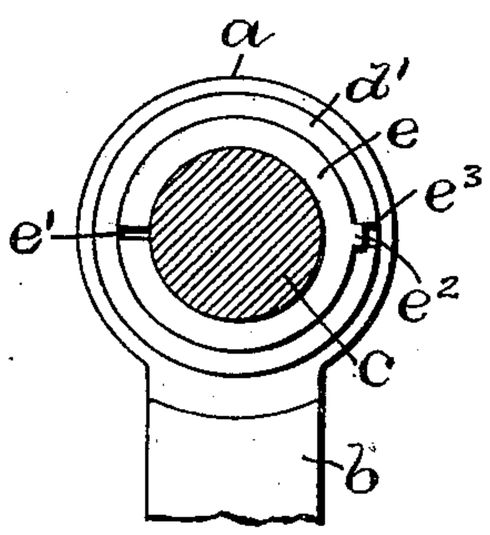


Fig. 2.

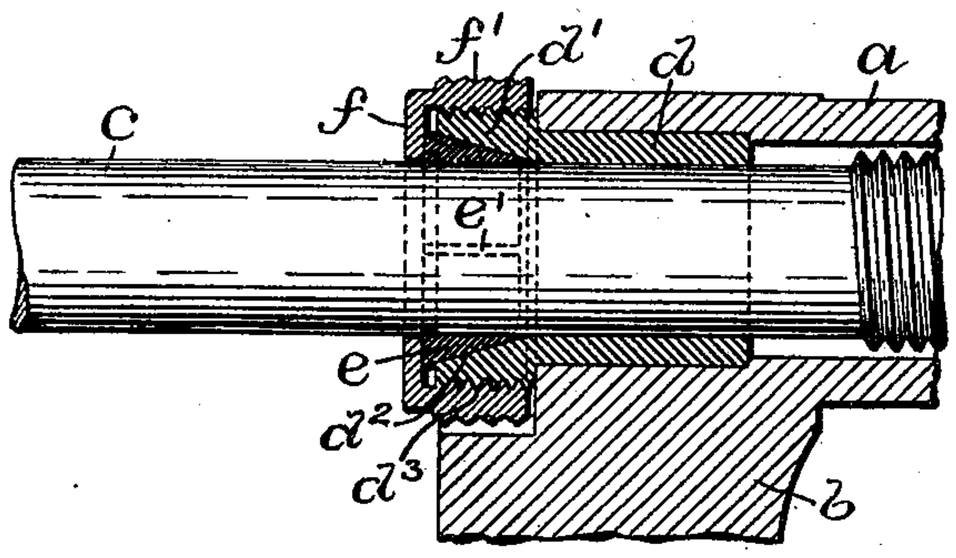


Fig. 4.

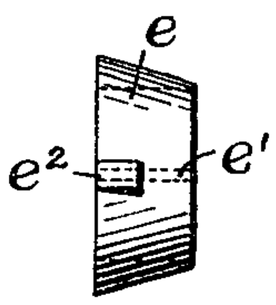
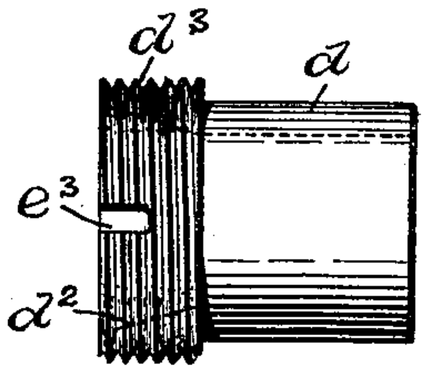


Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK SPALDING, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE BROWN & SHARPE MANUFACTURING COMPANY, OF SAME PLACE.

MICROMETER-GAGE.

SPECIFICATION forming part of Letters Patent No. 645,838, dated March 20, 1900.

Application filed March 16, 1899. Serial No. 709,261. (No model.)

To all whom it may concern:

Be it known that I, FRANK SPALDING, of the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Micrometer-Calipers; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

In micrometer-calipers the spindle is provided with a sleeve usually graduated on the end into twenty-five (25) divisions. In reading this scale the space between the lines of the scale is usually read with reference to the position of the zero-mark on the sleeve in fractions, so that one one-hundredth of a revolution of the spindle may be read after a micrometric measurement has been made. It is therefore important that in clamping the spindle the spindle should not be turned, for the slightest tendency to rotation of the spindle by the clamping device is liable to change the position of the spindle and the result of the measurement.

One object of this invention is to clamp the spindle without the slightest tendency to rotate the same.

Another object of the invention is to securely hold the spindle against the slightest lateral movement.

To these ends the invention consists in the peculiar and novel construction of the supporting-sleeve and clamping device, as will be more fully set forth hereinafter.

Figure 1 is a side view of a micrometer-caliper provided with my improved clamping device. Fig. 2 is a sectional view of the same on an enlarged scale. Fig. 3 is a transverse sectional view with the screw-cap removed, showing the split clamping-ring. Fig. 4 is a side view of the clamping-ring, and Fig. 5 a side view of the supporting-sleeve.

In the drawings, *a* indicates the barrel, projecting from the body *b*; *c*, the spindle, and *c'* the sleeve, secured to the spindle and turning with the same; *d*, a sleeve firmly secured in the end of the barrel *a* and forming an extended bearing for the spindle *c*, in which the spindle may rotate, but is firmly held against springing or lateral movement. The sleeve *d* is provided at it is outer end with the screw-threaded shoulder *d'* and the conical seat d^2. *e* is a split ring fitting the spindle *c* with a sliding fit when in its normal expanded condition, the conical outer surface of the split ring *e* corresponding with the conical surface of the seat d^2. The ring *e* is separated on one side by the cut *e'* and has on the other side the spline e^2, which enters the groove e^3 in the shoulder *d'* of the sleeve *d*. The cup-shaped cap *f* surrounds the spindle *c* with a loose fit. It is internally screw-threaded to engage with the screw-thread d^3 on the shoulder *d'* of the sleeve *d*, and the outer peripheral surface of the cap *f* is milled or otherwise roughened.

In a micrometer-caliper provided with my improvement the spindle is firmly supported against lateral movement and against springing by the long bearing in the sleeve *d*. In the normal condition the split ring also forms an adjustable bearing for the spindle, by which more or less frictional resistance may be exerted on the spindle by a partial turn of the cap *f*, so that in adjusting the spindle the same may turn freely. A slight turn of the cap *f* contracts the split ring on the spindle to give the desired frictional resistance for the final accurate measurement, and an additional partial turn firmly clamps the spindle without the slightest tendency to turn the spindle and alter the final adjustment.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

In a micrometer-caliper, the combination with the barrel and the rotatable spindle in the barrel, of a sleeve secured in the end of the barrel and forming the support of the unthreaded portion of the spindle, an externally-screw-threaded shoulder on the sleeve, an annular conical seat in the end of the sleeve, a split ring of wedge-shaped cross-section, a spline on the split ring, a groove in the end of the sleeve for the reception of the spline, and an internally-screw-threaded cap; whereby the rotation of the spindle may be retarded and the spindle may be clamped in the adjusted position, as described.

In witness whereof I have hereunto set my hand.

FRANK SPALDING.

Witnesses:
J. A. MILLER, Jr.,
B. M. SIMMS.