

No. 842,263.

PATENTED JAN. 29, 1907.

F. SPALDING.
MICROMETER CALIPERS.
APPLICATION FILED JUNE 28, 1906.

Fig. 1.

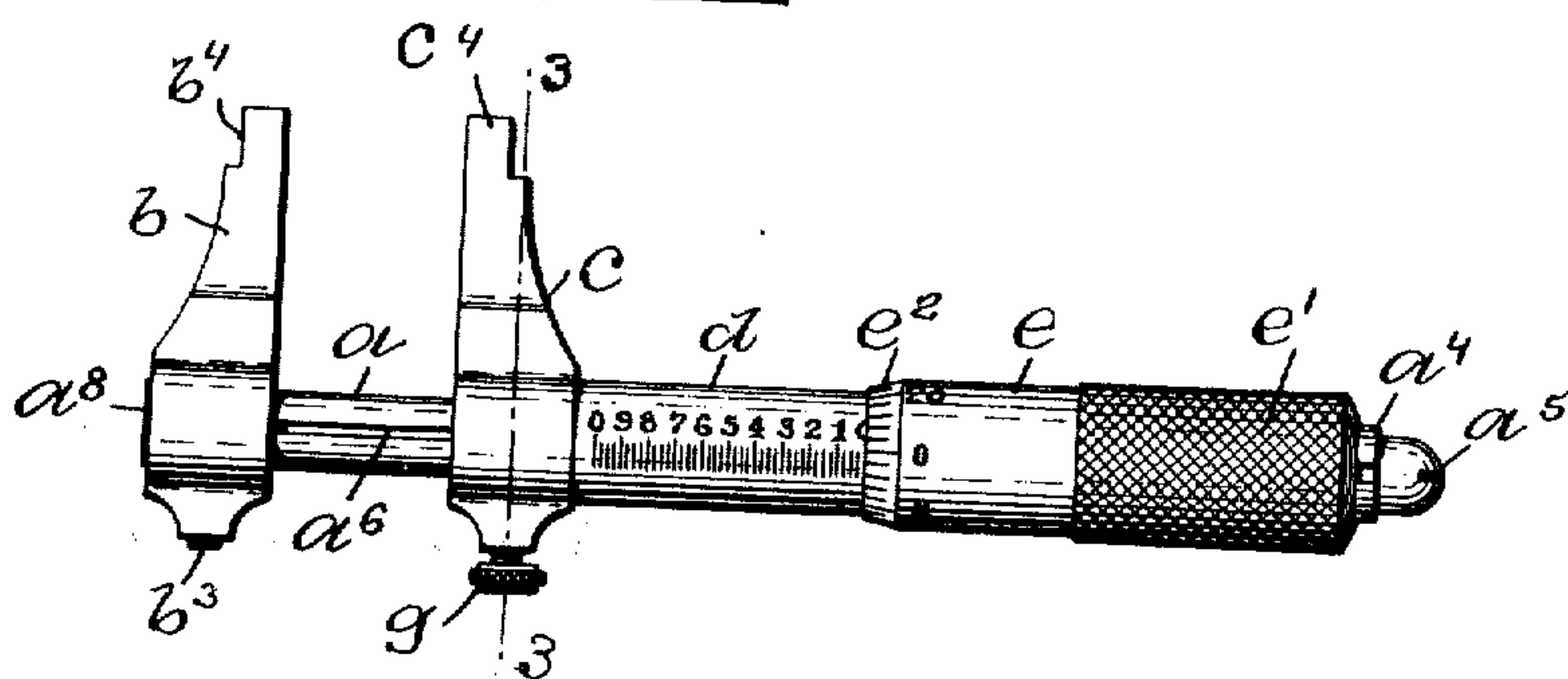


Fig. 2.

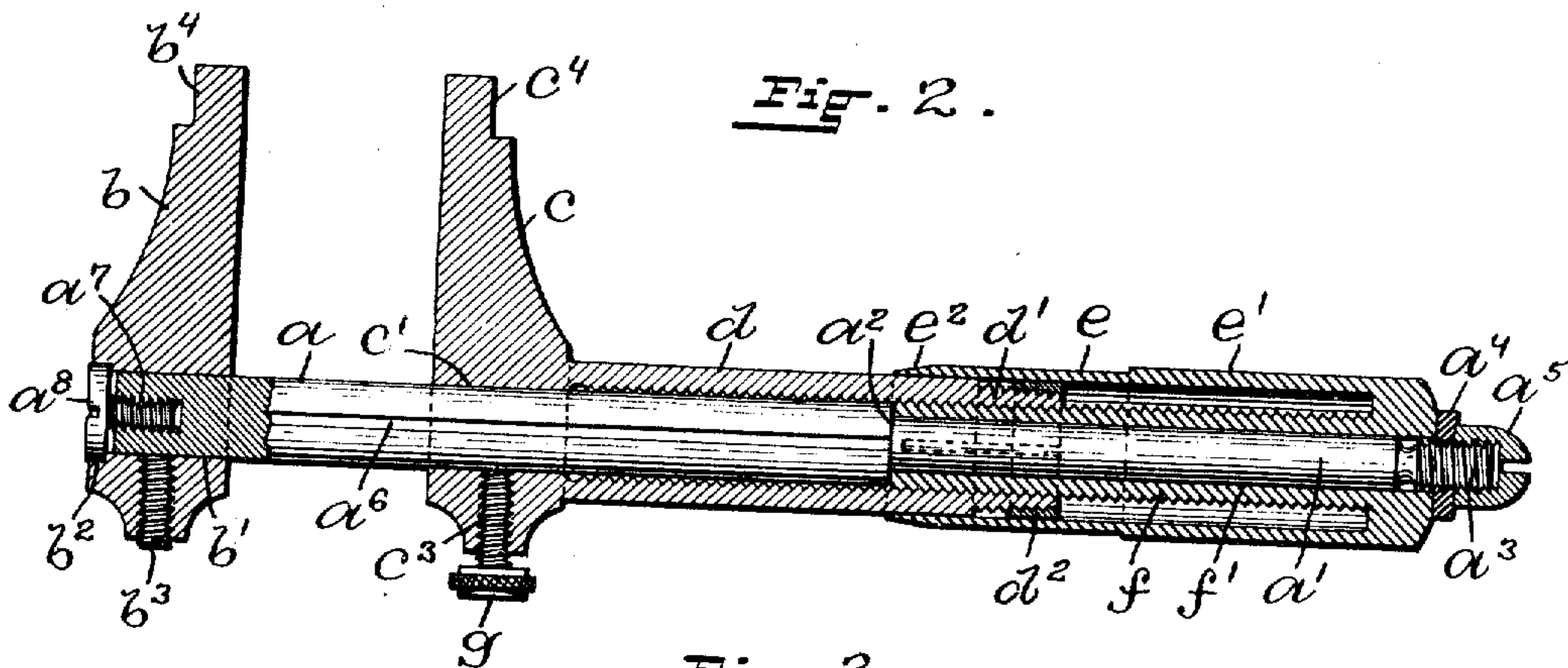
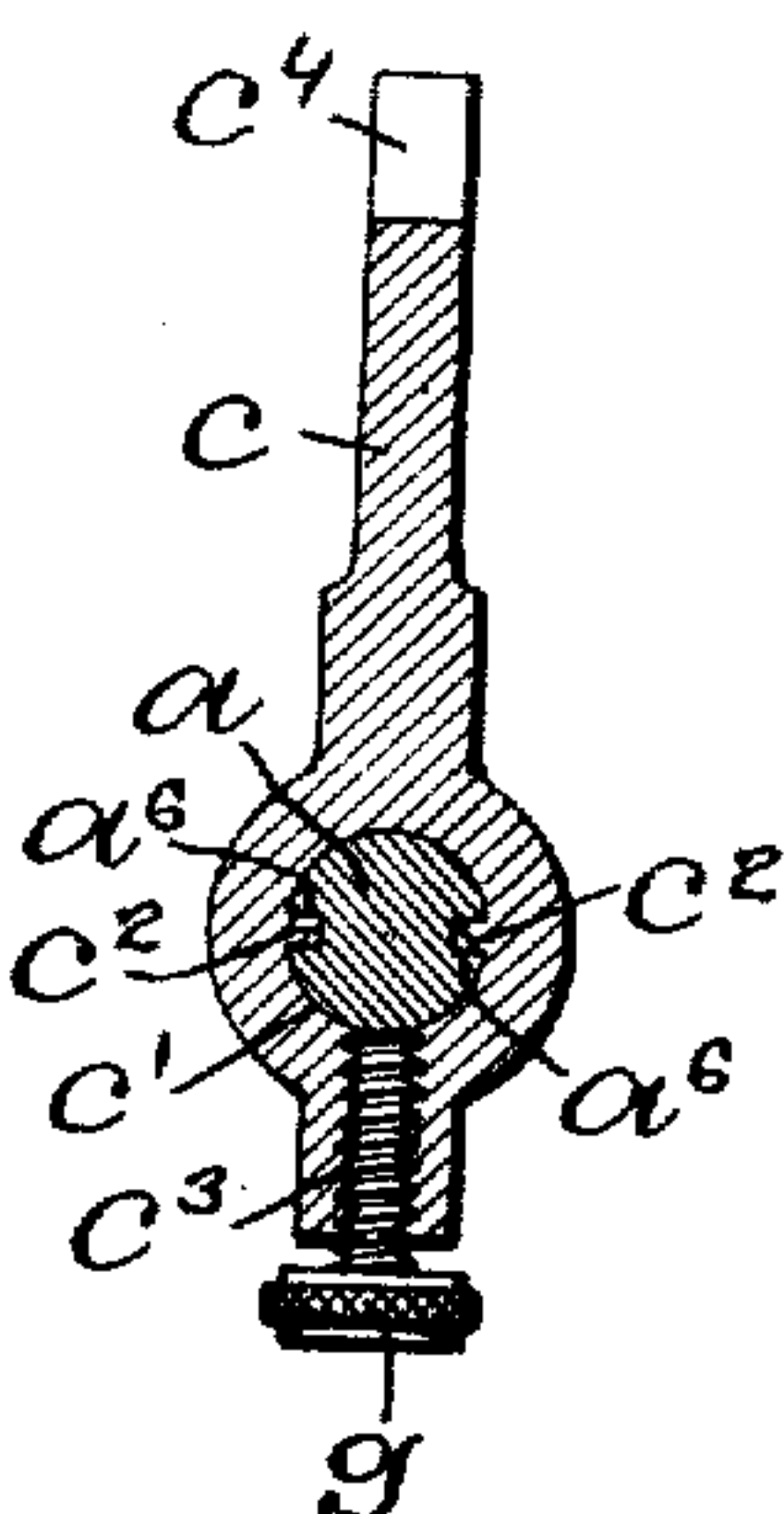


Fig. 3.



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MICROMETER-CALIPERS.

No. 842,263.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed June 23, 1905. Serial No. 266,552.

To all whom it may concern:

Be it known that I, FRANK SPALDING, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Micrometer-Calipers, of which the following is a specification.

This invention has reference to an improvement in micrometer-calipers, and more particularly to an improvement in inside micrometer-calipers.

The object of my invention is to improve the construction of inside micrometer-calipers, whereby the measurement of inside diameters is facilitated.

My invention consists in the peculiar and novel construction of an inside micrometer-caliper comprising a spindle, a fixed jaw having means for adjustment on the spindle, a sliding jaw on the spindle, means for preventing rotation of the sliding jaw on the spindle, an internally-screw-threaded sleeve on the sliding jaw, a barrel rotatably secured to the spindle, an externally-screw-threaded inner tube in the barrel adapted to engage with the internally-screw-threaded sleeve on the sliding jaw, means for taking up wear between the sleeve and the tube, means for locking the sliding jaw in its adjusted position, and other details of construction, as will be more fully set forth hereinafter.

Figure 1 is a face view of my improved inside micrometer-caliper, showing the same constructed to measure inside diameters from one to two inches by one-thousandths of an inch. Fig. 2 is an enlarged sectional view taken lengthwise through the caliper, showing the construction of the caliper; and Fig. 3 is an enlarged transverse sectional view through the sliding jaw and spindle of the caliper, taken on line 3 3 of Fig. 1.

In the drawings, *a* indicates the spindle, *b* the fixed jaw, *c* the sliding jaw, *d* the internally-screw-threaded sleeve on the sliding jaw, *e* the barrel, *f* the externally-screw-threaded tube in the barrel, and *g* the locking screw, of my improved inside micrometer-caliper.

The spindle *a* has a reduced portion *a'*, forming the annular shoulder *a²* for the inner end of the tube *f*, a screw-threaded end *a³* for the collar *a⁴*, and the lock-nut *a⁵*, the two

oppositely-disposed longitudinal grooves *a⁶* *a⁶*, and the screw-threaded hole *a⁷* in the opposite end of the spindle for the adjusting-screw *a⁸*, as shown in Fig. 2.

The fixed jaw *b* has a hole *b'* for the spindle *a*, with the countersunk portion *b²* for the head of the adjusting-screw *a⁸*, a set-screw *b³*, adapted to engage with the spindle *a*, and the shouldered end *b⁴*. The jaw *b* is adjusted lengthwise on the spindle *a* by the screw *a⁸* and firmly secured in its adjusted position by the set-screw *b³*, as shown in Fig. 2.

The sliding jaw *c* has a hole *c'* for the spindle *a*, the two oppositely-disposed longitudinal ribs *c²* *c²* on the interior wall of the hole *c'* for the grooves *a⁶* *a⁶* in the spindle *a*, a screw-threaded hole *c³* for the locking-screw *g*, and a shouldered end *c⁴*. The shouldered ends *b⁴* and *c⁴* on the jaws are shaped to enter the article to be calipered, the shoulders on the jaws limiting the inward movement of the jaws.

The internally-screw-threaded sleeve *d*, through which the spindle *a* extends, is formed integral with the sliding jaw *c* and has a split and tapered screw-threaded end *d'*, on which is a nut *d²*, as shown in Fig. 2, and the usual scale of one inch divided into forty equal parts on its exterior, as shown in Fig. 1.

The barrel *e* has a knurled portion *e'*, a tapered end *e²*, on which are graduations indicating one-fortieth of an inch divided into twenty-five equal parts, and the externally-screw-threaded tube *f*, formed integral with the barrel and having a central bore *f'* for the reduced portion *a'* of the spindle *a*, as shown in Fig. 2. The barrel *e* is rotatably secured to the reduced portion *a'* of the spindle *a*, between the shoulder *a²* and the collar *a⁴*, by the lock-nut *a⁵*, with the tube *f* in screw-thread engagement with the sleeve *d*. By turning the barrel *e* the sliding jaw *c* is reciprocated lengthwise on the spindle *a* and prevented from rotating on the spindle by the ribs *c²* *c²* on the jaw engaging with the grooves *a⁶* *a⁶* in the spindle.

When an accurate measurement is taken for future reference, the sliding jaw *c* is locked to the spindle *a* by the locking-screw *g*. Wear is compensated for between the sleeve *d* and the tube *f* by tightening the nut *d²* on the split end *d'* of the sleeve, and wear

on the jaws *b* and *c* is compensated for by adjusting the jaw *b* on the spindle *a* by the adjusting-screw *a*⁸, as shown in Fig. 2.

It is evident that the jaw *b* could have ribs in the hole *b*¹, adapted to engage with the grooves *a*⁶ *a*⁶ in the spindle, and that the jaw *b* could have a longitudinal movement toward the jaw *c* and then secured by the set-screw *b*³ for measuring the inside diameters of less than one inch without materially affecting the spirit of my invention.

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

1. An inside micrometer-caliper comprising a spindle, a fixed jaw on the spindle, a sliding jaw on the spindle, an internally-screw-threaded sleeve on the sliding jaw, a barrel rotatably secured to the spindle, an externally-screw-threaded tube in the barrel adapted to engage with the internally-screw-threaded sleeve on the sliding jaw, means for adjusting the fixed jaw on the spindle, and means for locking the sliding jaw to the spindle, as described.

2. In an inside micrometer-caliper, the combination of a spindle *a* having the reduced portion *a*¹ forming the shoulder *a*², the screw-threaded end *a*³, the collar *a*⁴ and the lock-nut *a*⁵ on the end *a*³, the longitudinal grooves *a*⁶ *a*⁶, the screw-threaded hole *a*⁷, the adjusting-screw *a*⁸ in the hole *a*⁷, a fixed jaw

b having the hole *b*¹ with the countersunk portion *b*², the set-screw *b*³ and the shouldered end *b*⁴, a sliding jaw *c* having the hole *c*¹, the ribs *c*² *c*² in the hole *c*¹ adapted to engage with the grooves *a*⁶ *a*⁶ in the spindle, the screw-threaded hole *c*³ and the shouldered end *c*⁴, an internally-screw-threaded sleeve *d* formed integral with the sliding jaw *c* and having the split and tapered screw-threaded end *d*¹, a nut *d*² on the end *d*¹, and the usual scale on the exterior of the sleeve, a barrel *e* having the knurled portion *e*¹, the tapered end *e*² on which are graduations, an externally-screw-threaded tube *f* formed integral with the barrel *e* and having the central bore *f*¹ for the reduced portion *a*¹ of the spindle *a*, and a locking-screw *g* in the screw-threaded hole *c*³ in the sliding jaw *c*, whereby the jaw *b* is adjustable on the spindle *a*, the jaw *c* is reciprocated on the spindle *a* and locked to the spindle by the locking-screw *g* and wear is compensated for between the sleeve *d* and the tube *f* and between the barrel *e*, the shoulder *a*² on the spindle and the collar *a*⁴, as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK SPALDING.

Witnesses:

ADA E. HAGERTY,

J. A. MILLER, Jr.