(No Model.)

C. P. JENNINGS.

MICROMETER CALIPERS.

No. 413,516. Patented Oct. 22, 1889.

Fig. 1

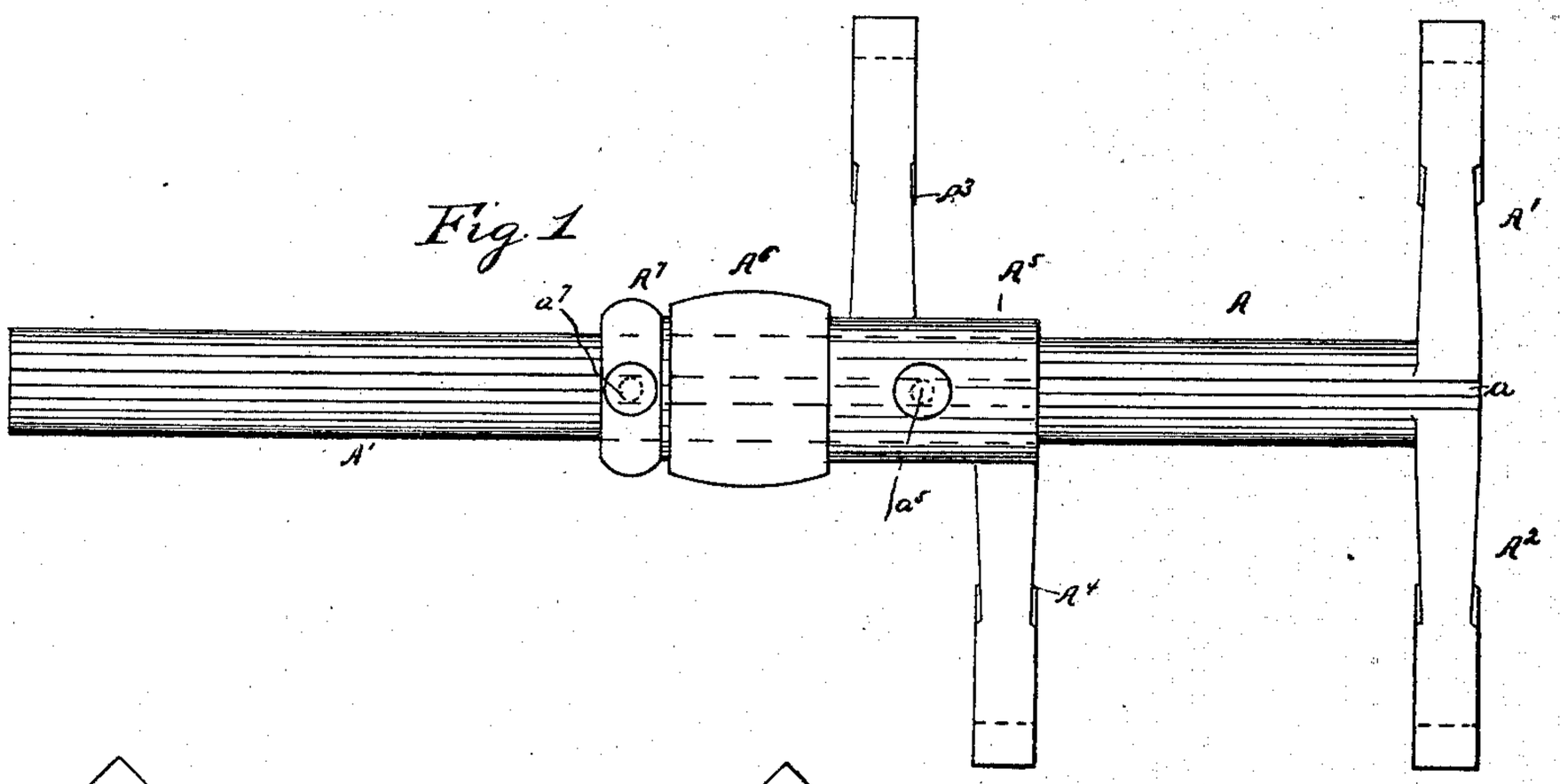


Fig. 2.

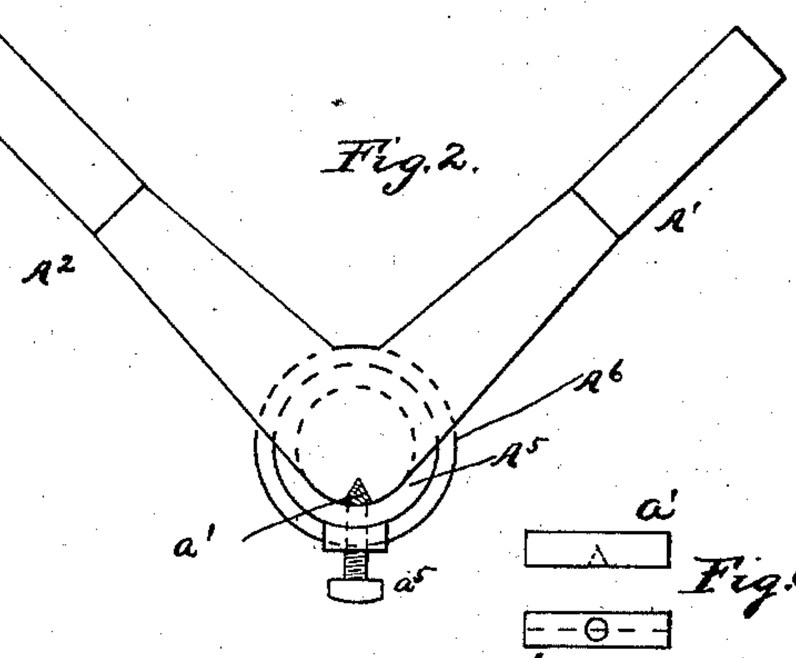


Fig. 4.

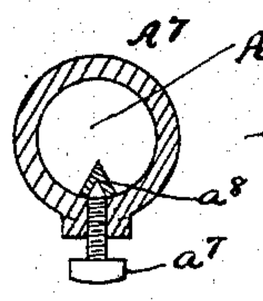


Fig. 6.

Fig 5

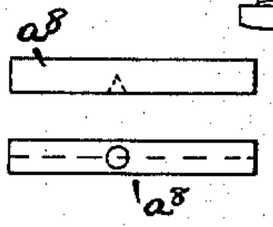
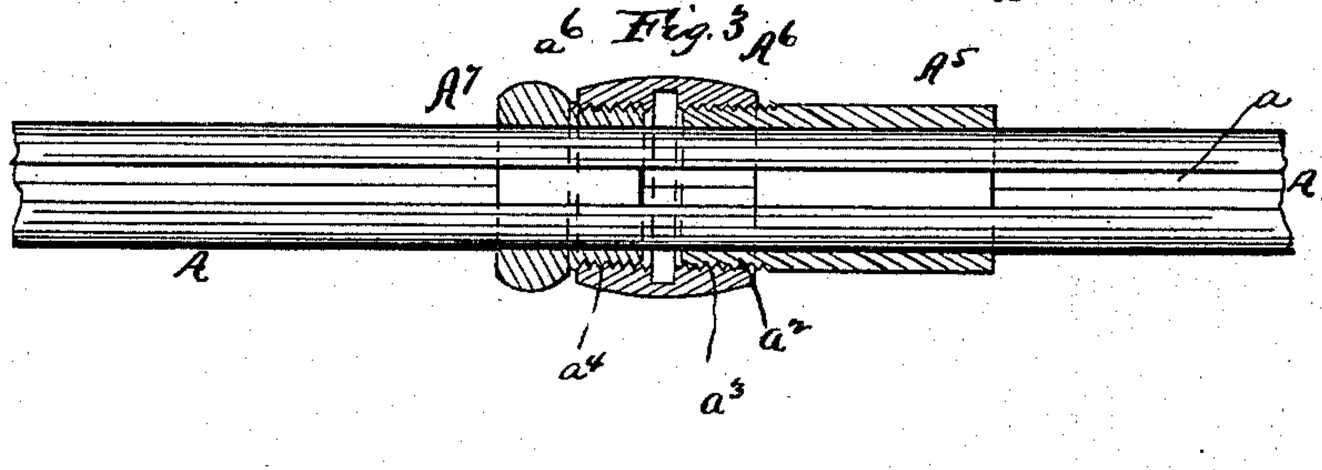


Fig. 3



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES P. JENNINGS, OF BRADFORD, PENNSYLVANIA.

MICROMETER-CALIPERS.

SPECIFICATION forming part of Letters Patent No. 413,516, dated October 22, 1889.

Application filed April 24, 1889. Serial No. 308,461. (No model.)

To all whom it may concern:

Be it known that I, CHARLES P. JENNINGS, a citizen of the United States, residing at Bradford, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Micrometer-Calipers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates, generally, to micrometer-calipers, and particularly to calipers which are used in fitting one piece of machinery into another.

It has for its object to improve the form of such instruments, particularly in the manner of arranging the legs and means for adjusting and setting the movable part which carries one pair of the legs.

My invention therefore consists of constructions and combinations, all as will hereinafter be described in the specification and pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation; Fig. 2, an end elevation; Fig. 3, a detail showing the shaft or stem in elevation and the other parts in section. Figs. 4, 5, and 6 are details.

A represents the shaft, made of cast-steel or other suitable material, and provided with the longitudinal guide-groove a, of any desired length, and the fixed legs A′ and A^2, and A^5 is a sliding sleeve provided with legs A^3 and A^4, the leg A^4 being in advance of the leg A^3, for a purpose hereinafter described. It is also provided with a set-screw a^5, which extends through the sleeve into a wedge-shaped block a', located in groove a and having a conical opening for the set-screw, which, when the sleeve is moved, moves the block with it, and when screwed down clamps the sleeve A^5, block a', and the shaft A firmly together. The rear end or projection a^2 of the sleeve is screw-threaded on the outside for the thumb-nut or thimble A^6, which is internally screw-threaded at both ends a^3 and a^4. The rear end is screwed upon the end or projection a^6 of the screw-threaded setting-ring A^7, also located upon the shaft and having a set-screw a^7, which extends through the ring into a conical opening formed in a wedge-shaped guide a^8, located in groove a. The screw-threads on projection a^6 and the screw-threads a^4 upon the thimble are coarser than the screw-threads a^3 on the thimble and the projection a^2 on the sleeve, so that when the thimble is turned the sleeve will have a slower forward or backward motion than it would have if the threads were alike. It is obvious that the degree of coarseness or fineness of the threads can be made to suit in each instrument.

The legs A′ A^3 and A^2 A^4 are respectively placed on the same radial plane, so that there will be no need of circumferential adjustment, and that the leg A^4 is in advance of the leg A^3. The object of this construction is to provide a caliper that will have the same distance between the outside of legs A^2 and A^4 as between the inside of legs A^3 and A′, so that there will be no need of changing the adjustment when measuring the inside of one piece or the outside of the piece to be fitted on the first piece. By this instrument a workman can readily fit the male and female parts of any device with ease and facility and without recourse to any other instrument of precision.

The operation of the device is as follows: The set-screws a^5 and a^7 are turned so that the adjustable parts can be moved on the shaft to bring the legs at or near their proper position. The set-screw a^7 is then screwed into the block a^8 until the setting-ring is fixed in place. The thumb-nut or thimble is then turned to move the adjustable sleeve until the exact position is reached, when the part is fixed in place by set-screw a^5. The parts will remain in this position until readjustment becomes necessary for other work.

What I claim as new is—

1. The combination of the shaft having the radial legs, the adjustable sleeve having radial legs, the setting-ring, the thimble having screw-threads meshing with screw-threads on the sleeve and ring, and means for holding the parts in place, for the purpose set forth.

2. The combination of a shaft having a longitudinal groove and sliding blocks and radial legs, a sleeve having radial legs, a screw-

threaded projection, and a set-screw engaging with one of the blocks in said groove, a setting-ring having a screw-threaded end, and a set-screw engaging with the other block in the groove, and a thimble having interior screw-threads engaging with the screw-threads upon the sleeve and ring, substantially as described.

3. In a caliper, the combination of the shaft having radial arms, the adjustable sleeve having radial arms and the external screw-threads, the setting-ring having external screw-threads coarser than the threads on the adjustable sleeve, and a set-screw, and the thimble secured to the sleeve and ring by screw-threads corresponding to the screw-threads on said sleeve and ring, substantially as described.

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

CHARLES P. JENNINGS.

Witnesses:
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