

(No Model.)

J. D. SLOANE.
MICROMETER CALIPERS.

No. 517,073.

Patented Mar. 27, 1894.

Fig. 1.

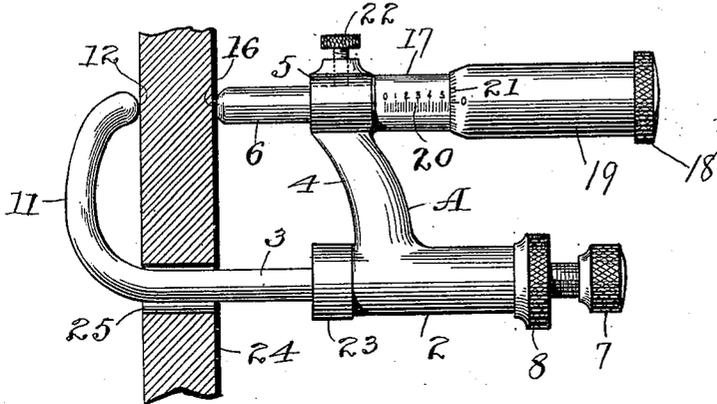
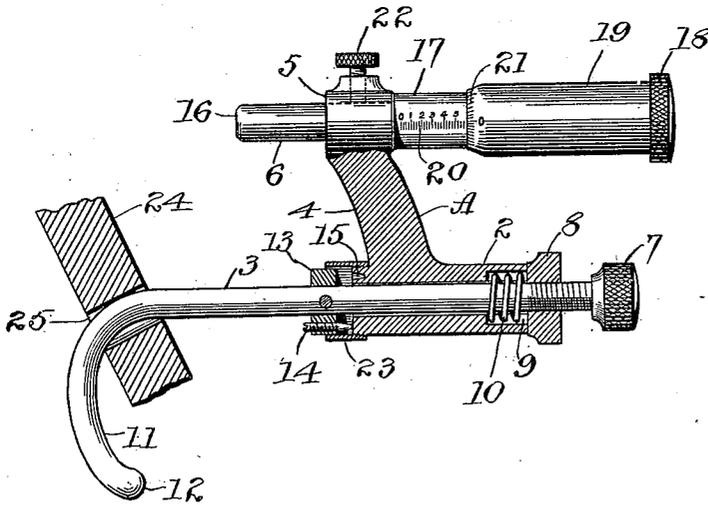


Fig. 2.



Witnesses,
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UNITED STATES PATENT OFFICE.

JOHN D. SLOANE, OF ST. PAUL, MINNESOTA, ASSIGNOR TO GERTRUDE
DUVALL SLOANE, OF SAME PLACE.

MICROMETER-CALIPERS.

SPECIFICATION forming part of Letters Patent No. 517,073, dated March 27, 1894.

Application filed April 7, 1892. Serial No. 428,120. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. SLOANE, of St. Paul, Ramsey county, Minnesota, have invented certain Improvements in Micrometer-Calipers, of which the following is a specification.

My invention relates to micrometer calipers of the type in which one leg is slidable and rotatable with reference to the other, the caliper points being offset from the axis of such rotation, the same being an improvement upon my prior patent on micrometer calipers, dated July 7, 1891, No. 455,644.

My invention consists in providing means for adjusting the position of the point of the relatively fixed caliper leg to take the measurement, and reading scales in connection therewith for indicating the same, and also in providing improved means for operating and adjusting the relatively movable caliper leg.

My invention further consists in the construction and combination hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification, Figure 1 is a side elevation of my improved calipers, shown in position to take the measurement of a plate, and Fig. 2 is a side elevation of the same, the movable leg being turned away from the other leg in position for insertion through the hole in the plate, the barrel or sleeve inclosing the movable leg, being shown in longitudinal section.

In the drawings, the frame A is made up of the sleeves or sockets 2 and 5, having their axes parallel, and connected by the member 4. Arranged to turn and slide freely in the sleeve 2 is the caliper leg 3, having a milled head 7 for its more convenient operation. The other end 11 is offset, so that its point 12 is in alignment with the axis of the sleeve 5. The leg 3 for a short distance inward from the head 7, is screw threaded and provided with a set nut 8, adapted to be screwed down so as to abut against the end of the sleeve 2. Arranged in the chamber or socket 9 in the outer end of the sleeve 2 is the spiral spring 10, which abuts against the bottom of the socket, and the nut 8. The collar 13 fixed upon the leg 3 abuts against the other end of

the sleeve 2, under the tension of the spring 10. This collar is provided with the pointed screw 14 which engages the recess or socket 15 when the leg stands in its normal position, thus holding it from rotary movement. Arranged in the sleeve or socket 5 is the straight leg 6, which is threaded into the part 17 of the sleeve, so that its point 16 is in alignment with the point 12 of the other leg, when the latter is in its normal position. The leg 6 is provided with the milled head 18 which has a sleeve extension 19, inclosing and projecting over the part 17. Upon the part 17 is inscribed the scales 20, and upon the tapering end of the sleeve 19 is inscribed the micrometer scale 21. The construction of this attachment for the leg 6 is not shown in detail, since it is in common use and no claim is made upon it. The set screw 22 is threaded through the socket 5, so as to bear upon the leg 6 and secure it in adjusted positions. The leg 3 is held from lateral movement preferably by means of the ferrule 23, secured upon the end of the sleeve 2, into which the collar 13 closely fits. This construction also prevents the pinching of the fingers of the operator between the collar and the end of the sleeve, and guards the interior of the instrument from dirt, which otherwise would work into the sleeve around the leg.

The instrument is used as follows: The plate or object 24 to be measured, is tapped with a small hole 25, slightly larger than the diameter of the leg 3. The leg 6 is then screwed outward by means of its head 18, to a distance greater than the thickness of the object to be measured. The nut 8 is then loosened and the leg 3 pushed outward by means of its milled head 7, until the point of the screw 14 is forced from the socket 15, when the leg is rotated to bring its hook 11 into the position shown in Fig. 2, when it can be inserted through the hole 25 as shown in Fig. 2. It is then turned back to the normal position, as shown in Fig. 1, the spring 10 drawing the leg inward and the screw 14 entering the socket 15, the nut 8 being then screwed tightly against the end of the barrel. The leg 6 is then screwed up into bearing contact with the plate as shown, when the measurement can be read on the scales,

or the leg 6 being secured by the set screw 22, the nut 8 is loosened to allow the turning of the leg 3 and the removal of the instrument from the plate. The reading of the scales 20 and 21 can then be taken at leisure, the position of the leg 6 being retained by means of the set screw.

I claim—

1. In a micrometer caliper, the combination of the straight, adjustable, fixed leg, and the independent, slidable and rotatable leg provided with an offset caliper point aligning with said fixed leg, substantially as described.

2. In a micrometer caliper, the combination with the fixed leg and the independent slidable and rotatable leg, of means for adjusting the position of the point of said fixed leg to and from the point of the rotatable leg, and measuring devices connected with said fixed leg, substantially as described.

3. In a micrometer caliper, the combination with its frame, of the leg rotatable and slidable therein and carrying an offset point, the leg independent of, but parallel with, and longitudinally adjustable in said frame, and measuring devices arranged in connection with said adjustable leg, substantially as described.

4. In a micrometer caliper, the combination with its frame, of the legs parallel with but independent of each other, one slidable and rotatable in said frame and carrying an offset point, and the other longitudinally adjustable, measuring devices arranged in connection with said adjustable leg, and means for securing said leg in an adjusted position, substantially as described.

5. In a micrometer caliper, the combination with its frame, of a straight caliper leg adjustable longitudinally therein, measuring devices in connection with said leg, the caliper leg parallel with but independent of the first leg and slidable and rotatable in said frame, and having an offset point, means for holding said point in alignment with said adjustable leg, and means for locking the same in such position, substantially as described.

6. In a micrometer caliper, the combination with its frame, of the adjustable leg, means for measuring its adjustment, means for securing it in adjusted positions, the caliper leg parallel with the adjustable leg, and having an offset point aligning therewith, spring controlled devices for holding said point in its normal position, and means for locking it in such position, and for sliding and rotating it, substantially as described.

7. In a micrometer caliper, the combination with its frame, of the adjustably fixed leg,

measuring devices connected therewith, a slidable leg carrying an offset point normally aligning with the adjustable leg, spring controlled devices for holding it in this position, and means for releasing it from such devices and rotating it to move said point laterally, substantially as described.

8. In a micrometer caliper, the combination with the frame having the two parallel sleeves, of the leg longitudinally adjustable in one sleeve, the measuring devices indicating its adjusted position, means for locking it in adjusted positions, the leg slidable and rotatable in said other sleeve and carrying an offset point, and devices carried by said rotatable leg adapted to engage said sleeve and to hold said point in alignment with the adjustable leg, substantially as described.

9. In a micrometer caliper, the combination with the frame having the parallel sleeves, of the leg longitudinally adjustable in one sleeve, devices for fixing and for indicating its adjusted positions, the leg slidable and rotatable in the other sleeve and carrying an offset point, and a spur adapted to engage a socket in one end of said sleeve and to hold said point in alignment with the adjustable leg, a spring tending to hold said spur in said socket, and a nut threaded upon said rotatable leg and abutting against the other end of said sleeve, substantially as described.

10. In a micrometer caliper, the combination of a frame having two parallel sockets or sleeves, a micrometer leg in one and a caliper leg independently slidable and rotatable in the other, substantially as described.

11. In a micrometer caliper, the combination of a frame, having two parallel sockets or sleeves, a micrometer leg in one, a caliper leg independently slidable and rotatable in the other, having an offset point, and a spring catch to secure the offset point in alignment with the micrometer leg, substantially as described.

12. In a micrometer caliper, the combination of a frame having two parallel sockets or sleeves, a micrometer leg in one, a caliper leg independently slidable and rotatable in the other provided with an offset point, and a spring catch to secure said offset point in alignment with the micrometer leg, and a nut adapted to lock the caliper leg in this secured position, substantially as described.

In testimony whereof I have hereunto set my hand this 24th day of March, 1892.

JOHN D. SLOANE.

In presence of—

T. D. MERWIN,
H. S. JOHNSON.