

No. 654,370.

Patented July 24, 1900.

O. J. WAHRER.
CALIPERS.

(Application filed Mar. 19, 1900.)

(No Model.)

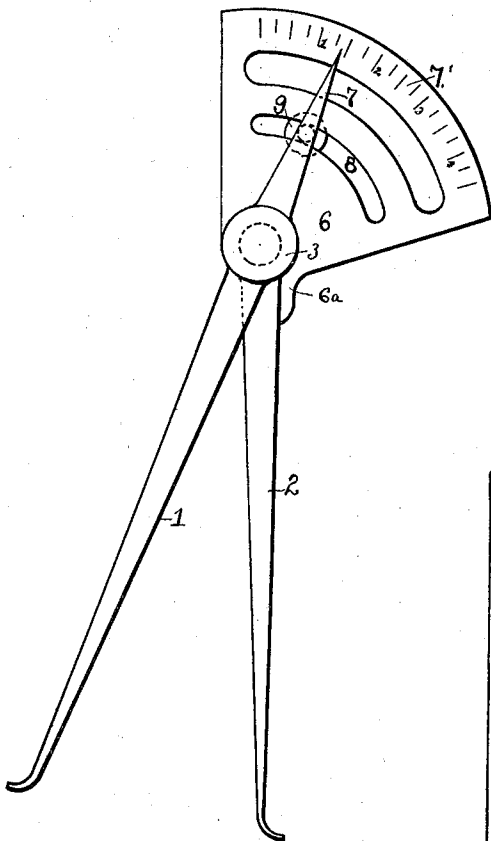


Fig. 1.

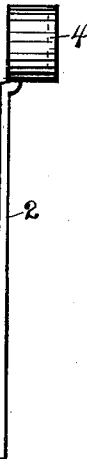


Fig. 5.

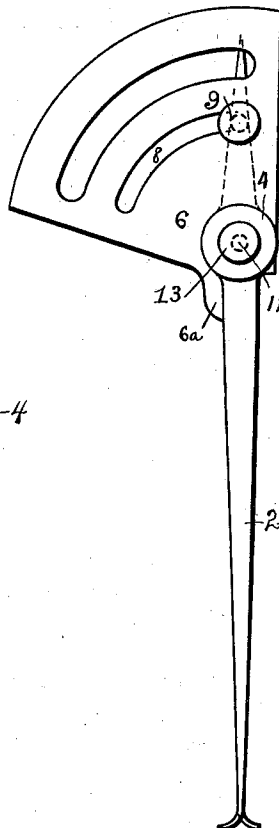


Fig. 2.

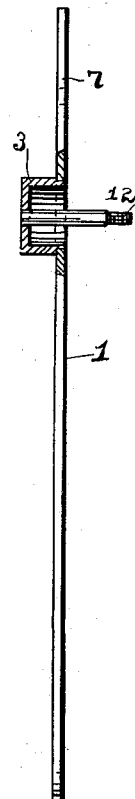


Fig. 4.

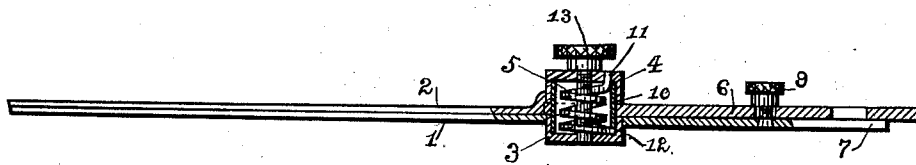


Fig. 3.

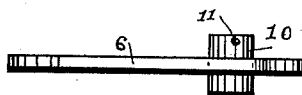


Fig. 6.

WITNESSES:

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UNITED STATES PATENT OFFICE.

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CALIPERS.

SPECIFICATION forming part of Letters Patent No. 654,370, dated July 24, 1900.

Application filed March 19, 1900. Serial No. 9,158. (No model.)

To all whom it may concern:

Be it known that I, OTTO J. WAHRER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Calipers; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in calipers for interior measurements.

The object of the invention is to provide a tool of the above description which does not require to be changed from its fixed position by unscrewing or detaching any of the parts to introduce it to or remove it from the bore.

In taking the diameter of an interior bore by means of the calipers heretofore in use the projections of the calipers are required to be closed upon themselves by unloosening the adjusting-screws. In the present invention the said projections or arms are controlled by a concealed spring and may be closed in the hand when inserting or removing the tool.

In a detailed description of my invention reference is made to the accompanying drawings, of which—

Figures 1 and 2 respectively show the calipers in an open and closed position. Fig. 3 is a sectional view. Fig. 4 is a sectional view of the long arm. Fig. 5 is an edge elevation of the short arm. Fig. 6 is a similar elevation of the scale-plate.

The long arm 1 and the short arm 2 have tubular casings 3 and 4, which when brought together form a housing, as shown in Fig. 3, for a coil-spring 5.

6 designates a base-plate which has a numerical scale 7', by means of which the diameter is obtained, the pointed end 7 of the long arm 1 pointing to said scale. This plate has a curved slot 8, through which a set-screw 9 passes and enters the arm 1, whereby said arm may be secured to measure any desired

diameter, as indicated on the scale, and when so secured the said arm 1 becomes fixed in such position.

The plate 6 has a fixed or integral sleeve 10, which extends an equal distance on either side of said plate and is inclosed in the housing formed by the casings 3 and 4. One end of the coil-spring 5 is attached at 11, Fig. 3, to said sleeve 4, and the other end of said coil-spring is attached to the sleeve of the plate 6. The spring 5 surrounds a pintle 12, which passes through the casing, and the said pintle has an exterior thumb-screw 13, by means of which the plate 6 and arms 1 and 2 are properly secured, as shown in Figs. 1 and 2. The plate 6 has a projection 6^a, which limits the movement of the short arm 2 in the direction away from the long arm 1.

In using the implement the long arm 1 is moved to the desired degree-mark indicated on the scale-plate 6 and is then secured by means of a thumb-screw 9. The arms may be closed upon each other, as shown in Fig. 2, owing to the short arm 2 being held normally out of the coil-spring 5. It will be seen that after the desired adjustment of the long arm 1 it does not become necessary to change the position of the long arm in inserting or removing the calipers. The calipers are closed by pressing on the short arm.

Having described my invention, I claim—

1. The herein-described calipers, consisting of long and short arms 1 and 2, having casings, a scale-plate 6 having a numerical scale thereon to indicate the diameters and to which the long arm may be moved and secured, a coil-spring inclosed within the casing formed by the arms 1 and 2, the said coil-spring having one end secured to the sleeve 6 and the other end secured to the casing of the short arm and by means of which said short arm is held normally away from the long arm, substantially as shown and described.

2. In an interior calipers, the combination of a scale-plate having a sleeve or hub thereon, arms 1 and 2 having casings 3 and 4 which inclose said sleeve, the said arm 1 being securable in various positions as indicated by the numerical scale on said scale-plate, a coil-spring inclosed within the casing formed by

the arms 1 and 2, the said spring having one end attached to the sleeve on the scale-plate, and the other end of said spring attached to the casing projecting from arm 2, and a set-
5 screw for maintaining one of said arms in a relative position with the scale-plate, substantially as described.

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

OTTO J. WAHRER.

Witnesses:

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