F. WILCOX.

RATCHET EXTENSION AND PROTECTOR FOR MICROMETER CALIPERS.

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1,143,007. Patented June 15, 1915.

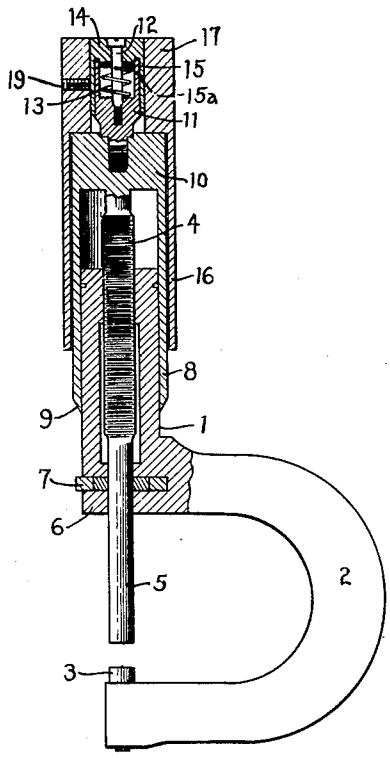


Fig. 1

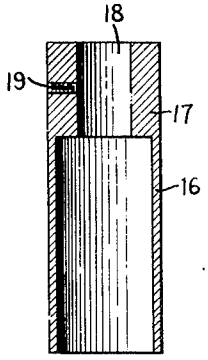


Fig. 2

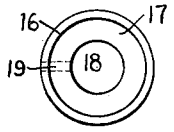


Fig. 3

Witnesses

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RATCHET EXTENSION AND PROTECTOR FOR MICROMETER-CALIPERS.

1,143,007. Specification of Letters Patent. Patented June 15, 1915.

Application filed January 14, 1914. Serial No. 812,101.

To all whom it may concern:

Be it known that I, FLOYD WILCOX, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented a new and useful Improvement in Ratchet Extensions and Protectors for Micrometer-Calipers, of which the following is a specification.

This invention relates to new and useful improvements in ratchet extensions and protectors for micrometer calipers.

As is well known in the art, many micrometer calipers are provided with ratchet stops which check the further movement of the measuring spindle when the latter is subjected to a pressure greater than that at which the instrument is set. Owing, however, to the distance of the ratchet stop from the U shaped arm which supports the anvil, there are many conditions under which it is difficult to hold the U shaped arm firmly and at the same time extend the fingers to readily clutch and turn the ratchet member. With a view of obviating this difficulty I provide longitudinal means which receive both the thimble and ratchet member, extending the latter to a point where it may be conveniently grasped by the fingers and turned as readily as the thimble itself. These extending means are also effective in protecting the ratchet member from any injury which it might receive when the caliper is dropped or knocked against any exterior object.

One embodiment of my invention is illustrated in the accompanying drawings, of which—

Figure 1 is a section of a ratchet-stop micrometer caliper, with my improved extending and protecting means applied thereto. Fig. 2 is a sectional view of my improved extending and protecting means. And Fig. 3 is a bottom plan view thereof.

Throughout the specification and drawings, similar reference characters denote corresponding parts.

In a detailed description of my invention, 1 designates the barrel of a micrometer caliper to which is secured a U shaped arm 2 supporting an anvil 3. The end of the barrel 1 farthest removed from the U shaped arm 2, is internally screw-threaded to receive the externally screw-threaded end 4 of a spindle 5, the other end of which is adapted to pass through said barrel and the head 6 of said U shaped arm, to meet the anvil 3. Provided in the said head 6 is a lock nut 7 adapted to lock the spindle 5 in any desired position.

The threaded end 4 of the spindle 5 enters, and is rigidly secured to the top of, a thimble or sleeve 8 adapted for rotary and longitudinal movement on the barrel 1 and having a beveled edge 9 which closely fits the latter. When the thimble 8 is turned, the spindle 5 will be likewise turned in the threaded barrel 1, whereby longitudinal movement will be imparted to both the thimble and spindle for the purpose of accurately measuring a selected piece. The divisions or graduations which are placed upon the barrel and spindle, and the method of reading them, are well known in the art and need no description here.

Rigidly connected to the top 10 of the thimble 8 is a cylindrical member or barrel 11, whose bore accommodates a screw 12 and a coil spring 13 surrounding the latter. Adapted to rotate around said barrel 11, and pivotally secured thereto by the screw 12, is a thimble or sleeve 14, to the interior top portion of which is secured a ratchet plate 15 which engages a similar ratchet plate 15^a resting upon the spring 13 within the said barrel 11. When the spindle 5 is not in engagement with the piece to be measured, the tension of the spring 13 is such as to force the ratchet plate 15^a into a sufficiently tight engagement with the ratchet plate 15, to permit the thimble 14 to turn said ratchet plate 15^a, and through it, the barrel 11 to which it is anchored, the sleeve 8 and spindle 5. However, when the spindle 5 engages the piece to be measured, the ratchet plate 15 will ride idly over the ratchet plate 15^a, the tension of the spring 13 being insufficient to overcome the pressure exerted on the spindle.

As before stated, it is often difficult to grip the U shaped arm of the micrometer caliper firmly and at the same time extend the fingers to readily clutch and turn the ratchet thimble. I therefore provide a cylindrical cap or thimble 16 which is adapted to readily slip over, and turn independently of, the thimble 8. (See Figs. 1 and 2.) The thimble 16 has a head 17 containing a cylindrical bore 18 which tightly receives the thimble or sleeve 14. The thimble 16 is adapted to be more firmly connected to the sleeve 14 by a screw 19.

The thimble cap 16 extends a sufficient distance over the sleeve 8 in the direction of

the U shaped arm 2, to be readily accessible to the fingers of the operator. In other words, by means of said cap the operator is enabled to firmly grip the U shaped arm and at the same time readily turn the ratchet thimble 14 with the fingers of the same hand. It also serves to protect the ratchet mechanism from injury when the micrometer caliper is dropped or knocked against an exterior object.

While I have shown and described but one form of micrometer caliper to which my ratchet extension and protector is applied, it may be applied to other forms with but little or no alteration or modification.

Having thus described my invention, I claim:

1. In a micrometer caliper, a barrel, an anvil-supporting arm secured thereto, a sleeve on said barrel, a measuring spindle attached to said sleeve, a ratchet stop attached to the top of said sleeve, an operating thimble, and a thickened head on said thimble containing a bore adapted to readily receive said ratchet stop, said thimble being removably secured to said sleeve without change in the thimble, sleeve or stop and extending over said sleeve to a point within convenient access of the fingers of the hand that grasps the anvil-supporting arm, substantially as described.

2. In a micrometer caliper, a barrel, an anvil-supporting arm secured thereto, a sleeve on said barrel, a measuring spindle attached to said sleeve, a cylindrical ratchet stop connected to the top of said sleeve and projecting above the latter, a separate operating thimble, and a cylindrical head on said operating thimble containing a cylindrical bore through which said ratchet stop is adapted to extend without structural alteration in the operating thimble or ratchet stop, said operating thimble extending over said sleeve to a point within convenient access of the fingers of the hand which grasps the anvil-supporting arm, substantially as described.

In testimony whereof I have hereunto set my hand this 12th day of January, 1914.

FLOYD WILCOX.

Witnesses:
WALTER V. SNYDER,
HOWARD S. SMITH.