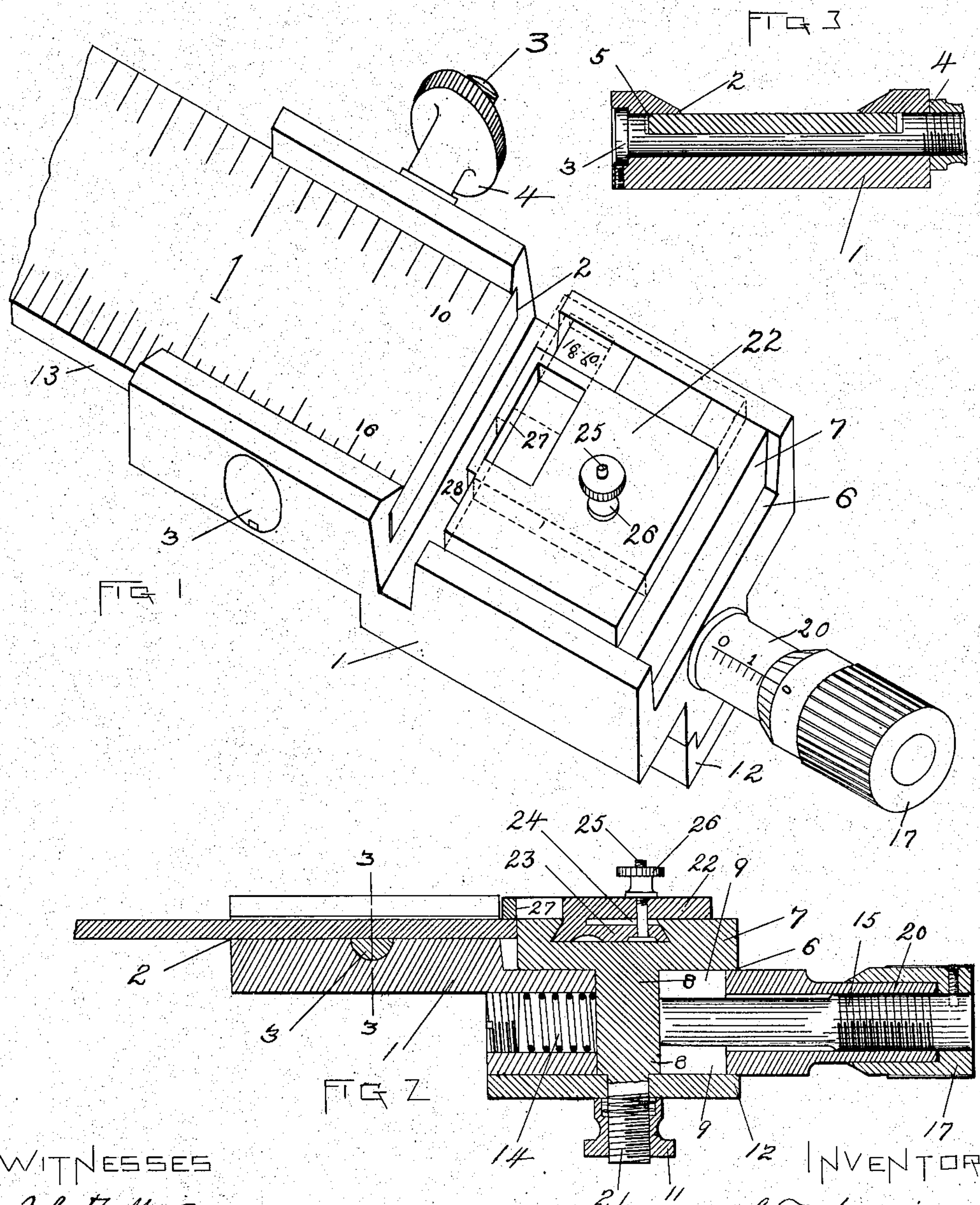


No. 827,443.

PATENTED JULY 31, 1906.

A. F. HENRIKSON.
MICROMETER ATTACHMENT FOR LINEAR SCALES.
APPLICATION FILED MAY 14, 1906.



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ADOLPH F. HENRIKSON, OF TROY, NEW YORK.

MICROMETER ATTACHMENT FOR LINEAR SCALES.

No. 827,443.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed May 14, 1906. Serial No. 316,677.

To all whom it may concern:

Be it known that I, ADOLPH F. HENRIKSON, a citizen of the United States, residing at Troy, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Micrometer Attachments for Linear Scales, of which the following is a specification.

The invention relates to such improvements; and it consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings and the reference characters marked thereon, which form a part of this specification. Similar characters refer to similar parts in the several figures therein.

Figure 1 of the drawings is a view in isometrical perspective of my improved micrometer attachment for linear scales. Fig. 2 is a central vertical longitudinal section of the same. Fig. 3 is a cross-section of the same, taken on the broken line 3 3 in Fig. 2.

All the figures are drawn on an enlarged scale.

The principal object of the invention is to provide an attachment for use in connection with an ordinary scale whereby the ordinary readings of said scale can be supplemented by micrometrical readings.

The device is particularly adapted for the use of mechanics in setting dividers and calipers.

Referring to the drawings, wherein the invention is shown in preferred form, 1 represents the body or base-plate of the attachment having an undercut longitudinal slideway 2, adapted to receive the end of an ordinary metal scale, which is adapted to be secured therein by means of the screw 3 and thumb-nut 4, said screw where it extends through said slideway being partly cut away to receive the scale, leaving on its end remote from the nut a shoulder 5, adapted to engage one side edge of the scale and when the nut is tightened to draw the other edge of the scale firmly against the opposite side of the slideway.

About in line with the slideway 2 on a slightly lower plane is a longitudinal slideway 6, along which is movable a longitudinal slide 7, from which a stud 8 depends through a slot 9 in the base-plate, which stud termi-

nates in a screw-threaded end 21, adapted to receive a lock-nut 11, engageable with the under side of the base-plate or an interposed washer-plate 12, which is shown of sufficient dimensions to at all times close the slot 9 to prevent the entrance of dust therethrough. The stud 8 is adapted to be engaged on the side nearer the slideway 2 by a coil-spring 14, which tends to force said stud and longitudinal slide 7 toward the right, as seen in Fig. 2, and said stud is engaged on the opposite side by the inner end of a screw 15, which extends through an aperture formed in the end of the base-plate and fits the interiorly-screw-threaded cylindrical extension 20, projecting from the base-plate surrounding said aperture. The screw 15 is provided with a head 17 in the form of a sleeve or cap adapted to receive freely therewithin the end of the cylindrical extension 20. The screw 15 is formed with forty threads to the inch, and the perimeter of the sleeve-cap 17 is divided into twenty-five equal parts, the subdivisions being indicated by graduation-marks adapted to register with an index-line on the cylindrical projection 20, in connection with which indication-mark each of said graduations represents an adjustment of the screw of .001 of an inch. The cylindrical projection 20 is also provided with graduation-marks adapted to be read in connection with the inner edge of the sleeve-cap 17, representing each an adjustment of the screw of one-fortieth of an inch. The value of certain of the several graduation-marks may be indicated by figures in the usual manner. It will thus be seen that by suitable adjustment of the screw 15 slide movements of the longitudinal slide 7 can be indicated to the thousandth part of an inch.

The screw being set in initial position, which is preferably indicated by zero on both the sleeve-cap 17 and the cylindrical projection 20, the metal scale 13, in connection with which the attachment is to be used, is inserted in the slideway 2 until it abuts firmly upon the neighboring end of the longitudinal slide 7, in which position it is locked by means of the nut 4. The desired distance is then measured from said abutting edge along the metal scale so far as provided for by the graduated subdivisions thereof, and in addition thereto such minute portions of

said distance as cannot be measured accurately on the metal scale are measured by setting the screw 15 at the point indicated, which will cause a movement of the longitudinal slide 7 away from the abutting edge of the metal scale to the required distance. The total distance will then be found by reading from the point previously measured on the metal scale to the edge of the longitudinal slide 7 instead of merely to the end of the metal scale. The longitudinal slide thus has the function of a movable index member of which its edge or end adjacent to the ordinary scale constitutes the index for use in reading the measurement.

To adapt the attachment for accurately setting dividers or calipers, I have shown the longitudinal slide 7 provided with a plurality of prick-marks at distances from its index edge corresponding each with an ordinary subdivision of the metal scale, which distance may be indicated by the proper fractional number. Thus, as shown in Fig. 1, one of said prick-marks is represented as being one-sixteenth of an inch and the other one-tenth of an inch from the index edge of the longitudinal slide. In setting dividers by means of the attachment the desired distance is first measured by means of the scale and longitudinal slide as above set forth. Then if the metal scale be subdivided into sixteenths of an inch one leg of the dividers is placed upon the sixteenth-inch line or mark next nearer the longitudinal slide 7 than that from which the measurement was taken, and the other leg of the dividers is adjusted to enter the prick-mark indicated by 16, whereby the sixteenth of an inch lost by placing the first leg of the dividers is regained in placing the second leg. If the metal scale be subdivided into tenths of an inch, the procedure is the same, except that the prick-mark indicated by 10 is employed.

The device as above described is sufficient for accurately setting ordinary dividers or calipers having two pointed legs. To adapt the attachment for setting calipers having only one of the legs pointed, I have provided a transverse slide 22, mounted by means of a dovetailed flange 23 in a transverse slideway in the longitudinal slide 7. The flange 23 is partly separated by a slit 24 from the body of the transverse slide, as shown in Fig. 2, and the flange and body are connected by means of a screw 25 and nut 26, so that they can be drawn together to cause the dovetailed flange to bind in its slideway and lock the transverse slide against movement along said slideway and transversely of the longitudinal slide 7. The transverse slide is provided with oppositely-facing plane surfaces 27 and 28 in the same plane with each other and with the index end of the longitudinal

slide 7, each of said surfaces being equally adapted with the index end of the longitudinal slide 7 to serve as an index for measurement in connection with the metal scale 13 and all of said surfaces being parallel with the neighboring end surface of the ordinary scale when located in the receptacle afforded for it by the attachment. The transverse slide 22 can be shifted from the position shown by solid lines in Fig. 1 to that indicated by dotted lines in the same figure, adapting it to be used in connection with the graduations along either side of the metal scale. In adjusting calipers having only one of the legs pointed the pointed leg is set upon the metal scale, as above described for ordinary dividers, after which the other leg is set by engagement in the case of the inside calipers with the surface 28 and in the case of outside calipers with the surface 27 on the transverse slide.

Only two prick-marks are shown in the longitudinal slide, marked, respectively, 16 and 10; but said slide may be provided with any desired number of properly located and indicated prick-marks to adapt the attachment to the graduations of the ordinary linear scale in connection with which the attachment is employed.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a device of the class described, the combination with a receptacle for one end of an ordinary linear scale; of an index member movably mounted upon said receptacle in line with said scale, and screw mechanism for adjustably moving said index member relatively to said scale.

2. In a device of the class described, the combination with a receptacle for one end of an ordinary linear scale; of an index member movable upon said receptacle in line with said scale and provided, at a distance from its index edge corresponding with certain of the subdivisions of said scale, with a seat adapted to receive and accurately set a pointed leg of a calipers or dividers; and screw mechanism for adjustably moving said index member relatively to said scale.

3. In a device of the class described, the combination with a receptacle for one end of an ordinary linear scale; and means for securing said scale in said receptacle; of an index member mounted to slide upon said receptacle in line with said scale, and having an index end adapted to abut upon said end of said scale; and mechanism, comprising in part a screw, for adjustably moving said index member away from said scale.

4. In a device of the class described, the combination with a receptacle for one end of an ordinary linear scale, and means for securing the scale therein; of a slideway in line with said scale; a longitudinal slide movable

along said slideway and provided with a
transverse slideway; a transverse slide mov-
able along said slideway in said longitudinal
slide and provided with oppositely-facing in-
5 dex-surfaces both in the same plane parallel
with the plane of the inserted end of said
scale; means for locking said transverse slide
in adjusted position; and screw mechanism

for moving said longitudinal slide along its
slideway.

In testimony whereof I have hereunto set
my hand this 10th day of May, 1906.

ADOLPH F. HENRIKSON.

Witnesses:

E. M. O'REILLY,
J. DONSBACH.