

No. 620,337.

Patented Feb. 28, 1899.

G. J. LAVIGNE.
MICROMETER GAGE.

(Application filed Apr. 21, 1898.)

(No Model.)

Fig. 1

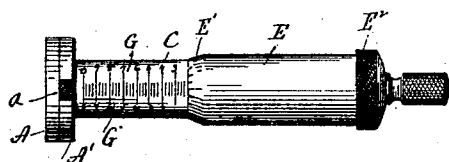


Fig. 2

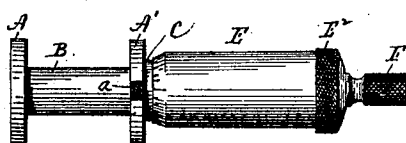


Fig. 3

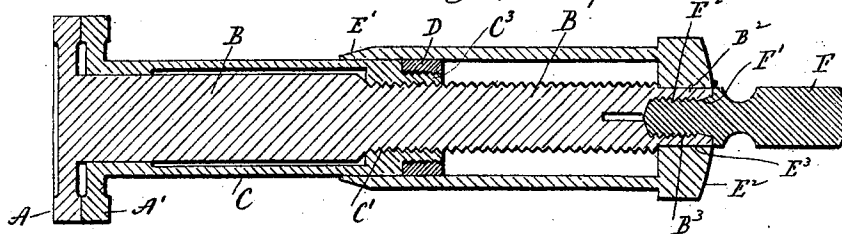


Fig. 4

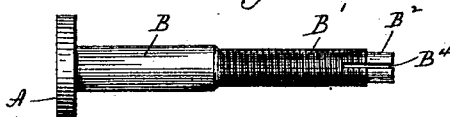


Fig. 5

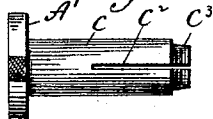


Fig. 6



Fig. 7

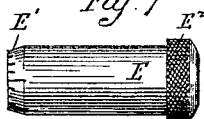
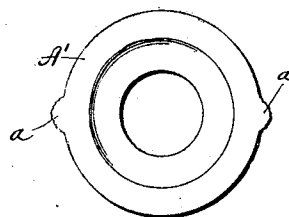


Fig. 8



Fig. 9



Witnesses.
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UNITED STATES PATENT OFFICE.

GEORGE J. LAVIGNE, OF NEW HAVEN, CONNECTICUT, ASSIGNOR OF ONE-HALF TO ALFRED CHADWICK, OF SAME PLACE.

MICROMETER-GAGE.

SPECIFICATION forming part of Letters Patent No. 620,337, dated February 28, 1899.

Application filed April 21, 1898. Serial No. 678,361. (No model.)

To all whom it may concern:

Be it known that I, GEORGE J. LAVIGNE, of New Haven, in the county of New Haven and State of Connecticut, have invented a new
5 Improvement in Micrometer-Gages; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of
10 the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in side elevation of one form which a micrometer-gage embodying my invention may assume, the gage being shown
15 as closed; Fig. 2, a corresponding view showing the gage open; Fig. 3, an enlarged view of the gage in central longitudinal section; Fig. 4, a detached view of the outer measuring-disk, the bar, and the measuring-screw;
20 Fig. 5, a detached view of the inner measuring-disk and the graduated sleeve; Fig. 6, a detached view of the compensating nut; Fig. 7, a detached view of the rotatable thimble; Fig. 8, a detached view of the binding-screw,
25 and Fig. 9 a face view of the inner measuring-disk.

My invention relates to an improvement in that class of micrometer-gages which are adapted for making both inside and outside
30 measurements, the object being to produce at a comparatively low cost for manufacture a simple, effective, and compact device composed of few parts, not liable to derangement, adapted to be adjusted to compensate for wear, and particularly constructed with reference to convenience of use in a wide range
35 of situations.

With these ends in view my invention consists in an inside and outside micrometer-gage having certain details of construction,
40 as will be hereinafter described, and pointed out in the claim.

In carrying out my invention as herein shown I employ two disk-shaped measuring
45 members A and A', which on account of their form I shall for convenience hereinafter speak of as "measuring-disks," the inner, as well as the outer, faces of these disks being adapted to be used in measuring. These two
50 disks exactly correspond in diameter, as shown, and while I conceive that they might

be differentiated in diameter somewhat it is probable that the best results will be secured by forming them of the same or approximately the same diameter. The disk A is
55 located upon and by preference formed integral with the outer end of a cylindrical bar or stem B, which in turn is formed integral with the measuring-screw B', while the disk A' is located at the outer end of and preferably
60 formed integral with the graduated sleeve C, the inner end of which is formed with screw-threads C', which receive the threads of the measuring-screw B'. For the purpose of compensating for wear the inner end of the said
65 sleeve is formed with a narrow slit C², which permits the said end of the sleeve to be slightly contracted by means of a slightly-tapered compensating nut D, corresponding in external diameter to the external diameter of the
70 sleeve and internally threaded, so as to be screwed upon an externally-threaded slightly-tapered neck C³, formed by reducing in diameter and threading the extreme inner end of the sleeve. I do not, however, limit myself to this mode of taking up wear between
75 the sleeve and the measuring-screw. The said screw is inclosed by a rotatable thimble E, having its inner end beveled, as at E', and graduated, as shown in Fig. 1, the said inner
80 end of the thimble passing over the inner end of the sleeve C and the nut D. The said thimble is coupled at its outer end with the end of the measuring-screw B' by means of a binding-screw comprising a knurled or otherwise
85 roughened handle F, an expanding separating-bevel F', and a threaded stem F². The outer end of the said sleeve is formed with a heavy solid head E², formed with a smooth central opening or bar E³, which receives a
90 smooth neck B², formed at the extreme outer end of the measuring-screw, which is also formed with a screw-hole B³, the said neck B² fitting friction-tight into the opening E³. To permit the said neck to be expanded in the
95 said opening, it is formed with a slit B⁴, which enables the neck to be expanded by the expanding-bevel F' of the binding-screw, the stem F² of which enters the screw-hole B³ and through the medium of which the sleeve and
100 screw are coupled together, so as to operate virtually as one piece. In case of wear the

binding-screw may be reversed or backed out of the measuring-screw sufficiently to permit the thimble to be rotated with respect to the screw, after which the parts are recoupled again.

By reference to Fig. 1 it will be seen that the sleeve C is formed with two parallel scales G and G', both of which are read in conjunction with the graduations formed upon the bevel E' of the thimble. The scale G, which is the upper scale, as shown, is employed for making outside measurements, while the scale G', which is the lower scale, as shown, is employed for making inside measurements. It will be noticed that the said scale G' begins at its outer end to read eight-tenths, instead of ten-tenths, and this is for the reason that in inside measurements the thickness of the two measuring-disks has to be taken into consideration, so that when each of them is one-tenth of an inch thick two-tenths of an inch must be discounted for their combined thickness, but of course the disks may vary in thickness; but whatever their combined thickness is it must be accounted for in the graduation of the scale G'.

For the purpose of facilitating the manipulation of the device the disk A', which is held against rotation with the sleeve E while the measuring-screw, and hence the disk A, is being rotated, is formed with two roughened lugs *aa*, which permit it to be rigidly grasped and held.

It is apparent that in carrying out my invention some changes in the construction shown and described may be made, and I would therefore have it understood that I do not limit myself to the exact construction herein described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a micrometer-gage, the combination with a graduated sleeve, of a measuring-disk located at the outer end thereof, a measuring-screw passing through the said sleeve, a corresponding disk located at the projecting outer end of the said screw, a thimble coupled with the opposite end of the screw and embracing the said sleeve over which it moves when the screw is rotated in one direction or the other, the said measuring-disks being larger in diameter than the said sleeve and screw, and having their outer portions unobstructed and their inner faces adapted for outside measurements, and their outer faces adapted for inside measurements.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE J. LAVIGNE.

Witnesses:

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LILLIAN D. KELSEY.