

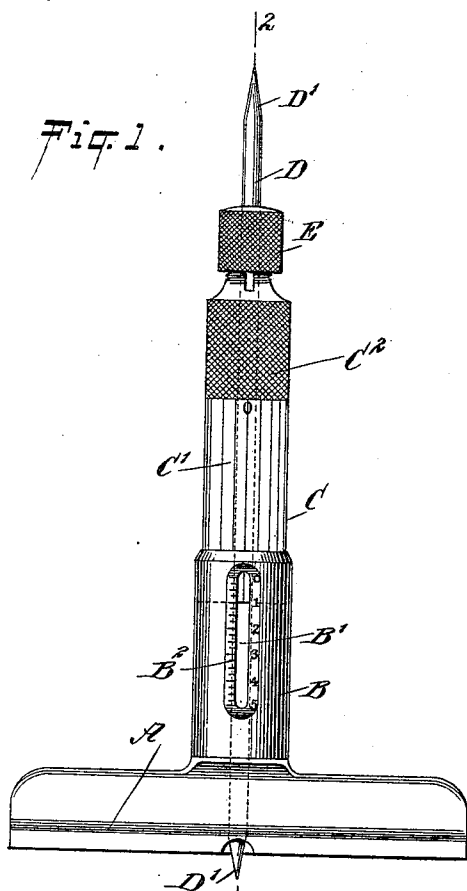
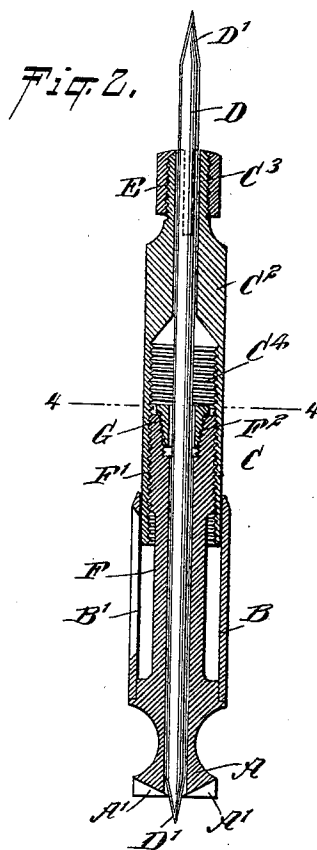
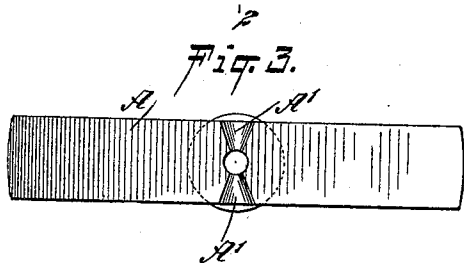
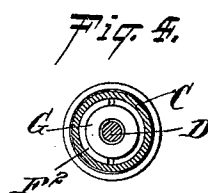
No. 623,748.

Patented Apr. 25, 1899.

C. L. WALTERS.
MICROMETER DEPTH GAGE.

(Application filed Mar. 1, 1899.)

(No Model.)



WITNESSES:
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UNITED STATES PATENT OFFICE.

CLAUDE LIVINGSTONE WALTERS, OF STAMFORD, CONNECTICUT.

MICROMETER DEPTH-GAGE.

SPECIFICATION forming part of Letters Patent No. 623,748, dated April 25, 1899.

Application filed March 1, 1899. Serial No. 707,325. (No model.)

To all whom it may concern:

Be it known that I, CLAUDE LIVINGSTONE WALTERS, of Stamford, in the county of Fairfield and State of Connecticut, have invented
5 a new and Improved Micrometer Depth-Gage, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved micrometer depth-gage
10 arranged to permit a convenient and direct reading of the depth of a hole, recess, or the like without further mental calculation and without covering up the graduations and also permitting accurate adjustment and readjust-
15 ment of the parts in case of wear.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

20 A practical embodiment of my invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

25 Figure 1 is a side elevation of the improvement. Fig. 2 is a transverse section of the same on the line 2 2 in Fig. 1. Fig. 3 is an inverted plan view of the base, and Fig. 4 is a sectional plan view of the improvement on
30 the line 4 4 in Fig. 2.

The improved micrometer depth-gage is provided with a base A, on which is formed or secured an upwardly-extending barrel B, formed with an elongated longitudinally-extending slot B', the side walls of which are
35 provided with a linear graduation B², as is plainly indicated in Fig. 1. On said graduation, B² indicates the lower edge of an indicator-sleeve C, adapted to pass into the barrel
40 B, and formed on its peripheral surface with a graduation C', the lines of which extend lengthwise of the sleeve, to permit reading of correct measurement along the graduation B² of the barrel B. The part of the indicator-
45 sleeve directly above the graduation C' is roughened or knurled, as at C², to permit the operator to conveniently turn the sleeve for making the desired measurement, as herein-
after more fully described.

50 A rod D is centrally secured in the indicator-sleeve C by means of a clamping-nut E, screwing on the upper split and threaded end

C³ of the sleeve C. The latter is provided in its lower portion with an internal screw-thread C⁴, screwing on the thread F' of a spindle F, secured or formed on the base A and
55 extending concentrically within the barrel B, sufficient space being allowed between the barrel and the spindle to permit the passage of the indicator-sleeve into the barrel around
60 the sleeve.

In order to take up backlash of the indicator-sleeve C on the threaded end of the spindle, I prefer to split the upper end thereof and screw into this split end a conical
65 expanding-nut G, which forces the split portions sufficiently outward into firm contact with the corresponding threads C⁴ to take up the backlash.

The ends of the rod D are pointed, as at
70 D', and said rod extends through a central bore in the sleeve F and the base A, the lower end of the lower point D' being flush with the under surface of the base at the time the lower edge of the sleeve C stands at zero on
75 the graduation B², the zero-mark and the graduation C' being in alinement with the side wall of the slot B', carrying the graduation B².

It is evident that when a full turn is given to
80 the sleeve C it screws downward on the spindle F to bring its lower edge to the second mark on the graduation B², thus indicating when the twenty-five thousandth of an inch has been measured, as the graduation C' indi-
85 cates twenty-five one-thousandths of an inch marked off on the peripheral surface of the sleeve.

It will be seen that by the arrangement described the graduation C' appears in the slot
90 B', and hence the user of the device can readily read the accurate measurement along the graduation B² and the graduation C', as both are visible, and no part of the graduation B² is covered up as the sleeve C passes into the
95 barrel B.

The base A is formed with transversely-extending recesses A', having tapering walls leading with their inner apex ends to the central bore in the base A, so that light can read-
100 ily pass down to the point D' to permit the operator to see when the point touches the bottom or the depth to be measured.

In case the point D' is somewhat worn

ready adjustment of the rod D in the indicator-sleeve C can be had by the operator unscrewing the clamping-nut E to permit of sliding the rod D in the sleeve the desired distance to compensate for the amount worn off at the point D'. When this has been done, the nut E is again screwed up to securely clamp the rod D in position on the sleeve C. In a like manner the rod D can be adjusted to bring its point any desired distance beyond the base A at the time the zero-marks of both graduations C' and B² are in register to allow of measuring greater depth than that indicated by the aggregate length of the graduation B².

From the foregoing it is evident that the gage is very simple in construction, can be cheaply manufactured, is not liable to get out of order, and permits a convenient measuring and reading of the depth of a hole or recess or a like calculation and without covering up the graduations, as is so frequently the case in micrometer-gages as heretofore constructed. Furthermore, the rod D can be readily adjusted in the sleeve C to compensate for wear or to allow of making larger measurements than indicated by the graduation B². Any backlash can be readily taken up by the operator adjusting the expanding-nut G.

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

1. A micrometer-gage, having a base capable of bearing non-movably upon the object to be measured, a fixed threaded micrometer-spindle mounted on the base, a barrel fixed to the base and inclosing the spindle, and an indicator-sleeve screwing on the spindle and

sliding within the barrel, between the same and the spindle.

2. A micrometer-gage, comprising a base, a fixed threaded micrometer-spindle on said base, a barrel fixed to the base and concentric to said spindle to leave an annular space between the spindle and the barrel, an indicator-sleeve screwing on said spindle and adapted to pass into the space between the spindle and the barrel, and a rod adjustably secured to said sleeve, and extending through a bore in said spindle and said base, as set forth.

3. A micrometer-gage, comprising a base, a barrel carried thereby and formed with an elongated longitudinally-extending slot, the side walls of which are formed with a graduation, a screw-threaded spindle extending concentrically in said barrel and fixed to the base, and an indicator-sleeve screwing on said spindle, and arranged to pass into said barrel, to permit of bringing the peripheral graduation of the sleeve in register with said graduation on the barrel, and an expanding-nut screwing in the upper, split end of said spindle, for taking up backlash between the spindle and the sleeve, substantially as shown and described.

4. A micrometer-gage, provided with a base having a central bore for the passage of a measuring-rod, the bottom of the base being formed with recesses extending transversely and having tapering walls, and leading with their inner, apex ends to the bore for said rod, substantially as shown and described.

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Witnesses:

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