

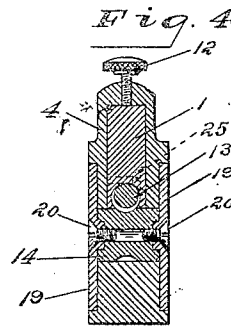
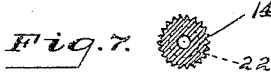
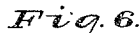
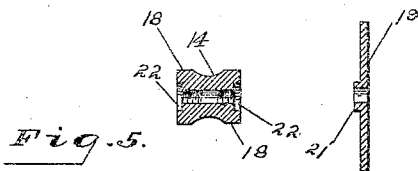
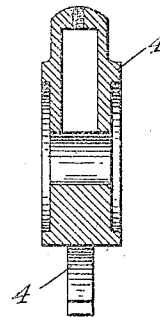
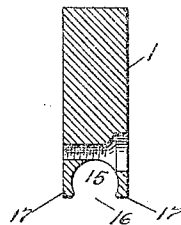
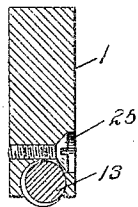
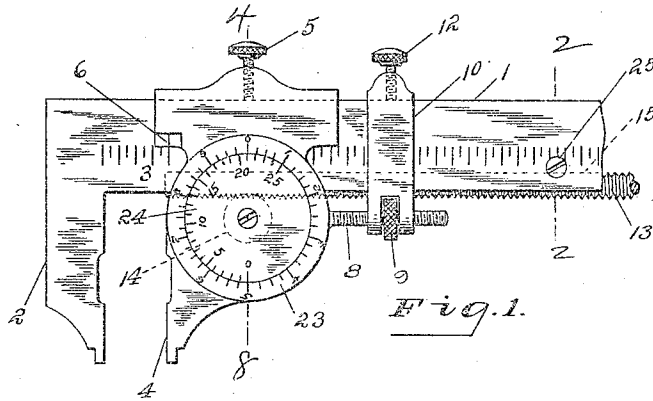
No. 890,287.

PATENTED JUNE 9, 1908.

J. H. LONDICK.

CALIPERS.

APPLICATION FILED SEPT. 26, 1907.



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JOHN H. LONDICK, OF ALMA, MICHIGAN.

CALIPERS.

No. 890,287.

Specification of Letters Patent.

Patented June 9, 1903.

Application filed September 26, 1907. Serial No. 394,600.

To all whom it may concern:

Be it known that I, JOHN H. LONDICK, a citizen of the United States of America, residing at Alma, in the county of Gratiot and State of Michigan, have invented certain new and useful Improvements in Calipers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to that kind of calipers known as beam caliper and the object of the invention is to provide a beam caliper of simple design which will accurately indicate the measurements upon a dial without complicated manipulation and to this end the invention consists in the specific arrangement and construction of different parts, all as more fully hereinafter described and shown in the accompanying drawings, in which:—

Figure 1 is a side elevation of my improved beam caliper. Fig. 2 is an enlarged crosssection through the beam on line 2—2. Fig. 3 is the same as Fig. 2 without the rack bar. Fig. 4 is a crosssection of the sliding jaw on line 4—8 Fig. 1, other parts being omitted. Fig. 5 a detached longitudinal section of the pinion of the indicating device. Fig. 6 is a detached section of the disk carrying the vernier. Fig. 7 is a crosssection of the pinion shown in Fig. 5. Fig. 8 is a crosssection on line 4—8, in Fig. 1.

In the drawings 1 is the beam, 2 the fixed jaw formed at one end thereof, 3 the scale marked off on the beam and 4 the sliding jaw carrying a set screw 5 for holding it in any desired position.

The jaws are of known description and adapted for inside and outside calipering, the movable jaw being provided with an index mark 6 adapted to be registered with the divisions of the scale.

For accurate adjustment the sliding jaw has secured thereto in parallelism with the beam, a micrometer screw 8 which passes loosely through the forked ends of a sliding block 10 and bears a knurled nut 9 in the fork of the sliding block.

The sliding block has a set screw 12 for making it fast upon the beam to permit the adjustment of the sliding jaw upon the beam within the limit of the screw 8 by turning the knurled nut, all as well understood.

The indicating device comprises for its ac-

tuating means a suitably screw-threaded rod 13 carried by the beam and constituting a rackbar and a rotary member 14 carried by the sliding jaw and adapted to form with the screw-threaded rod 13 a rack and pinion engagement.

The screw-threaded rod 13 is endwise removably secured in a longitudinal channel 15 of circular crosssection formed in the underside of the beam and forming thereon a contracted throat 16 marginally bounded by the portion 17 of the bar; all so arranged that a portion of the screw-threaded rod, equal to about the depth of its threads, projects on the underside of the beam and meshes with the rotary member 14 which has cooperating female screw-threads cut upon it to impart to it a rotary motion when the slide is moved, the pinion being of such dimension that for each inch or unit of travel the pinion makes one complete revolution.

The rotary member or pinion 14 is of cylindrical shape and the opposite ends form the bearings 18 by means of which it is journaled in the sliding jaw, the pinion being thus held against lateral displacement by its engagement with the screw-rod.

To one or both ends of the pinion is rotatively adjustably secured by a screw 20 a disk 19 having a suitable index mark adapted to register with the divisions of the scale 23, which is placed upon the outer margin of a circular recess provided for the disk and represents fractions of an inch or other unit of measurement.

The disk 19 is preferably provided upon its rear side with a boss 21 fitting into a corresponding recess 22 formed in the pinion and upon its front side it is provided with a scale 24 forming in connection with the scale 23 a vernier in the well known manner. As shown in the drawings the scale 23 represents one inch, divided into 10 parts each subdivided into four parts which in connection with the vernier will permit readings to one thousandth of an inch, but other units of measurements and divisions may be used.

The screw-threaded rod 13 may be permanently secured in the channel 15 by soldering or otherwise, but preferably I secure it by means of one or more set screws 25 passing transversely through the beam adjacent to the rod in such manner that the head of the screw bears against it and not

only holds it fast but presses it down against the throat in the channel. If the part in engagement with the pinion should wear out another portion could be adjusted into engagement therewith.

The caliper being constructed as shown and described is very simple and compact and capable of giving accurate measurements and of easy and quick manipulation, all of which makes it well adapted for general use.

What I claim as my invention is:—

1. The combination of a beam having a fixed jaw and provided upon its lower side with a longitudinal channel the walls of which form a throat therein, a screw-threaded rod secured in said channel and having a portion of its screw-thread projecting outwardly through the throat, a sliding jaw on the beam, a cylindrical member journaled therein transversely to the screw-threaded rod and provided with screw-threads upon its middle portion forming a rack and pinion engagement with the screw-threaded rod, and an

indicator carried by the sliding jaw and actuated by the member.

2. The combination of a beam having a fixed jaw and provided upon its lower side with a longitudinal channel of circular cross-section the walls of which form a contracted throat therein, a screw-threaded rod rotatively adjustably secured in said channel and having portions of its threads projecting outwardly through said throat, a sliding jaw on the beam, a cylindrical member journaled therein transversely to the screwthreaded rod and provided with screw-threads upon its middle portion forming a rack and pinion engagement with the screw-threaded rod, and an indicator carried by the sliding jaw and actuated by the member.

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

JOHN H. LONDICK.

Witnesses:

ALLEN I. BERGY,
STEPHEN LORENZO BENNETT.