May 10, 1932. H. H. SHELTERS 1,858,116

CALIPER OR DIVIDER

Original Filed May 5, 1928

Fig. 1.

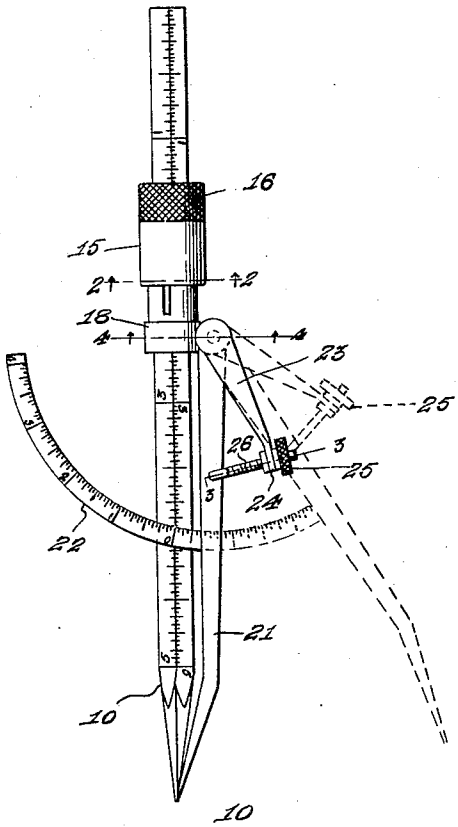


Fig. 2.

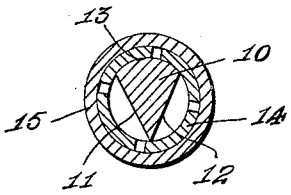


Fig. 4.

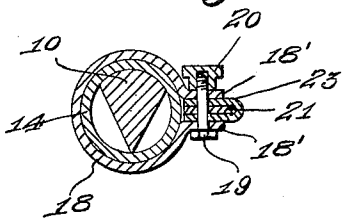


Fig. 5.

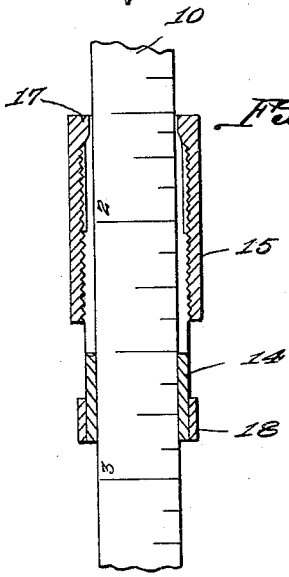
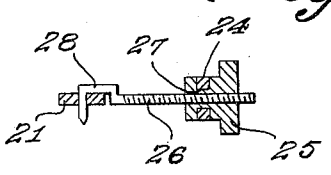


Fig. 3.



H. H. Shelters, INVENTOR

BY Victor J. Evans

ATTORNEY

Patented May 10, 1932 1,858,116

UNITED STATES PATENT OFFICE

HIRAM H. SHELTERS, OF DETROIT, MICHIGAN

CALIPER OR DIVIDER

Application filed May 5, 1928, Serial No. 275,350. Renewed December 15, 1931.

This invention relates to tools of that class or type known as the caliper, compass or divider.

An object of the invention is to provide a tool or instrument of the above character in which one of the legs is removable, novel means being provided for detachably and pivotally associating the legs.

Another object of the invention is the provision of a tool or instrument of the above character with means to indicate the radius of a circle, means being also provided for effecting a fine adjustment of the legs of the instrument so that an accurate adjustment of the legs may be made.

With the above and other objects in view, the invention further consists of the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claim.

In the drawings:

Figure 1 is an elevation of the invention, illustrating the operation thereof by the positions capable of being occupied by the legs.

Figure 2 is a horizontal sectional view taken on line 2—2 of Figure 1 through the adjusting sleeve.

Figure 3 is a longitudinal sectional view taken through the fine adjustment.

Figure 4 is a horizontal sectional view taken on line 4—4 of Figure 1.

Figure 5 is a fragmentary longitudinal sectional view taken through the adjusting sleeve upon the scale leg.

Referring to the drawings in detail, wherein like characters of reference denote corresponding parts, the reference character 10 indicates a leg of substantially triangular cross section and having flat sides 11 and 12 and a curved side 13. The flat sides 11 and 12 of the leg 10 are calibrated in inches and the fractions thereof whereby the leg may lie flush with its work to accurately scribe a measurement.

A split sleeve 14, slidably mounted upon the leg 10, is adapted to engage the rounded side 13 thereof and the apex or corner defined at the intersections of the flat sides 11 and 12 in the manner as best illustrated in Figures 2 and 4 of the drawings.

A locking element 15, threadedly engaged with the outer surface and upper portion of the split sleeve 14 upon the leg 10, is provided with a knurled or serrated finger engaging portion 16. An annular rib 17, provided within the bore adjacent the upper end of the locking element 15, is adapted to engage the leg 10 to center the locking element upon the leg to assist in the threading the locking element upon the split sleeve 14.

A clamping band or collar 18, carried adjacent the lowermost end of the split sleeve 14, terminates to provide spaced parallel apertured ears 18′ to accommodate a fastening element 19, the latter being adjustably retained by a nut 20.

An adjustable or movable leg 21, pivotally mounted at its uppermost end upon the bolt member 19, is adapted to dispose the lowermost sharpened or pointed end thereof in juxtaposition to that of the correspondingly constructed extremity of the leg 10.

An arcuate-shaped or curved arm 22, carried by the movable leg 21, is adapted to be extended across the calibrations and the apex of the scale leg 10, as illustrated in Figure 1 of the drawings. The arm 22 is calibrated after the manner of the leg 10.

A channeled arm 23, apertured at the uppermost end thereof to receive the bolt member 19, terminates at its opposite end in a forked extremity 24. A nut 25, carried upon the outermost end of a bolt member 26, is provided with a circumferential groove 27 adapted to accommodate the yoke end 24 of the arm 23. The opposite end of the bolt member 26 terminates to provide a hook 28 having connection with the movable leg 21, as manifest from the illustration of the invention in Figure 3 of the drawings.

Inasmuch as the invention is calibrated in the manner set forth, the same may be properly termed a divider compass. The graduations on the curved or arcuate-shaped arm 22 indicates the distance in inches between the points of the legs.

In setting the tool extremities of the legs 10 and 21 are disposed in juxtaposition, as

illustrated in Figure 1 of the drawings, and by revolving the scale leg 10, the sharp corner or apex thereof, as defined between the flat sides 11 and 12, is disposed for registration with the first graduation mark on the arm. The adjusting element 15 is then tightened upon the split sleeve 14 to retain the scale leg 10 in a desired position. The arm will indicate all dimensions in direct relation to this initial setting. A fine adjustment of the points of the legs may be quickly and accurately made through the fine adjustment afforded by the channeled arm 23, inasmuch as the mounting for the movable leg 21 may be jerky or loose.

The nut 25 having connection with the forked extremity 24 of the channeled arm 23 is used to shift the movable leg 21 a given distance in either direction to register the calibrations on the scale and arc.

The invention may be effectively employed as a compass by substituting a hexagon shaped pencil for the scale leg 10.

The invention is susceptible of various changes in its form, proportions and minor details of construction, and the right is herein reserved to make such changes as properly fall within the scope of the appended claim.

Having thus described the invention, what is claimed is:—

A measuring instrument comprising a pair of relatively movable pivotally connected legs, a curved arm carried by one of the legs movable across the face of the companion leg, a bolt member mounted upon the leg, a nut for the bolt member having a circumferential groove, and an arm pivoted at the connection for the legs and terminating in a forked extremity receivable within the circumferential groove of the nut to facilitate a fine adjustment of the legs.

In testimony whereof I affix my signature.

HIRAM H. SHELTERS.