W. H. HARRIS.

CALIPERS.

APPLICATION FILED JAN. 18, 1910.

970,817. Patented Sept. 20, 1910.

Fig. 1.

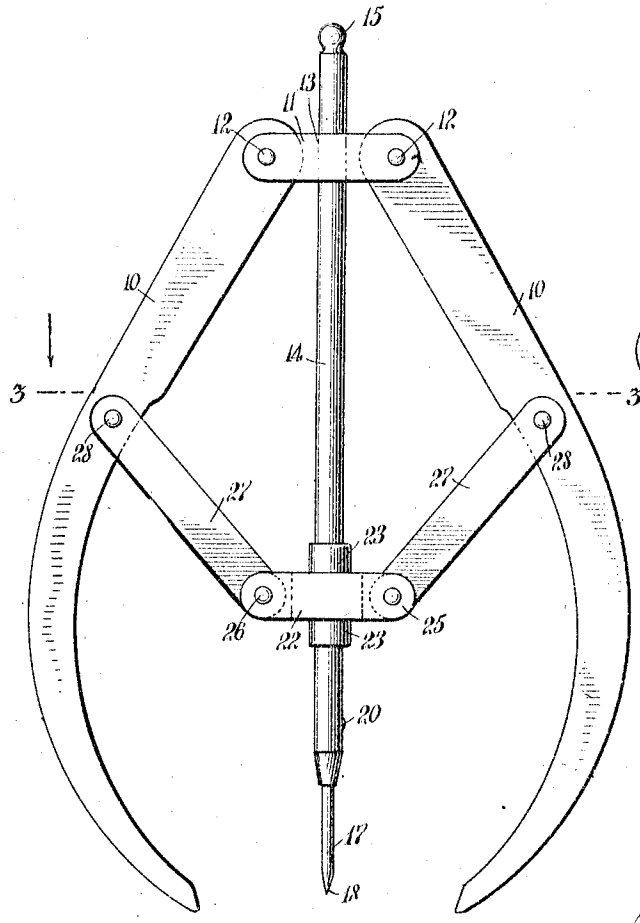


Fig. 2.

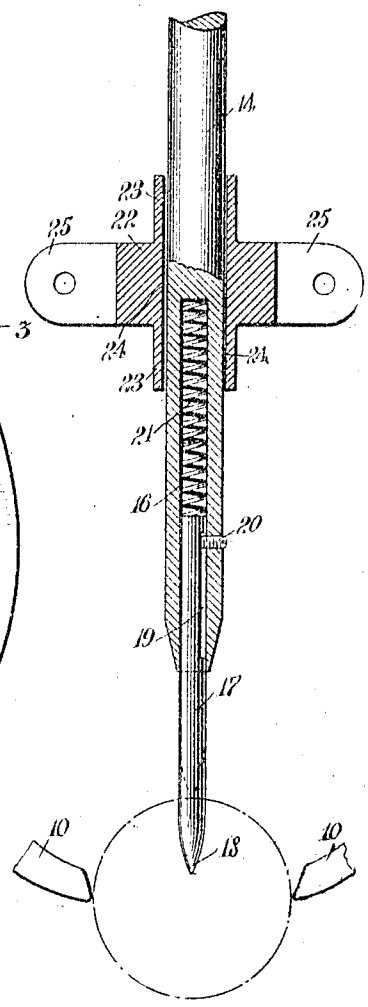
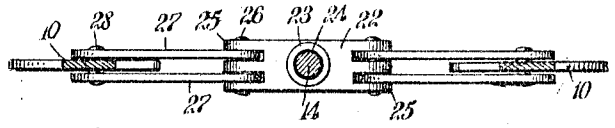


Fig. 3.



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CALIPERS.

970,817. Specification of Letters Patent. **Patented Sept. 20, 1910.**

Application filed January 18, 1910. Serial No. 538,592.

To all whom it may concern:

Be it known that I, WILLIAM HENRY HARRIS, a citizen of the United States, and a resident of Laurium, in the county of Houghton and State of Michigan, have invented new and Improved Calipers, of which the following is a full, clear, and exact description.

This invention relates to calipers for use by mechanics, draftsmen and others, and has reference more particularly to a device of this kind by means of which centers of bodies of different cross sectional forms can be determined, and which has a resiliently adjustable centering point for this purpose.

The object of the invention is to provide simple, strong and durable calipers, which can be manufactured inexpensively, which are easily manipulated, by means of which centers of bodies of round, oval, angular or other cross section can be determined, which are adjusted mechanically to the work, and which do not need to be set for each piece of work with which the calipers are used.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a side elevation of an embodiment of my invention; Fig. 2 is an enlarged, fragmentary elevation of the calipers in use, showing parts in longitudinal section; and Fig. 3 is a transverse section on the line 3—3 of Fig. 1.

In machinists' work and the like, it is frequently necessary to determine the centers of bodies of different cross sectional forms, for example, it is required to find the center of shaft ends, or of the extremities of rods of say, square cross section. To enable operations of this kind to be executed with despatch I provide a caliper having the usual legs pivotally associated, and a centering rod connected with the legs, so that it at all times is central with respect thereto. The rod has a point positioned approximately between the free ends of the legs having a limited resilient movement with respect to the rod, so that it adjusts itself automatically to the body with which it is brought in contact.

Certain of the details of construction form no part of the invention, and can be altered in accordance with individual preference and special conditions, without departing from the underlying spirit of the invention.

Referring more particularly to the drawings, I have shown for example, a pair of calipers having legs 10 of the usual curved form and tapering to the free extremities. They are connected by means of a crown piece 11 movably secured at corresponding ends of the legs, by means of pivot pins or rivets 12, the extremities of the crown piece being bifurcated to receive the legs. The crown piece has an opening 13 in which is rigidly secured by soldering or in any other suitable manner a centering rod 14 which extends longitudinally between the legs as is shown most clearly in Fig. 1. It projects beyond the crown piece and has a button 15. The projecting end of the centering rod can be used as a grip in manipulating the calipers.

At the lower end, the centering rod has a bore 16, and is tapered. A pointed member 17, having at one end a point 18, is slidably mounted within the bore 16 and projects therefrom. It has a longitudinal slot or groove 19 which movably receives one end of a screw pin or stop 20, projecting into the bore 16, and serving to limit the movement of the pointed member. A spring 21 within the bore, engages at the inner extremity of the pointed member, and tends normally to project the latter from the bore.

A slide 22 has extensions 23 forming sleeves, and is provided with an opening 24 through the body thereof and through the sleeves. By means of the opening 24, the slide is movably mounted upon the centering rod 14. At opposite sides, each sleeve has spaced ears 25 between which are movably mounted, by means of pivot pins or rivets 26, spaced links 27 arranged in pairs, movably connected with the legs 10 by means of pivot pins or rivets 28. The pairs of links receive the legs therebetween as shown most clearly in Fig. 3. They serve operatively to connect the slide and the legs, and to maintain the parts in a position such that the centering rod is at all times central with respect to the legs.

When it is desired to determine the center of a body, the calipers are passed across the end of the body, with the extremities of the legs engaging the sides of the body, and with

the point 18 passing across the end face of the body, to make a mark, the point 18 serving to scratch the body. The operation is then repeated by making a mark at an angle with the former mark, so that a second line is formed at an angle with the first line. The intersection of these two lines constitutes the center of the end face of the body. It will be understood that owing to the resilient mounting of the pointed member 17, the latter adjusts itself to the face, the center of which is being determined.

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

1. A device of the class described, comprising legs, a member pivotally connecting said legs, a centering rod rigidly secured to said member, a slide movably mounted upon said rod, links operatively connecting said slide and said legs, a point carried at the lower end of said rod and having a limited movement, and a spring tending normally to hold said point in a predetermined position.

2. A device of the class described, comprising legs, a crown piece pivotally connecting said legs, a centering rod rigidly carried by said crown piece, a slide movably mounted upon said rod, links operatively connecting said slide and said legs, said rod having a bore, a pointed member movably mounted in said bore, a stop limiting the movement of said member, and a spring within said bore and tending normally to project said member.

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

WILLIAM HENRY HARRIS.

Witnesses:
J. H. Rice,
Edward Rompf.