July 13, 1948. C. D. JACKSON 2,445,068

PIVOTED CALIPER

Filed Feb. 16, 1945

Fig. 1.

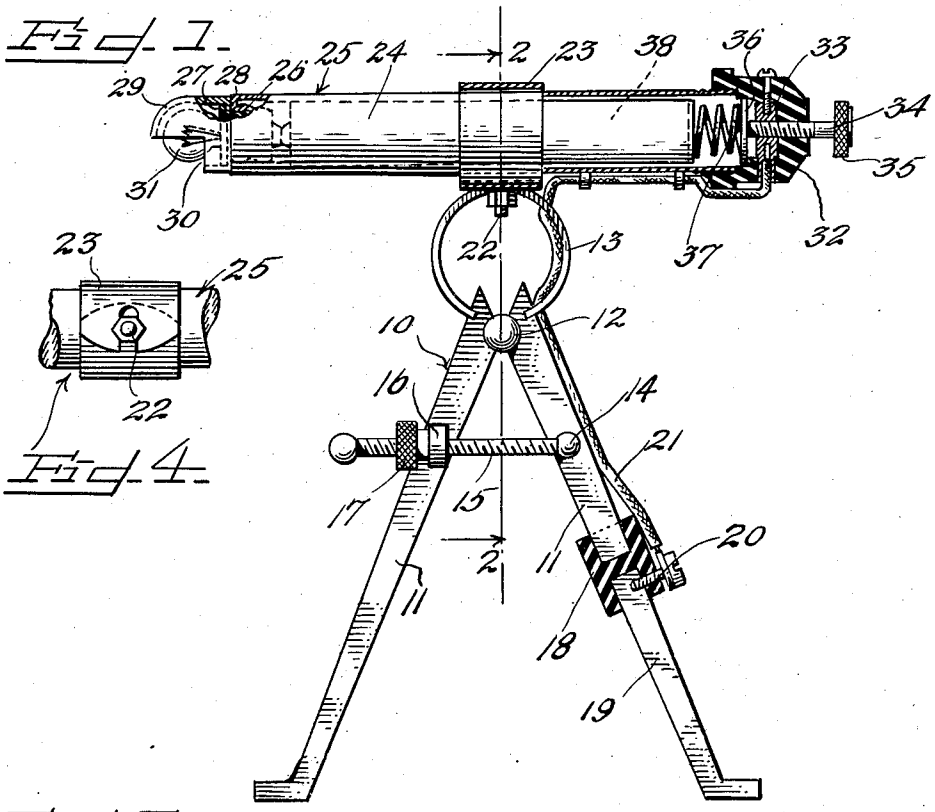


Fig. 4.

Fig. 2.

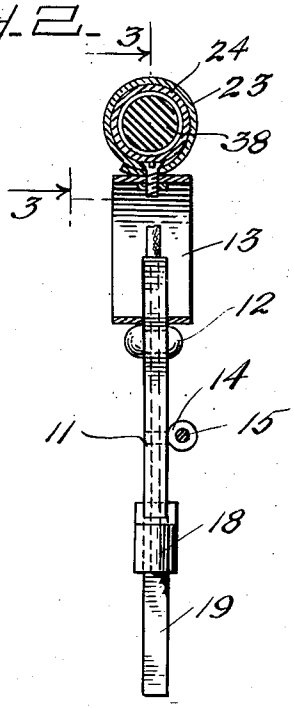
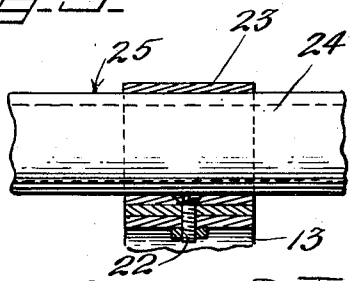


Fig. 3.



CLARENCE D. JACKSON
Inventor

By Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

Patented July 13, 1948 2,445,068

UNITED STATES PATENT OFFICE

2,445,068

PIVOTED CALIPER

Clarence D. Jackson, Putnam, Conn.

Application February 16, 1945, Serial No. 578,286

1 Claim. (Cl. 33—149)

1

This invention relates to calipers and may be applied to either inside or outside calipers as well as depth gauges and surface gauges. The object of the invention is to improve the reading of calipers and hence facilitate the production of mechanical structures such as dies and other machine tools and parts.

Another object is to insure accuracy in calipering metal surfaces and to eliminate the necessity of depending on the feel of the users to determine when the caliper legs are in proper contact with the surface being measured.

Among its features my invention embodies an electrically actuated illuminating device which is controlled to turn on the illumination when the legs of the caliper contact the surface to be measured.

Other features embody utilizing the conductivity of the item being measured to establish electrical contact with the source of illumination.

In the drawings—

Figure 1 is a side view of a pair of calipers embodying my invention.

Figure 2 is a vertical sectional view taken on the line 2—2 of Figure 1.

Figure 3 is an enlarged detail view partly in section showing the manner in which the battery case is connected to the caliper spring, and

Figure 4 is a bottom plan view of Figure 3.

Referring to the drawings in detail my improved caliper designated generally 10 comprises a pair of legs 11 which are pivoted together at 12 and are held against the pivot by a substantially circular spring 13. One of the legs has pivoted thereto, as at 14, a screw-threaded bar 15 while the other leg carries a pivoted collar 16 behind which a nut 17 is threaded on the screw-threaded bar 15, all in the conventional manner.

Unlike the caliper of the ordinary construction, however, one of the caliper legs 11 is made shorter than the other and carries an insulating sleeve 18 in the opposite end of which is mounted a caliper leg extension 19 to bring the length of the shorter leg equal to that of the longer leg 11. As shown in Figure 1, the insulator 18 is pierced to receive a binding screw 20 to which a wire 21 is attached for a purpose to be more fully hereinafter described.

Secured atop the spring 13 as by a bolt 22 is a loop of metal 23 which encircles the case 24 of a flashlight designated generally 25. The forward end of the flashlight case 24 carries a lamp socket 26 having a flange 27 which overlies a flange 28 formed at the rear end of a hood or bonnet 29 the lower portion of which is cut away as at 30

2

to expose to vision of the user light emanating from the lamp bulb 31 which is mounted in the socket 26 as illustrated in Figure 1. Thus it will be seen that the hood 29 may be turned to various different positions so as to render the light emanating from the lamp bulb 31 visible to the operator irrespective of the position in which the caliper is being used.

Mounted on the end of the casing 24 opposite that in which the lamp socket 26 is mounted is a cap 32 formed of insulating material which carries intermediate its ends a contact block 33 in which the end of the wire 21 opposite that attached to the binding screw 20 is received. A screw 34 extends longitudinally through the cap 32 and carries at its outer end a knurled head 36 by means of which it may be adjusted through the block 33 to move into or out of engagement with a spring-pressed plate 36 which is mounted for longitudinal movement in the cap 32. A spring 37 bears against the plate 36 as shown while its opposite end is adapted to bear upon the jacket of a battery or dry cell 38, it being understood that the opposite terminal of the dry cell contacts the centre contact of the lamp bulb 31 previously described.

In operation the screw 34 is turned up to a point where it engages the plate 36 after which the caliper is used to measure the item to be worked upon in the ordinary manner. As soon as the ends of the legs of the caliper contact the body being worked upon current will flow from the battery or dry cell 38 through the positive contact thereof from whence it passes through the lamp socket 26 and into the flashlight case 24 passing therefrom through the band 23 and bolt 22 to the spring 13 and leg 11 of the caliper from whence it flows through the work and into the leg 19 and binding screw 20 through wire 21 and block 33 through the screw 34 to the plate 36 and spring 37 back to the dry cell. In this way as soon as the contact is established by the legs of the caliper engaging the work the lamp bulb 31 will become illuminated and thus give a visible indication of the establishment of contact. When the device is not in use the screw 34 is turned back away from contact with the plate 36 so that should contact be established between the leg 11 and the extension 19 through accident or otherwise the lamp 31 will not function and consequently drain on the battery is eliminated. The utility of the device may, however, be readily reestablished by turning the screw 34 again so that it contacts the plate 36 at which time the device is again ready for use.

While in the foregoing there has been shown and described the preferred embodiment of this invention it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

What is claimed is:

A caliper comprising a long leg and a short leg pivoted together, yielding means to urge the legs open, means positively to move the legs against the urge of the yielding means, an insulating socket carried by the short leg, a contact carried by the insulating socket and forming an extension to the shorter leg whereby its effective length is substantially equal to the length of the longer leg, a casing supported on the yielding means a dry cell within the casing, a minature lamp carried by the casing, one contact of the lamp engaging one terminal of the dry cell, means establishing electrical communication between the contact carried by the insulating socket and the opposite terminal of the dry cell and the opposite contact of the lamp being grounded to the longer leg of the caliper whereby when a conductor bridges the gap between the leg of the caliper and the contact, the lamp will be lighted.

CLARENCE D. JACKSON.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
840,005	Mattice	Jan. 1, 1907
1,135,095	Blake et al.	Apr. 13, 1915
1,816,464	Biggert	July 28, 1931