

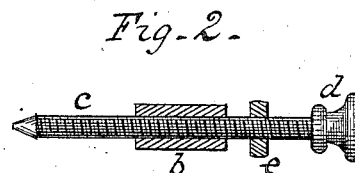
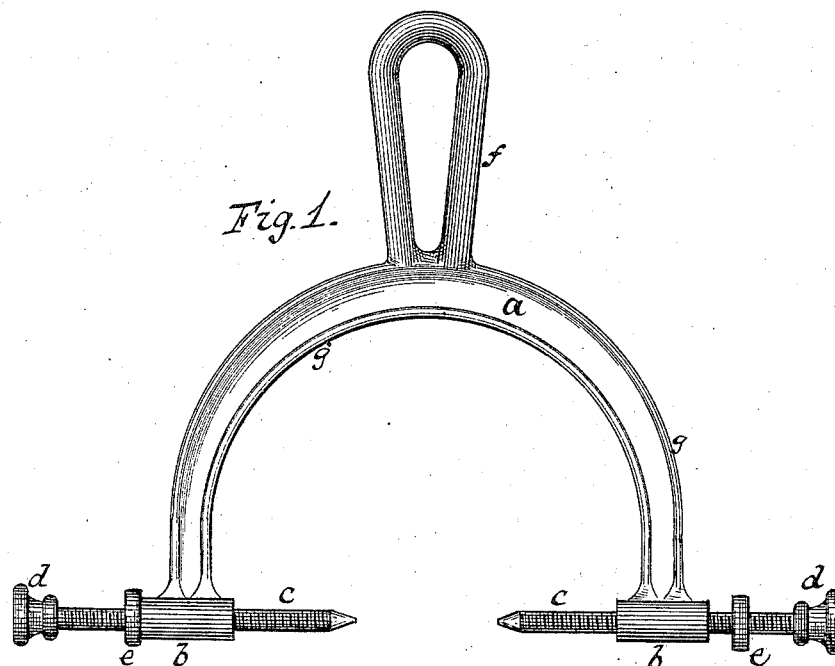
(No Model.)

M. P. LEONARD.

GAGE.

No. 301,247.

Patented July 1, 1884.



Witnesses:

J N McKinney  
A Hartup

Inventor:

Michael P. Leonard  
Per C D Lewis  
Attorney

# UNITED STATES PATENT OFFICE.

MICHAEL P. LEONARD, OF PITTSBURG, PENNSYLVANIA.

## GAGE.

SPECIFICATION forming part of Letters Patent No. 301,247, dated July 1, 1884.

Application filed January 28, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, MICHAEL P. LEONARD, a citizen of the United States, and a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have made a new and useful improvement in calipers, or that class of instruments used for determining the thickness and diameter of hollow or solid bodies.

The invention I have made is such as to greatly simplify the construction and increase the efficiency of such instruments in a manner readily understood from the following description, when taken in connection with the accompanying drawings, wherein—

Figure 1 represents a front view of my improved calipers; Fig. 2, a transverse longitudinal section of a portion of one of its arms and adjustable screws connected therewith.

For the purpose of reducing my invention to practical use, I construct the frame *a* of the instrument of one piece of metal and in the form of a half-circle or crescent, bearing at each extremity a cylindrical sleeve, *b*, having a female screw-thread in the interior thereof arranged on a common axial line, and which are respectively provided with a reversible and interchangeable solid adjustable screw, *c*, each of such length as will admit of their ends being brought together in and about the middle of the supporting-frame or at a point midway between its extremities. One end of each solid adjustable screw *c* is pointed, and the other end is provided with a button-like head, *d*, whereby it may be easily rotated, and in addition thereto with a small jam-nut, *e*, as a means of tightly securing the several positions of said solid screws when once properly adjusted. For convenient manipulation, the crescent-shaped frame *a* is provided with a centrally-located and projecting handle, *f*, formed of the same piece of metal with the frame and integral therewith. Along each edge of the frame *a* extends a light bead, *g*, that serve to

increase its strength and improve its appearance, while the handle *f* is of that peculiar shape best calculated, with a small quantity of material, to afford sufficient size.

When, within the scope of these calipers, any solid body is to be measured exteriorly, the screws *c* are to be arranged with their pointed ends toward each other, in the manner represented in the drawings, Fig. 1, and one or both may be turned until their points are in just and proper position with relation thereto, when they may be secured and affixed in such position by simply bringing each jam-nut *e* to bear against the approximate end of its respective female screw *b*. Where the interior transverse measurement of any hollow object is required, the position of both screws *c* is to be reversed, so that their pointed ends shall be outside of and project beyond the frame, with the button-like heads *d* toward each other, whereby such adjustment of the screws may be had as shall be found necessary to accomplish the desired end.

Having thus described the nature of my invention, what I claim, and desire to secure by Letters Patent, is—

A calipers consisting of the semicircular or crescent-shaped frame *a*, provided at or near its outside central portion with a projecting handle, *f*, integral therewith, and at each extremity of the frame a cylindrical sleeve, *b*, having a female screw-thread in the interior thereof, wherein is arranged a reversible and interchangeable adjusting-screw, *c*, pointed at one end and furnished with a head, *d*, at the other, and with an intermediate jam-nut, *e*, substantially in the manner shown and hereinbefore described.

MICHAEL P. LEONARD.

Witnesses:

J. N. MCKINNEY,  
ROBT. R. LOWRY.