

J. W. MALOY.
Steam Pressure Gage.

No. 101,636.

Patented April 5, 1870.

Fig. 1.

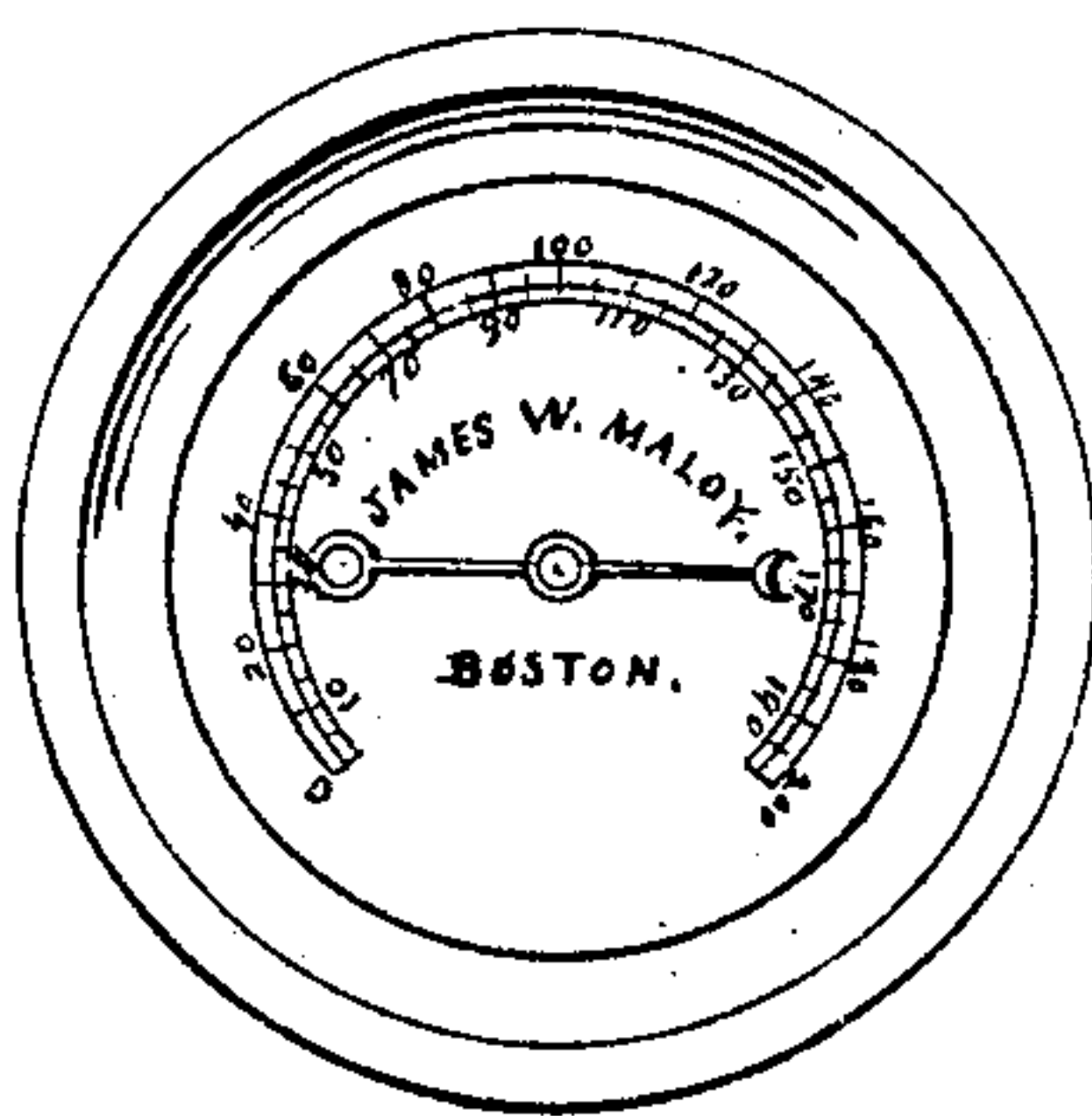


Fig. 2.

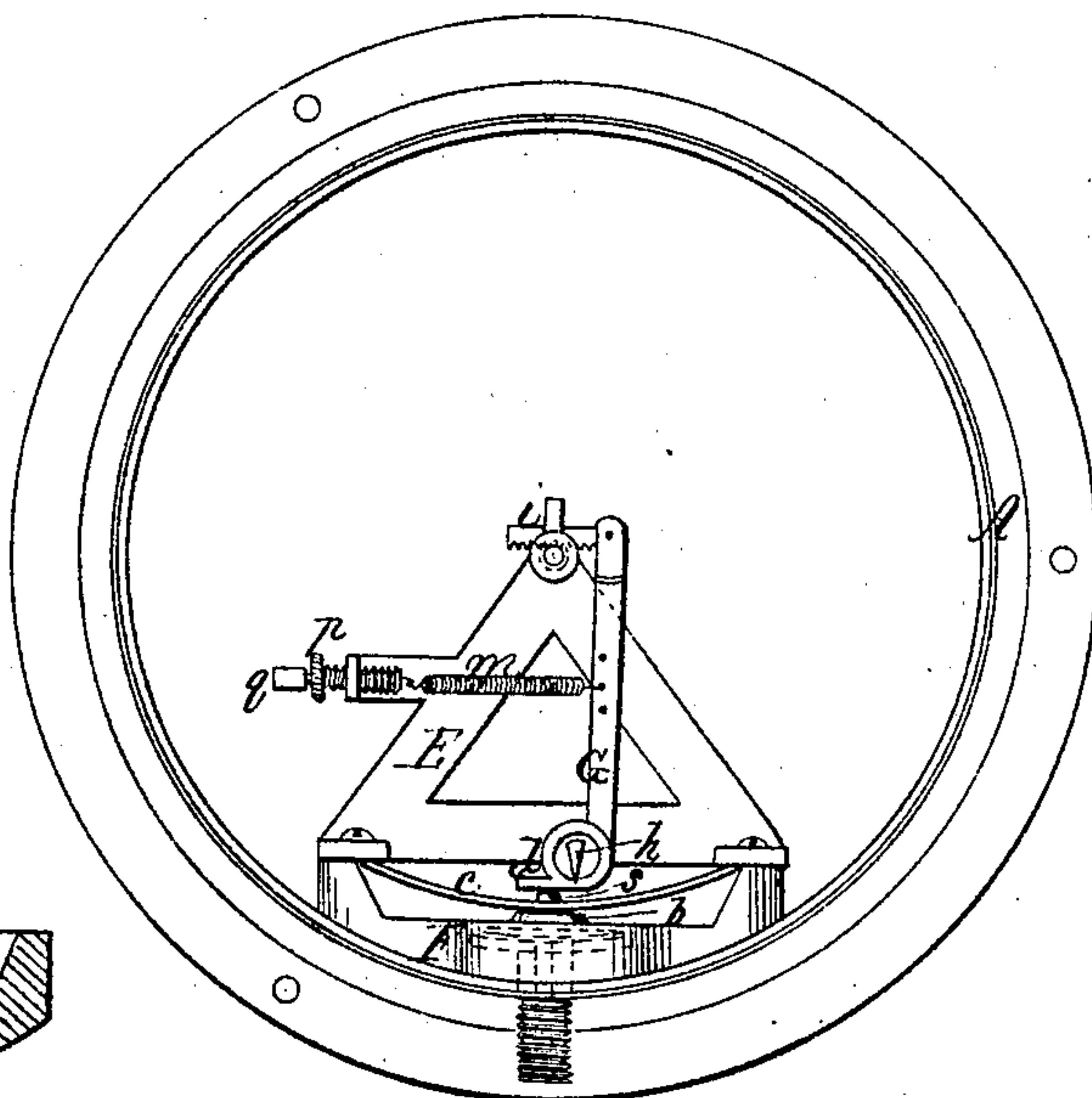


Fig. 5.

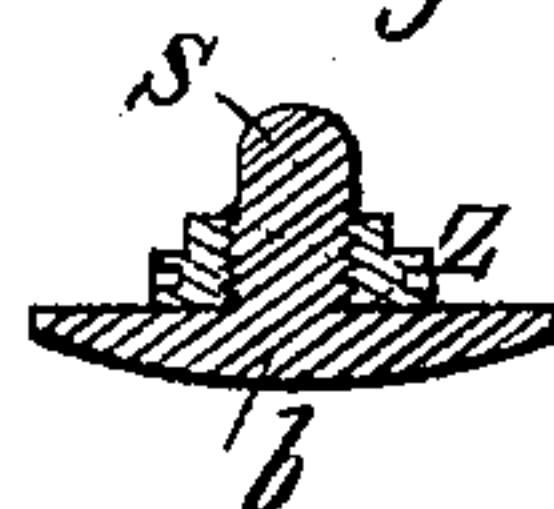


Fig. 6.

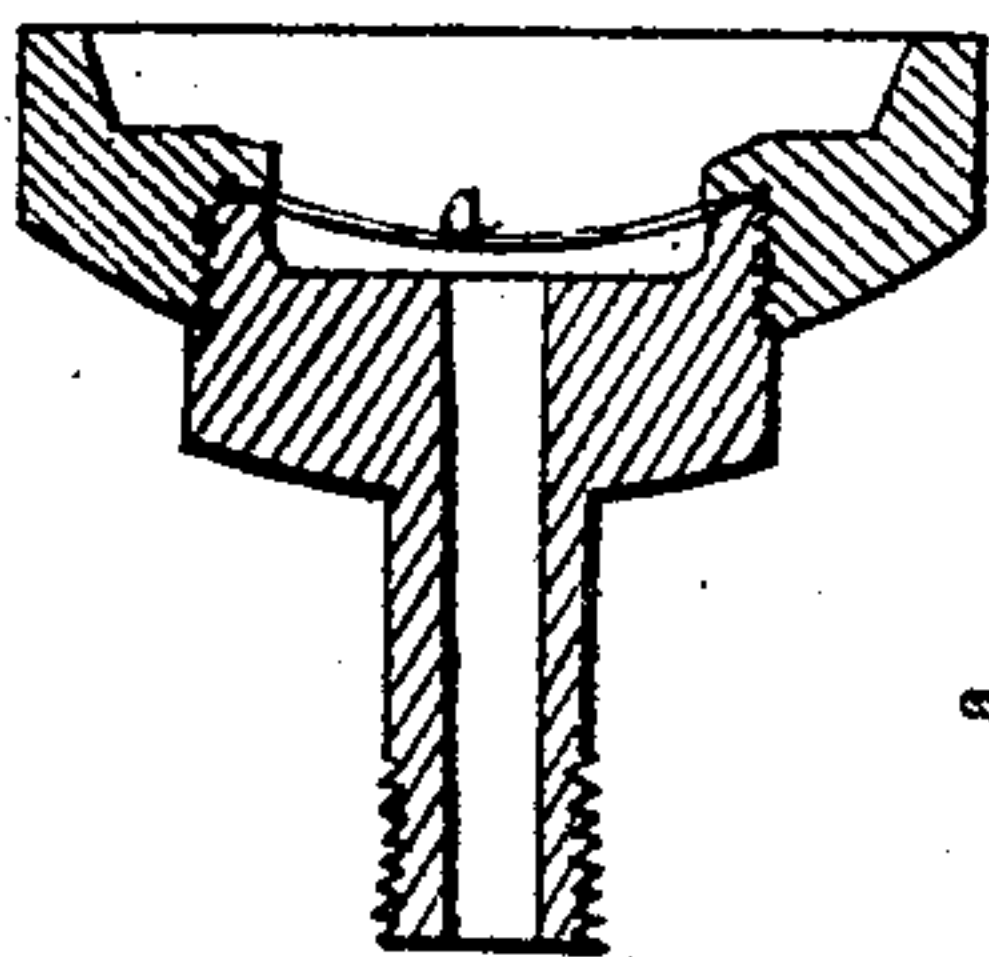
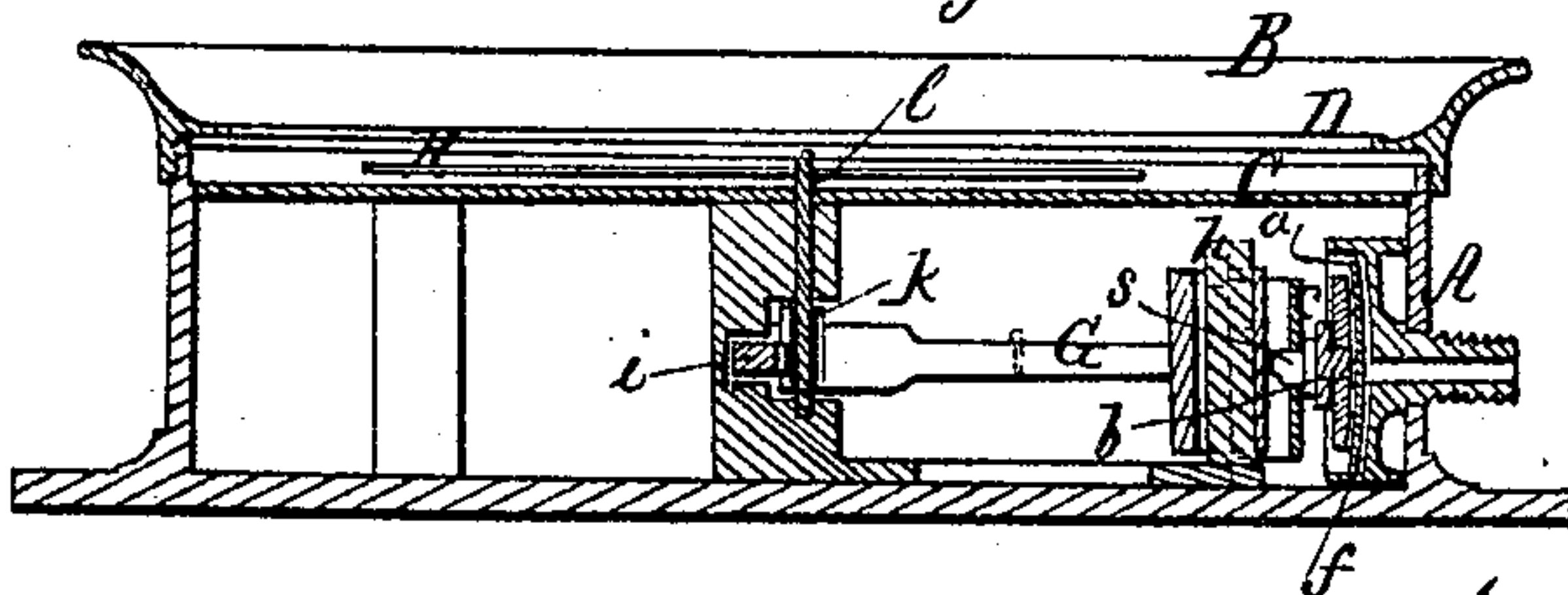


Fig. 4.



Fig. 3.



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JAMES W. MALOY, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE MALOY PRESSURE-GAUGE COMPANY, OF SAME PLACE.

Letters Patent No. 101,636, dated April 5, 1870.

IMPROVEMENT IN PRESSURE-GAUGES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, JAMES W. MALOY, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and improved "Steam-Gauge," of which the following is a full, clear, and exact description, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is an elevation of the steam-gauge ;

Figure 2 is an elevation of the same with the glass cover and dial-plate removed ;

Figure 3 is a transverse section of the same ;

Figures 4 and 5 are detailed views ; and

Figure 6 is a modification of mode of attachment of pressure-plate.

The object of my invention is to produce a reliable gauge for measuring the pressure of gases, steam, or other fluids, with great accuracy, and which is simple in its construction, and all the parts easily accessible when in need of repairs, adjustment, or examination ; and

My invention, being an improvement on the pressure-gauge for which Letters Patent, No. 71,773, December 3d, 1867, were granted to me, consists in a flexible metallic disk, upon which the gases, steam, or fluids exert pressure, and which, by its movement, acts upon an index by means of a mechanical combination, hereinafter described, said index indicating upon a dial the exact pressure of the gases, steam, &c.

Referring to the drawings—

A is a metallic casing, to which the cover B, containing a dial-plate, C, and glass cover D, is secured.

Within the casing and firmly attached to it is the frame E and casting F.

The upper portion of the latter is provided with the recess *f*, and communicates, by the tubular projection, with the steam or pressure-pipe, and is closed by the flexible slightly-concave disk *a*, in such a manner that the latter can expand and contract steam-tight in said recess *f*.

The flexible plate *a* consists of a thin curved plate, and is, at its circumference, provided with a grooved rim, to allow of the ready expanding or contracting motion of the plate.

This plate *a* may be secured into the recess, either in the manner shown in fig. 3, or as shown in fig. 6, when the plate *a* fits against a shoulder, and a follower screwed into the casting.

On the upper surface of flexible plate *a* is seated the button *b*, having projection *s* with rounded head, which, passing loosely through the curved spring *c*, presses against the short arm *d* of the lever G.

The button *b* consists of a convex washer, fitting into the curvature of plate *a*.

On the projection *s* are screw-threads, and nut *z*, by turning which the curved spring *c* can be adjusted.

This nut is turned by means of little slots in its rim, and a small lever or hook.

The lever G vibrates on knife-edge *h*, and has the rack *i* attached to the end of its longer arm, and which is geared into the pinion *k* on spindle *l*.

The latter projects through the dial-plate, and has the index R secured to its outer portion.

The spiral spring *m* forces the lever G inwardly, and against the button *b*, and receives the proper tension for adjusting it to the required pressure by means of hollow thumb-screw *p*, and headed pin *q*.

I may use other forms of springs instead of spring *c*, but the action would be the same. The one shown illustrates my invention.

The knife-edge *h* is cast upon the frame E.

Operation.

Steam or gases being admitted into the recess *f*, and underneath the disk *a*, presses against the latter and forces it upward, and with it the button *b*, which will soon bear against curved spring *c* and the arm *d* of lever G, and spiral spring *m*.

By the upward motion of arm *d*, the longer arm will be forced outward, drawing with it the rack *i*, which, by this motion, gives the pinion *k*, spindle *l*, and index R a rotary movement, which latter will correctly indicate the pressure of the acting forces.

The whole apparatus is encompassed in a very small space, and is so compact and simple in its construction that it can be easily understood and adjusted.

The springs are of such strength, and the proportion of the levers so arranged, as to insure durability and accuracy, while the friction and the number of working parts are reduced to a minimum.

This apparatus is cheap, reliable, and neat, and well adapted to suffice for the highest pressure with which gases, steam, or fluids can be worked.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The disk *a*, provided with an annular groove next its rim for convenience in fastening, and not being corrugated in any respect, substantially as described.

2. The combination of the flexible plate *a*, button *b*, nut *z*, and spring *c* with the perforated and recessed casting F, as and for the purpose described.

3. The combination of button *b*, having projection *s*, as shown, and nut *z*, substantially as described.

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

JAMES W. MALOY.

Witnesses :

CARROLL D. WRIGHT,
AUSTIN S. HOWARTH.