

J. T. Large.

Barometer.

*N^o. 1,832.
32,836.*

Patented Jul. 16, 1861.

Fig. 1.

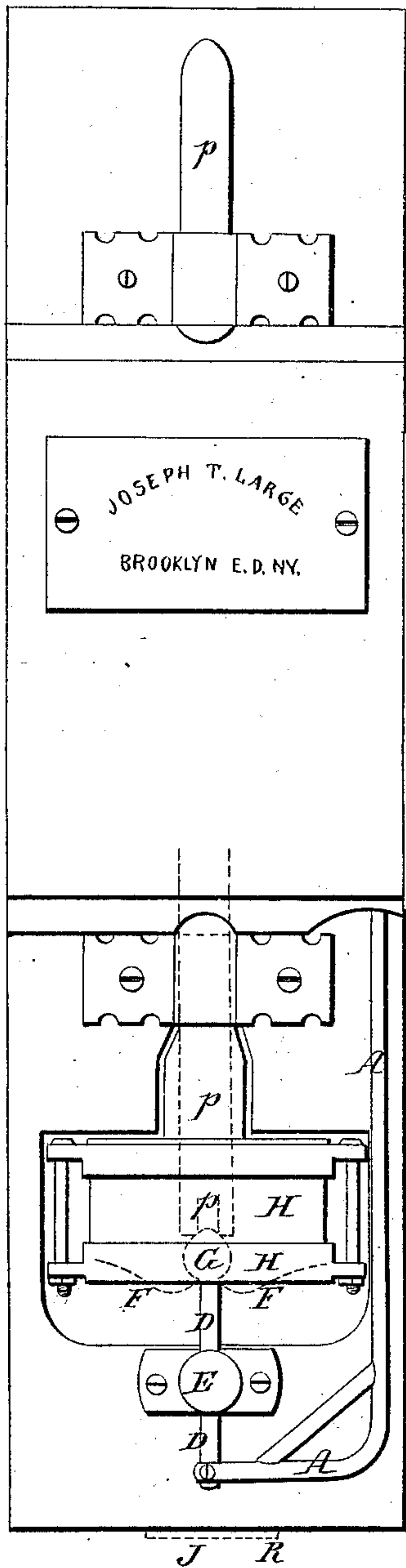


Fig. 3.

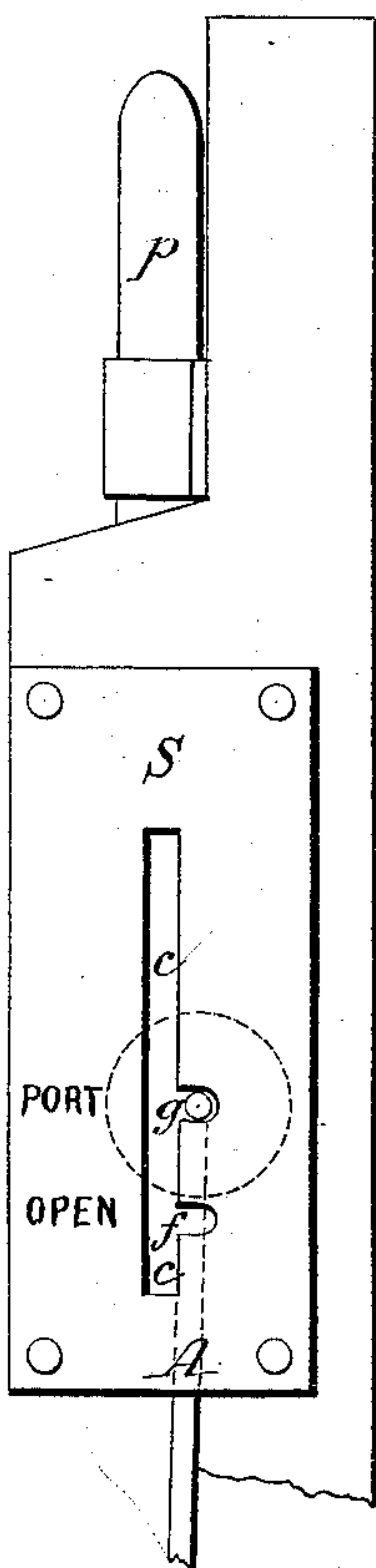


Fig. 2.

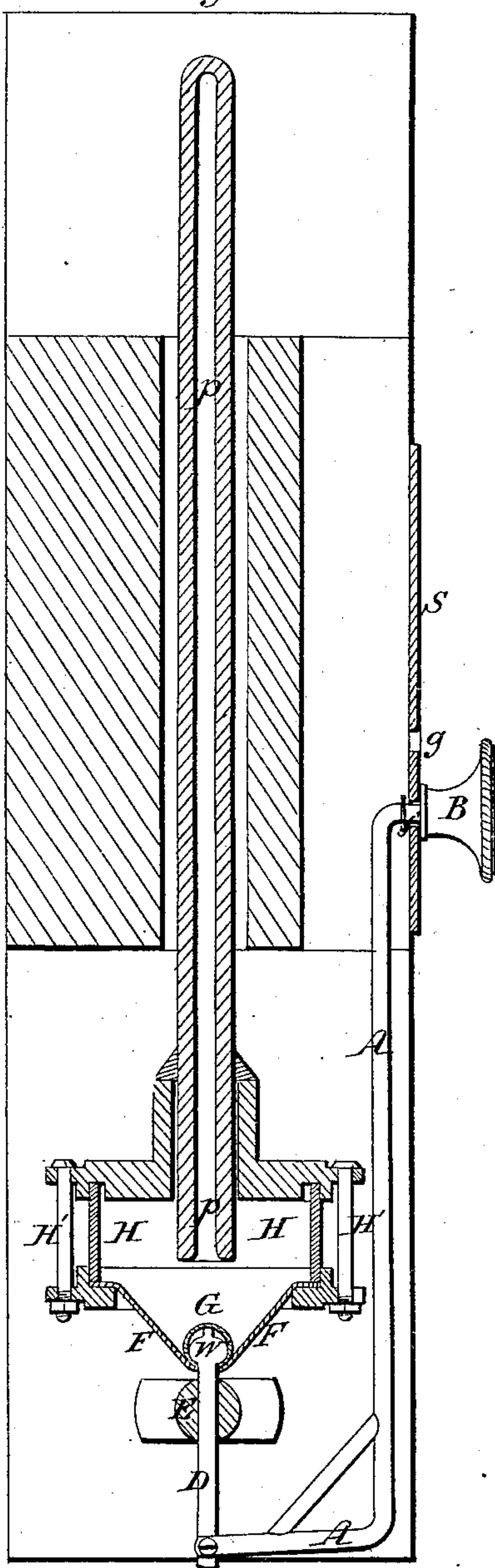
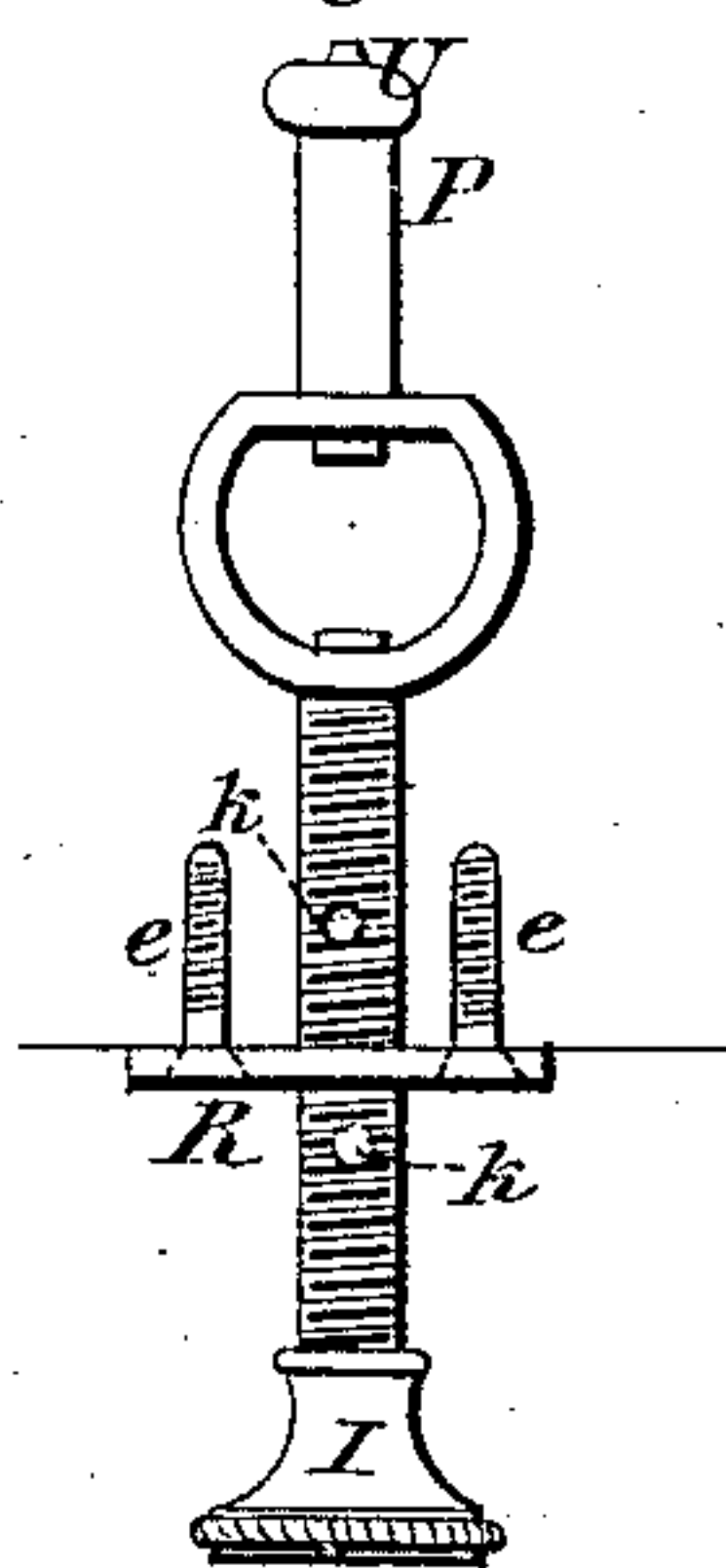


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOSEPH T. LARGE, OF BROOKLYN, NEW YORK.

BAROMETER.

Specification of Letters Patent No. 32,836, dated July 16, 1861.

To all whom it may concern:

Be it known that, JOSEPH T. LARGE, of Brooklyn, Long Island, in the State of New York, have invented a new and useful Improvement in Barometers; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

10 The nature of my invention consists in a mode of constructing barometers, whereby the liability of breaking, bursting or leaking, from expansion or sudden concussion of the mercury during transportation is entirely prevented.

15 The principle upon which my improvement is based, is this, that I construct the mercury cups or cisterns at bottom of barometer tubes with india rubber or elastic bags, worked by a mechanical arrangement so as to render the instrument "portable" and thereby preventing the least likelihood of bursting or leaking of the "bag" (attached at bottom, and forming part of the mercury cup or receptacle for the quick-silver) from expansion or sudden concussion of the mercury, while in transportation.

20 Barometers in present use are constructed with wood or iron mercury cups, or boxes with "leather" bags at bottom, which are always, breaking, bursting or leaking from expansion of the mercury, or sudden concussion of the mercury during transportation. Now by my improvement I obviate the least tendency in these mishaps in the use of barometers.

25 To enable others skilled in the manufacture of barometers to make and use my invention, I will proceed to describe its construction and operation, reference being had to the annexed drawings making part hereof, and to the letters of reference marked thereon, in which—

30 Figure "1," represents a part of barometer, with improvements attached, showing the position of elastic bag "F," and cushion or mercury cut-off "G," at the bottom of tube "p," when the instrument is "portable" and ready for transportation. Fig. "2," is a sectional view of same, showing the position of the "bag" "F," with cushion or mercury cut-off "G," when the instrument is in use. Fig. "3," is partially a side view showing the manner brass plate "S," is attached with slot "C," and notches "f," and "g," thereon in which the thumb screw

"B," is worked, in the adjusting of the bag "F," with cushion "G." Fig. "4," represents a different arrangement as shall be hereinafter described. 60

"A," is a vertical lever worked laterally, up and down by a thumb screw "B," through slot "C," and a fixed knob "E," which is attached by screws on facing of instrument directly under the center of mercury cup or cistern "H," as shown in drawing. The end of that part of the lever "A—D," as worked through "E," is formed in the shape of an "acorn," as shown in Fig. "2," letter "W," upon which the bag "F," is drawn tightly over, and secured by the winding around on its lower part, a string or thread forming a cushion, or mercury cut-off "G," on interior of mercury cup or cistern "H," for the purpose as shall be hereinafter described. 70 75

Fig. "3" shows the brass plate S, with notches "f," and "g," at side of slot "C," in which the thumb screw "B," is slid into in the forcing up and down of the "lever" "A," in the adjusting of the bag "F," with cushion "G," as shall be hereinafter described. 80

Fig. "4" represents a different arrangement, or device but for the same purpose and producing the same result as the arrangement above specified in which "P," is a swivel, with an acorn end "U," secured to the bag "F," in the same way as "D," shown in Figs. "1," and "2," and worked by a thumb screw "I," through a plate or standard "R," affixed at the end on bottom of barometer by screws "e, e," at "J," Fig. "1." On this screw "I," are two pins "h," and "k," for regulating of swivel, in the adjusting of the bag "F," with cushion or mercury cut-off "G," as shall be hereinafter described. 85 90 95

Operation is as follows: Holding the barometer at an "angle" of "45" degrees slightly unscrewing the thumb screw "B," and forcing the "lever" "A," down to, and in notch "f," marked "open" then screwing fast "B," the barometer is then ready to be hung up for use. To make the barometer "portable," hold it in the angle as above stated, and unscrewing "B" and forcing the lever "A," up to and in the notch "g," marked, "portable," which brings the cushion or mercury cut-off "G," up at the same time to the tube "p," air tight, so that the tube is filled with quick-silver from bottom 100 105 110

to top and cannot return to the "body" of the quicksilver in cup or cistern "H," thereby preventing any sudden concussion of the quick-silver against the bag "F," when
5 shaken by the hand, or during transportation.

The cushion or mercury cut-off "G," answers for two purposes: as an effectual cut-off to the mercury when the barometer is to
10 be made "portable" for transportation and to give to the expansion of the mercury confined in the tube; the bag or bottom "F," being "elastic" gives to the pressure of the lever "A," when worked by the screw "B,"
15 also leaving the confined quick-silver "free" in cistern "H," and giving on any sudden concussion of the mercury during transportation, thereby preventing the bursting or leaking of the bag, or breaking of the cistern as is the case with barometers now in
20 use, also a "perfect" vacuum in the tube, when barometer is in use.

In the arrangement of Fig. "4," screw up "I," until the pin "h," reaches close up to
25 "R;" this forces up the cushion or mercury cut-off in the same position, and ready for

the same purpose as described and shown at "G," Fig. "1." Otherwise unscrew "I," until the pin "h," is brought down close to "R," the barometer is then ready to be hung
30 up for use as hereinbefore described.

This improvement is adapted to all kinds of barometers, either mountain—marine or house.

Having thus fully described the nature
35 and use of my improvement I will proceed to state what I claim and desire to secure by Letters Patent.

What I claim as my invention and desire to secure by Letters Patent is—
40

The arrangement and combination of the elastic cistern bag F, "acorn-shaped" knob W, "lever" A, thumb-screw B, slot C, and notches *f, g*, substantially in the manner and
45 for the purpose herein specified.

In testimony whereof I have hereunto set my hand and seal.

JOSEPH T. LARGE. [L. s.]

Witnesses:

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HENRY BELL.