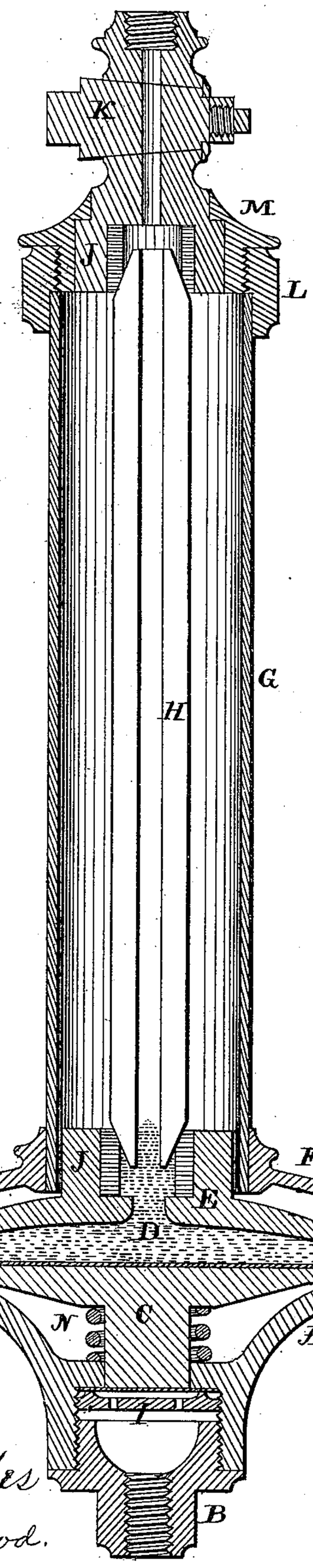
T. SHAW.

PRESSURE GAGE.

No. 187,053. Patented Feb. 6, 1877.



Witnesses:

W Hughes

Wm Garwood.

Inventor:

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UNITED STATES PATENT OFFICE.

THOMAS SHAW, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN PRESSURE-GAGES.

Specification forming part of Letters Patent No. **187,053**, dated February 6, 1877; application filed October 18, 1876.

To all whom it may concern:

Be it known that I, THOMAS SHAW, of the city and county of Philadelphia, Pennsylvania, have invented a new and Improved Mode of Constructing Mercury Steam-Gages; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My invention consists in the application of a spring to support weight of plunger loaded with mercury, and in the provision of stop-cock and elastic cushion for tube, all for the purpose as hereinafter described.

The object of the invention is to enable the register of low pressures in high-pressure gages, and to secure glass tube tightly without risk of fracture, and to prevent possible loss of mercury while in transit, and to secure correct working when in operation, and is an improvement on my patent, No. 37,794, of February 24, 1863, of which I am sole owner.

In order to enable others to use and practice my invention, I will proceed to describe its construction and operation.

On reference to the accompanying drawings, which form part of the specification, the sketch represents a vertical section through center of gage, of which A is the metal base, provided with plungers C, the weight of which is caused to rest on spring N. The bottom and top of plunger C is covered with sheet-rubber, (shown in heavy black line,) to prevent leakage at joints of plunger. I is a screw-button that impinges on rubber at bottom, and E is an iron disk that impinges on rubber disk at top, being forced down by screw-cap F. The concavity in center of iron disk E forms the mercury-chamber D. B is a nut screwed into base A, and is provided with tapped hole in center to enable attachment to any source of pressure. Brass tube G is soldered to cap F and ring L. Said tube G is slotted in front side to enable the observance of rise of mercury in glass tube H. Figures recording the pressure are marked on the outside of brass tube. K is a stop-cock, secured concentric in cap M, that screws into ring L. J is a rubber ring, forming a cushion for the glass tube in recess in bottom of stop-cock K, making it similar to rubber cushion J in center of iron disk E, giving two elastic supports to glass tube H, which lessens the liability to fracture.

The stop-cock K enables a convenient and ready means of shutting off mercury while the gage is in transit, and equal facility for opening the mercury-tube to the atmosphere when in use.

The spring N is made of sufficient tension and strength to support the weight of the plunger C, when loaded with mercury to any desired point.

This improvement enables the immediate registering of any applied pressure beneath plunger C. Without this improvement the pressure cannot be shown until it has reached a point beyond the weight of plunger and its load of mercury.

It will be evident that the spring C can be variously fashioned and applied to effect the same object.

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

1. The combination, in a mercury steam-gage, with the plunger C, of a spring, N, supporting the plunger and its load of mercury, substantially as and for the purpose set forth.

2. The combination, in a mercury steam-gage, with the tube, its cap M, and the mercury-reservoir, of a stop-cock, K, arranged as shown, to retain the mercury within the tube during transit, substantially as set forth.

3. The combination of the rubber cushion J and the gage-tube, beveled at its ends, so that the tube is cushioned in every direction, substantially as set forth.

THOMAS SHAW.

Witnesses:

W. HUGHES,

WM. GARWOOD.