R. M. LOWNE.
Barometer.

No. 200,739. Patented Feb. 26, 1878.

Fig: 1.

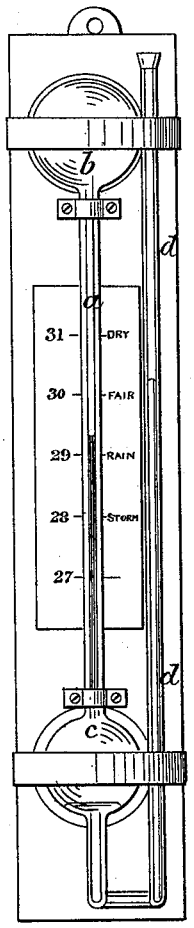
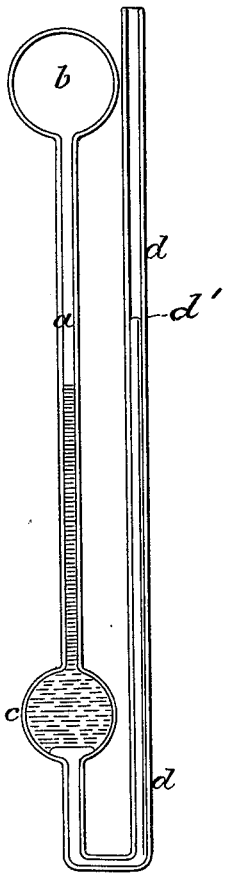


Fig: 2.



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IMPROVEMENT IN BAROMETERS.

Specification forming part of Letters Patent No. **200,739**, dated February 26, 1878; application filed August 16, 1877.

To all whom it may concern:

Be it known that I, ROBERT MANN LOWNE, of East End, Finchley, in the county of Middlesex, England, have invented new and useful Improvements in Barometers, of which the following is a specification:

The invention has for its object improvements in barometers; and relates to means for rendering them self-compensating for differences of temperature, and at the same time providing them with an open and fixed scale.

The instrument devised by me is very simple in construction; and consists in a tube open at one end to the atmosphere, and continued downward to the bottom, where it is bent round to form an inverted goose-neck, the top of which expands into a bulb. This tube is then continued upward therefrom, in a line parallel to the open portion of the tube, until it terminates in another bulb at the other end.

This instrument thus constructed is somewhat of the character of that class of barometer known as the "sympiesometer;" but instead of allowing the height of the indicating fluid to be varied by any variation of temperature acting upon and expanding or contracting the air in the air-bulb, the fluid in the lower bulb is also affected by changes of temperature.

In preparing my thermometer for use, air is allowed to enter the upper bulb and that portion of the tube immediately below it constituting the gage-tube. Then oil or other indicating fluid is poured down the open tube until it fills, or nearly fills, the lower bulb. A sufficient quantity of mercury or other heavy fluid is then poured in until it rises to the top of the inverted goose-neck, and covers a portion of the bottom of the lower bulb, the column of mercury or other heavy fluid thus acting to support the indicating fluid. The scale is fixed between the two bulbs.

By this construction of barometer any change of temperature which, in the ordinary construction of sympiesometer, would cause the air in the bulb to force down the column of fluid, also acts upon the fluid in the lower bulb or chamber to expand it, and thereby causes such fluid to force the mercury or other heavy fluid higher in the open tube, to compensate for the greater pressure of air in the air-bulb.

If it be desired to prevent differences and rapid changes of temperature from unequally affecting the contents of the two bulbs, the air-bulb may be inclosed in another bulb or chamber surrounding the same, and leaving a space between the two bulbs, which space may be filled with spirit or other fluid.

In the drawings, Figure 1 represents a front elevation of a small-size barometer constructed according to my invention, and Fig. 2 is a section through the bulbs and tubes of the same.

a represents that portion of the vertically-bent tube which forms the gage-tube. This tube terminates at its upper end in an air-bulb, *b*, and has at its lower end a bulb, *c*, to contain any suitable indicating fluid. The tube is continued downward from said bulb *c* in the form of an inverted goose-neck, which terminates in that portion of the vertically-bent tube *d* parallel to *a* and open to the atmosphere.

The bulb *c* is filled with oil or other fluid, which rises up the gage portion of the tube *a*, and the other portion, *d*, of the tube is filled up to the point *d'* with mercury or other heavy fluid, which rises up the inverted goose-neck to the bulb *c*.

I claim—

The barometer herein described, having gage-tube *a*, compressed-air bulb *b*, fluid-reservoir *c*, and mercury-tube *d*, the latter being open at its upper end to the atmosphere, its lower part forming an inverted goose-neck, terminating a short distance above the bottom in the reservoir *c*, the whole being formed out of the material of a continuous tube bent to form two vertical legs, substantially as set forth.

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