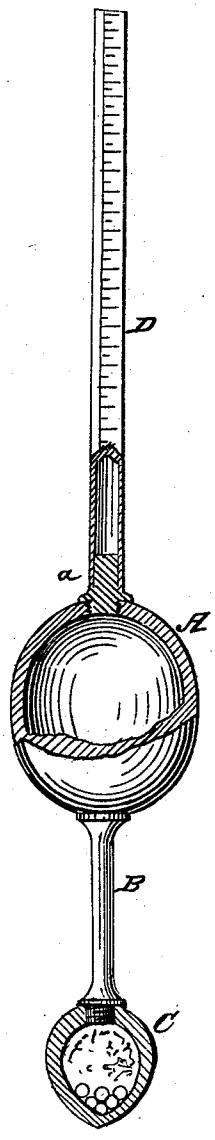
J. ADAMS.

Hydrometer.

No. 31,100. Patented Jan. 15, 1861.



Witnesses
Wm Thompson
B Grouby

Inventor:
James Adams

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JAMES ADAMS, OF NEW YORK, N. Y.

HYDROMETER.

Specification of Letters Patent No. 31,100, dated January 15, 1861.

To all whom it may concern:

Be it known that I, JAMES ADAMS, of the city, county, and State of New York, have invented a new and useful Improvement in Hydrometers, Saccharometers, and other Instruments for Ascertaining the Specific Gravity of Liquids; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, said drawing representing a side view, partly in section, of a hydrometer constructed according to my invention.

My invention consists in the construction of a hydrometer or other instrument for ascertaining the specific gravity of liquids with its bulb and lower part of hard vulcanized india-rubber, gutta-percha, or analogous substances, and its stem of silver or other metal by which construction the instrument is made to possess advantages over one made wholly of metal or one made wholly of india-rubber or gutta-percha, inasmuch as the bulb is less liable to have its form changed by being carelessly laid or thrown down or let fall, than the metal bulb, and the stem is capable of finer and more accurate graduation and less liable to have its graduations defaced and less liable to be bent than the india rubber or gutta percha stem.

A, represents the principal bulb of the hydrometer; B, the lower stem; and C, the lower bulb containing or constituting the weight; all made of hard vulcanized india-rubber or gutta-percha and made of one or more pieces.

D, is the graduated upper stem made of silver or other metal tubing and attached to the bulb A, in any suitable manner. The drawing represents this attachment as being made by a shouldered metal plug *a*, soldered into the metal tube and screwed into the top of the bulb, but a similar plug of the same material as the bulb may be used such plug being cemented into the tube and screwed into the bulb; or the tube may be screwed into the bulb without the use of a plug. The metal stem D, is graduated by engraving in the usual manner and its lines of graduation so far from being obliterated by handling with dirty hands or use in dark colored liquids is only rendered plainer; but an india-rubber stem being of dark color and having its lines of graduation filled with white lead to make them visible is liable to have the lines obliterated by dirt, besides which it is very liable to be warped if laid away carelessly when warm, which is not the case with the metal stem.

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

The construction of a hydrometer or other instrument for ascertaining the specific gravity of liquids substantially as herein described by combining with its bulb and lower part made of hard vulcanized india-rubber or gutta-percha a graduated upper stem made of metal.

JAMES ADAMS.

Witnesses:
SALEM H. WALES,
O. D. MUNN.