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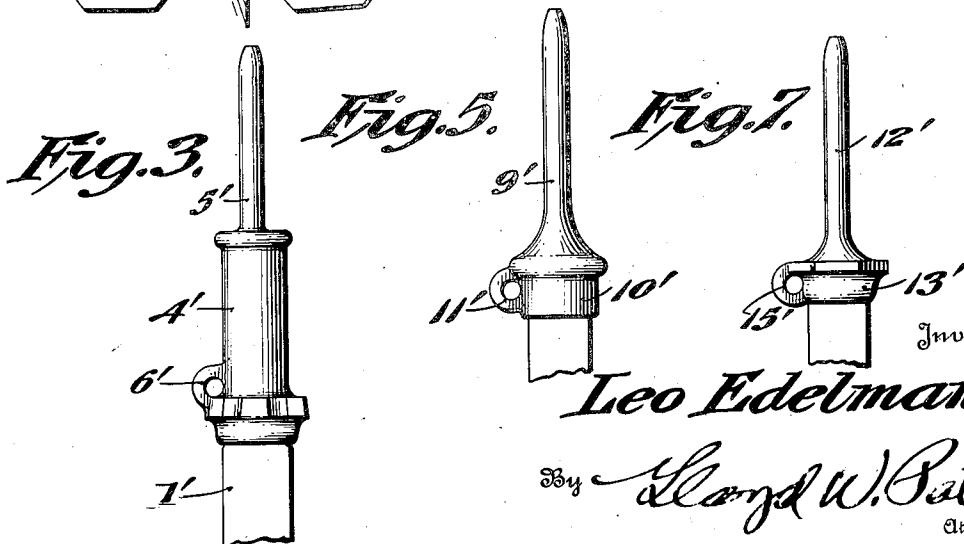
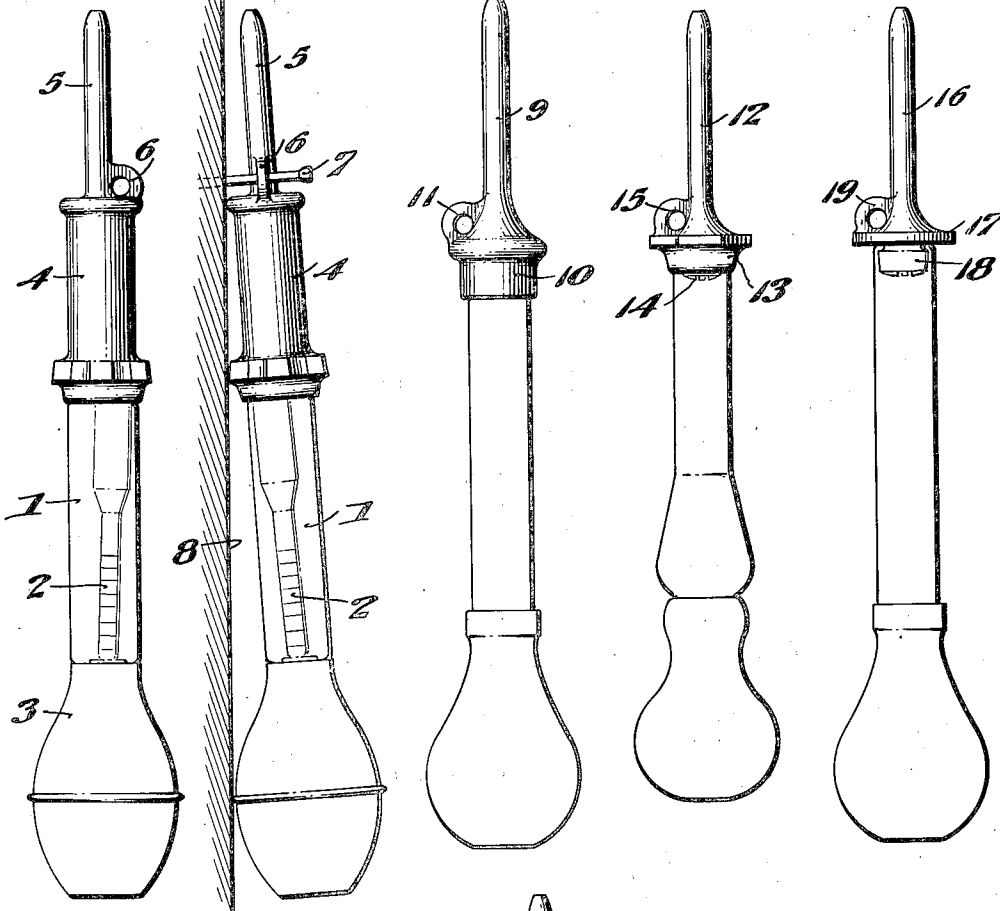
1,683,452

L. EDELMANN

HYDROMETER

Filed May 22, 1925

Fig.1. Fig.2. Fig.4. Fig.6. Fig.8.



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HYDROMETER.

Application filed May 22, 1925. Serial No. 32,199.

This invention relates to hydrometers, and particularly to a hydrometer of the syringe type such as is used in testing battery fluids, radiator solutions and the like.

5 The primary object of my invention is to provide convenient means for suspending and supporting the hydrometer when not in use.

10 A further object resides in so arranging the parts that the suspended hydrometer will be supported in a manner to prevent leakage or dripping of any liquid, usually acid solution, which may remain after use.

15 Another object lies in providing a hydrometer structure which can be used without danger of frangible portions thereof being broken or damaged.

20 Yet another object is to so construct the supporting means that it can be embodied with various types and constructions of hydrometers.

25 A still further object is to provide a supporting means which will function efficiently for suspension of the hydrometer, and which will prevent the instrument from rolling when laid down.

30 With the above and other objects in view, which will be apparent to those skilled in the art, this invention includes certain novel features in construction and combinations of parts which will be set forth in connection with the drawing.

In the drawing:

35 Figure 1 is a view in side elevation of a hydrometer embodying my invention.

Fig. 2 is a view in elevation showing the hydrometer in the position it assumes when suspended.

40 Fig. 3 is a fragmentary view of the intake end of this type of hydrometer showing a modification in the construction.

Fig. 4 is a view in elevation illustrating a modified type of hydrometer embodying my invention.

45 Fig. 5 is a fragmentary view in elevation showing a different placement of the suspending loop with the structure illustrated in Fig. 4.

50 Fig. 6 shows another modified type of hydrometer including my present invention.

Fig. 7 is a fragmentary view in elevation of the tip end of the type of hydrometer illustrated in Fig. 6 showing a different placement of the suspending loop.

Fig. 8 is a view in elevation illustrating 65 still another type of hydrometer structure embodying my invention.

The parts as illustrated in Figs. 1, 2 and 3, of my present invention are embodied with a syringe hydrometer structure similar to that 70 shown in Patent No. 1,245,449, however, it is to be understood that this invention can be embodied with substantially any and all types of syringe hydrometers.

The transparent barrel or jar 1 having the 65 hydrometer gauge 2 therein has a bulb 3 at one end, and the housing 4 at the remaining end, this housing being provided with an elongated tip or spout 5 of relatively small diameter to be fitted through a battery cell 70 opening or into any other receptacle containing the electrolyte or other fluid to be tested.

On one side of the elongated tip or spout 5 I mold or otherwise form a loop 6 adjacent the housing 4, and at such a position that the 75 size of the relatively small tip or spout is not increased and no projection or extension is offered which would prevent or hinder the free insertion and removal of the tip or spout into and from the opening of a receptacle. 80 In practice I have found that the housing 4, tip 5, and suspending loop 6, can be molded to be integral, but it is possible that the loop 6 might be made as a separate part and might be vulcanized onto or otherwise associated with the tip and housing. When a hydrom- 85 eter constructed as set forth above is to be used the loop 6 does not in any way interfere, and when the hydrometer is to be suspended it can be hung upon a nail 7, or upon any other support or projection, after the manner 90 illustrated in Fig. 2. As the bulb 3 and the housing 4 project beyond the barrel or jar 1, of glass or other frangible material, and are of larger diameter, the hydrometer will be 95 suspended with the frangible portion 1 entirely out of contact with the wall 8 or other member or structure in which the supporting nail 7 is held.

As shown in Fig. 3, the housing 4' has the 100 tip or spout 5' extending therefrom, and the parts are substantially the same as illustrated in Fig. 1, with the exception that the suspending loop 6' is located on the side of the housing 4 at a point adjacent the connection 105 of the housing with the frangible barrel or jar 1'.

As illustrated in Fig. 4, the housing is dis-

pensed with and the tip 9 is carried by a sleeve 10 adapted to be fitted over one end of the glass barrel or jar, and the suspending loop 11 is located at the base of the tip or spout 9 where the same widens out to give the increased diameter of the sleeve 10.

Fig. 5 shows a hydrometer structure substantially the same as Fig. 4 with the exception that the suspending loop 11' is provided on one side of the sleeve 10' and the tip or spout 9' is thus entirely unobstructed throughout its length.

With the particular hydrometer structure shown in Fig. 6 the tip or spout 12 is carried by a sleeve 13 which fits over the end of the barrel or jar, and a plug 14 is inserted within the open end of the barrel or jar. The suspending loop 15 is in this instance located at the base of the tip or spout 12.

The disclosure in Fig. 7 is similar to the showing in Fig. 6, and here the suspending loop 15' is located on one side of sleeve 13' to avoid any projection on the tip or spout 12'.

In each of the forms of hydrometer as hereinbefore described the float barrel 1 is adapted to be fitted into and held within a cap or cup portion formed on the end of the housing 4 or within the sleeves 10, 10', 13 and 13'. The float barrel can be provided with a bead around its end and the cap or cup portion would then have a corresponding groove, or this connection can be made in any other desired manner, such connections being old and well known in this art.

In Fig. 8 the tip or spout 16 is carried by a flange 17 and this flange 17 has a plug 18 which is fitted within one end of the glass barrel or jar. The suspending loop 19 is located at the base of the tip or spout 16 adjacent flange 17.

It is preferable that the suspending loop be formed to project radially with respect to the remaining portions of the hydrometer structure, as in this relation it will extend to offer an obstruction to prevent the instrument from rolling when the hydrometer is laid down.

While I have herein shown and described my invention incorporated with certain specific types and constructions of syringe hydrometers, and have suggested only certain other possible adaptations, it will be appreciated that a hydrometer constructed in accordance with my invention can be suspended with the tip or spout uppermost so that an acid electrolyte or other fluid retained in the barrel after use will not drip therefrom, and it will be appreciated that my invention can be employed with and embodied in a number of other types and constructions of syringe

hydrometers without departing from the spirit and scope of my invention.

I claim:

1. A syringe hydrometer comprising a frangible barrel to contain a hydrometer gauge, a bulb of non-frangible material at one end of the barrel and of larger diameter than the barrel, a closure member of non-frangible material at the remaining end of the barrel of larger diameter than the said barrel and provided with a liquid spout of reduced diameter, and a supporting loop on the closure member projecting radially therefrom to prevent the instrument from rolling when laid down.

2. With a syringe hydrometer having a liquid spout at one end, a supporting loop adjacent the base end of the spout to provide for suspension of the hydrometer with the spout uppermost, said supporting loop projecting radially as a stop to prevent the instrument from rolling when laid down.

3. A syringe hydrometer comprising two end members composed of non-frangible flexible material and one of which is cup-shaped and designed to encase a hydrometer gauge and an intermediate frangible barrel, the end members including projecting parts adapted to maintain the intermediate frangible portion out of contact with a plane surface, and a supporting loop on the cup-shaped end member by which the hydrometer can be suspended, said supporting loop projecting laterally from said member to prevent the instrument from rolling when laid down.

4. The combination with the barrel of a hydrometer syringe, of a cylindrical rubber member surrounding the barrel and having a projecting perforated ear.

5. The combination with a hydrometer barrel of a ring surrounding a part of the barrel and having an eye for suspending the same from a support, the ring and eye being located at such a point that the syringe will hang in an inverted position when suspended by the eye.

6. The combination with the barrel of a hydrometer syringe of an annular member fitting on the barrel and having a projecting perforated ear.

7. A hydrometer syringe having a perforated ear projecting therefrom as a suspending loop, said ear being located between the center of gravity and the inlet end of the syringe to hang said syringe in an inverted position when suspended by the ear.

In testimony whereof I hereunto affix my signature.

LEO EDELMANN.