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L. S. BRACH

ATTACHMENT FOR HYDROMETER UNITS

Filed March 6, 1926

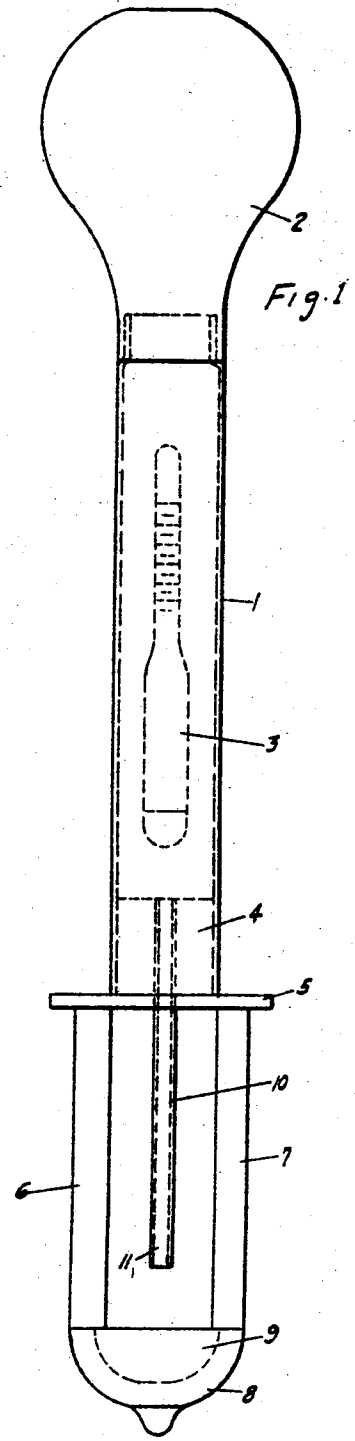


Fig. 1

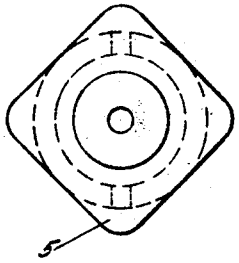


Fig. 3

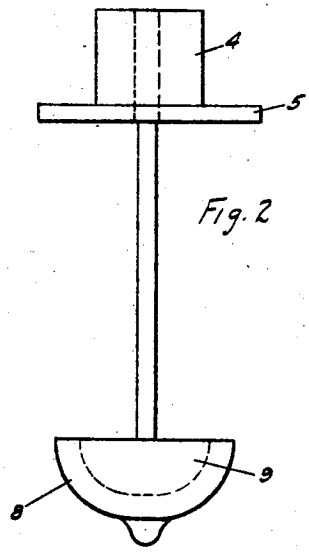


Fig. 2

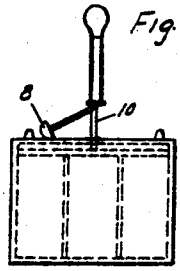


Fig. 4

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ATTACHMENT FOR HYDROMETER UNITS.

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This invention relates to improvements to be used in connection with the use of hydrometers, especially those used for testing or measuring the specific gravity of the electrolyte of a storage battery. A storage battery that is used for automotive vehicles, radio purposes and such like are completely enclosed and in order to test the specific gravity, the electrolyte must be withdrawn and this is done by a hydrometer syringe, comprising a shell or tube or barrel having an attachment on the end to go into the opening in the cell of the battery, and a rubber bulb at the other end for sucking the electrolyte into the tube or barrel, within which is carried the hydrometer per se.

In the operation of such a device there is practically always some drip from the attachment on the end of the tube or barrel, which is ordinarily in the form of a rubber tube and this drip I have found, has caused a lot of trouble as one drop of the electrolyte, which is sulphuric acid at a specific gravity of from twelve to thirteen hundred, will ruin a piece of wearing apparel in very short order.

My invention is therefore directed to means for preventing this drip from coming in contact with the user's person or apparel, and a further object is to provide a device that will accomplish the main object, which is cheap to manufacture and readily applicable to various designs of hydrometer devices, it being understood that throughout this specification, the barrel or glass tube, which is usually used, with its associated bulb and hydrometer, is referred to as a hydrometer unit.

My invention will be readily understood by reading the following specification taken in connection with the annexed drawing wherein, Figure 1, is a view of a hydrometer unit with my improvement applied thereto.

Figure 2, is a view of the attachment shown in Figure 1, but at right angles thereto, and without the stem member.

Figure 3, is a top view of Figure 2, while Figure 4, shows the application of the hydrometer unit with my improvement used in one position of operation, whereby the electrolyte is about the be drawn from a storage battery.

In the drawing, the hydrometer unit comprises a shell or barrel 1, usually of glass, to which a rubber bulb 2, is fastened at one end, and within the shell is carried the usual hydrometer 3.

My improvement comprises an attachment preferably of soft rubber moulded in one piece, and has a part 4, shown in the nature of a plug, which is adapted to close the end of the barrel 1, of the hydrometer unit. A flange is provided for assisting in applying the attachment. Extending downward from the part 4, and flange 5, is a pair of arms 6 and 7, at the lower end of which is carried a receptacle 8, having a cavity 9, which is normally in alignment with a stem 10, that is securely attached to the part 4. The stem 10, is preferably of some strong insulating material that will not be attacked by electrolyte, hard rubber, being found quite satisfactory, and the stem has a passage 11, through which the electrolyte may be drawn from the battery cell.

In operation, when it is desired to measure the specific gravity of the battery, the receptacle 8 and arms 6 and 7, are pushed aside as shown in Figure 4, and the stem 10 inserted into an opening in the top of the battery cell, which opening is provided with the usual plug, and the electrolyte is withdrawn by forcing the air out of the bulb 2, before the insertion of the stem 10, in the battery cell. On withdrawal of the stem 10, during the act of raising the hydrometer unit up, in order to read the hydrometer, the arms 6 and 7, preferably being of soft rubber and having considerable resilience automatically carry the receptacle 8, back to its normal position as shown in Figure 1, whereby the cavity 9, is below and substantially in alignment with the passage 11, of the stem 10, so that any drip coming from the stem will be caught by the cavity 9, which is so formed that a drop or two of electrolyte which may pass into it during the reading of the hydrometer will not run out, when the electrolyte in the shell 1, and the bulb 2, is being returned to the battery cell.

After the hydrometer unit has been used as above described, the attachment may be washed off or wiped off, and the whole unit returned to its carrying case.

It will be apparent that my invention is susceptible of certain changes in detail without departing from the spirit of invention, and the scope of the appended claims, for example the part 4, which is integral with

the part 6 and 7 may fit on over the member 1, and the claims are intended to be broad enough to cover either or both forms.

Having thus described my invention what I claim is:

1. An attachment for a hydrometer receiving barrel comprising: a closure for one end of the barrel, a hollow stem carried by said closure and adapted to be inserted into a vessel containing a liquid, the specific gravity of which is desired to be measured, means attached to said closure and extending downwardly therefrom and a recepticle supported by said means substantially below the stem, said means being adapted to be moved so as to carry the receptacle away from its position below the stem so said stem may be inserted into said vessel.

2. An attachment for a hydrometer receiving barrel comprising: a closure for one end of the barrel, a hollow stem carried by said closure and adapted to be inserted into a vessel containing a liquid the specific gravity of which is desired to be measured, a pair of flexible arms extending downwardly from said closure, a receptacle carried by said arms and normally below said stem, said arms being adapted to be moved so said receptacle is carried from its normal position below the stem when the same is to be inserted into said vessel.

3. An attachment for a hydrometer receiving barrel comprising: a closure for one end of the barrel, a hollow stem carried by said closure and adapted to be inserted into a vessel containing a liquid the specific gravity of which is desired to be measured, a pair of resilient arms attached to said closure and normally extending in a vertical direction downwardly one on either side of said stem, a receptacle carried by said arms below the end of the stem, said arms being adapted to be bent sidewise so as to carry the receptacle out of the path of movement of the stem for the purpose described, said resilient arms also acting to automatically move the receptacle back to normal position under the stem, when the stem is withdrawn from the vessel.

4. An attachment for a hydrometer receiving barrel comprising: a closure for one end of the barrel, a hollow stem carried by said closure and adapted to be inserted into a vessel containing a liquid the specific gravity of which is desired to be measured, means attached to said closure and extending downwardly therefrom and a receptacle supported by said means substantially below and in alignment with the stem, said means and receptacle adapted to be moved sidewise so said stem may be inserted into said vessel, said means functioning on withdrawal of the stem from the vessel to carry the receptacle automatically back to normal position under the stem.

5. An attachment for a hydrometer receiving barrel comprising: a soft rubber closure for one end of the barrel, a hollow rigid stem carried by said closure and adapted to be inserted into a vessel containing a liquid the specific gravity of which is desired to be measured, a pair of spaced soft rubber arms integral with said part, and extending downwardly below said stem and a receptacle preferably of soft rubber and integral with said arms carried thereby below the end of said stem.

6. An attachment for a hydrometer receiving barrel comprising: a soft rubber closure for one end of the barrel, a hollow stem of rigid insulating material carried by said closure and adapted to be inserted into a vessel containing a liquid the specific gravity of which is desired to be measured, a pair of spaced soft rubber arms integral with said part and extending downwardly therefrom on opposite sides of the stem and a soft rubber cup moulded integral with said arms and normally held below the stem but adapted to be moved aside by bending said arms by the act of insertion of said stem into the vessel and further adapted to return to normal position for the purpose described when the stem is withdrawn from the vessel.

7. An attachment for a hydrometer receiving barrel comprising: a one piece device of soft rubber and a rigid hollow stem of insulating material, said one piece device having a closure to engage the hydrometer receiving barrel and having means attached to said closure and extending downwardly from the closure, said means carrying a receptacle below and substantially in alignment with the opening in the stem.

In testimony whereof, I affix my signature.

LEON S. BRACH.