

Aug. 25, 1936.

L. EDELMANN

2,052,344

BATTERY FILLER

Filed Sept. 21, 1934

2 Sheets-Sheet 1

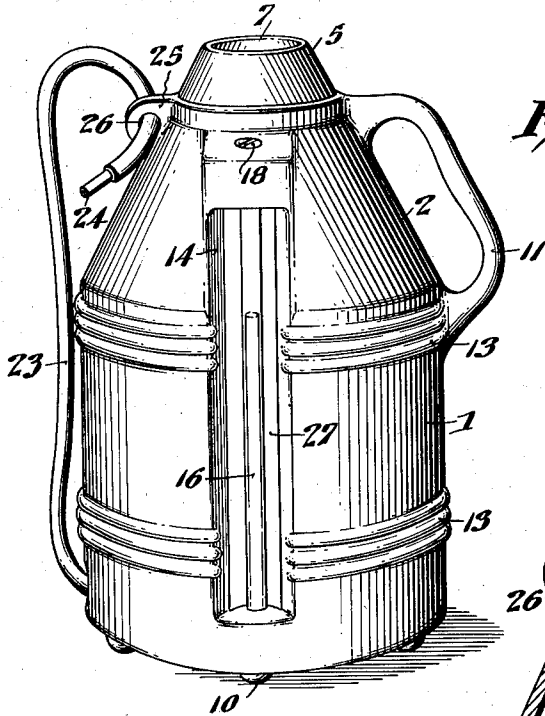
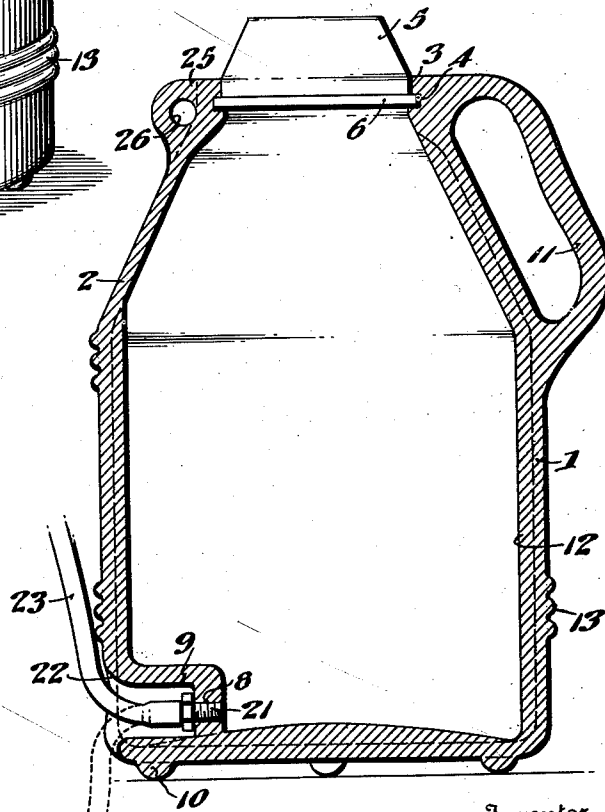


Fig. 1.

Fig. 2.



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2 Sheets-Sheet 2

Fig. 3.

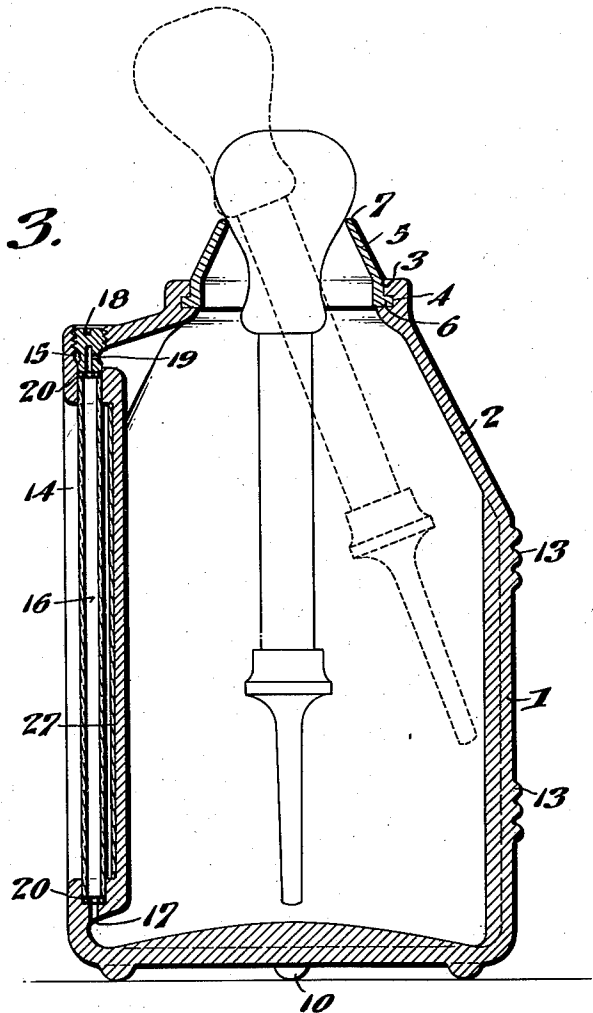
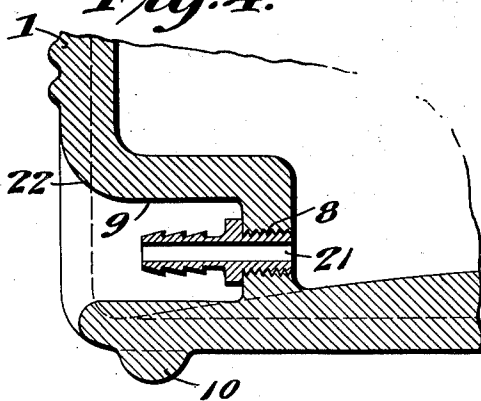


Fig. 4.



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UNITED STATES PATENT OFFICE

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BATTERY FILLER

Leo Edelmann, Chicago, Ill.

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7 Claims. (Cl. 221-25)

My invention relates to improvements in battery fillers, and particularly to a device of this character intended and adapted to be used to contain distilled water, and to readily and easily be manipulated to supply water into the usually relatively small openings of the battery, without 5
spilling or overflowing of the water.

An object is to provide a device of this character including a main container of not readily 10
frangible material, which is ordinarily more or less opaque, together with means by which the quantity of water or other liquid that is in the container can be readily ascertained.

Another object is to so construct the parts that 15
a discharge tube, readily handled and manipulated to properly direct and to control the supply of water or liquid is included and is associated with the container in a manner to give facility and to avoid the possibility of damage in use.

Still another object is to provide a container 20
with an opening through which liquid is readily supplied for filling, and which opening and the adjacent portions of the container are so constructed that a hydrometer or other testing instrument is readily and conveniently held in 25
place therein and is protected against damage or breakage, when in place, or when being inserted or removed.

Yet another object resides in so constructing, 30
positioning and assembling the parts that the container structure, of not readily frangible material, will afford protection to a gauge tube and to the filler tube to protect the same when the device is in use.

With these and other objects in view, which 35
will be apparent to those skilled in the art, my invention includes certain novel features of construction and combinations of parts which will be hereinafter set forth in connection with the 40
drawings and then pointed out in the claims.

In the drawings:

Figure 1 is a view in perspective illustrating 45
one adaptation of the present invention.

Fig. 2 is a vertical sectional view through the 50
structure.

Fig. 3 is a vertical sectional view taken substantially at right angles to the showing in Fig. 2, and with a hydrometer in place.

Fig. 4 is a fragmentary detail sectional view.

The container, generally indicated at 1, is made 55
of hard rubber, vulcanite, or other readily molded and substantially non-frangible or not readily frangible material, preferably possessing a degree of elasticity or yieldability to prevent fracture or

breakage due to dropping, knocking against objects, and other shocks or blows encountered in use. This container, preferably of a size to hold a quantity of water sufficient for several battery fillings, has in practice been made to have a capacity of substantially one gallon, although not 5
limited to such capacity. The container is advantageously shaped to be substantially cylindrical in its body portion, with the upper portion tapered to be of reduced size, as indicated at 2, 10
and of truncated cone form terminating in a relatively wide opening at 3.

This opening 3 is made wide to permit more ready molding and formation of the body portion, and more ready removal of any mold sections that may be required; and, the opening 3 15
is provided with an internal annular groove 4. A funnel or neck 5, also preferably of tubular truncated cone shape, has an outwardly projecting flange 6 at its flared end to fit within the 20
groove 4, and the edge around the open mouth 7 is preferably rounded and smoothed off and is of a size to receive and hold the bulb portion of a hydrometer or other testing instrument, of the usual syringe type, with the usual glass barrel and other frangible portions of the hydrometer 25
suspended centrally within the body or jug portion 1, after the manner illustrated in Fig. 3.

The body or jug portion is preferably rounded up in its middle portion on the inside of the 30
bottom to thus drain toward a lateral opening 8, formed through the wall of a recessed portion 9 of the body 1, and it is preferable that bosses or knobs 10 be provided on the bottom portion at suitable points to serve as feet or rests. These 35
bosses or knobs give increased material at the points where the greatest shock is ordinarily received by the body or jug portion when set down or dropped, and due to their rounded form and the more or less elastic and yielding nature of 40
the material, these bosses will function to reduce and absorb such shocks.

The body portion or jug 1 is preferably made with a handle 11 extending at one side of the 45
portion 2, so that as the handle is grasped the body or jug portion will be held and will suspend, by balancing of the weight, in substantially upright relation to avoid spilling the liquid through the open top at 7. It is perhaps preferable that 50
rib portions 12 be provided internally in the body portion to reinforce and strengthen the walls thereof where strain is placed by the handle 11, and at any other desired points, and it is also perhaps desirable that circumferential or peripheral ribs or beads 13 be provided on the 55

outside of the body portion 1 to further reinforce and strengthen the structure. Also, these ribs or bead portions 13, through the inherent elasticity or flexibility of the material, aid in cushioning and absorbing shocks sustained laterally by the body portion.

At one side, the portions 1 and 2 of the jug formation have a recess 14 formed to extend vertically substantially from the bottom to the top of the jug portion. The formation of this recess to extend up adjacent to the height of the bottom of the filler portion 5 requires the embodiment of an extension or boss 15 upon the portion 2 of the jug or body, and a bore is formed through this bossed or enlarged portion 15 to receive the glass gauge tube 16, which is thus disposed to lie and be protected entirely within the recess 14. A port 17 establishes connection with the lower end of the gauge tube 16, and a screw portion 18 turned into a correspondingly threaded portion of the bore 15 and holding the gauge tube in place has an air escape port 19 therein communicating with the interior of the jug portion. Suitable packing washers 20 are provided to form liquid tight connections and to cushion the ends of the glass gauge tube 16.

A connecting nipple 21 is secured in the laterally opening passage 8 to be substantially within the reentrant recess 9, and the outer rim marginal portions of this recess 9 are rounded over or rolled in form, as at 22. A battery filler hose 23 is fitted at one end on the connecting nipple 21, and this battery filler hose, which is preferably of soft rubber, may have a filler tip 24, of hard rubber, vulcanite, or other suitable material, at its outer end.

A supporting ear 25 is provided on the upper part of the jug portion, preferably above the placement of the connecting nipple 21, and this supporting ear 25 has an opening 26 there-through of sufficient size to receive and hold the free end of the battery filler hose 23, substantially after the manner illustrated in Figure 1.

As has been stated, the body or jug portion will be substantially opaque, or at least sufficiently lacking in transparency to permit the user to determine with any degree of accuracy the amount of liquid contained therein and consequently the glass gauge tube is provided to definitely, readily and accurately show the amount of liquid. Due to the fact that this tube is entirely within the recess 14 and is thus shaded, it may be necessary to provide a back card, shield, or reflector 27 within the inner side of the recess 14 back of the gauge tube 16 to permit a better view and more definite and accurate determination of the water height.

In constructing the body or jug portion, the wide opening at the upper end of the tapered portion 2 will allow ready access for molding, removing mold sections, and the like, and when the mouth or filler portion 5 is mounted in place this restricts the opening sufficiently to give a convenient filler opening and to yet give a convenient and efficient support for the bulb portion of a syringe hydrometer. In the construction of the body or jug portion, the filler portion 5 is made of rubber, or other material that can be treated to be hardened, or of any suitable material that will stand the heat required for vulcanizing or hardening the material of which the portions 1 and 2 are constructed. The body or jug part, consisting of the portions 1 and 2, is then molded or shaped, and while yet in a pliable state is fitted over the flanged end of the filler

portion 5. The entire structure is then subjected to further vulcanization or other curing, and the material then becomes firm and of more or less rigid character, at the same time being sufficiently elastic and yieldable to resist breakage and to cushion against and absorb shocks encountered in use.

With the filler portion 5 constructed to be of substantially tubular truncated cone shape, the bulb of a syringe hydrometer will be conveniently and sufficiently supported thereby, as illustrated in Fig. 3, and yet if the hydrometer be twisted or moved to dispose its long axis diagonally, when being inserted in the jug or removed therefrom, the tapered flared formation of the part 5 will guard against contact with the glass barrel or other frangible portion of the syringe hydrometer to avoid breakage of or damage to the same. Further, this widened flared form lends to more ready placement and removal of the hydrometer.

Due to the fact that the glass gauge tube 16 is entirely within the recess 14, this tube is substantially housed and protected against contact with surfaces or objects that might cause breakage of the tube, and at the same time the tube is protected against contact with greasy or dirty objects that would cause smudging of the glass and obscuring of a proper and expeditious reading of the liquid height.

As the reentrant recess 9 has its outer edge rolled or rounded over as at 22, no sharp edge or corner is presented against the battery filler hose 23, and in consequence the hose will not be chafed, cut, or otherwise injured in use; nor, will the hose break or kink against the contacting portion of the jug structure.

My improved battery filler can be readily grasped and conveniently held through the handle 11, and when so held the battery filler hose 23 is presented in convenient position for insertion within the filler opening of a battery or cell. The filler hose 23, being of soft rubber, can be pinched between the thumb and fingers to prevent the passage of water therethrough and the end of the hose can then be inserted in the battery filling opening without danger of leakage or spilling water upon the top of the battery. When the proper amount of water has been filled into the battery cell, the hose is again pinched to cut off the flow, and when the hose end has been raised above the liquid level and inserted through the opening 26, there is no possibility of water being spilled through or leaking from the filler hose.

While I have herein referred to this invention as a battery filler, and have described its construction and use only for this purpose and for dispensing distilled water, it will be appreciated that this invention can be used for substantially any and all liquids and to dispense such liquids wherever desired. Further, it will be appreciated that changes and variations can be made in the form, construction, arrangement and assembly of the parts without departing from the spirit and scope of my invention.

I claim:

1. A battery filler comprising, a jug portion of not readily frangible material such as vulcanite recessed on one side adjacent to its bottom with the rim around the recess rounded and having a passage communicating with the recess, and a flexible compressible battery filler hose connected with the passage and the connecting end being housed within the recess ad-

5 facent the point of connection to thus be protected against kinking and chafing.

2. A battery filler comprising, a handled jug portion of not readily frangible material such as molded vulcanite having a recess at one side near the bottom thereof and provided with a passage communicating with the recess, said jug portion having the surface thereof of rounded and rolled form around said recess, a connecting nipple mounted in communication with said passage to be within the recess, and flexible compressible battery filler hose coupled with said connecting nipple to thus be protected against kinking at the point of connection and be protected against chafing by the rolled formation at the edge of the recess.

3. A battery filler comprising, a handled jug portion of not readily frangible material such as molded vulcanite having a recess at one side near the bottom thereof and provided with a passage communicating with the recess, said jug portion having the surface thereof of rounded and rolled form around said recess, a communicating nipple mounted in communication with said passage to be within the recess, a flexible compressible battery filler hose coupled with said connecting nipple to thus be protected against kinking at the point of connection and be protected against chafing by the rolled formation at the edge of the recess, said portion having a second recess formed in the side thereof to extend substantially vertically and of elongated form to reach substantially from the bottom of the jug portion to a point at least the normal maximum liquid level, said recess being deeply indented and having passages communicating with its upper and lower portions, and a transparent gauge tube mounted in said recess in communication with the passages to thus be readily viewed to determine the water level within the jug portion and to yet be protected by the outer contour lines of the jug portion against contact with surfaces and objects that might cause fracture of the tube.

4. A battery filler comprising, a jug portion to receive and contain liquid to be dispensed and filled into a battery, a handle by which said jug is held and carried, a battery filler hose connected with said jug portion adjacent the bottom thereof, and a filler neck of substantially truncated-cone shaped tubular form at the top of the jug portion sufficiently restricted at its opening to loosely receive an ordinary syringe hydrometer to support the same from the bulb portion and through the flare on its inner wall to positively preclude the possibility of breaking

contact with ordinarily frangible barrel portions of the hydrometer when the hydrometer is being fitted in place and removed and when the jug is transported with the hydrometer suspended therein.

5. A battery filler comprising, a jug portion having a recess at one side near the bottom thereof and provided with a passage communicating with the recess, said jug portion having the surface thereof rounded over around said recess, and a flexible compressible battery filler hose connected with said opening and extending from the recess.

6. A battery filler adapted for use to contain and support a hydrometer having a frangible barrel with a suction bulb at one end and a non-frangible tip at the other end comprising, a body portion widened out in its middle part as a liquid container and restricted at its top to provide a substantially truncated cone-shaped tubular filler neck having the opening thereof sufficiently large to freely pass the tip and frangible barrel of the hydrometer and to engage the bulb of the hydrometer to support said hydrometer to depend from the bulb portion within the widened part of the body, said truncated cone-shaped tubular portion being flared at an angle sufficiently wide to prevent contact of the frangible barrel portion of the hydrometer as said hydrometer swings in its suspended relation and joining the side wall of the body part of the liquid container portion at a point to present said side wall to engage the non-frangible nozzle portion to positively hold the frangible barrel from contact with any part of the battery filler structure.

7. A battery filler comprising, a jug portion of not readily frangible molded material having a deep elongated recess molded into and extending substantially vertically on the outside at one side of said jug portion and having passages communicating from the jug portion at the upper and lower ends of said recess, said molded jug portion being provided with an opening substantially longitudinally aligned with the recess, a transparent gauge tube inserted endwise through said opening to be disposed and protected within the recess and to have its ends in communication with the upper and lower passages into the body of the jug, and means secured in said opening engaging the gauge tube to hold the same in liquid-tight fitting within the recess and in communication with the upper and lower passages.

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