(No Model.)

G. R. BABBITT.

BARREL FILLER.

No. 517,136. Patented Mar. 27, 1894.

Fig. 1.

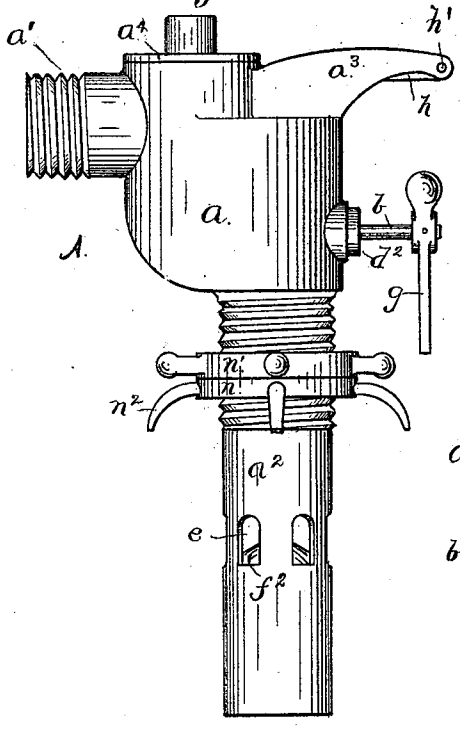


Fig. 3.

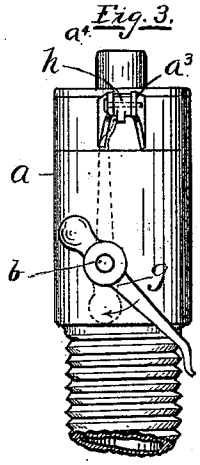


Fig. 2.

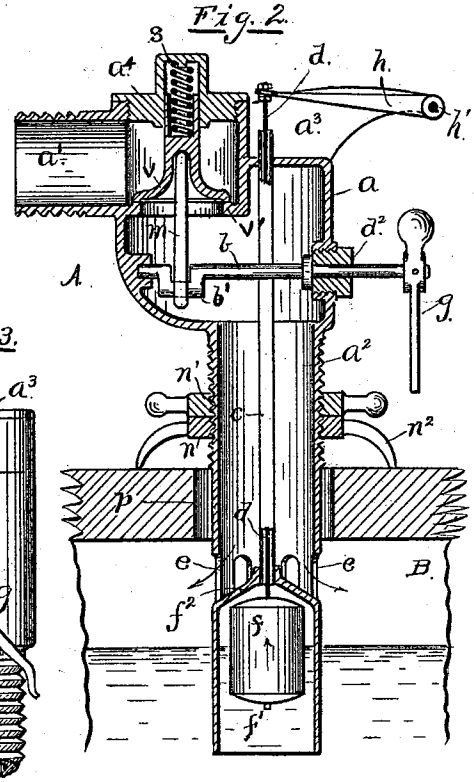


Fig. 5.

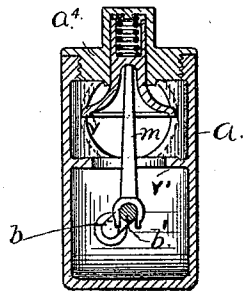
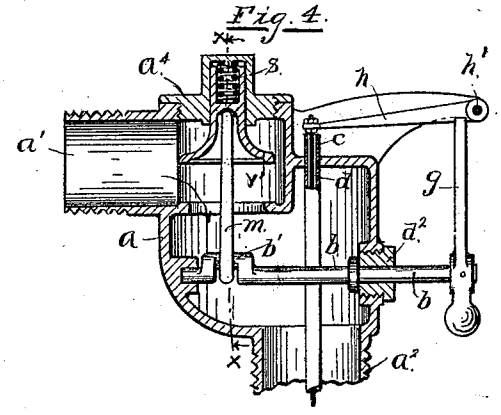


Fig. 4.



Witnesses

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GEORGE R. BABBITT, OF PROVIDENCE, RHODE ISLAND.

BARREL-FILLER.

SPECIFICATION forming part of Letters Patent No. 517,136, dated March 27, 1894.

Application filed September 4, 1893. Serial No. 484,747. (No model.)

To all whom it may concern:

Be it known that I, GEORGE R. BABBITT, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Barrel-Fillers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The device forming the subject of my present invention relates to improvements in barrel fillers, so-called, provided with automatically closing valves; and it consists essentially in the novel construction and arrangement of the valve-actuating mechanism combined with a protected float, &c., all as will be more fully hereinafter set forth and claimed.

Hitherto, in barrel-fillers of the class referred to it has been usual to employ a comparatively small float working in a chamber formed at one side of the interior of the charging pipe. Moreover, the valves controlled by said float were closed by the pressure of springs. There are objections to such former devices; for example, the float is not sufficiently sensitive in its action owing to its small area, thereby requiring considerable vertical movement to trip the valve. The float chamber is easily clogged, thus rendering the device inoperative for the time being. It cannot be used for comparatively slow-flowing materials, such as heavy oils, coal tar, molasses, &c. Since the float-controlled valve is closed by means of a spring its action is uncertain, as it is well-known that springs are liable to become inoperative at any time.

The object I have in view is to provide a barrel-filler devoid of the objections before referred to. In my improved device the passage way for the flow of the liquid is practically free and unobstructed throughout, a full area being maintained at all points; the float is comparatively large in area, a short vertical movement being sufficient to trip the valve; the float and its rod or stem are completely protected from the action of the flowing liquid; the valve is so located with respect to the tripping or releasing mechanism that its own weight and leverage operate to quickly close it whenever the tripping arm is freed, and finally the device as a whole may be readily adjusted so as to fill the barrel or vessel to any pre-determined height.

In the accompanying sheet of drawings, Figure 1 represents a side elevation of my improved barrel-filler in its normal position. Fig. 2 is a vertical sectional view taken through the center, showing the apparatus as in use, the valve having just been tripped and the supply cut off through the medium of the elevated float. Fig. 3 is a partial end or side elevation, viewed from the right of Fig. 1. Fig. 4 is a partial sectional view, showing the position of the valve, &c., while the liquid is passing through it, as in use, and Fig. 5 is a transverse sectional view, taken on line x x of Fig. 4.

My improved barrel-filler, as a whole, is indicated in the drawings by A. The casing or body portion a is provided with an inlet nozzle a' adapted to be screwed to piping communicating with the supply tank or reservoir in any well known manner. The charging or outlet nozzle a^2 is arranged at substantially right angles with the nozzle a', its lower end being open and forming the float chamber f'. Within the said chamber is mounted a central float f secured to a small stem or rod d extending upwardly through the casing, its upper end being attached to the float lever h fulcrumed at h' to and between brackets a^3 integral with the casing. The float is protected from the action of the flowing material or liquid by means of the fixed cone-shaped partition f^2 located at the top of the float-chamber. The walls of the outlet nozzle or tube are provided with peripheral openings e having a combined area equal to or exceeding that of the inlet nozzle; these openings it will be seen are located just above the top of the float chamber.

In order to guard the float-rod from injury, &c., I provide the apparatus with a tube c which is fixed to the partition f^2 and passes through the top of the casing; the rod is adapted to play freely within this tube, the latter at the same time forming a vent to the

chamber. As drawn, the upper end of the tube *c* forms a stop for the float lever to arrest the latter in its downward movement.

A drop-valve *v* is mounted within the casing chamber, its seat *v'* being located at the base of the inlet nozzle. A cap a^4 is screwed into the top of the casing and is bored out to receive the upper portion of the valve; a light spring *s* being interposed between the valve and cap.

The valve-tripping device includes the horizontal shaft *b* mounted in the upper portion of the casing; said shaft being located at one side of the center of the valve and tube *c*. The shaft is bent to form a crank *b'*, adapted to receive the lower or forked end of the connection *m;* the upper end being inserted into and supporting the valve. The shaft extends outwardly through a plug d^2 screwed into the side of the casing and carries at its free end a tripping-arm or lever *g*, an end of the latter being adapted to contact with the float-lever *h*. As thus arranged, see Figs. 4 and 5, it will be seen that when the valve is lifted or open the leverage is such that it acts to automatically drop or close the valve upon tripping the arm *g*, since there are no "dead centers."

In filling barrels with oil, &c., it is usual to leave more or less of an air space or chamber in order to allow the fluid to expand, the volume of such space being determined by the nature of the material filling the barrel, at the same time taking into consideration the section of country to which it is to be shipped. In order to so adapt the apparatus that it may be adjusted to the varying conditions just referred to I provide the charging tube a^2 with a screw-thread on which are mounted a nut *n* and check-nut *n';* the nut *n* having a series of downwardly bent lugs n^2 arranged to rest upon the barrel and support the filler. It is obvious that the air space is controlled by changing the relation of the float to the nuts.

From the foregoing description it will be apparent that upon introducing the float-end of the previously adjusted filler into the barrel B, say through the bung-hole *p*, Fig. 2, connecting the nozzle *a'* with the supply system and finally opening the valve *v*, the arm *g* then resting against the lever *h*, the liquid will flow freely past the valve and be discharged through the several openings *e*. The flowing liquid does not touch the float in its passage, but as the filling operation nears completion the rising liquid enters the float chamber and gradually lifts the float, thereby at the same time elevating the lever *h* from the position shown in Fig. 4 until it rises past the end of the arm *g*, at which instant the weight of the valve, &c., automatically rotates the shaft *b* and closes the valve, thus shutting off the supply to the barrel. Fig. 2 shows the corresponding relation of the several parts. The filler is next withdrawn from the barrel and another barrel substituted; the operation of filling being repeated upon again placing the filler in position and lifting the valve.

By means of my improvement the float is fully protected; it has a comparatively large area, and it is very sensitive in action, owing to the fact that it cannot become clogged because there are no small ducts or passages communicating with the charging tube. The flow of the liquid into the barrel may be fast or slow, the action of the float being unaffected. The tube *c* forms a vent for the float chamber, is unobstructed throughout and permits a free movement of the float rod therein.

I claim as my invention—

In a barrel-filler, the combination with the discharge or outlet tube a^2 having its lower portion provided interiorly with a partition extending entirely across the tube to form a float-chamber beneath and having the walls of the tube above said partition perforated for the free passage of the liquid being barreled, of an inlet nozzle arranged to communicate with a reservoir or source of supply, a fixed guide-tube *c* extending upwardly from the float-chamber and through the casing of the filler, a self-closing inlet valve, a suspended float located in said float-chamber and practically non-movable laterally, and tripping mechanism connected with said valve and float, whereby the latter in moving upwardly releases the tripping mechanism automatically, substantially as hereinbefore described.

In testimony whereof I have affixed my signature in presence of two witnesses.

GEORGE R. BABBITT.

Witnesses:
GEO. H. REMINGTON,
IDA M. WARREN.