

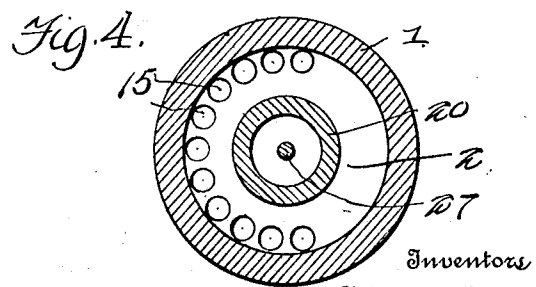
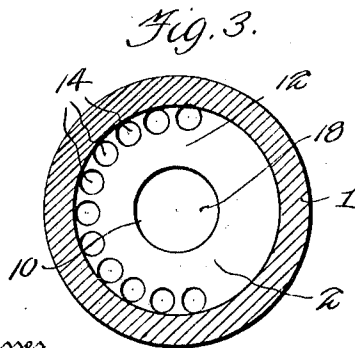
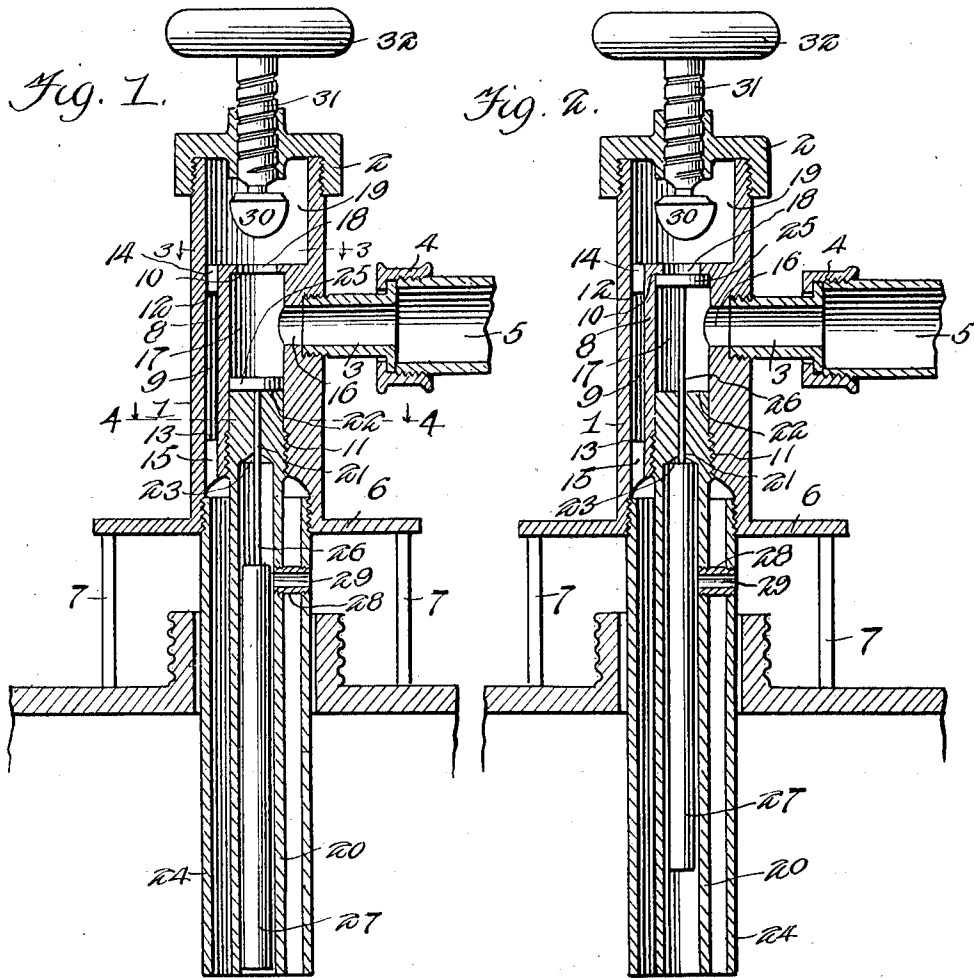
L. S. BRADLEY & W. H. SHATTUCK.

FILLING NOZZLE.

APPLICATION FILED JULY 25, 1911.

1,054,500.

Patented Feb. 25, 1913.



Witnesses

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FILLING-NOZZLE.

1,054,500.

Specification of Letters Patent.

Patented Feb. 25, 1913.

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To all whom it may concern:

Be it known that we, LEONARD S. BRADLEY and WILMER H. SHATTUCK, citizens of the United States, residing at White River Junction, in the county of Windsor and State of Vermont, have invented new and useful Improvements in Filling-Nozzles, of which the following is a specification.

This invention relates to a filling nozzle, contemplating the provision of a nozzle for filling containers with fluid from a source of supply, the main object of the invention being to provide a device of this character which will automatically cut off the flow of the liquid to the container when the latter is filled to a predetermined level.

A further object of the invention is to provide a filling nozzle which may be attached to a supply pipe or transportable supply vessel for convenience in filling containers at different points or at greater or less intervals, and which embodies a float controlled cut off valve and means for holding the same closed, to prevent flow of liquid from the source of supply when the nozzle is not in use or is being transported from place to place.

A still further object of the invention is to provide a filling nozzle of the type described which may be employed for filling the gasoline tanks of automobiles and for other similar purposes, and which is simple of construction, comparatively inexpensive of production and adapted to afford convenience in filling containers of any desired type and cutting off the flow when the container is completely filled or filled to the desired degree, thus preventing overflow and waste of the liquid.

The invention consists of the features of construction, combination and arrangement of parts, hereinafter described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a vertical longitudinal section through the device showing the parts in position for the supply of liquid to the container. Fig. 2 is a similar view showing the cut off valve closed to cut off the flow of liquid to the container. Figs. 3 and 4 are horizontal transverse sections on the lines 3—3 and 4—4 of Fig. 1.

Referring now more particularly to the

drawing, our improved filling nozzle comprises an outer shell or casing 1 closed at its upper end by a screw cap 2 and provided at one side with an inlet tube 3 carrying a suitable coupling device 4 for attaching it to a tube or pipe 5 leading from the source of liquid supply. The casing 1 is provided at its lower end with a flange 6 which may be provided with arms or projections 7 to bear against the wall of the container, whereby the device may be properly held and centered in position while the container is being filled. Arranged concentrically within the casing is a partition tube 8, spaced from said casing to provide a feed passage 9 for the flow of the liquid to the container. This tube is formed to provide an upper valve seat 10 and lower shoulder 11 and is connected at its upper and lower ends with the casing by annular flanges or heads 12 and 13, respectively provided with series of ports or perforations 14 and 15. The tube 8 communicates with the inlet 3 below the valve seat 10 through a duct 16, at which point of communication said tube 8 is formed to provide a valve chamber 17, which is in communication through a passage 18 with a space or chamber 19 at the top of the casing, which space or chamber in turn communicates with the upper end of the feed passage 9 through the upper series of ports or perforations 14. The liquid entering the nozzle through the inlet 3 must therefore flow through the valve chamber before entering the passage 9, the liquid passing from said chamber through the passage 18 into the space 19 and thence through the perforations 14 to said passage 9.

The tube 8 is internally threaded above the head 13, which is arranged above the lower end of the casing, to receive the upper externally threaded end of a guide tube 20 provided at its upper end with a restricted guide passage 21 and upper and lower stop surfaces 22 and 23. The guide tube 20 extends at its lower end below the bottom of the casing and is arranged concentrically within a conducting tube 24 threaded into the lower end of the casing so that the space between said tubes will form a continuation of the feed passage 9, the projecting ends of the tubes conjointly providing a discharge outlet to extend down through

the inlet opening of the container which is to be filled. As shown, the upper end of the guide tube is formed to fit snugly against the shoulder 11 to provide an air and liquid tight connection.

5 A valve 25 is provided for movement within the chamber 17 to close against the seat 10 and control the passage 18. This valve is mounted upon the upper end of a stem 26 movable through the guide passage 10 21 and carrying at its lower end a float 27, movable within the guide tube 20. The valve and float are adapted to drop by gravity to normally maintain the valve in open position, in which it rests against the surface 15 22, and at the limit of its upward movement, in which the valve 25 engages the seat 10 and closes the passage 18, the float is adapted to engage the seat 23, to close the guide passage 21 against the entrance of 20 liquid from the inlet 3 and valve chamber 17 to the guide tube. The guide tube 20 and conducting tube 24 are provided with registering threaded openings receiving a plug 25 28 having a passage 29 for the vent of air from the container when the nozzle is in use, the float being of less diameter than the guide tube to form an intervening passage for the flow of the air, as will be readily understood. A valve 30 is provided to close 30 the passage 18 to cut off the flow of liquid from the source of supply when the nozzle is not in use, at which time the valve 25 will rest against the seat 22 and prevent leakage 35 of the liquid through the guide tube. This valve 30 is carried by a stem 31 extending through and having a threaded engagement with the cap 2 and provided with a hand wheel or other suitable operating device 32. 40 In operation, the discharge outlet of the nozzle is inserted within the inlet opening of the container to be filled and the valve 30 opened for the supply of liquid, which passes through the passage 18, chamber 19, 45 ports 14, passage 9, ports 15 and the final discharge passage to the container, the float being raised by the liquid in the container when such liquid reaches the prescribed level to automatically close the valve 25 50 against the seat 10, thus cutting off the feed of liquid and indicating that the container has been filled. The valve 30 may then be closed and the nozzle removed from the container until its use is again desired, when 55 the valve 30 is opened preliminary to the filling operation, as will be readily understood.

The invention will be found of manifold advantages and conveniences in filling the 60 gasoline tanks of automobiles and other containers which are to be rapidly filled and in which no means are provided for indicating when the tank or container is filled to the desired degree, the invention thus serving to 65 effectually prevent overflow of the liquid

upon the tank and floor or street surface and the consequent waste of liquid and other objections incident thereto. As the construction is simple, the nozzle may be manufactured and sold at a comparatively low cost, 70 enabling it to be employed for general use by large and small dealers and others requiring the use of a device of this character.

Having thus described the invention, what we claim as new is:

75 1. A device of the character described comprising a casing, a partition arranged within the casing and forming a feed channel communicating through ports with the upper portion of the casing above the partition, said partition having a valve chamber 80 provided with an inlet and a passage connecting said chamber with the upper portion of the casing, a guide tube provided with a stop surface at the lower end of the valve chamber and a second stop surface below the first named stop surface, a float in 85 the guide tube, and a valve connected with the float and movable in the valve chamber to control said passage, said valve normally resting against the first-named stop surface and said float adapted to engage the second-named stop surface at the limit of its upward movement. 90

2. A device of the character described 95 comprising a casing having a flow chamber at the top thereof and an inlet below said flow chamber, a partition arranged within the casing to form an intervening feed channel, said channel communicating at its upper 100 end with the flow chamber and at its lower end with the casing, and said partition being provided with a valve chamber communicating with the inlet and also communicating with the flow chamber through 105 an interconnecting passage, a guide tube connected with the lower end of the partition and having a constricted passage at its upper end provided with upper and lower stop surfaces, a float in said guide tube 110 adapted to close against said lower stop surface, a valve in the valve chamber connected with the float and movable between the upper stop surface and said interconnecting passage, and a conducting tube connected 115 with the casing and surrounding the guide tube to form a continuation of the feed channel.

3. A device of the character described 120 comprising a casing having a flow chamber at the top thereof and an inlet below said flow chamber, a partition tube arranged within the casing to form an intervening feed channel, said channel communicating at its upper end with the flow chamber and 125 at its lower end with the casing, and said tube being provided with a valve chamber communicating with the inlet and also communicating with the flow chamber through an interconnecting passage, a guide tube 130

connected with the lower end of the partition tube and having a constricted passage at its upper end provided with upper and lower stop surfaces, a float in said tube
5 adapted to close against the lower stop surface, a valve in the valve chamber connected with the float and movable between the upper stop surface and said interconnecting passage, and a conducting tube connected
10 with the casing and surrounding the guide

tube to form a continuation of the feed channel.

In testimony whereof we affix our signatures in presence of two witnesses.

LEONARD S. BRADLEY.
WILMER H. SHATTUCK.

Witnesses:

ETHEL MAE PIPER,
ALICE H. BRADLEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
