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W. A. KYSOR

1,990,386

NOZZLE

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Fig. 1

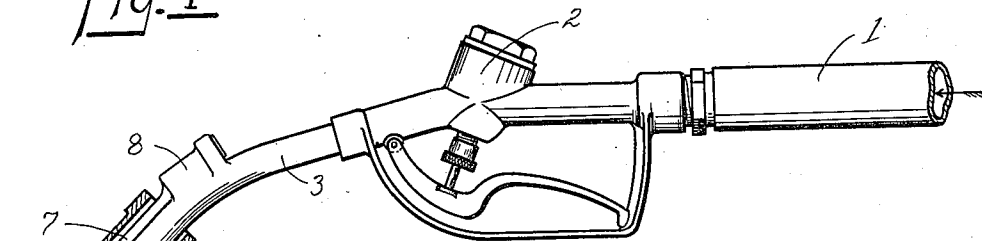


Fig. 3

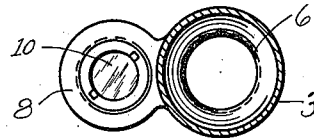
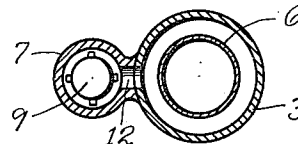


Fig. 4

Fig. 2

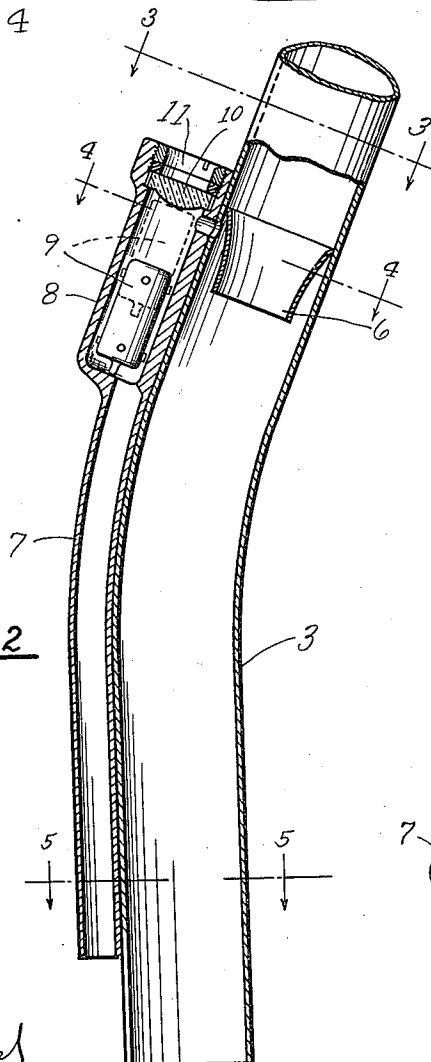
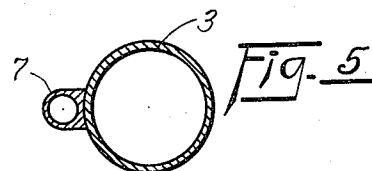


Fig. 5

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UNITED STATES PATENT OFFICE

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NOZZLE

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3 Claims. (Cl. 226—66)

The present invention relates to nozzles and more particularly to nozzles connected to conduits communicating with gasoline pumps or reservoirs of filling stations.

5 The main objects of the invention are to provide a nozzle having means associated therewith for determining when a tank is substantially full while being filled; to provide such a nozzle having visible means for determining when a tank 10 being filled is substantially full; to provide such a nozzle particularly adapted for use in conjunction with the conduit connected to a gasoline pump or reservoir of a filling station and having means associated with the nozzle whereby 15 the gasoline filling station attendant may be visibly informed when the gasoline tank of a motor car being filled is substantially full; and, to provide such a device which is economical to manufacture, rugged and sturdy in construction 20 and convenient and reasonably accurate in use.

An illustrative embodiment of the invention is shown in the accompanying drawing, wherein:

Figure 1 is a side elevational view of the nozzle and its valved conduit showing the manner 25 in which it is used in instances wherein it is desired to fill a tank substantially full;

Figure 2 is an enlarged view of the nozzle per se, partly in section;

Figure 3 is a sectional view thereof on line 3—3 of Figure 2;

Figure 4 is a sectional view on line 4—4 of Figure 2; and

Figure 5 is a sectional view on line 5—5 of Figure 2.

35 Referring to the drawing in which like parts are designated by the same numerals in the several views, a conduit 1 communicating with a liquid reservoir or other source of liquid supply such as a gasoline pump, not shown, of a filling station, is here shown as connected at its other 40 end to a conventional type handle operated valve structure 2 controlling the flow of the liquid from the reservoir or pump through the valve to the nozzle 3.

45 This nozzle as shown in Figure 1 is inserted into the neck 4 of a suitable container 5, such as the gasoline tank of a motor vehicle and as is well known to motor car owners and filling station attendants, the tank of the automobile 50 frequently fills and runs over, the gasoline spilling on the tank, wasting and injuring the finish of the car. To avoid the difficulty above commented upon, the invention now to be described provides means for visibly informing the filling 55

station attendant when the tank being filled, is substantially full.

The nozzle 3 is provided with an injector tube 6 here shown as substantially medial of its length, and a tubular member 7 is associated and preferably secured in parallelism therewith in any suitable manner as by soldering, welding or the like. This associated tubular member for the greater part of its length from its orifice is substantially smaller in cross sectional internal diameter than is the internal cross sectional diameter of the nozzle and the upper end 8 of the tubular member is preferably enlarged in cross sectional area to house the float 9 visible to the filling station attendant through the magnifying 15 glass 10 within the sight opening 11 when the float rises as hereinafter described. A port 12 communicating the upper end of the tubular member with the nozzle adjacent the injector tube and the suction chamber formed thereby is 20 likewise provided.

In operation, the nozzle is placed in the neck of the tank to be filled and extended therein somewhat below the top inside surface of the tank as shown in Figure 1. As the gasoline or other 25 liquid flows into the tank, a suction through the port is created by the suction chamber adjacent the injector tube. The float however because of its weight remains in the position shown in full lines in Figure 2 until the gasoline in the tank reaches the liquid level indicated by the dotted lines in Figure 1 when the suction through the port lifts the liquid level in the tubular member to raise the float to the position indicated in dotted lines in Figure 2. When the float thus 35 rises, it becomes visible to the attendant who is thus visibly informed that the tank is substantially full.

It will thus be seen that the device herein shown and described is convenient and reasonably accurate for its intended use, is economical to manufacture, and is rugged and sturdy in construction. 40

While but one specific embodiment of this invention has been herein shown and described, 45 it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention as defined by the following claims.

I claim:

50 1. In a device of the class described, a nozzle having an injector tube therein forming a suction chamber within the nozzle adjacent the injector tube, a tubular member of smaller diameter than said nozzle associated therewith and having 55

a port communicating with the nozzle adjacent the suction chamber, and a float within said tubular member.

2. In a device of the class described, a nozzle having an injector tube therein forming a suction chamber within the nozzle adjacent the injector tube, a tubular member of shorter length than said nozzle associated and in parallelism with said nozzle and having a port communicating with said nozzle adjacent the suction chamber, and a float within said tubular member.

3. In a device of the class described, a nozzle having an injector tube therein forming a suction chamber within the nozzle adjacent the injector tube, a tubular member of smaller diameter than said nozzle having an enlarged portion therein associated with said nozzle and having a port communicating with the nozzle adjacent the suction chamber, and a float within the enlarged portion of said tubular member.

4. In a device of the class described, a nozzle having an injector tube therein forming a suction chamber within the nozzle adjacent the injector tube, a tubular member of shorter length and of less diameter than said nozzle associated with said nozzle and having a port communicating with the nozzle adjacent the suction chamber, and a float within said tubular member.

5. In a device of the class described, a nozzle having an injector tube therein forming a suction chamber within the nozzle adjacent the injector tube, a tubular member of shorter length and of

less diameter than said nozzle having an enlarged portion, said tubular member being disposed in parallelism with said nozzle and having a port communicating with the nozzle adjacent the suction chamber, and a float with the enlarged portion of the tubular member.

6. In a device of the class described, a nozzle having an injector tube therein forming a suction chamber within the nozzle adjacent the injector tube, a tubular member associated with said nozzle and having a port communicating with the nozzle adjacent the suction chamber, a float within said tubular member, and a sight opening in the tubular member for visibly observing said float.

7. In a device of the class described, a nozzle having an injector tube therein forming a suction chamber within the nozzle adjacent the injector tube, a tubular member associated with said nozzle and having a port communicating with the nozzle adjacent the suction chamber, a float within said tubular member, and a sight opening in the tubular member provided with a magnifying glass for visibly observing said float.

8. In a device of the class described, a nozzle having an injector tube therein forming a suction chamber within the nozzle adjacent the injector tube, a tubular member associated with said nozzle and having a port communicating with the nozzle adjacent the suction chamber, and a visible float within said tubular member.

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