Oct. 2, 1928. 1,685,880

N. H. LOPOSER

LIQUID DISPENSING DEVICE

Filed March 19, 1927

Fig. 1.

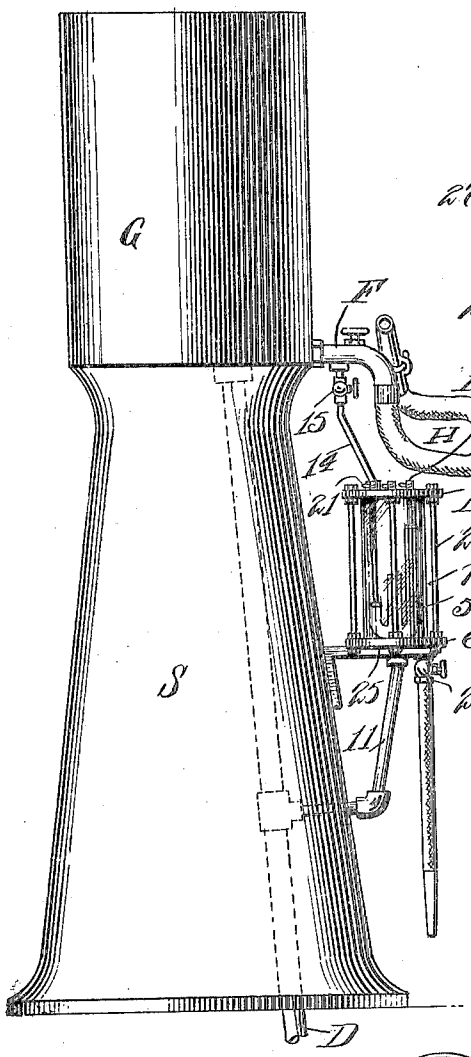


Fig. 2.

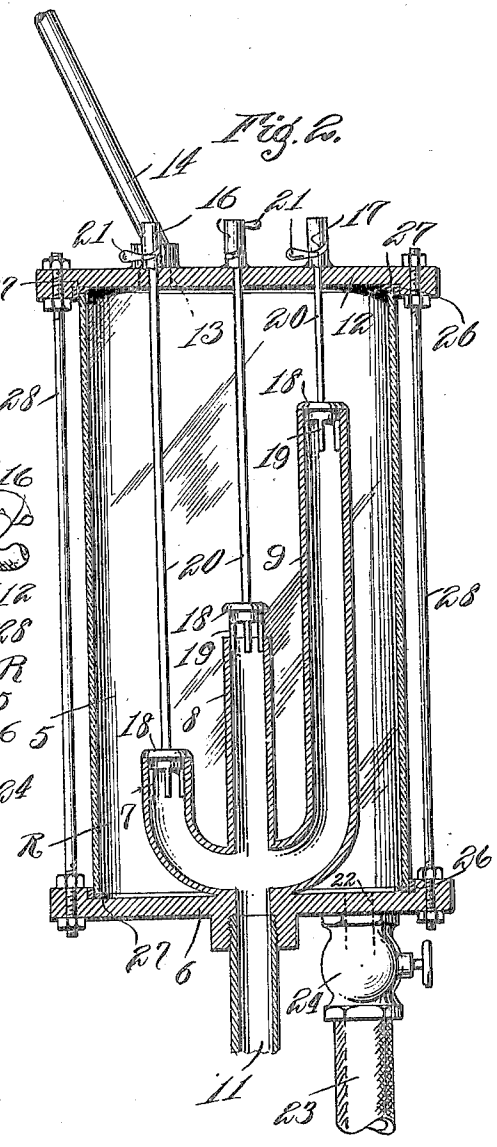
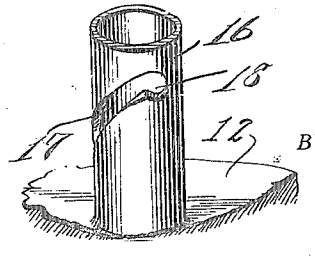


Fig. 3.



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UNITED STATES PATENT OFFICE.

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LIQUID-DISPENSING DEVICE.

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This invention relates to dispensing devices, and especially to an attachment or auxiliary adjunct of an ordinary filling station tank from which gasoline is dispensed in gallons and multiples of gallons. At such filling stations, no provision is usually made for dispensing gasoline in fractions of a gallon, and the public is inconvenienced by this fact, especially because small quantities of gasoline are needed for various uses by housewives and others, and because it is dangerous, and sometimes unlawful, for gasoline to be kept in apartment houses and residences of cities and towns. Therefore, a main object of this invention is to provide a perfectly safe, convenient and practical means of dispensing fractional parts of a gallon of gasoline from filling stations primarily intended to dispense only gallons and multiples of gallons.

Another object is to provide a device of this character which is applicable and attachable to various forms of filling stands and tanks without affecting the utility thereof with respect to dispensing gallons and multiples of gallons.

Another object is to provide a device of this character which is formed of comparatively few and simple parts, so it can be manufactured at a comparatively low cost.

Other objects and important features are pointed out or implied in the following details of description, in connection with the accompanying drawings in which:

Figure 1 is a view in side elevation showing a conventional form of filling stand and tank having my invention applied thereto.

Fig. 2 is an enlarged central vertical sectional view of the measuring device from which fractions of a gallon are dispensed.

Fig. 3 is an enlarged detail view of one of the valve-controlling members such as shown on top of the measuring device in Fig. 2.

Referring to these drawings in detail in which similar reference characters correspond to similar parts in the several views, and in which the gallon-dispensing tank G and its supporting stand or base S, and dispensing hose H are shown to illustrate the application and an attachment of the auxiliary dispensing device; the latter will now be described as follows:

A measuring receptacle is indicated at R, as a whole, and is preferably formed as shown in Figure 2, having its bottom and top parts formed of cast iron or other metal, while its vertical wall is preferably a hollow glass cylinder such as indicated at 5. The bottom casting includes a disk 6 which forms the bottom of the receptacle, and three tubular uprights or measuring tubes 7, 8 and 9 which extend to different levels within the measuring receptacle. The lower ends of these measuring tubes are in open communication with one another and with an internally threaded outlet or opening 10 which is in threaded engagement with a discharge pipe or drain pipe 11. The lower end of this pipe 11 is in open communication with the drain pipe D of the tank G, for a purpose which will presently appear.

The upper casting includes a disk 12 provided with an inlet opening which is indicated in dotted lines at 13, and an inlet pipe 14 connects with the dispensing faucets F (of the dispensing tank G) through the medium of a manually operable valve 15. The disk 12 is provided with tubular bosses 16 which are formed with cam-slots 17, each of these cam-slots having a retaining notch 18 therein (see Figure 3), and these bosses 16 may be either formed integrally with the top 12, or secured thereto by any appropriate means. Valves 18 are provided to close the upper ends of the measuring tubes 7, 8 and 9, these valves being of any appropriate form, but preferably provided with guiding fingers or members 19 which insure the proper seating of the valves when closed, and permit gasoline to pass between them and into the measuring tubes when the valves are open. For opening these valves, valve-rods 20 are provided, and the upper end of each rod is provided with a handle 21 extending laterally and horizontally from the tops of the respective rods 20. These handles 21 are designed to slide in the respective cam-slots 17, and to rest in the respective notches or seats 18. It will be seen that these seats 18 cooperate with the handles 21 and rods 20 for holding the valves open, but the cam-slots 17 effect the opening of the valves when the respective handles 21 are turned therein toward the notches 18. For closing any one of the valves, its handle 21 is moved out of the contiguous notch 18, and released, whereupon the valve gravitates to its closed position.

The lower disk has an opening or outlet 22 with which a dispensing tube 23 is in open communication through a manually operable valve 24, and this provides a dispensing conduit or outlet through which fractional

parts of a gallon are dispensed into suitable receptacles (not shown) provided by the customers.

A bracket or shelf 25 is preferably secured on the dispensing stand S, and apertured to permit the drain pipe 11 and dispensing tube 23 to extend therethrough, these cooperating with the inlet or supply pipe 14 for securing the receptacle R in a fixed or stationary position.

The upper and lower discs are provided with annular shoulders 26 against which are seated suitable gaskets 27 to form seats for the upper and lower ends of the hollow glass cylinder 5 and make the receptacle leak-proof or liquid-tight and at the same time cushion the ends of the cylinder 5 so as to avoid breaking it when the securing rods 28 are tightened by the nuts that are provided thereon and which cooperate therewith to hold the parts 5, 6 and 12 together as an integral unit.

The operation will be more clearly and easily understood by first having an explanation of the reason for varying heights of the measuring tubes 7, 8 and 9, and that is, that the height of the highest measuring tube corresponds to the level of one gallon of gasoline or liquid in the receptacle R, the next or middle tube 8 corresponds to the level of two quarts in the receptacle, and the height of the lowest tube 7 corresponds to the level of one quart in the receptacle R. However, it is to be understood that these drawings do not purport to show the respective heights of the tube for accurate measuring, but such heights will depend on other dimensions when the device is manufactured for use.

In operating the device, assuming that two quarts of gasoline are wanted, the receptacle R is filled or partly filled to a level above the top of the tube 8. The valve 15 is then closed, and the middle valve 18 is opened, so the excess of gasoline flows through the pipes or tubes 8 and 11, thence back into the drain tube D, and thence into the usual supply tank which is not herein shown; then the valve 24 is opened, and the desired two quarts of gasoline pass out through the dispensing conduit 23 into the receptacle provided therefor. It will be seen that the same operation should be pursued in case a quart is desired, except in this case the valve 18 of the measuring tube 7 is opened. Obviously, the heights of the tubes 7, 8 and 9 may be made for arbitrary fractions of a gallon or quantities of liquid expressed according to the selling price, for instance, five cents' worth, ten cents' worth, twenty cents' worth, etc.

Although I have described this form of my invention quite specifically, it is to be understood that I have no intention of limiting my patent protection to these exact and specific details of construction and arrangement, but I may make appropriate or desirable changes within the scope of the inventive ideas as implied and claimed.

What I claim as my invention is:

1. In a liquid dispensing device, the combination of a dispensing receptacle including an inlet and a dispensing outlet and an overflow outlet, a plurality of measuring tubes communicating with the overflow outlet and extending to different levels in the receptacle and having valve seats at their respective upper extremities, the top of said receptacle having openings vertically alined with the respective measuring tubes and a plurality of valve units each including a handle and a stem and a valve closing element, these valve closing elements being normally seated on the upper extremities of the respective measuring tubes while the respective stems extend through the respective openings which are alined with the respective measuring tubes, the respective handles being operable to raise the respective valve elements from the respective measuring tubes and thereby permit a surplus of the liquid to escape through one or another of the measuring tubes, means to engage with the respective handles and thereby hold the respective valves in raised position, and a valve operable to open and close said dispensing outlet and thereby dispense the liquid remaining in the receptacle after the surplus has escaped through one of the measuring tubes.

2. The structure defined by claim 1, and cams on the top of said receptacle and cooperative with the respective handles for raising the respective valves from the respective measuring tubes.

In testimony whereof I affix my signature.

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