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2,776,849

SEMI-AUTOMATIC DISPENSING VALVE

Filed Dec. 23, 1954

2 Sheets-Sheet 1

Fig-1.

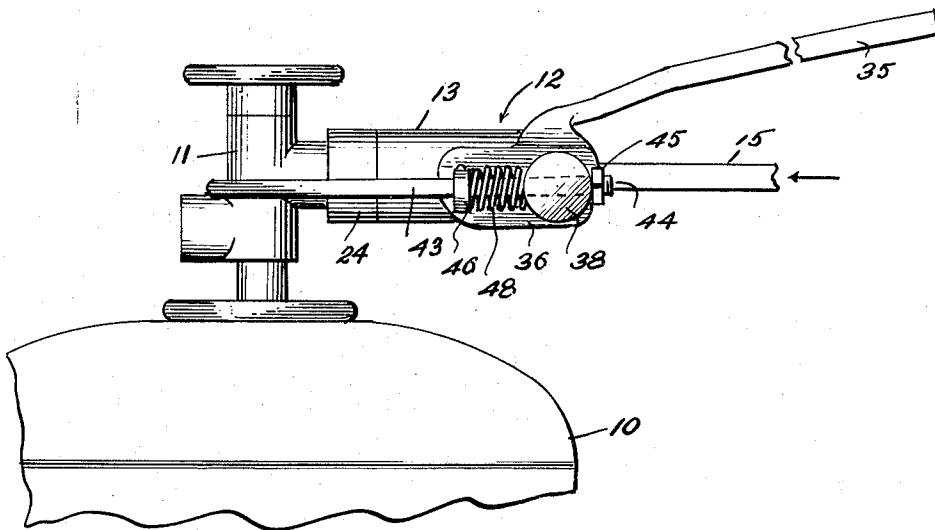
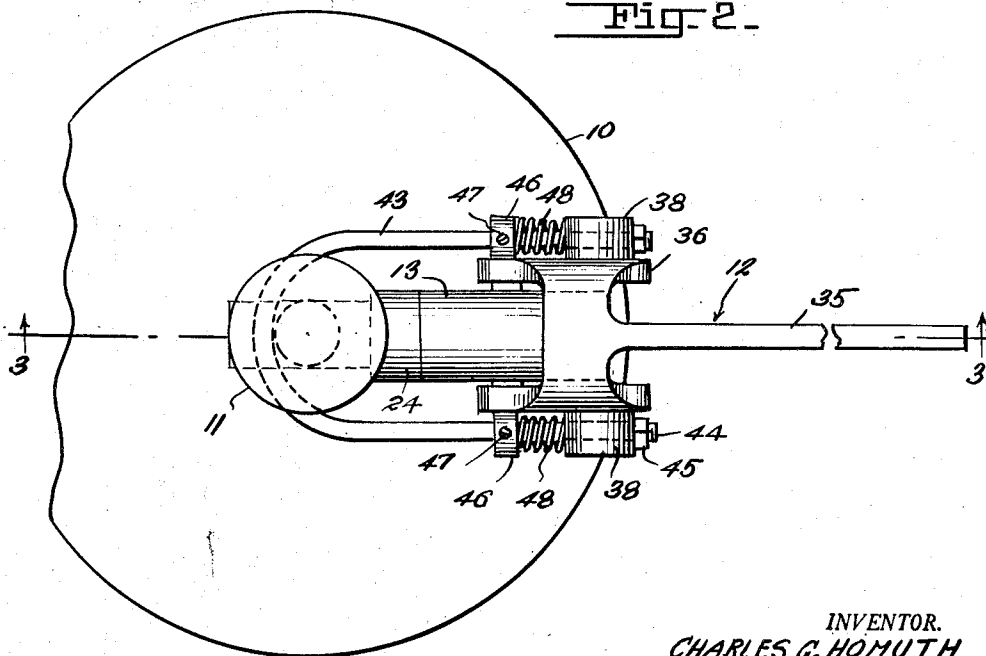


Fig-2.



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Fig. 3-

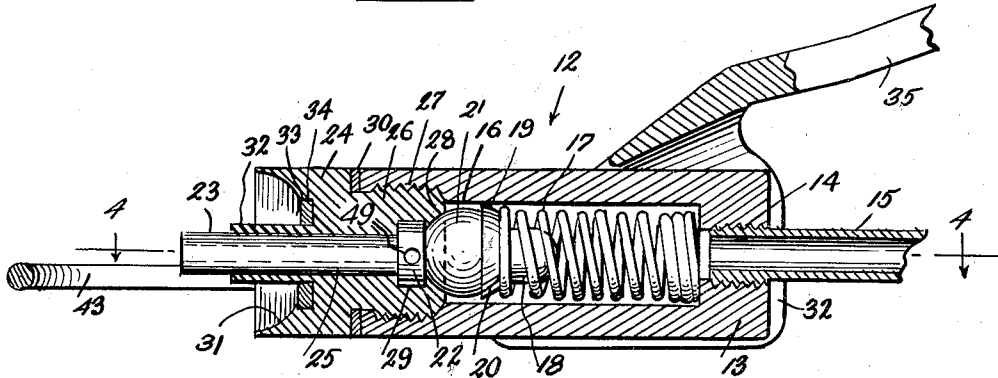


Fig. 4-

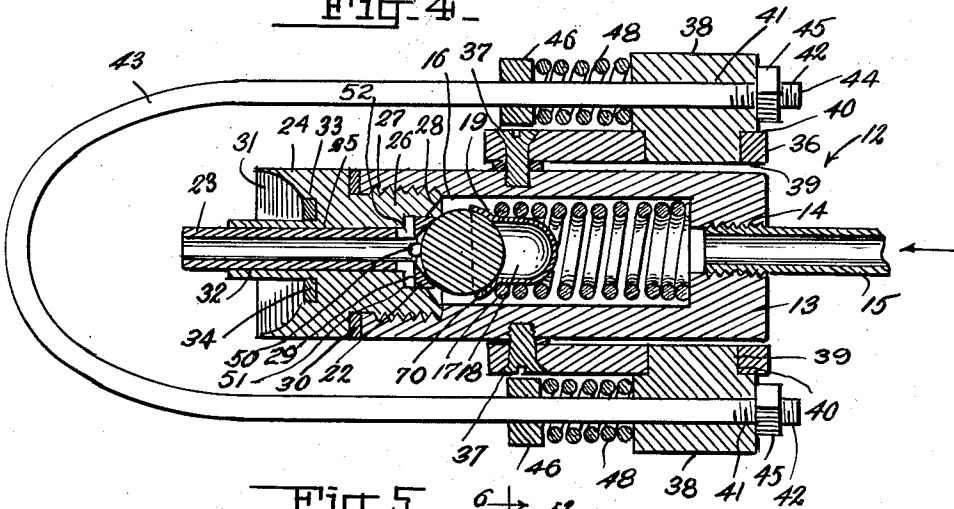


Fig. 5-

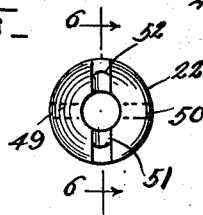


Fig. 6-

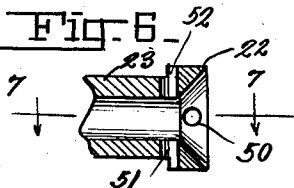
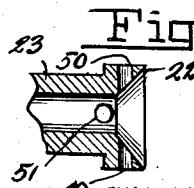


Fig. 7-



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SEMI-AUTOMATIC DISPENSING VALVE

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Application December 23, 1954, Serial No. 477,324

1 Claim. (Cl. 284—17)

This invention relates to improvements in valves and more particularly to a dispensing valve that is used to fill and empty propane gas cylinders.

Great difficulty has been encountered in the dispensing valves in use at the present time with propane gas cylinders. Propane gas is an unpredictable element and if the dispensing valve used for controlling the admission or discharge of the gas into and out of the cylinder is not highly efficient, trouble will be encountered.

An object of the invention is, therefore, to provide a dispensing valve that will efficiently and safely handle the admission and discharge of the propane gas into and out of the cylinder.

The dispensing valve embodying the invention is simple in construction and simple in operation.

With the above and other objects and advantages in view the invention consists of the novel details of construction, arrangement and combination of parts more fully hereinafter described, claimed and illustrated in the accompanying drawings in which:

Fig. 1 is a side elevational view of a dispensing valve embodying the invention in place on a propane gas cylinder;

Fig. 2 is a top plan view of the assembly of Fig. 1;

Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 2;

Fig. 4 is a transverse sectional view on the line 4—4 of Fig. 3;

Fig. 5 is a front view of the valve operating plunger;

Fig. 6 is a vertical sectional view on the line 6—6 of Fig. 5; and

Fig. 7 is a transverse sectional view on the line 7—7 of Fig. 6.

Referring more in detail to the drawings wherein like parts are designated by like reference numerals the dispensing valve embodying the invention is adapted to be used with a propane gas cylinder 10.

The gas cylinder 10 is provided with the conventional inlet coupling 11 to which a dispensing valve 12 embodying the invention is connected.

The dispensing valve 12 comprises a tubular barrel 13 having a threaded inlet port 14 to receive a gas supply hose 15 which is connected to a pump, not shown.

The barrel 13 has a cavity 16 in which is positioned a shut off spring 17.

Seated in one end of the spring 17 is the nose 18 of a ball retainer 19 which is provided with a cup formation 20 that receives a neoprene ball valve 21.

The ball valve 21 is received in a conical shaped seat 22 that is formed integral with a tubular plunger stem 23. The plunger stem 23 is slidably mounted in a bore 25 of a coupling 24.

The coupling 24 has an extended threaded projection 26 that is received in a threaded socket 27 of the barrel 13.

The forward end of the socket 27 is cup shaped at 28 to provide a seat to receive the ball valve 21 in sealing engagement therewith and a cavity 29 rearwardly of the end of the socket and communicating with the bore 25 receives the seat 22.

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A ring gasket 30 seals the connections between the coupling 24 and barrel 13 and a cup shaped cavity 31 is provided in the end of the coupling 24 opposite to the end on which projection 26 is provided. A tubular guide 32 extends from the center of the cavity 31 and the plunger stem 23 extends outwardly of the guide 32.

A ring shaped cavity 33 coincident with the guide 32 and positioned in the cup shaped cavity at the base thereof receives a sealing gasket 34 which seals the coupling 11 as will be later described.

A handle 35 is provided with a yoke 36 which is pivoted at 37 on the barrel 13.

A pair of pivot bushings 38 are provided with reduced portions 39 that are pivotally mounted in openings 40 in the yoke 36.

The bushings 38 are each provided with a bore 41 to receive one end 42 of a loop 43. The ends 42 of the loop 43 are threaded as at 44 to receive nuts 45.

Collars 46 are retained in place on the loop 43 by set screws 47. The collars 46 adjust the tension springs 48 that are mounted on the loop 43.

Viewing Figs. 5, 6 and 7, it will be seen that the seat 22 has a first pair of diametrically arranged ports 49 and 50 and a second pair of diametrically arranged ports 51 and 52. The ports are in radial relation to each other, but the ports 49 and 50 are positioned in the seat 22, while the ports 51 and 52 are at the base of the seat 22, all ports communicate with the bore of the plunger stem 23.

In positioning the valve assembly on the gas tank 10 the stem 23 is inserted into the coupling 11 and the loop 43 is positioned about the coupling 11, as shown in Figs. 1 and 2, after which the handle 35 is brought downwardly to substantially horizontal position causing the plunger 23 and the seat 22 to move into contact with the ball valve 21 to unseat the latter from the valve seat 28 on the forward end of the socket.

In the position of the handle, as in Figs. 1 and 2, gas will be permitted to enter the cylinder 10. However, when the handle 35 is pivoted on the pivots 37 to a vertical position, the ball valve 21 will be seated in the valve seat 28 on the forward end of the socket to cut off all flow of gas. With the gas supply hose 15 removed gas can be discharged from the cylinder.

There has thus been provided a dispensing valve which is simple and efficient in operation and it is believed that the construction and operation of the valve will be apparent to those skilled in the art.

It is also to be understood that changes in the minor details of construction, arrangement and combination of parts may be resorted to provided they fall within the spirit of the invention and the scope of the appended claim.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent is:

A device of the character described comprising a barrel, a supply port in one end of said barrel, a socket having one end thereon bevelled to form a seat in the other end of said barrel, a hollow plunger stem slidably extending into said socket, an enlarged head fixed to the inner end of said stem and receivable in said socket, said head having a recessed seat on the forward end thereof and having a plurality of radial ports therein communicating with said hollow stem, a ball valve engageable with said seat in said socket, a spring mounted in said barrel and normally urging said ball valve toward its seat in the socket, a yoke pivoted to said barrel, a handle affixed to said yoke, a bushing pivoted to each leg of said yoke, a V-shaped loop having each of its legs extending slidably through one of said bushings, a collar adjustably fixed upon each loop leg between the bight portion of said loop and the adjacent bushing, a compression spring mounted upon each leg of said loop between its associated bushing

and collar, and a nut on the outer end of each leg of said loop.

References Cited in the file of this patent

UNITED STATES PATENTS

201,634	Seal	Mar. 26, 1878
654,236	Dreckmann	July 24, 1900
953,154	Pride	Mar. 29, 1910

5

1,245,614
1,304,814
1,611,241
1,759,872
1,813,982
2,469,642
2,706,660

Pahlow	Nov. 6, 1917
Schweinert	May 27, 1919
Sandford	Dec. 21, 1926
Schwimmer	May 27, 1930
Woodruff	July 14, 1931
Crewe	May 10, 1945
Johnson et al.	Apr. 19, 1955