

Dec. 27, 1932.

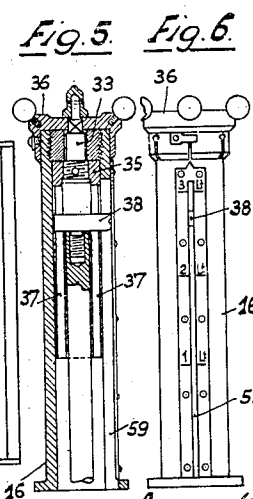
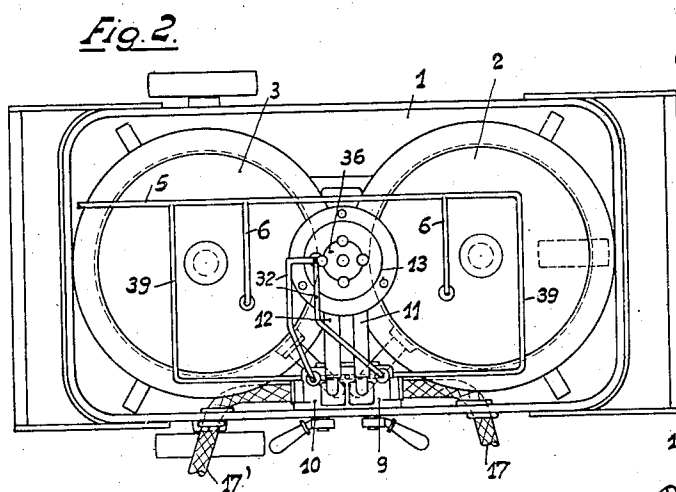
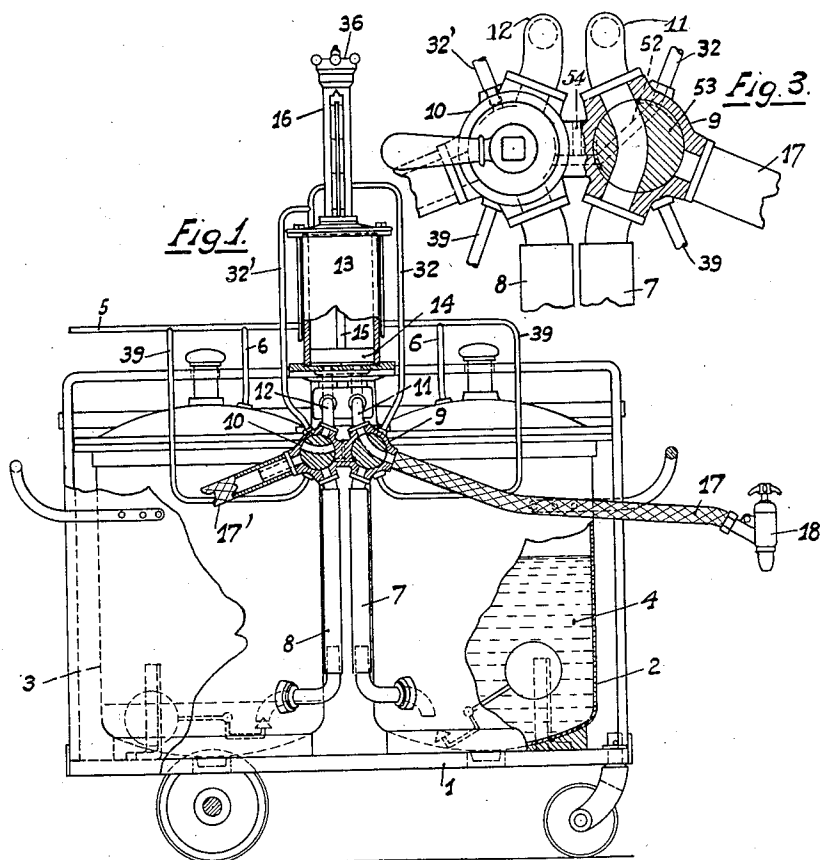
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1,892,344

APPARATUS FOR DISPENSING OILS AND FATS

Filed Dec. 16, 1930

2 Sheets-Sheet 1



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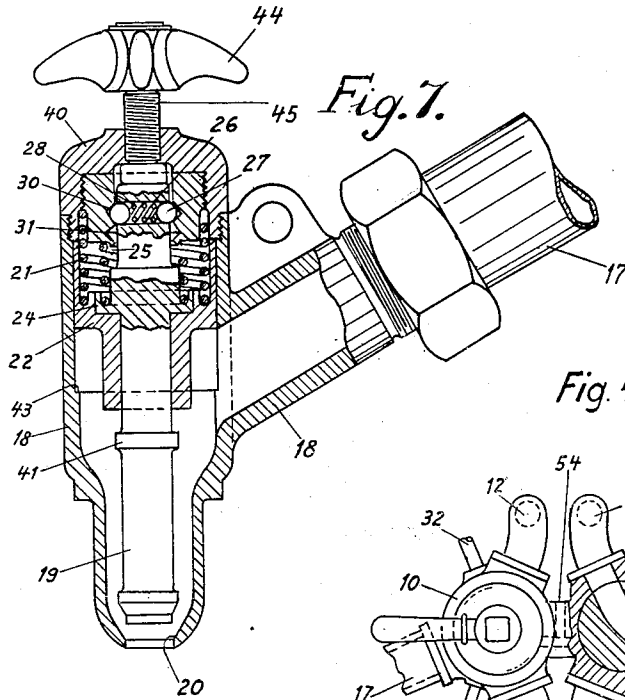


Fig. 7.

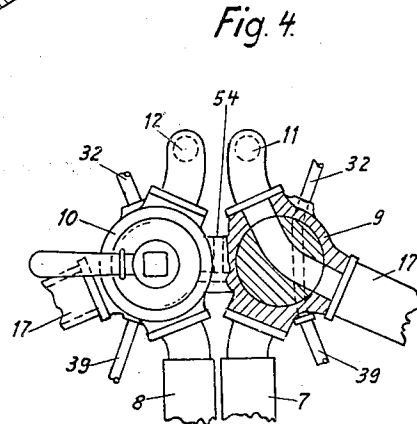


Fig. 4.

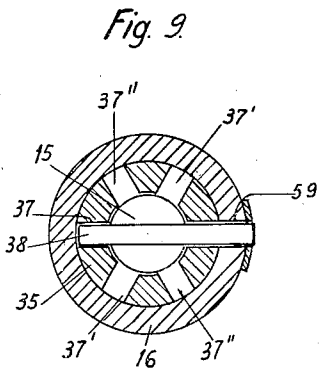


Fig. 9.

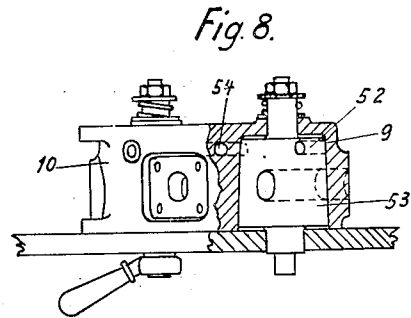


Fig. 8.

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UNITED STATES PATENT OFFICE

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APPARATUS FOR DISPENSING OILS AND FATS

Application filed December 16, 1930. Serial No. 502,692.

The present invention relates to improvements in apparatus for dispensing oil and fats and more particularly to apparatus by means of which a measured quantity of oil and the like may be supplied to retail purchasers, at the so-called filling stations.

The main object of the invention is to provide improved means by which a predetermined quantity of the oil may be delivered directly into the gear boxes, oil containers etc. of motor cars by means of a hose or other flexible conduit.

A further object consists in the provision of means to prevent the leaking and spilling of oil and the automatic and accurate operation of the dispensing valve.

I attain these and other objects as will appear in the annexed description by the device illustrated in the accompanying drawings, the invention consisting in certain novel features which will be hereinafter fully described and more particularly pointed out in the appended claims.

In the drawings

Fig. 1 is an elevation, partly in section of the dispensing device.

Fig. 2 is a top view of the same.

Figs. 3 and 4 are detail views partly in plan and partly in section of the valve arrangement.

Figs. 5 and 6 are respectively a vertical section and an elevation of the device to control the dispensed oil.

Fig. 7 is a section through the automatic dispensing valve.

Figs. 8 and 9 show details.

The apparatus comprises a carriage 1 on which two tanks 2, 3 are mounted for storing the oil 4 to be dispensed. The tanks 2, 3 are tightly closed and communicate by pipes 5, 6 with a container (not shown) supplying air or gas under pressure to said tanks above the level of the oil 4. From tanks 2, 3 pipes 7, 8 lead respectively to valves 9, 10. Said valves are connected with a measuring vessel 13 by means of short tubes 11, 12. In said vessel 13 a tightly fitting piston 14 is arranged. The piston rod 15 passes through a stuffing box in the lid of said vessel 13 and projects into a tubular support 16 fixed on the lid of

said vessel 13. Said member 16 is provided with an abutment to arrest the piston in its upward stroke and to vary the stroke at will to dispense predetermined quantities of oil. The said abutment is a sleeve 35 rotatably mounted in the support 16 by means of a stud 33 and a cap 36 rotatably mounted on the support. Knobs fixed to said cap facilitate the turning of the sleeve 35. The latter is provided with slots 37, 37', 37'' running in axial direction. The slots 37, 37', 37'' have different length. The piston rod 15 is provided with a cross piece 38 projecting into a slot 59 of the support 16 and through one of the slots 37, 37', 37''. In the lowermost position of the piston 14 the cross piece 38 is out of engagement with the sleeve 35 and the latter may be turned within the support to allow the cross piece to enter any of the slots 37, 37', 37''. An index running along the slot 59 indicates the position at which the piece 38 is arrested and denoting the quantity of oil which is being dispensed.

To the valves 9, 10 hose members 17, 17' are respectively attached and at the free end of each hose a valve 18 is fixed adapted to deliver the oil for instance into the gear box of a motor car.

The space above the piston 14 communicates by pipes 32, 32', the valves 9, 10 and pipes 39 and 5 with the container of air under pressure. Each plug 53 of valve 9 or 10 is provided with two conduits, one for the oil, the other, 52, for the air. In the position shown in Fig. 3 oil is driven from tank 2 through pipe 7, valve 9 and pipe 11 in the space below piston 14. The space above the piston 14 communicates by the pipes 32 and the bore 52 in the plug 53 of the valve 9 with an air outlet 54 arranged in the casing of valve 9. The pressure acting on the oil in the tank 2 presses the piston 14 upwards until the cross piece 35 strikes against the bottom of a slot 37. The air above the piston 14 escapes through the pipe 32, plug 53 and bore 54 into atmosphere. The plug of valve 9 is now turned to bring the hose 17 in communication with the measuring vessel 13 and the space above piston 14 with the compressed

air supply pipe 5. The air pressure on piston 14 forces the oil to valve 18.

The valve 18 comprises within a casing attached to the hose 17, a valve body 19, and a valve seat 20. The seat 20 and the outflow orifice of valve 18 are in a common plane. The stem of the valve body 19 is provided with a disk 24. Between the disk 24 and a cap 40 of the casing a coiled spring 25 is arranged which tends to keep the valve closed. In the upper portion of the stem a cross bore 26 is provided in which two balls 27 and a short spring 28 are arranged. The spring 28 presses the balls into annular grooves 30 or 31 according to the position of the valve body 19. On the stem 19 between the disk 24 and a shoulder 41 a piston 22 is slidably mounted. A coiled spring 21 abutting on the cap 40 presses on said piston 22.

If the pressure in the hose 17 attains a certain measure the piston 22 is moved upwardly against the action of the spring 21. The piston 22 strikes against disk 24 and lifts the same and therewith the valve body 19 against the action of spring 25. The valve body 19 assumes now the position shown in Fig. 7, the balls 27 have entered the upper groove 30, and hold the valve body in its open position. The oil is delivered. As soon as the pressure in the hose 17 diminishes the spring 21 expands again and the piston 22 slides down on the stem of the valve body and strikes against the shoulder 41. The spring 25 presses on the valve body 19, the combined pressure of both springs 21, 25 being sufficient to move the valve body down on to its seat 20. The balls 27 are first forced into the cross bore 26 and are projected into the groove 31 again as soon as the valve body rests on its seat 20. The piston 22 comes to rest on the shoulder 43, the valve body 19 may be pressed on to its seat by a screw 45 arranged in the cap 40 and provided with handles 44. The screw 45 may be screwed on to the top face of the valve body stem to keep it pressed on the seat 20.

If the pressure in the hose 17 raises temporarily, if for instance the hose 17 is sharply bent etc. the piston 22 is first moved upwardly without the valve body 19 being raised from the seat. Leakage and spilling of oil is thus prevented.

The delivery of oil from the tank 3 occurs in an analogous manner and need not be described.

What I wish to claim and secure by the U. S. Letters Patent, is:—

1. A supply valve comprising a cylindrical body having a discharge spout and also having an inlet duct for fluid under pressure, a cylindrical piston in the body movable toward the spout and movable in the reverse direction by pressure of the fluid in the valve body, a valve arranged to open and close the spout and extending through and movable

to a limited extent in the piston and provided with a stop to limit closing movement independently of the piston, and also with a stop engageable by the piston when the latter moves to closing position, a spring active to move the piston normally to closing position, a spring active to move the valve to closing position when the piston so moves and yieldable means countervailed by said springs to prevent causal movement of the valve when the latter is in either open or closed position.

2. A supply valve as claimed in claim 1, including manually operable means to move the valve to closed position.

3. A supply valve as claimed in claim 1, in which the piston has a chamber in which the springs for moving the piston and the valve are arranged, and in which said springs are coiled springs.

In testimony whereof I affix my signature.
PETER HUBER.