E. F. KROSS.

COIN CONTROLLED LIQUID DISPENSER.

APPLICATION FILED JUNE 2, 1921.

1,428,244. Patented Sept. 5, 1922.

2 SHEETS—SHEET 1.

Fig. 3.

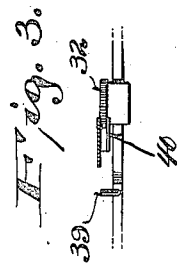
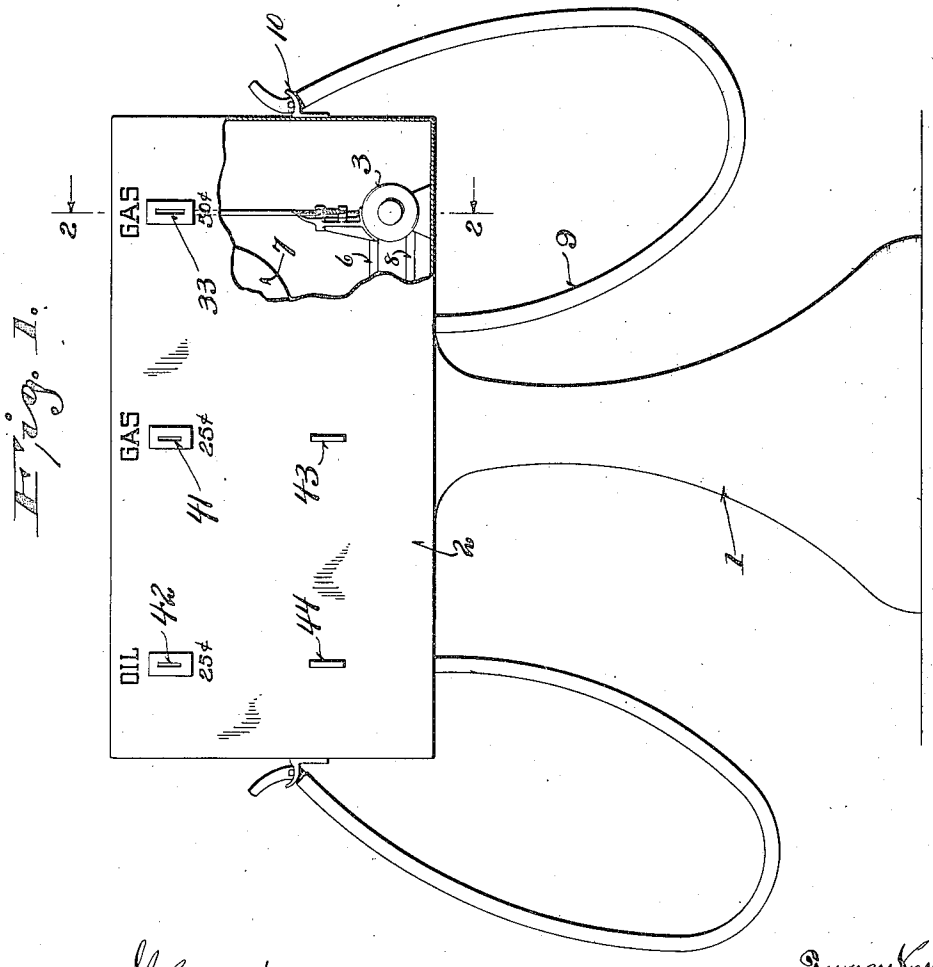


Fig. 1.



Witness:
Robert E. Weber

Inventor:
Edwin F. Kross
Young & Young
Attorneys

E. F. KROSS.

COIN CONTROLLED LIQUID DISPENSER.

APPLICATION FILED JUNE 2, 1921.

1,428,244. Patented Sept. 5, 1922.

2 SHEETS—SHEET 2.

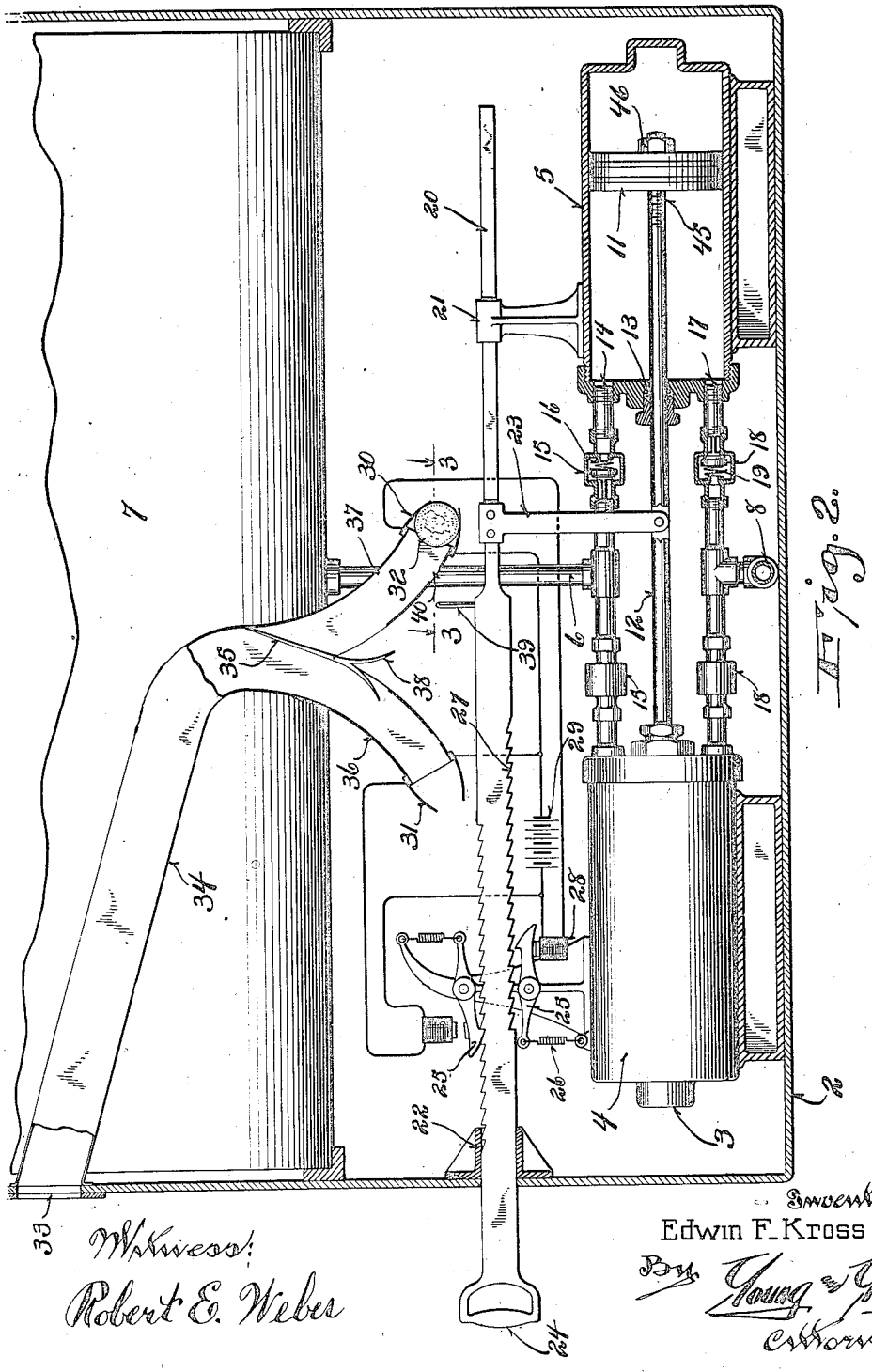


Fig. 2.

Witness:
Robert E. Weber

Inventor:
Edwin F. Kross
By Young & Young
Attorneys

Patented Sept. 5, 1922. 1,428,244

UNITED STATES PATENT OFFICE.

EDWIN F. KROSS, OF HORICON, WISCONSIN.

COIN-CONTROLLED LIQUID DISPENSER.

Application filed June 2, 1921. Serial No. 474,362.

To all whom it may concern:

Be it known that I, EDWIN F. KROSS, a citizen of the United States, and resident of Horicon, in the county of Dodge and State of Wisconsin, have invented certain new and useful Improvements in Coin-Controlled Liquid Dispensers; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to new and useful improvements in a coin controlled liquid dispenser, and is more especially adapted for use in connection with an oil and gasoline station for supplying the automobile trade.

It is the general object of my invention to provide a dispensing device which is entirely controlled by a coin inserted therein so that the constant presence of an attendant will be unnecessary.

It is a more specific object of the invention to provide a measuring pump which upon the insertion of a coin may be operated to dispense a predetermined amount of gasoline or oil.

It is a further object of the invention to provide a double acting or a double cylinder pump which may be operated successively in opposite directions by the insertion of successive coins.

With the above and other objects in view, my invention consists in certain structural details which will be fully described in connection with the accompanying drawings, in which—

Figure 1 is a front elevation of the device with a portion of the housing broken away to show the interior thereof.

Figure 2 is a vertical transverse sectional view on the line 2—2 of Figure 1, and

Figure 3 is a detail sectional view on the line 3—3 of Figure 2.

Referring now to the drawings by reference characters, the numeral 1 designates a suitable support on which is mounted a housing 2 which contains one or more pumps 3. Each pump, as shown in Figure 2, comprises two oppositely disposed aligned cylinders 4 and 5 which are connected by a pipe line 6 to the supply tank 7 which may contain oil, gasoline or the like. The liquid to be dispensed is drawn in through the pipe line 6 into one of the cylinders and expelled through the pipe line 8, which is connected with the usual hose line, the end of which is supported by the hook 10 when not in use. Cooperating with the cylinders are the pistons 11 which are mounted on the ends of a rod 12, which is provided with the usual packing glands 13. The liquid is drawn into the cylinder through the port 14 which is controlled by a check valve 15 and its cooperating spring 16. It is expelled through the outlet port 17, past the check valve 18 which is controlled by the spring 19.

For the purpose of operating the pump, I have in the present instance, provided a reciprocating bar which is mounted in the aligned bearings 21 and 22 and connected with the piston rod 12 by the cross arm 23. This bar may be reciprocated by any suitable means, a handle 24 being shown in the present instance for this purpose. The bar 20 is normally held against movement in either direction by the pawls 25 which are held by the coil springs 26 in engagement with the ratchet teeth 27 on the sides of the bar. In connection with each pawl, I have provided an electromagnet 28 which when energized will retract the pawl in opposition to the spring 26. The electromagnets are connected in parallel to the source of electric energy 29 and the circuit through the magnet is completed by connecting the terminals 30 or 31 respectively. These terminals are in the form of spring arms which are so arranged as to be connected by a coin 32, introduced through the slot 33. A coin inserted in the slot 33 passes downwardly through the chute 34 and is directed by the switch 35 into one of the branches 36 or 37 to the corresponding terminal. The switch 35 is provided with spurs 38 so that each coin as it passes engages one of the spurs to throw the switch so that the next coin will be directed into the other branch of the chute.

When the coin has been inserted and the terminals connected so as to energize one of the magnets, the bar 20 is released so that the piston may be operated in one direction as long as the circuit is closed. The bar 20 is provided with a finger 39 which, when the bar approaches the limit of its movement in this direction, passes through the slot 40 and engages the coin 32, forcing it out past the ends of the terminal arms and interrupting the circuit. The magnet then releases the pawl, permitting it again to engage the teeth 27. The parts then remain in this position until the next coin closes the circuit through the other magnet, permitting the bar to be moved in the opposite direction.

The housing 2 may be provided with as many pumps as may be desired. In the present instance, in addition to pump which is controlled through the slot 33 by a 50¢ coin, I have shown a slot 41 for dispensing 25¢ worth of gasoline, the pump which is controlled by this slot being actuated by the handle 43. I have also shown a slot 42 which controls a pump actuated by the handle 44 for dispensing oil. For the purpose of adjusting the amount of liquid which may be dispensed in accordance with the prevailing market price, I have provided the end of the piston rod 12 with threads 45 and a lock nut 46 so that the capacity of the pump may be varied by adjusting the position of the piston head 11.

From the foregoing description, it will be seen that I have provided a convenient and practical device by which oil or gasoline or other liquids may be automatically dispensed. Thus the automobilist may obtain his supply at any time of the day or night and it will be unnecessary to maintain an attendant to care for the same.

I claim as my invention:

1. In a liquid dispensing device, a pair of opposed measuring cylinders, a piston reciprocable therein, locking means for normally locking said piston against movement in either direction, coin controlled means for releasing said locking means and means for rendering said locking means again operative after the piston has completed a predetermined operation.

2. In a liquid dispensing device, a pair of opposed measuring cylinders, a piston reciprocable therein, a pair of locking devices for normally locking said piston against movement, coin controlled means for releasing the locking devices for permitting the piston to move in either direction successively, means for rendering said locking device again operative after the piston has traveled a predetermined distance.

3. In a liquid dispensing device, a pair of opposed measuring cylinders, a piston reciprocable therein, a pawl and ratchet for controlling the operation of said piston in each direction, an electromagnet for each pawl operable when energized to disengage the pawl from the ratchet, an electric circuit connected with each magnet and having a pair of terminals which are adapted to be closed by a coin of predetermined size, a coin slot, means for directing a coin dropped into said slot into a position to close one pair of terminals and means for removing the coin from the terminals when the piston has reached the limit of its movement in one direction.

4. In a liquid dispensing device, a pair of opposed measuring cylinders, a piston reciprocable therein, means for normally locking said piston against movement in either direction, means operable by a coin for releasing the piston for movement in one direction and a switch operable by the coin in passing so that the next coin will release the piston for movement in the opposite direction.

In testimony that I claim the foregoing I have hereunto set my hand at Horicon, in the county of Dodge and State of Wisconsin.

EDWIN F. KROSS.