Oct. 27, 1931. C. F. OVERPECK ET AL 1,829,534

COIN CONTROLLED GASOLINE PUMP

Filed Aug. 16, 1930 2 Sheets-Sheet 1

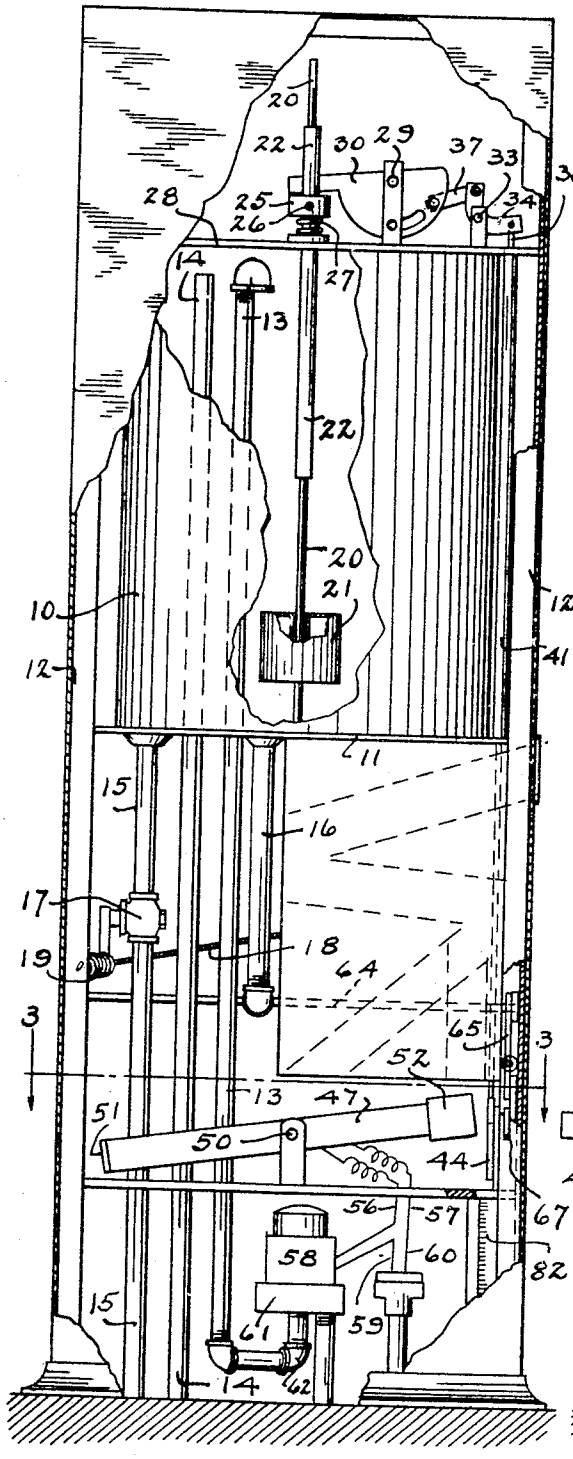


Fig. 2.

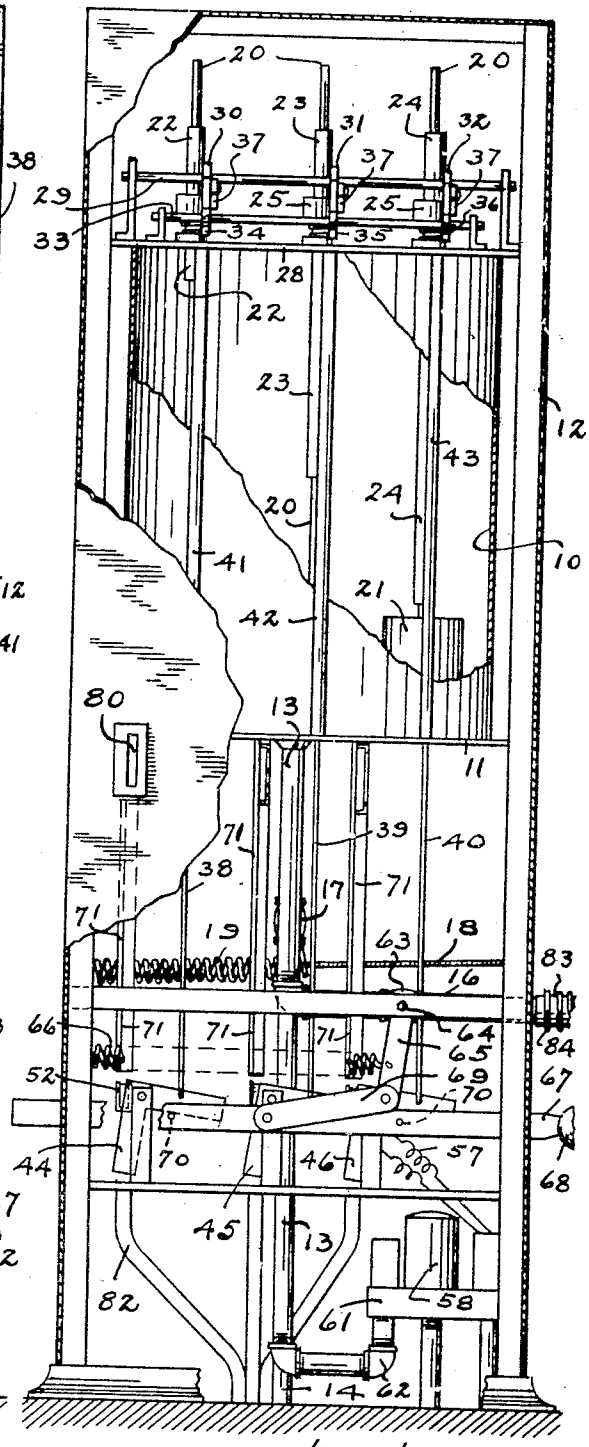


Fig. 1.

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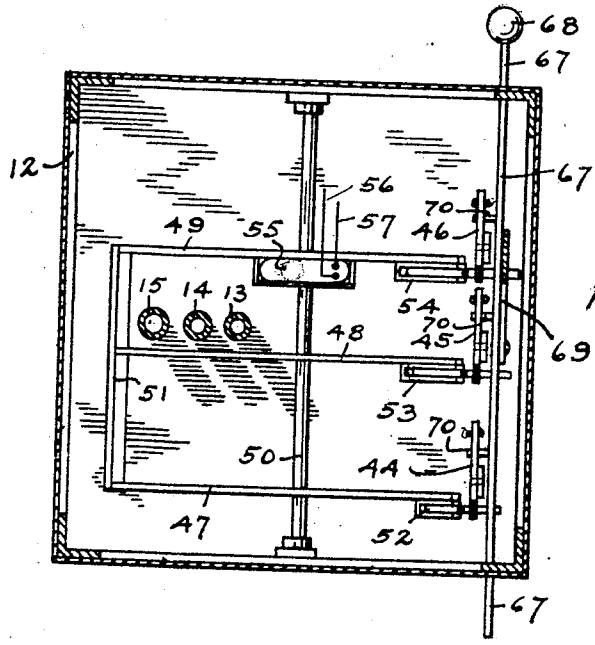



Fig. 3

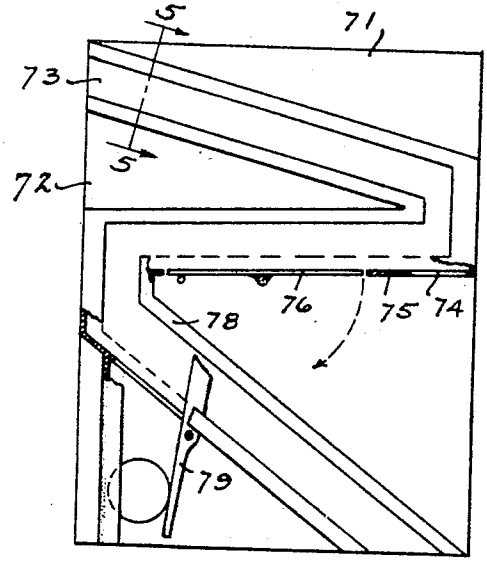



Fig. 4.

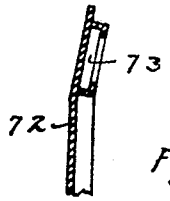
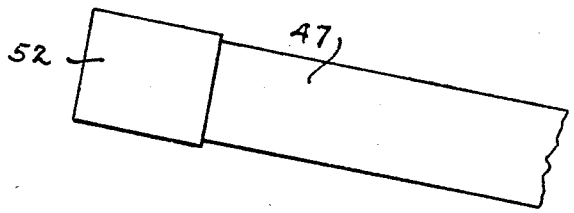



Fig. 5.




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Patented Oct. 27, 1931

1,829,534

# UNITED STATES PATENT OFFICE

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## COIN CONTROLLED GASOLINE PUMP

Application filed August 16, 1930. Serial No. 475,776.

This invention relates to the art of fluid dispensers and particularly to a type of a dispenser adapted to be coin operated for dispensing gasoline and the like for automobiles.

It is a primary object of the invention to provide a structure whereby upon deposit of a coin, a predetermined amount of fluid to be sold for the value of that coin automatically will be made available to be drained therefrom at the will of the purchaser all without aid or necessity of an attendant.

A primary object resides in the particular new association of elements whereby a very simple, durable, and accurately measuring device is obtained.

A primary object also resides in the means provided to prevent dispensing more fluid than that intended for the coin deposited.

Other important objects reside in the means for dumping the measuring tank in case of fire, means for easily adjusting the amounts of fluid to be dispensed as the sales price of the fluid may vary, and in means that may be manufactured and assembled at a very low cost.

These and other objects will become apparent in the following description of the invention made in reference to the accompanying drawings, in which

Fig. 1 is a fragmentary side elevation of of a structure embodying our invention;

Fig. 2, a fragmentary front elevation;

Fig. 3, a horizontal transverse section on the line 3—3 in Fig. 2;

Fig. 4, a detail in side elevation of a coin detector; and

Fig. 5, a detail in section on the line 5—5 in Fig. 4.

Like characters of reference indicate like parts throughout the several views in the drawings.

We mount a tank 10 on a floor 11 carried by a frame 12 and fit to the tank, a supply pipe 13, an overflow pipe 14, a drain pipe 15, and a discharge pipe 16. In the drain pipe 15 is a valve 17 normally held closed by a combustible or fusible link, here shown as a cord 18, against the pull of a spring 19 tending to open the valve.

Within the tank 10 are fixed a plurality of vertically disposed guide rods 20, here shown as three in number. A float 21 is slidingly carried on each rod 20, normally dropping to the bottom of the tank. Tubing of varying lengths, 22, 23, and 24 slips over the upper ends of the guides through collars 25 which may be shifted along the tubing and fixed thereto at different positions by set screws 26. The collars 25 rest on springs 27 which bear against the upper cover 28 across the tank 10.

A shaft 29 extends across the tank over the cover 28 in front of the guides 20 and carries individually rockably thereon the rockers 30, 31 and 32 each of which have a rearwardly extending arm in the path of vertical travel of the respective collar 25. In front of the shaft 29 and parallel thereto, but at a lower elevation, is a shaft 33, on which are rockably carried the bell cranks 34, 35 and 36. Links 37, 37, 37 interconnect the rockers and bell cranks whereby lifting that end of the rocker over the collar 25 will lift the outer end of the bell crank. Cables 38, 39 and 40 extend downwardly respectively from the outer ends of the bell cranks 34, 35 and 36 through tubes 41, 42 and 43 to the horizontally disposed arms of rockably mounted bell cranks 44, 45 and 46, the other arms of which project downwardly.

Behind the bell cranks 44, 45, 46 is a carriage made up from three spaced apart parallel arms 47, 48 and 49, rockably supported on the transverse shaft 50, and a tie bar 51 across the rear ends of the arms. The forward end of each arm is formed into coin buckets 52, 53 and 54 respectively, each open at the top and forward side. The carriage is so balanced about the shaft 50 that it will normally assume the position indicated in Fig. 2 with the buckets carried upwardly and the tie bar downwardly. A mercury switch 55 is fixed to the arm 49 to be rocked therewith, and from the switch, the wires 56 and 57 lead to complete an electrical circuit through an electrical motor 58 from line wires 59 and 60. The motor 58 operates a pump 61 having an intake pipe from an underground storage tank (not shown) and

a discharge pipe 62 connected to the tank supply pipe 13.

In the discharge pipe 16 is fitted a control valve 63 which may be operated by revolving the shaft 64. A lever 65 is fixed on the shaft 64 and is normally pulled to a closed position by the spring 66. An operating bar 67 is supported by the frame 12 to be moved horizontally fore and aft by a knob 68 on the forwardly projecting end of the bar. A connecting link 69 interconnects the lever 65 with the bar 67 whereby pulling the bar outwardly will rock the lever 65 to open the valve 63, and release of the bar will permit the spring 66 to close the valve and pull back the bar. Pins 70, 70, 70 project laterally inwardly from the bar, one under each of the horizontally disposed arms of the bell cranks 44, 45 and 46.

We mount the coin selectors 71, 71, 71, immediately above and in line with the coin buckets. Each selector 71 Fig. 4, consists essentially of a vertically disposed mounting plate 72 with a flanged guide 73 starting angularly downwards from the upper front corner at which point the plate is bent over slightly so that coins too small in diameter will rock over and drop laterally from the guide. Coins of proper diameter roll on down the guide to drop down the vertical chute at the rear edge of the plate, at the bottom end of which is a slot 74 of a width preventing genuine coins from dropping therethrough, but permitting thin spurious coins to drop through. From the bottom of the vertical guide, a forwardly sloping guide 75 leads with a trap door 76 along its under side. A coin too heavy in weight to be genuine rocks open the door 76 and falls thereout, whereas a coin of the proper weight, not being sufficiently heavy to swing the door open, rolls on across to drop down into the rearwardly and downwardly directed guide 78, in which is a trap door 79 so mounted that if a coin is too light, it will roll on across the door and be discharged to the rear, but, if heavy enough to be genuine, will rock open the door and fall therethrough into a coin bucket immediately therebelow.

The structure here shown, having three coin selectors, is adapted to be operated by coins of three different denominations, for example, twenty-five cents, fifty cents, and a dollar, the openings into the coin selectors and guides therein being formed proportionately. As an illustration of the operation of the invention, a dollar coin is dropped into the slot 80 over the receiving guide of the selector 71 therebehind. The coin, being genuine, passes through the selector and drops into the bucket 52. The weight of the coin in the bucket causes the carriage to rock and carry the bucket downwardly. The coin within the bucket contacts the downturned arm of the crank 44 and is held back thereby in the bucket. When the carriage rocks as described, mercury in the switch 55 flows forwardly to close the circuit across the wires 56 and 57 and start the motor 58. Fluid is pumped into the tank 10 and floats 21 rise with the fluid level to contact and raise the tubes 24, 23 and 22 in the order named. As each tube is raised, the corresponding rockers 32, 31, and 30 are rocked to pull up the arms of the cranks 46, 45 and 44, which causes the downwardly extending arms thereof to swing toward the vertical line and uncover the front opening of the buckets therebehind. As soon as the float 21 raises the tube 22 to cause the crank 44 to be rocked, the coin may roll out of the bucket 52 down a chute 82 into any suitable receptacle below (not shown). As the coin leaves the bucket, the bucket is relieved of its weight and rocks upwardly to cause the mercury in the switch 55 to flow rearwardly and break the circuit to the motor 58, thereby stopping the flow of fluid to the tank 10. The deposit of a smaller coin in the proper selector 71 would have caused the motor to have stopped sooner, since a float 21 would have contacted a tube 23 or 24 either of which projects into the tank to a greater distance so that the corresponding crank 45 or 46 would have been rocked to release the coin in the bucket therebehind.

The tank 10 having been filled to the proper level for the coin deposited, and the motor 58 having been stopped, the purchaser pulls out on the bar 67, opens the valve 63, and thereby allows the fluid to leave the tank 10 through the discharge pipe 16 and out the hose 83 which is preferably wrapped its entire length with a stiff spring wire 84 to prevent sagging of the hose. As a precaution against the purchaser dropping a smaller coin into either bucket 53 or 54 while the bar 67 is held out to start the motor and cause more fluid to flow into the tank and out the then open discharge pipe 16, we provide the pins 70, as above described to pass under the arms of all the cranks 44, 45 and 46 so that all buckets 52, 53 and 54 are opened and can not retain coins and, therefore, a continued flow of fluid can not be maintained following the discharge of the measured quantity actually paid for. The arms of the cranks under which the pins 70 pass, normally tend to swing downwardly since they are longer than the downturned arms of the cranks, and the normal positions of said first arms are slightly sloping downwardly from a horizontal position, the pins 70 rocking the arms upwardly to horizontal positions upon travel forwardly thereunder. Release of the bar 67, permits the spring 66 to return it to close the valve 63 and allow the cranks 44, 45 and 46 to drop back.

While we have herein described and shown our invention in the one best form as now

known to us, it is obvious that structural changes may be made therein without departing from the spirit of the invention, and we, therefore, do not desire to be limited to that precise form, nor any more than may be required by the following claims.

We claim:

1. In a liquid dispensing device, a movable coin bucket, a switch actuated upon travel of the bucket, a motor pump adapted to be controlled by said switch, a measuring tank adapted to receive the discharge from the pump, a float in the tank, a coin gate across said bucket, and operating means between said float and said gate whereby a predetermined travel of the float will actuate said gate.

2. In a liquid dispensing device, a movable coin bucket, a switch actuated upon travel of the bucket, a motor pump adapted to be controlled by said switch, a measuring tank adapted to receive the discharge from the pump, a float in the tank, a coin gate across said bucket, and operating means between said float and said gate whereby a predetermined travel of the float will actuate said gate, a tank discharge valve, and an operating bar adapted to actuate said valve and hold open said coin gate when said valve is open.

3. In a coin controlled liquid dispensing device having a coin selector, a coin bucket under the discharge of the selector, an arm carrying said bucket and pivoted on an axis whereby the bucket is normally held in an upper position, a mercury switch adapted to be rocked upon movement of the arm, a pump motor in circuit with said switch, a tank, a pump operatable by said motor to discharge into said tank, a float in the tank, a stop member in the path of the float, a gate normally closing a discharge opening of said coin bucket, connecting means between the stop member and the gate whereby upward travel of the member will cause said gate to be opened, and a tank discharge valve.

4. In a coin controlled liquid dispensing device having a coin selector, a coin bucket under the discharge of the selector, an arm carrying said bucket and pivoted on an axis whereby the bucket is normally held in an upper position, a mercury switch adapted to be rocked upon movement of the arm, a pump motor in circuit with said switch, a tank, a pump operatable by said motor to discharge into said tank, a float in the tank, a stop member in the path of the float, a gate normally closing a discharge opening of said coin bucket, connecting means between the stop member and the gate whereby upward travel of the member will cause said gate to be opened, and a tank discharge valve, a bar for operating said valve, and means interposed between said bar and said gate for opening said gate when said valve is open.

5. In a liquid dispensing device, a tank, a float in the tank, a float contacting member depending within the tank, means for adjustably varying the length of the member within the tank, a rocker member in the path of the contacting member, a coin bucket movable vertically and having a coin discharge opening, a gate normally across said opening, and connecting means between said rocker member and said gate whereby raising the float contacting member moves said gate away from said bucket opening.

6. In a liquid dispensing device, a tank, a float in the tank, a float contacting member depending within the tank, means for adjustably varying the length of the member within the tank, a rocker member in the path of the contacting member, a coin bucket movable vertically and having a coin discharge opening, a gate normally across said opening, and connecting means between said rocker member and said gate whereby raising the float contacting member moves said gate away from said bucket opening, a tank discharge valve, a bar for actuating said valve, and connecting means between said bar and said gate whereby said gate is opened when said valve is opened.

7. In a liquid dispensing device, an arm pivoted about an axis, a coin bucket on one end of the arm, said arm being mounted on said axis to have the bucket normally swung upwards, a normally open switch adapted to be actuated by travel of the arm about said axis, a pump motor in circuit with the switch, said bucket having a discharge opening, a gate normally swinging to be across said opening, a bar, and a pin carried by the bar adapted to swing the gate away from said opening upon travel of the bar.

8. In a coin controlled liquid dispensing device adapted to dispense various quantities of liquid dependent upon the size of the coin deposited, a tank, a plurality of floats vertically guided in the tank, a stop member in the path of each float, means for adjustably positioning each stop member, a rocker member in the path of each stop member, a rocker frame, a plurality of coin buckets carried by the frame, one bucket to each float, each of said buckets having a coin discharge opening, said frame being unbalanced about a pivot axis whereby the buckets are normally swung upwardly, a gate across the opening of each bucket, connecting means between each of said rocker members and the respective gate whereby upward travel of the stop members opens the gates, a switch adapted to be operated upon travel of said frame to be closed upon downward swing of said buckets, a motor in circuit with the switch, a pump actuated by the motor and discharging into said tank, a bar, and connections between the bar and each of said gates whereby all of said

gates are opened simultaneously upon travel of the bar.

9. In a coin controlled liquid dispensing device, a bucket provided with a discharge opening and movable by the weight of a coin, a gate across the opening of each bucket, a switch actuated by travel of the bucket, a pump motor controlled by the switch, and float means for opening said bucket.

10. In a coin controlled liquid dispensing device, a plurality of coin buckets provided with discharge openings and movable by the weight of a coin therein, a gate across the opening of each bucket, a switch actuated by travel of the buckets, a pump motor controlled by the switch, float means selectively opening said buckets, and means for preventing a continuous operation of said motor following an initial operation thereof and means actuated by the buckets when relieved of the coins for actuating the motor arresting means.

In testimony whereof we affix our signatures.

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FRANCIS MARIAN ALLEN.