

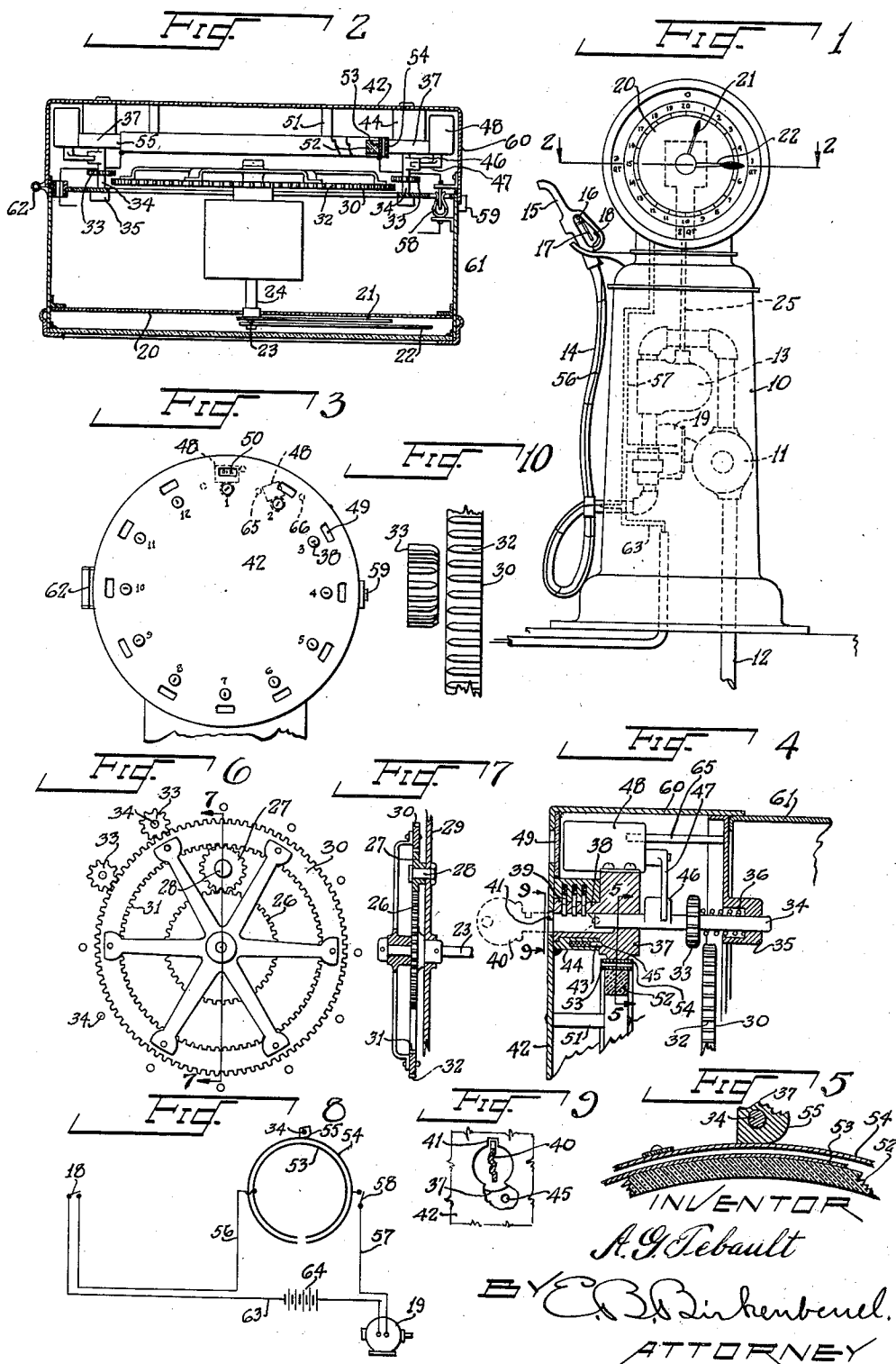
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A. G. TEBAUT

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DISPENSING DEVICE FOR GASOLINE

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ALFRED G. TEBAUT, OF PORTLAND, OREGON

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This invention relates generally to devices for dispensing gasoline, and particularly to that class of devices in which gasoline is pumped from an underground storage and delivered to the consumer's tank through a hose.

The main object of this invention is to provide a dispensing unit in locations not justifying the presence of a regular attendant for the purpose of rendering service and taking care of the transactions.

The second object is to provide a dispensing unit especially designed for use on aviation fields.

The third object is to provide a dispensing unit which will be adapted for use in large service stations having a number of attendants, or in garages for taking care of important accounts.

The fourth object is to adapt same for use by large business houses having numerous motor cars for the purpose of making it possible to keep an accurate record of the gasoline used by each of its units.

These, and other objects, will become more apparent from the specification following as illustrated in the accompanying drawing, in which:

Figure 1 is a front elevation of the device. Figure 2 is a horizontal section taken along the line 2—2 in Figure 1. Figure 3 is a rear elevation of the registering portion of the device. Figure 4 is an enlarged section through one of the locking mechanisms. Figure 5 is a section taken along the line 5—5 in Figure 4. Figure 6 is a somewhat diagrammatic side elevation of the gearing employed in the device. Figure 7 is a vertical section taken along the line 7—7 in Figure 6. Figure 8 is a wiring diagram showing the manner of operating the device. Figure 9 is a fragmentary elevation of a single key-hole taken along the line 9—9 in Figure 4. Figure 10 is an enlarged view of pinion and gear showing form of teeth.

Similar numbers of reference refer to similar parts throughout the several views.

Referring in detail to the drawing, there is shown the usual frame 10 in which is mounted a pump 11 from which gasoline is

drawn from an underground tank (not shown) through a pipe 12 and delivered through a meter 13 to a dispensing hose 14 and filling nozzle 15. The filling nozzle 15 is provided with a cut-off valve 16 controlled by a trigger 17 which closes a switch 18 on the nozzle 15 normally starting the motor 19 whenever the trigger 17 is operated to open the valve 16.

The measures of gasoline dispensed are indicated on the dial 20 by means of the gallon hand 21 and the quart hand 22, as is now the common practice. The hands 21 and 22 are mounted on the shafts 23 and 24 which are driven from the meter shaft 25 by the usual form of gearing (not shown).

On the shaft 23 is secured a gear 26 which meshes with a pinion 27 which is in turn mounted on a stud bolt 28 on the casing 29. The gear 26 is pinned or otherwise secured to the shaft 23. Loosely mounted on the shaft 23, outside of the gear 26, is a combined internal and external gear 30 whose internal teeth 31 mesh with the pinion 27, and whose external teeth 32 are normally out of mesh with all of the pinions 33 disposed around the periphery thereof on the slidable shafts 34, one end of which journals in the bearings 35 and contains the spring 36 which urges the pinions 33 out of mesh with the teeth 32.

The opposite end of each shaft 34 journals in a rotatable bearing 37 in whose shank 38 are a plurality of locking tumblers 39 which normally lock the bearing 37 stationary. A key 40 is employed to release the tumblers 39, thereby freeing the bearing 37 as well as pushing the shaft 34 sufficiently far to bring its respective pinion 33 into mesh with the teeth 32 of the gear 30. The key when inserted in its lock must pass through the slot 41 in the front 42 so that when once the key is turned away from its starting position it cannot again be pushed outwardly by the spring 36 until it is restored to its starting position.

While the tumblers 39 will correctly position each of the bearings 37 when the pinion 33 is inoperative, it is evident that provision must be made to hold the bearing 37 against

rotation when its associated parts are in an operative position. For this purpose there is provided a spring-urged pin 43 within the bearing housing 44, and a corresponding
 5 recess 45 within the bearing 37 which is not sufficiently deep to lock the parts together, but merely to hold same more securely than they would be held by friction.

On each shaft 34 is formed a cam arm 46
 10 which engages the arm 47 of a counting mechanism 48 which is carried by the bearing 37. The front 42 is provided with windows 49 through which the numbers 50 of the counting mechanism are visible only
 15 when the key 40 has been turned to an unlocked position, due to the fact that when the key 40 is turned to a locked position then the numbers 50 move away from their respective windows 49.

On the inside of the front 42 are the pillars 51 which carry a circular contact support 52 on which is mounted a rigid inner contact 53 and a flexible outer contact 54, which are normally separated from each
 25 other, but may be brought into contact with each other by an external pressure against the outer member 54. This is accomplished by providing an eccentric portion 55 on the bearing 37 so that when the key 40 is turned
 30 to an unlocked position a contact is made across the members 53 and 54. The contact 53 is joined by the wire 56 to the switch 18 on the nozzle 15. The contact 54 is joined by a wire 57 to the motor 19. The wire 57
 35 includes a contact switch 58 which is close to the door lock 59 between the sections 60 and 61 which are joined by the hinge 62. A wire 63 connects the motor 19 to a source of power 64 from which it is connected to the second
 40 side of the switch 18.

The operation of the device is as follows: If, for example, a pilot should wish to draw a supply of fuel he merely inserts his key 40 into the particular key-hole assigned to him
 45 and turns it, thereby exposing the numbers 50 on his own register or dial to view, and at the same time closing one portion of the motor circuit by means of the eccentric 55. It will be remembered that the other side of the
 50 motor circuit is under control of the trigger 17 which operates the switch 18. When he attempts to draw gas from the filling nozzle 15, thereby starting the motor 19 which draws the gasoline from the underground
 55 tank through the pipe 12, it forces it through the meter 13 and displaces first any gasoline which may remain in the hose 14, and then continues to flow as long as the trigger 17 is depressed, during which time the meter 13 is
 60 causing a visible indication of the volume of fuel drawn, by means of the hands 21 and 22, which are of course restored to a zero position at the close of the drawing.

Not so, however, with the numbers on the
 65 counting mechanism 48 which keep a total

of the amount of gasoline drawn for the particular person or piece of equipment represented by the various key-holes, in this instance numbered from 1 to 12 respectively, although of course the actual names of the
 70 users could be supplied if desired, and the number of such key-holes can also be varied to suit the requirements of the particular unit in question.

While this device has been illustrated as
 75 being entirely above ground, it can easily be understood that for landing fields it would in many instances be desirable to provide an entirely flush unit over which planes could pass without danger to the plane or dispensing
 80 unit.

It is also clear that numerous other changes, such as details of construction, means for operating the counting mechanism, or means for operating the circuit closing device could
 85 be provided by anyone skilled in the art.

It is also desirable to provide stops 65 and 66 for limiting the two extreme positions of each of the counters 48.

While I have thus illustrated and described
 90 my invention it is not my intention to be limited by the particular type of apparatus illustrated in the drawing, but I intend to cover all forms and modifications of this device as fall fairly within the appended
 95 claims.

I claim:

1. In a gasoline dispensing apparatus the combination of a metered pumping unit including a motor, a hose line having a control valve on the end thereof, said pumping
 100 unit having visible indicators showing the amount of a single drawing of gasoline, a plurality of counters normally disconnected from said metering mechanism but selectively connectable thereto, a cover plate for said
 105 counters having a plurality of openings therein through which the total on the respective counters can be seen when in an unlocked position, locking means for said counters whereby the totals can be concealed and the flow of current to the motor interrupted, and a remote control switch for said motor in series with said locking device actuated by the valve of the hose line.
 110

2. An attachment for motor driven fuel dispensing pumps having in combination means for metering the fuel passing therethrough consisting of a plurality of counters, a casing for said counters having apertures
 120 therein through which the totals on said counters can be read when in an operative position, an operating connection between each counter and each meter normally in an inoperative relation, lock means whereby said meter may be operatively connected to any of said counters for the purpose of registering the amount of fuel dispensed to a given account and for closing the motor
 125 circuit at one point and a normally open
 130

switch at the hose outlet holding said motor circuit open at a second point until gasoline is drawn from said hose.

3. In an apparatus for dispensing gasoline, the combination of a motor driven pump, a meter for measuring the output of said pump, a plurality of counters selectively engageable with said meter whereby one of said counters can be rendered operative at a given time for the purpose of registering the amount of fuel drawn by its respective account, a lock for each counter, a key for each lock, a valve for the discharge line from said pump, a switch actuated by said valve for controlling said pump motor providing a remote control for said motor, and a switch for each lock in series with said first mentioned switch and controlled by its respective key.

4. In a gasoline dispensing apparatus, the combination of a gasoline pump, a motor for driving said pump, a meter for the discharge of said pump, a plurality of counting mechanisms separately connectable to said metering mechanism, a lock for controlling the connection between each counting mechanism and said metering mechanism, a motor controlling switch actuated by each of said locks, a valve on the discharge end of said apparatus, a second switch for controlling said motor in series with said first switch, said second switch having means for closing same when said discharge valve is open.

5. In an apparatus for dispensing gasoline, the combination of a pump, an electric motor for operating said pump, a hose line extending from said pump to the point of delivery, a cut-off valve at the end of said hose line, an electrical circuit connected with said motor, a motor-controlling switch in said circuit, a second motor-controlling switch actuated by said cut-off valve and placed in series with said first mentioned switch, and a lock for controlling said first mentioned motor-controlling switch.

ALFRED G. TEBAULT.