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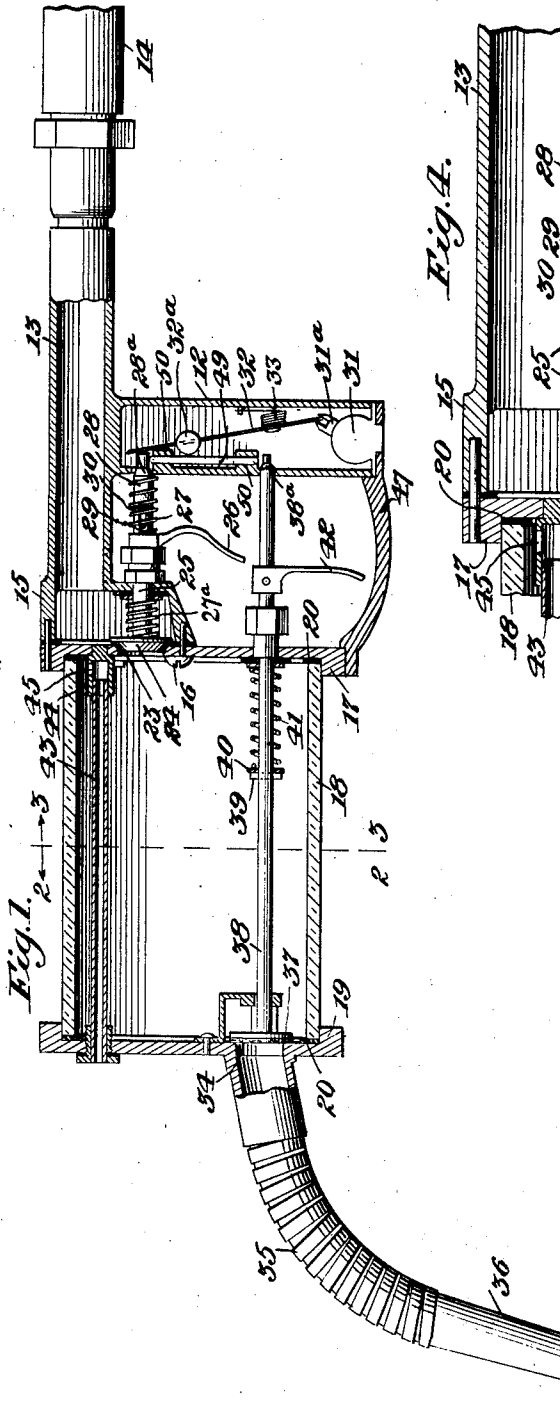
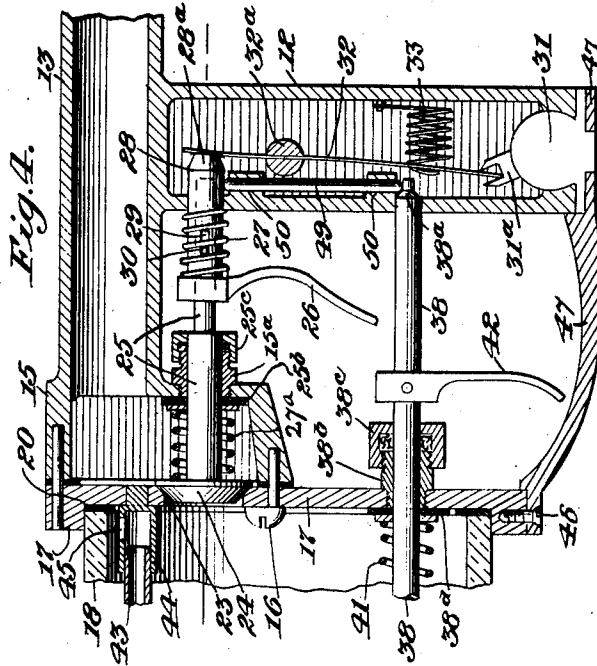
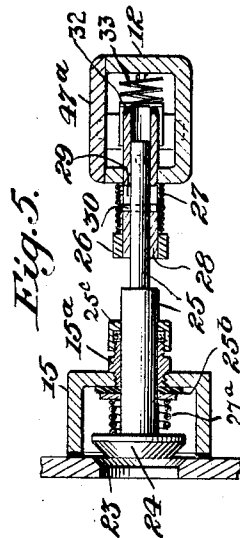
R. P. HERON

1,594,367

LIQUID MEASURING, REGISTERING, AND DISPENSING DEVICE

Filed March 3, 1925

2 Sheets-Sheet 1



Inventor:
Robert P. Heron,
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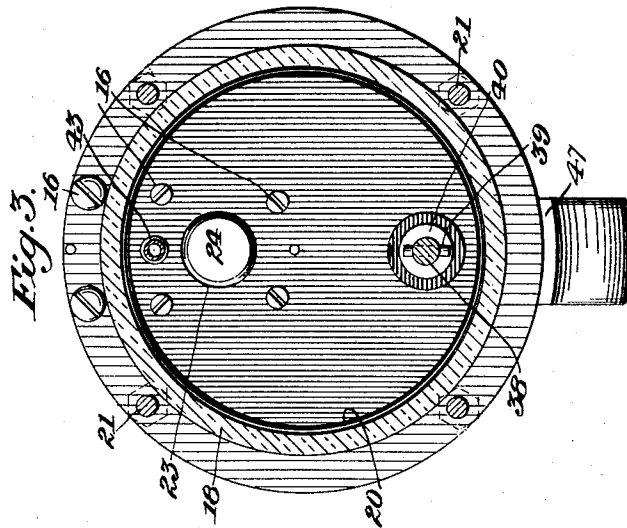
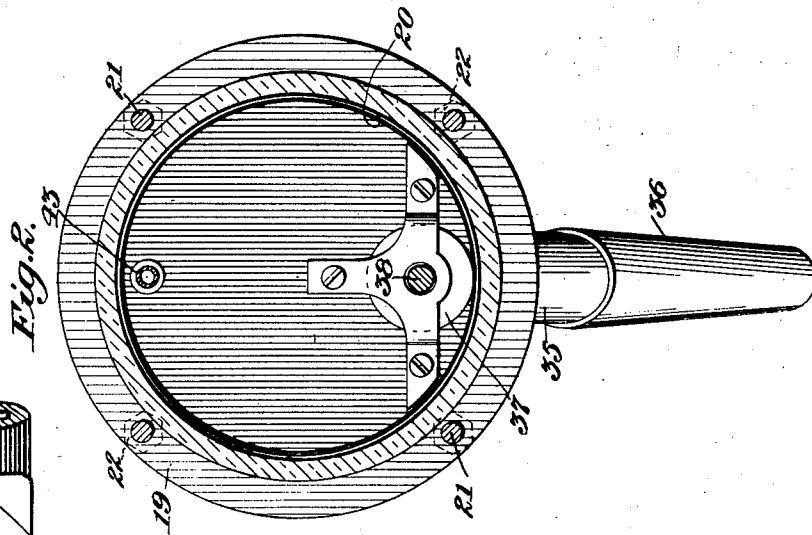
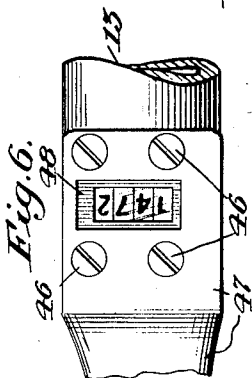
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R. P. HERON

LIQUID MEASURING, REGISTERING, AND DISPENSING DEVICE

Filed March 3, 1925

2 Sheets-Sheet 2



Inventor:
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Patented Aug. 3, 1926.

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UNITED STATES PATENT OFFICE.

ROBERT P. HERON, OF UTICA, NEW YORK.

LIQUID MEASURING, REGISTERING, AND DISPENSING DEVICE.

Application filed March 3, 1925. Serial No. 12,998.

This invention relates to certain improvements on the liquid measuring, counting and dispensing device shown and described in my application Serial No. 635,005, filed April 27, 1923. The present invention has for one of its objects to provide a convenient device, of the character referred to, and which is of such construction that it will be impossible to fill the measuring device without first operating the register or counter by which the number of times that the measure is filled and emptied will be indicated or counted. The invention also relates to certain other desirable features as will herein after more fully appear.

Referring to the drawings Fig. 1 is a vertical sectional view of the present improved device. Figs. 2 and 3 are sectional views of the same taken on lines 2—2 and 3—3, respectively, of Fig. 1, looking in the direction of the arrows adjacent to said lines. Fig. 4 is an enlarged partial sectional view showing the parts in position to operate the register or counter. Fig. 5 is a detail view showing the parts in the opened position of the inlet valve, and Fig. 6 is a detail bottom view of the handle showing the figures of the register or counter.

Referring to the drawings, 12 denotes a handle portion of the frame work at the top of which is a tubular portion 13 to which is coupled a suitable flexible inlet pipe 14 and at the front end of the said tubular portion 13 is a hollow member 15 the chamber of which communicates with the said tubular portion 13. Rigidly attached to the said hollow member 15, by screws 16, is an inlet head 17 of a measure which also comprises a glass cylinder 18 and an outlet head 19. The heads 17 and 19 are recessed as shown and are provided with packings 20 of cork, felt or the like, said heads being connected by tie rods 21 provided with nuts 22 which, when properly screwed up, will hold the ends of the said glass cylinder 18 tightly against the packings 20 to ensure liquid-tight joints at these points.

The inlet head 17 is provided with an inlet opening 23 normally held closed by a spring-pressed valve 24 the stem 25 of which is slidably supported from the hollow member 15, preferably by a sleeve 15^a. Said sleeve is screwed into said hollow member, as shown more clearly in Figs. 4 and 5, and said valve stem is slidably mounted in said sleeve. Attached to a sleeve 28 slidably mounted on

said valve stem is an operating trigger or finger-piece 26 against which impinges a coil spring 27 encircling said sleeve which extends rearward from said finger-piece and is provided with a slot 29 through which a pin 30, attached to said valve stem, extends. The coil spring 27 is normally loosely disposed between the pin 30 and the operating finger-piece 26 so that, by virtue of the slot 29, a certain limited movement of the operating finger-piece 26 and its attached sleeve 28 is permitted before said pin, at the rearward movement of said finger-piece, is engaged by the wall at the forward end of said slot to impart a positive movement to the valve stem 25 to open the inlet valve 24, as shown in Fig. 4. In other words, the sleeve 28 is free to move a considerable distance before the operating finger-piece 26 can act, through the sleeve 28, to move the valve stem 25 rearward to open said inlet valve, said valve being normally held in closed position by the coil springs 27 and 27^a.

Mounted in the lower part of the handle 12 is a register or counter 31 of well known construction, and which is operated from the sleeve 28 through a lever 32, mounted in said handle, and the operating member 31^a of said register. As herein shown the lever 32 is attached to a rocking fulcrum pin 32^a, but may be mounted in any other suitable manner. Thus when the user holding the measure by the handle 12 pulls inward on the operating finger-piece 26 the sleeve 28, extending rearward from said finger-piece, will first move rearward and will actuate the lever 32 and thus cause said lever to operate the register or counter 31 to the extent of one number, this operation occurring before the valve stem is moved rearward to open the inlet valve 24. The lever 32 is herein shown as being thin and somewhat flexible and is assisted in its operation by a retracting spring 33. From this it will be understood that the register or counter will be advanced to the extent of one number before the inlet valve is opened for the purpose of filling the measuring chamber, so that it will be impossible to fill the said measuring chamber without first operating the register.

The head 19 is provided with an outlet port 34 communicating with a flexible discharge pipe 35 preferably terminating in a suitable nozzle 36. The said outlet port 34 in the head 19 is normally closed by a valve 37 carried by a rod 38 and provided with an

abutment consisting, as herein shown, of a pin 39 and washer 40. A coil spring 41 is interposed between the inlet head 17 and the said abutment and serves to hold the outlet valve 37 in a normally closed position. Attached to the valve rod 38 is a trigger or finger-piece 42 which may be pressed upon by the fingers of the user to draw the said rod rearward for the purpose of opening the said outlet valve when desired. The valve rod or stem 38 is mounted in a sleeve 38^b fixed to the head 17 and is encircled by a gland 38^c and packing washers 38^d to make liquid tight joints. Also a packing washer 25^b and a gland 25^c are preferably provided to make liquid tight joints for the inlet valve stem or rod 25.

Mounted in the upper part of the measure is an air tube 43 extending into a nipple 44 mounted on the inlet head 17, said nipple having an opening 45 permitting air to escape from the measuring chamber into and through the said air tube 43 when the measure is being filled, and also permitting the inlet of air to the said measuring chamber when the latter is being emptied, the air escaping or entering through the forward end of the said tube which opens outside of the outlet head 19.

To the lower end of the handle 12 and to the inlet head 17 is attached, by screws 46, a cover plate 47 having an opening 48 through which the numbers of the register 31 are visible, the said plate having an upward extension 47^a which serves as a cover for one side of the hollow handle 12, so that by removing the said cover plate access to the mechanism within the said hollow handle is permitted.

To prevent the inlet and outlet valves from being opened at the wrong times a locking pin 49, mounted to slide vertically in bearings afforded by lugs 50 on the inside of the handle 12 is provided. This locking pin is arranged to be engaged by a rounded or inclined shoulder 28^a at the end of the sleeve 28 slidably mounted on the stem or rod 25 of the inlet valve 24 and an inclined or conical shoulder 38^a on the outlet valve rod 38. Thus when the inlet valve is opened by the finger piece 26, to fill the receptacle, the said locking pin will be forced downward to lock the outlet valve rod 38 against opening movement, and after the receptacle has been filled and is to be emptied and the inlet valve is closed by the springs 27 and 27^a, and the sleeve 28 is returned to the position shown in Fig. 1, the locking pin will be freed from the shoulder 28^a on the sleeve 28 so that a pull on the finger piece 42 will cause the inclined or conical shoulder 38^a of the outlet valve rod 38 to force the locking pin 49 upward to lock the sleeve 28 and thus prevent the inlet valve from being opened. Thus the inlet and outlet valves can only be

opened alternately, or one at a time, and will be locked against opening movements except at the proper times.

It will be noted that this improved measuring and dispensing device is mounted at the discharge end of a flexible tube or pipe 14 which is to extend to a suitable source of supply. The invention is especially adapted or intended for use at supply stations for measuring oil, and the glass cylinder 18 enables the purchaser to see that the measuring chamber within said cylinder is properly filled each time, while the register or counter 31 will indicate the number of times that the measure is filled and emptied and will also register the total amount of oil or other liquid dispensed for any desirable given time, and will thus serve as a check on the operator of the dispensing station. Owing to the fact that the measuring dispenser is at the discharge end of the supply pipe or tube 14 the purchaser is assured full measure, which might not be the case if the measuring device were at a distance from the point of discharge through a tube or pipe, as in such case a considerable quantity of a measured viscous liquid, such as lubricating oil, would adhere to the inside of such discharge pipe or tube and the purchaser would not get the full amount measured.

This improved measuring and dispensing device can be conveniently grasped by the handle 12 when in use, and the spring-closed inlet and outlet valves can be conveniently opened alternately by the triggers or finger-pieces 26 and 42 in filling and emptying the measuring and dispensing device, as will be obvious. Thus the invention presents a convenient device, for the purpose indicated, which can be operated rapidly in measuring oils or other liquids, as has been demonstrated in actual use.

Having thus described my invention I claim and desire to secure by Letters Patent:

1. A measuring, registering and dispensing device for liquids comprising a measuring receptacle having an inlet, a valve controlling said inlet, and a stem to which said valve is attached, combined with a register operatively connected with said valve, and means whereby said register may be operated to be advanced one number, when said valve is to be opened, but before the valve-opening operation occurs.

2. A measuring, registering and dispensing device for liquids comprising a measuring receptacle having an inlet, a valve controlling said inlet, a stem by which said valve is carried, and an operating finger-piece for opening said valve and which is loosely connected with said valve stem so as to have a limited movement independently of said valve stem, combined with a register

and connections between said finger-piece and said register whereby said register may be actuated to be advanced one number before said inlet valve is opened.

5 3. A measuring, registering and dispensing device for liquids comprising a measuring receptacle having an inlet, a valve controlling said inlet and a stem to which said valve is attached and which is provided
10 with a pin, a sleeve loosely mounted on said valve stem and provided with a slot, an operating finger-piece attached to said sleeve, and a spring encircling said sleeve and engaged by said pin, said slot permitting a
15 limited movement of said sleeve independently of said valve stem, combined with a register and a connection between said sleeve and register; whereby a movement of said sleeve by said finger-piece will cause said
20 register to be advanced one number before said inlet valve is opened.

4. A measuring, registering and dispensing device for liquids comprising a measuring receptacle having an inlet, a valve controlling said inlet and a stem to which said
25 valve is attached and which is provided with a pin, a sleeve loosely mounted on said valve stem and provided with a slot, an operating finger-piece attached to said sleeve, and a spring encircling said sleeve and engaged by said pin, said slot permitting a
30 limited movement of said sleeve independently of said valve stem, combined with a register and a lever serving as a connection between said sleeve and register; whereby a
35 movement of said sleeve by said finger-piece will cause said register to be advanced one number before said inlet valve is opened.

40 5. A visible measuring, registering and dispensing device for liquids comprising a measuring receptacle having a glass body and metal end heads provided with inlet and outlet ports, a handle with which said receptacle is connected and which handle is
45 adapted to be grasped by the hand of a user,

a spring-pressed inlet and outlet valves normally closing said ports, sliding rods or stems by which said valves are carried, a finger-piece attached to each of said rods or stems adjacent said handle, and a register
50 or counter operatively connected with said inlet valve so as to be advanced one number when said valve is to be opened.

6. A visible measuring, registering and dispensing device for liquids comprising a
55 measuring receptacle having a glass body and metal end heads provided with inlet and outlet ports, a handle with which said receptacle is connected and which handle is adapted to be grasped by the hand of a
60 user, spring-pressed inlet and outlet valves normally closing said ports, sliding rods or stems by which said valves are carried, a finger-piece attached to each of said rods or stems adjacent said handle, and a register or
65 counter operatively connected with said inlet valve so as to be advanced one number when said valve is to be opened, the operating finger-piece for the said inlet valve being loosely mounted on the inlet valve
70 stem so that it may be moved to advance the register or counter one number before said inlet valve is opened.

7. A measuring, registering and dispensing device for liquids comprising a receptacle having inlet and outlet ports, inlet and outlet valves controlling said ports, and means for alternately locking said valves
75 so that when one of said valves is open the other will be locked against an opening movement, said locking means consisting of sliding parts connected with said valves and having shoulders, and a sliding locking pin arranged to be engaged alternately by said
80 shoulders and thereby lock one of said valves in closed position when the other is open.
85

In testimony whereof I affix my signature.

ROBERT P. HERON.