

Nov. 27, 1923.

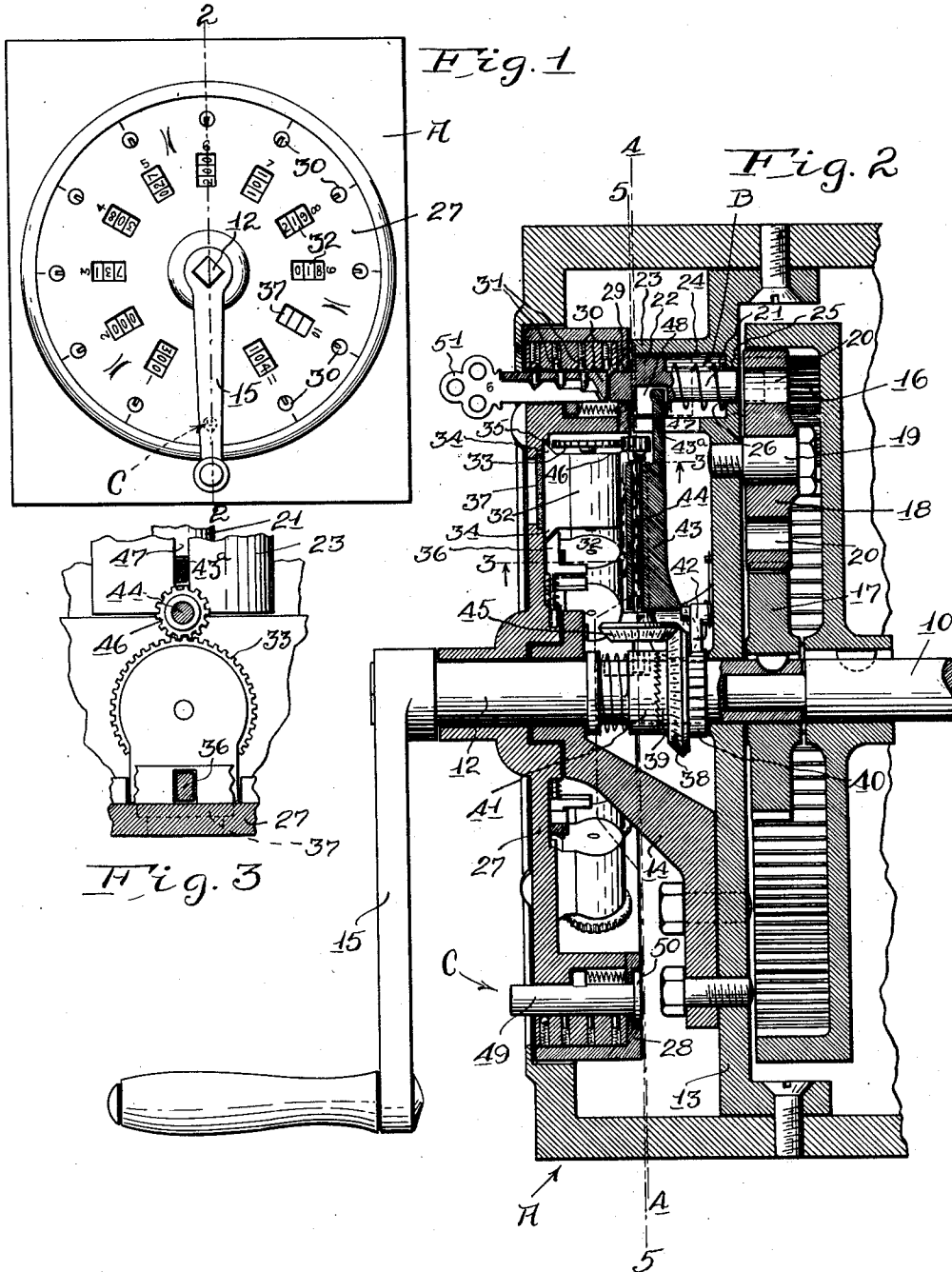
1,475,368

S. B. CHILSON

REGISTER FOR FLUID DISPENSERS

Filed Nov. 21, 1921

3 Sheets-Sheet 1



Inventor

Sumner Boyd Chilson

By Bradbury & Caswell
Attorneys

Nov. 27, 1923.

1,475,368

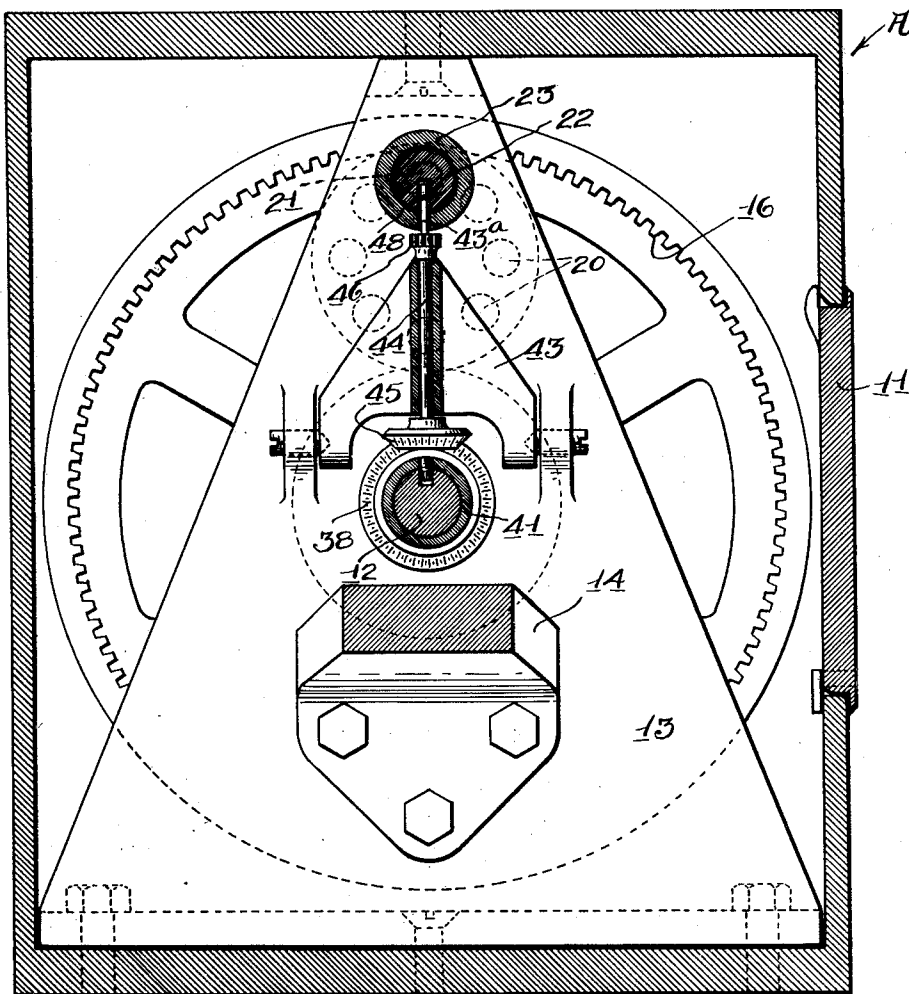
S. B. CHILSON

REGISTER FOR FLUID DISPENSERS

Filed Nov. 21, 1921

3 Sheets-Sheet 2

Fig. 4



Inventor

Sumner Boyd Chilson

By Bradbury & Caswell
Attorneys

Nov. 27, 1923.

1,475,368

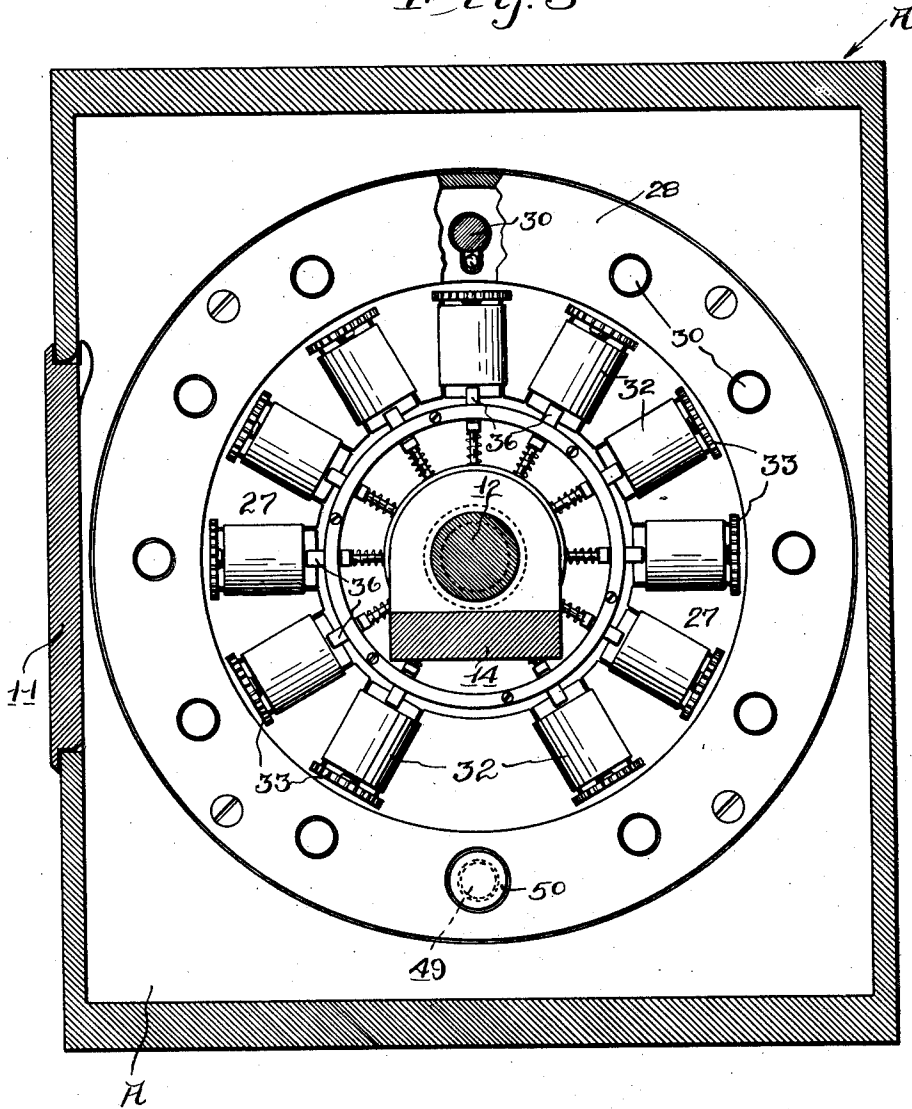
S. B. CHILSON

REGISTER FOR FLUID DISPENSERS

Filed Nov. 21, 1921

3 Sheets-Sheet 3.

Fig. 5



Inventor

Sumner Boyd Chilson

By Bradbury & Caswell
Attorneys

UNITED STATES PATENT OFFICE.

SUMNER BOYD CHILSON, OF MINNEAPOLIS, MINNESOTA.

REGISTER FOR FLUID DISPENSERS.

Application filed November 21, 1921. Serial No. 516,636.

To all whom it may concern:

Be it known that I, SUMNER BOYD CHILSON, a citizen of the United States, residing in Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and useful Register for Fluid Dispensers, of which the following is a specification.

My invention relates to improvements in registers for fluid dispensers.

Concerns, operating fleets of trucks and automobiles, have considerable difficulty in keeping an accurate check upon the individual users of liquid fuel drawn from a common dispenser.

It is the object of my present invention to supply a simple and durable device for association with a fuel dispenser, whereby each of a number of individuals may have guarded access thereto, said device serving to register against each user, the amount of fuel drawn by him or at his instance.

Another object is to provide a device of this kind embodying a master lock to prevent the use of an attached dispenser by any of the persons ordinarily having authorized access thereto.

With the foregoing and other objects in view, which will appear in the following description, the invention resides in the novel combination and arrangement of parts and in the details of construction hereinafter described and claimed.

In the drawings, Fig. 1 is an elevation of a device embodying my invention; Fig. 2 is an enlarged sectional view in detail taken on the line 2—2 of Fig. 1, a part of the housing at the rear of the device being broken away; Fig. 3 is a sectional view in detail taken on the line 3—3 of Fig. 2 and Figs. 4 and 5 are sectional views taken respectively on the lines 4—4 and 5—5 of Fig. 2.

In the drawings, I have used similar reference letters and numerals to indicate like parts throughout the several views. A is a housing constructed to encase the moving parts of my improved device, the rear of said housing being formed, as desired, for convenient attachment to the frame of a fluid dispenser having a propeller shaft, as indicated by the numeral 10. This housing A has a door 11 in one side thereof to supply access to the interior of the housing A. A power shaft 12, journaled in a web 13 in the housing and in a bracket 14 on

said web is driven by a crank 15 or other suitable means. The propeller shaft 10 of a fluid dispenser is geared to the power shaft 12 through a large internal gear 16 keyed on said shaft 10, a spur gear 17 keyed on the shaft 12 and an idler locking gear 18 journaled on a stud 19 in the web 13 and meshing with both of said gears 16 and 17. The locking gear 18 is formed with a plurality of slide receiving apertures 20. A locking slide B consisting of a pin 21 with an annular shoulder 22 thereon is provided to secure the gear 18 against rotation and thereby lock the propeller shaft 10 against movement by the crank 15. A boss 23 on the web 13 has a bore 24 therein to slidably receive the shoulder 22 on the pin 21. The rear extremity of said pin 21 slides in an opening 25 in the web 13, said opening being arranged so that each of the apertures 20 in the locking gear 18 will register, in one position of said gear, with the rear end of the pin 21. A spring 26 encircling the pin 21, and interposed between the shoulder 22 and the web 13 operates to yieldingly shift the pin 21 forwardly out of engagement with the gear 18. A carriage or dial 27 revolubly mounted on the power shaft 12 closes an annular opening in the front side of the housing A. Said carriage 27 has an annular plate 28 on the rear side thereof forming a sliding abutment for the forward end of the pin 21. Apertures 29 in said plate, normally closed by lock bolts 30, are arranged to severally receive the forward end of the pin 21, when their respective lock bolts 30 are withdrawn. The pin 21, in position against the abutment is held in locking engagement with the gear 18, as shown in dotted lines, Fig. 2. The lock bolts 30 are of the ordinary sliding type and may be unlocked in the usual manner by key or dial controlled tumblers 31, the former preferred. For each lock bolt 30, I supply a register 32, the working parts thereof being of ordinary design, including a drive gear 33. The base of each register is formed with opposed angular flanges 34, one flange being provided to fit in a groove 35 in the carriage 27 and the other to co-operate with a catch 36 yieldingly slidable on the carriage. The bases of these registers are held against windows 37 in the carriage, the register readings being readily observed through said windows. Each register is placed on the carriage just

inside of its respective locking bolt 30, the axis of its driving gear 33 lying radially of the carriage 27. Means, common to all of the registers for severally driving the same from the power shaft 12, are provided. A bevel gear 38, loosely journaled on the power shaft 12, has a ratchet clutch member 39 on one side and a ratchet wheel 40 on the opposite side thereof. A yielding ratchet clutch member 41 feathered on the power shaft 12 engages its companion clutch member 39 on the bevel gear 38 and operates to turn the gear 38, in one direction, during the rotation (clockwise, Fig. 1) of the power shaft 12, the reverse movement of said gear 38, upon reverse rotation (counter clockwise, Fig. 1) of the shaft 12, being prevented by a spring pressed pawl 42 pivoted on the web 13. A hinged frame 43 pivoted with respect to the bevel gear 38, as shown, supplies a mounting for a shaft 44. A bevel gear 45 secured to the lower end of the shaft 44 is held in rocking mesh with the bevel gear 38 on the power shaft 12. A spur gear 46 on the upper end of said shaft 44 is located so as to be swung into and out of mesh with the driving gear 33 of the register 32 for the particular lock bolt 30 positioned to co-operate with the latch slide B. The tip 43^a of the frame 43 projects upwardly through a slot 47 in the boss 23 and into a recess 48 in the shoulder 22 of the pin 21. With the pin 21 in gear locking position (dotted lines, Fig. 2), the forward wall of the recess 48 engages the tip 43^a of the frame 43 and holds the same so that the gear 46 is withdrawn from meshing relation with the driving gears 33 of the registers 32. With said pin 21 in gear releasing position (solid lines, Fig. 2), the rear wall of the recess 48 engages the tip 43^a of the frame 43 and holds the same so that said gear 46 rests in mesh with the driving gear 33 of the uppermost register 32.

A master lock C is supplied to secure both the power shaft 12 and carriage 27 against manipulation. This master lock comprises a lock bolt 49 similar to the lock bolts 30, except that it is supplied with a head 50 capable not only of shifting the latch slide 21 into gear locking position, but also capable of a further movement into the bore 24 in the boss 23.

In use, the different keys 51 to the lock bolts 30 are assigned to the different authorized users of liquid fuel. These keys are numbered, each key fitting the lock bolt associated with the register 32 correspondingly numbered (Fig. 1). The key to the master lock C is retained by the overseer, the application of said key to the lock bolt 49 being necessary to free the shaft 12 and carriage 27 after the same have been locked by the pressing of said lock bolt 49 into position

within the bore 24 of the boss 23. With the carriage or dial 27 free to revolve, a user, No. 6 for example, may swing the carriage 27 to position shown in Fig. 1, wherein lock bolt 30 for key No. 6 registers with the forward end of the pin 21. By inserting his key, the user frees the lock bolt 30, whereupon the pin 21 is urged by the spring 26 into the aperture 29 uncovered by said lock bolt. This movement of the pin 21 frees the same from engagement with the locking gear 18, thus permitting the turning of the crank 15 and the resultant rotation of the propeller shaft 10. The forward movement of said pin 21 also results in shifting the frame 43 into position wherein the gear 46 meshes with the driving gear 33 of register No. 6. The meter actuating gears 38, 45, 46 and 33 are proportioned to cause the register 32 to accurately register the amount of fuel dispensed when the crank 15 is turned, the usual errors and omissions in checking the use of fuel being thereby avoided. Should the dispenser be of that type requiring reverse resetting rotation of the propeller shaft 10, such turning of the said shaft by reverse movement of the crank 15 is unattended by movement of the then operative register 32, due to the locking of the bevel gear 38, by the pawl 42 and the slipping of the clutch member 41 upon the companion clutch member 39 on said bevel gear 38. Having obtained, the desired quantity of fuel, the same having been registered against him, user No. 6 withdraws his key from his lock bolt 30 and thrusts said lock bolt inward against the pin 21. Said pin 21, yielding under this pressure, is pushed out of the aperture 29 in the abutment 28 and into position (dotted lines, Fig. 2) engaging the registering aperture 20 in the locking gear 18. At the inward extremity of the movement of said lock bolt 30, the tumblers 31 operate to secure the same. The locking movement of the pin 21 also serves to withdraw the gear 46 from mesh with the driving gear 33 of register (No. 6). The carriage 27 being again free to rotate may be turned into appropriate position by a subsequent user, the quantity of fuel withdrawn being registered by his respective register 32. Register readings may be had at any time, said readings determining the exact quantities of fuel drawn by the various users.

Changes in the specific form of my invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of my invention.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

1. In a device of the class described, the combination with a fluid dispenser having a propeller shaft therefor, of gearing to turn

said shaft including a locking gear, a yielding latch slide operating in one position to lock said gear, a carriage, a plurality of yielding, slidable lock bolts, on said carriage, severally movable into operative position for actuating the latch slide, a register for each lock bolt, said registers being mounted upon the carriage, means associated with said gearing and rendered operative by said lock slide to drive the respective register for the particular lock bolt employed in freeing said gearing through said latch slide.

2. In a device of the class described, the combination with a fluid dispenser having a propeller shaft therefor, of a power shaft operatively connected with said propeller shaft, a yielding latch slide operating in one position to lock said power shaft, a carriage, a plurality of yielding, slidable lock bolts, on said carriage, severally movable into operative position for actuating the latch slide, a register for each lock bolt including a drive gear, said registers being mounted upon the carriage, and gearing propelled by the power shaft and movable through the medium of said latch slide into co-operative relation with respect to the drive gear of the respective register for the particular lock bolt employed in freeing the power shaft through said latch slide.

3. In a device of the class described, the combination with a fluid dispenser having a propeller shaft therefor, of a power shaft operatively connected with said propeller shaft, a yielding latch slide operating in one position to lock said power shaft, a carriage, a plurality of yielding, slidable lock bolts, on said carriage, severally movable into operative position for actuating the latch slide, a register for each lock bolt including a drive gear, said registers being mounted upon the carriage, gearing propelled by the power shaft and co-operative with the drive gear of the respective register for the particular lock bolt employed in freeing the power shaft through said latch slide and a movable frame carrying a part of said gearing, said frame being shiftable by said latch slide to render said gearing operative when the power shaft is free.

4. In a device of the class described, the combination with a fluid dispenser having a propeller shaft therefor, of a power shaft operatively connected with said propeller shaft, a yielding latch slide operating in one position to lock said power shaft, a carriage, a plurality of yielding, slidable lock bolts,

on said carriage, severally movable into operative position for actuating the latch slide, a register for each lock bolt including a drive gear, said registers being mounted upon the carriage, and gearing propelled, in one direction only, by the power shaft and co-operative with the drive gear of the respective register for the particular lock bolt employed in freeing the power shaft through said latch slide.

5. In a device of the class described, the combination with a fluid dispenser having a propeller shaft therefor, of a power shaft operatively connected with said propeller shaft, a yielding latch slide operating in one position to lock said power shaft, a carriage having an apertured abutment for said latch slide, a plurality of yielding, slidable lock bolts, on said carriage, said lock bolts normally closing the apertures in said abutment and retractable to severally permit of the reception of the latch slide by said apertures and the consequent releasing movement of said latch slide, a register for each lock bolt, said registers being mounted upon the carriage, and means associated with the power shaft to operate the respective register for the particular lock bolt employed in freeing said power shaft through said latch slide.

6. In a device of the class described, the combination with a fluid dispenser, of propelling mechanism associated with a driving medium of said dispenser, a lock for said mechanism, a carriage, a plurality of guarded lock releasing members mounted on the carriage, a guarded lock securing member also mounted on said carriage, a register for each lock releasing member mounted on the carriage and register actuating means driven by the propelling mechanism to operate the appropriate register for a given lock releasing member.

7. In a device of the class described, the combination with a fluid dispenser, of propelling mechanism associated with a driving medium of said dispenser, a lock for said mechanism, a plurality of guarded lock releasing members, a register for each member, and register actuating means associated with said propelling mechanism, said means operating to drive in one direction only the appropriate register for a given lock releasing member.

In testimony whereof, I have signed my name to this specification.

SUMNER BOYD CHILSON.