F. EVANS AND J. CORCOS.

FILLING APPARATUS FOR LIQUID FUEL TANKS AND THE LIKE.

APPLICATION FILED MAR. 29, 1919.

1,381,864. Patented June 14, 1921.

2 SHEETS—SHEET 1.

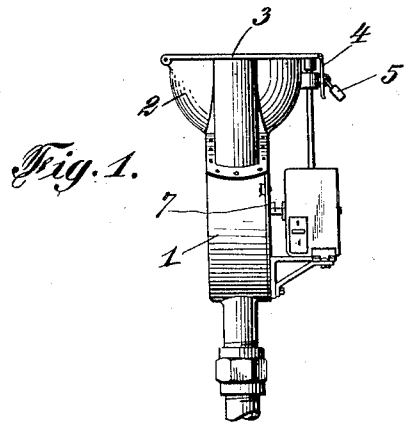


Fig. 1.

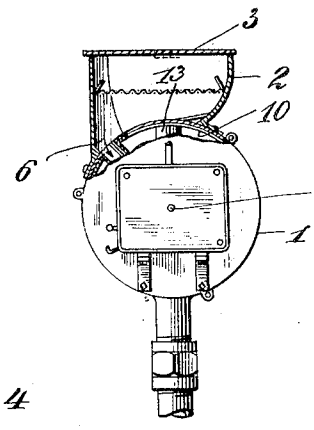


Fig. 2.

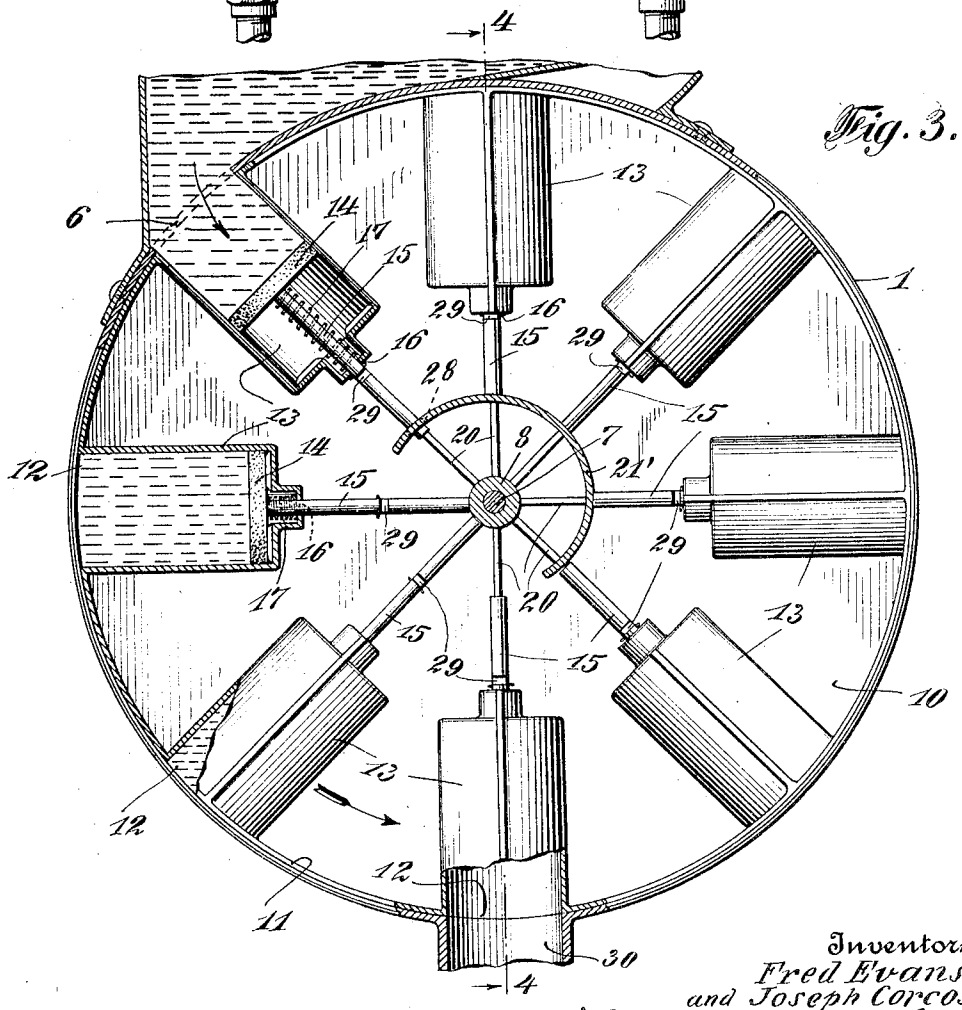


Fig. 3.

Inventors
Fred Evans
and Joseph Corcos
By their Attorney
Charles H. Wilson.

F. EVANS AND J. CORCOS.

FILLING APPARATUS FOR LIQUID FUEL TANKS AND THE LIKE.

APPLICATION FILED MAR. 29, 1919.

1,381,864.

Patented June 14, 1921.

2 SHEETS—SHEET 2.

Fig. 4

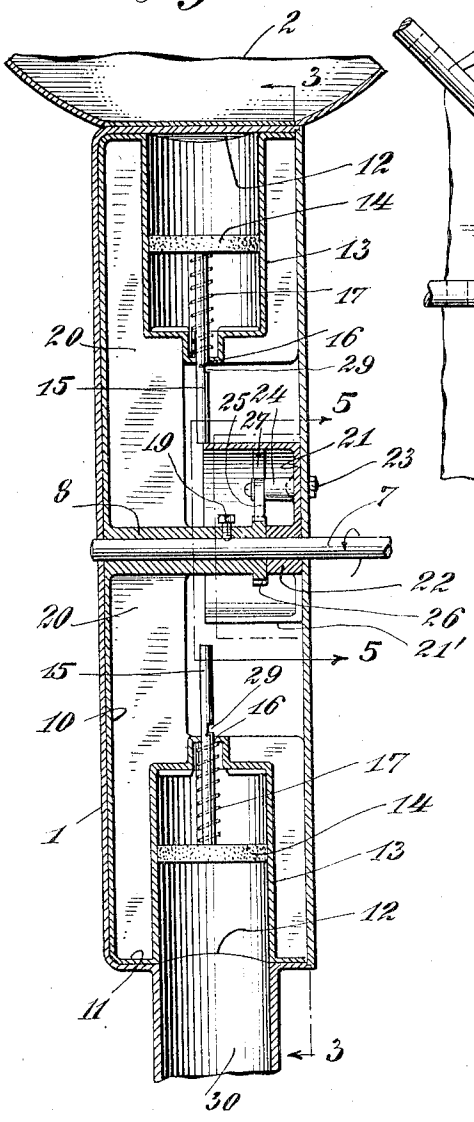


Fig. 5.

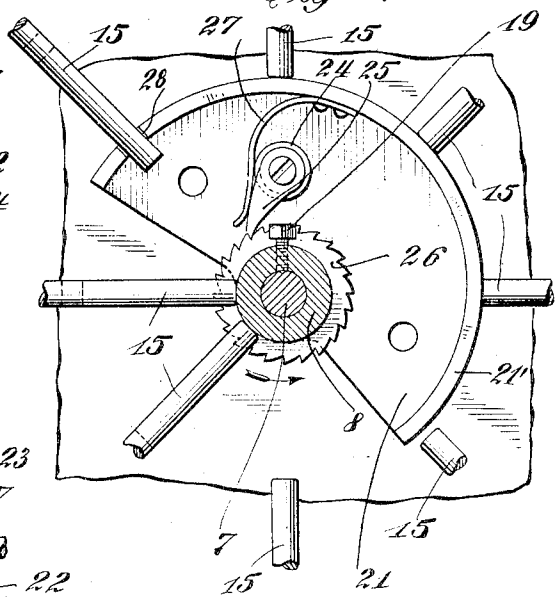
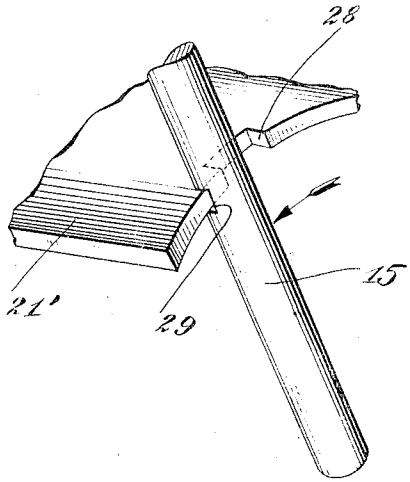


Fig. 6.



Inventors
Fred Evans
and Joseph Corcos
By their Attorney
Charles N. Wilcox

UNITED STATES PATENT OFFICE.

FRED EVANS, OF SUMMIT, NEW JERSEY, AND JOSEPH CORCOS, OF NEW YORK, N. Y., ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO INTERNATIONAL GAS RECORDER MANUFACTURING COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

FILLING APPARATUS FOR LIQUID-FUEL TANKS AND THE LIKE.

1,381,864. Specification of Letters Patent. Patented June 14, 1921.

Application filed March 29, 1919. Serial No. 286,148.

To all whom it may concern:

Be it known that we, FRED EVANS and JOSEPH CORCOS, residing, respectively, at Summit, in the county of Union and State of New Jersey, and at New York, in the county and State of New York, have invented certain new and useful Improvements in a Filling Apparatus for Liquid-Fuel Tanks and the like, of which the following is a specification.

This invention relates to a filling apparatus for liquid fuel tanks and the like, and one of the objects of the invention is to provide means whereby the fuel tank or the like may be filled with liquid fuel in measured quantities, whereby a quantity of fuel deposited into the storage tank can be effectively measured, and the amount inserted therein accurately determined.

The mechanism shown, described and claimed in this application is designed to cooperate with a certain recording mechanism forming the subject matter of our application filed contemporaneously herewith, Serial Number 286,149.

Another object of the invention is to provide the apparatus of the above type, which operates substantially automatically.

Other objects and aims of the invention, more or less specific than those referred to above, will be in part obvious and in part pointed out in the course of the following description of the elements, combinations, arrangements of parts and applications of principles, constituting the invention; and the scope of protection contemplated will be indicated in the appended claims.

In the accompanying drawings wherein we have shown a preferred form of embodiment of our invention:

Figure 1 is an elevational view of the entire apparatus.

Fig. 2 is a similar view, partly in section, taken at right angles to Fig. 1.

Fig. 3 is a vertical sectional view, taken on line 3—3 of Fig. 4, on an enlarged scale, showing the means for filling the storage tank with the liquid fuel while measuring the quantities thereof deposited in said tank.

Fig. 4 is a vertical sectional view taken on line 4—4 of Fig. 3, looking in the direction of the arrow.

Fig. 5 is a fragmentary view taken on line 5—5 of Fig. 4, showing a detail of construction; and

Fig. 6 is a perspective view showing a detail of construction.

Referring now to the drawings, wherein similar reference characters refer to similar parts throughout the several views thereof, the reference numeral 1 denotes the casing for the apparatus and located above the casing is a receptacle or funnel 2, the same being adapted to be closed by a suitable hinged cover 3, adapted to be locked in the position shown, as by means of the clasp 4 and lock 5. The funnel 2 rests upon the casing 1 and is in communication therewith as by means of the passageway 6.

Extending through the central part of the casing 1, and journaled in the side walls thereof, is a shaft 7, and carried upon the shaft is a hub 8. A cylindrical member 10 is located within the casing 1, the periphery or rim 11 of this cylindrical member having a close sliding engagement with the inner wall of the cylindrical portion of the casing 1.

The rim 11 of the cylindrical member 10 is provided with a plurality of apertures 12 of a diameter equal to that of the passageway 6, said apertures being so located that during the rotation of the cylindrical member 10 each of said apertures will successively be brought into registry with said passageway whereby liquid deposited in the funnel 2 will pass through the passageway 6 and through the apertures 12 provided in this rim.

Carried by the rim 11 of the cylindrical member 10, and forming continuations of the passageways 12, is a plurality of cylinders 13, each cylinder being radially disposed with respect to the axes of the cylindrical member 10. Located in each of the cylinders 13 is a piston 14, and each piston is provided with a piston or guide rod 15, which extends through an aperture provided in the bottom wall 16 of each cylinder.

An extensile spring 17, encircling each of the rods 15, rests upon the bottom wall 16 of each cylinder, and engaging the piston 14, urges it to outward movement within the cylinder 14.

The cylindrical member 10 has its hub portion 8 fastened to the shaft 7 as by

means of the set screw 19. The cylinders 13 are rigidly supported within the cylindrical member 10 by means of ribs 20 which extend from the inner wall of the cylinder to the hub portion 8 thereof, whereby all the cylinders are rigidly supported within the casing comprised by the cylindrical member 10.

21 indicates a plate having a hub portion 22 through which extends the shaft 7, said plate 21 being fastened to the outer cylindrical casing as by means of the bolt 23. Journaled on a post 24, extending laterally from the plate 21, is a pawl 25, said pawl engaging with a ratchet wheel 26 formed on the hub portion 8 of the cylindrical member 10. The pawl 25 is spring pressed into engagement with the teeth of the ratchet member 16 as by means of the spring 27. This pawl and ratchet mechanism prevents a retrograde movement of the cylindrical member 10. The semi-circular flange 21′ is provided with a cutaway portion or notch 28, which is located centrally of the axis of the passageway 6, and each of the piston rods 15 is provided with a transverse slot or notch 29, for a purpose which will be presently described.

The cylinders 13 are of a predetermined size, that is to say, they are adapted to act as the measuring elements of the apparatus, so that when the pistons 14 are in their lowermost positions in the cylinder a predetermined measured quantity of liquid will be contained within each cylinder. The unit of measure can, of course, be a quart, a gallon, or such unit as may meet the requirements to which the apparatus is put.

Having thus described this embodiment of our invention, the operation thereof may now be understood:

Assuming the parts to be in the position shown, the liquid to be measured is deposited within the funnel 2, whereupon it will flow through the passageway 6, forcing downwardly the piston of the cylinder which is opposite said passageway. In this connection it will be noted that when any cylinder is opposite the passageway 6 the piston rod 15 thereof occupies the slot 28 of the flange 21′, whereby the cylindrical member 10 carrying all the pistons is held against rotation. The continued flow of the liquid into the cylinder will force the piston therein to its lowermost position, whereupon the slot 29 of the piston rod will register with the slot 28 of the flange 21′, whereupon the cylindrical member 10 will be unlocked, and the weight of the liquid within the cylinder will cause the cylindrical member 10 to revolve to bring the next cylinder in position opposite the passageway 6. When any cylinder carrying a liquid arrives at a position opposite the discharge passageway 30 of the machine the liquid will be discharged therethrough into the storage tank, and the spring 17 will force the piston to its normal position. During the continued intermittent movement of the cylindrical member 10 the pistons are carried progressively in a counter clockwise direction, the pistons in the empty cylinders being held against retraction due to the engagement of the piston rods 15 with the flange 21′, as clearly shown in Figs. 3 and 5, until each rod registers with the slot 28, in which position the cylinder thereof is in registry with the passageway 6. Thus it will be seen that the machine will operate continuously and automatically as long as there is liquid in the funnel 2, the liquid being automatically discharged and measured in its passage from said funnel through the discharge aperture 30.

It will accordingly be seen that we have provided a construction well adapted to attain, among others, all the aims and objects above pointed out in an exceedingly simple yet efficient manner, and that by means of which a liquid, such as gasolene, or other liquid fuel, can be automatically measured while the same is being discharged into the storage tank.

As many changes could be made in this construction without departing from the scope of the following claims, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative only and not in a limiting sense.

Having thus described our invention what we claim as new and desire to secure by Letters Patent is:—

1. In apparatus of the class described, in combination, a casing, a funnel disposed above said casing and having a passageway leading thereinto, a rotatable cylinder located within said casing, provided with a plurality of measuring elements, each of which is adapted to register with said passageway during a rotation of said cylinder member, and means associated with each of said measuring elements operable upon rotation of the same for automatically locking said cylindrical member against rotation.

2. In apparatus of the class described, in combination, a casing having a collecting basin at its upper portion, and a discharge aperture at its lower portion, there being a passageway leading from said collecting basin into said casing, a cylindrical member rotatably mounted within said casing, said cylindrical member being provided with a plurality of measuring elements, each of which is provided with a movable bottom wall, each of said measuring elements being adapted to register with said passageway during the rotative movement of said cylindrical member, and means operable upon rotation of the measuring elements for locking said cylindrical member in a plurality of its rotative positions.

3. In apparatus of the class described, in combination, a cylindrical casing, a funnel located at the upper portion of said casing having a passageway leading into the casing, said casing being provided with a discharge aperture, a cylindrical member rotatably mounted within said casing, said cylindrical member being provided with a plurality of hollow measuring receptacles extending inwardly from its periphery, each of which is adapted during the rotation of said cylindrical member to register with said passageway, a movable bottom wall for each of said receptacles, and means associated with each of said movable bottom walls for locking said cylindrical member against rotation when a receptacle is opposite said passageway, and means whose operation is determined by the quantity of liquid in each receptacle for releasing said cylindrical member from its locked condition.

4. In apparatus of the class described, in combination, a fixed cylindrical member having a funnel located at its upper portion and a discharge aperture at its lower portion, there being a passageway extending from said funnel into the interior of said cylindrical member, a rotatable cylindrical member located within said first named cylindrical member, the outer wall of said rotatable cylindrical member engaging with the inner wall of said first named cylindrical member, said rotatable cylindrical member being provided with a plurality of radially disposed receptacles which extend inwardly from the periphery thereof, each of said receptacles being adapted to register with said passageway during the rotative movement of said cylindrical member, and means actuated by said receptacles upon predetermined movement for locking said rotatable cylindrical member against rotative movement when each of said receptacles is opposite said passageways.

5. In apparatus of the class described, in combination, a fixed cylindrical member having a funnel located at its upper portion and a discharge aperture at its lower portion, there being a passageway extending from said funnel into the interior of said cylindrical member, a rotatable cylindrical member located within said first named cylindrical member, the outer wall of said rotatable cylindrical member engaging with the inner wall of said first named cylindrical member, said rotatable cylindrical member being provided with a plurality of radially disposed receptacles which extend inwardly from the periphery thereof, each of said receptacles being adapted to register with said passageway during the rotative movement of said cylindrical member, and means actuatable by said receptacles upon predetermined rotative movement for automatically locking said rotatable cylindrical member against rotative movement when each of said receptacles is opposite said passageways.

6. In apparatus of the class described, in combination, a plurality of cylindrical members, one of which is located within the other and is rotatable therein, a funnel disposed above the outermost of said cylindrical members and having a passageway leading from the funnel thereinto, said rotatable cylindrical member being provided with a plurality of measuring receptacles disposed equidistant about its periphery, and extending radially thereinto, each of said measuring receptacles being provided with a movable bottom wall, a rod extending inwardly from said movable bottom wall, each of said measuring receptacles during a rotative movement of said rotatable cylindrical member being adapted to register with said passageway, and fixed means coöperating with said rods adapted to lock said cylindrical member when each measuring receptacle is in registry with said passageway, said rod being provided with means for releasing said cylindrical member from its locked condition when the measuring receptacle, in registry with said passageway, contains a predetermined amount of liquid, whereby said cylindrical member is permitted to rotate until the next measuring receptacle is in registry with said passageway, and a discharge aperture leading from said outermost cylinder.

In testimony whereof we affix our signatures in the presence of two witnesses.

FRED EVANS.
JOSEPH CORCOS.

Witnesses:
MARCY LEVY,
EMMA WEINBERG.