Jan. 5, 1932. F. O. JOHNSON 1,839,681

OIL THIEF

Filed April 8, 1930

Fig. 1.

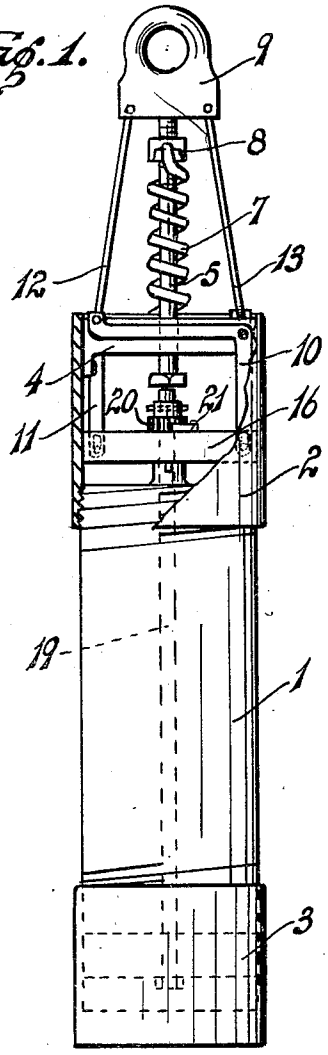


Fig. 2.

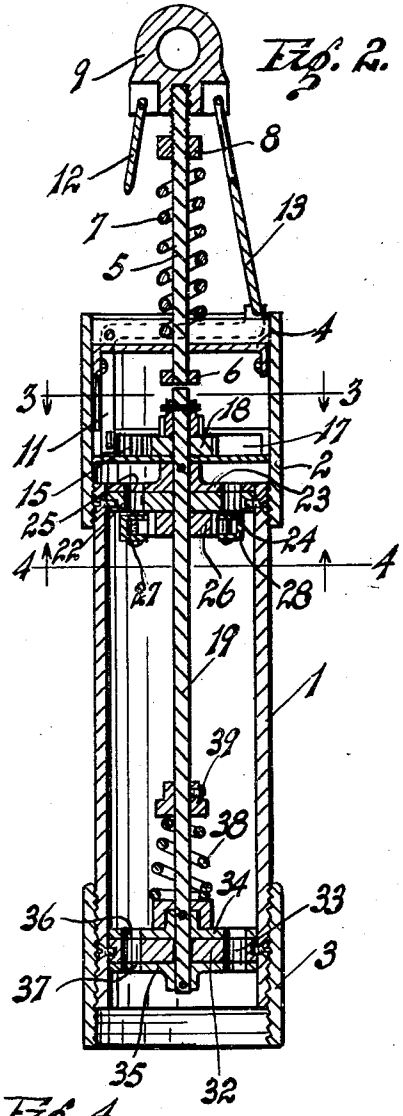


Fig. 3.

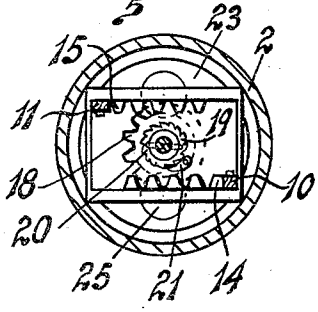
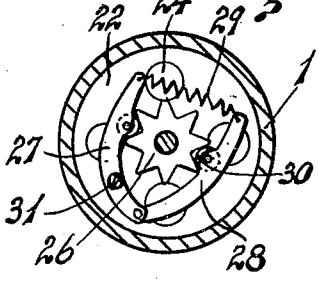


Fig. 4.



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UNITED STATES PATENT OFFICE

FREDERICK O. JOHNSON, OF LONG BEACH, CALIFORNIA

OIL THIEF

Application filed April 8, 1930. Serial No. 442,708.

This invention relates to an oil thief whereby a quantity of oil or other liquid, can be obtained from a tank, and at any level in the tank.

An object of my invention is to provide an oil thief which can be readily operated and closed at any level in the tank.

Another object is to provide an oil thief which is actuated by a sharp jerk on the line on which the thief is suspended.

A further object is to provide a novel means for simultaneously opening ports at the top and bottom of a cylinder so that the oil can readily and quickly pass therein.

Still another object is to provide an oil thief which will operate easily and with precision.

Other objects, advantages, and features of invention may appear from the accompanying drawings, the subjoined detailed description, and the appended claims.

In the drawings:

Figure 1 is a side elevation of my oil thief with parts broken away to show interior construction.

Figure 2 is a longitudinal, sectional view of the oil thief.

Figure 3 is a sectional view taken on line 3—3 of Figure 2.

Figure 4 is a sectional view taken on line 4—4 of Figure 2.

Referring more particularly to the drawings, the numeral 1 indicates tube, on the upper end of which a head 2 is mounted, and at the lower end I provide a shoe 3. A suspension plate 4 is secured in the head 2 and a post 5 is slidably mounted in the plate and rises therefrom. A head 6 on the post, limits the upward movement thereof. A tension spring 7 is secured at its lower end to the head 2, and the upper end is secured to an adjusting nut 8. This spring normally holds the post 5 in the lowered position.

A fitting 9 is secured to the upper end of the post 5 and the oil thief is carried by the fitting in the usual manner, that is, a cable or other suspension means is secured to the fitting so that the oil thief can be lowered into the tank. A pair of bell crank levers 10—11, are pivotally mounted in the head 2 and preferably on the plate 4. To the upper end of these bell crank levers are secured links 12—13 respectively, which are also fastened to the fitting 9. Thus any reciprocal movement of the fitting will be imparted to the bell crank levers and will swing the same. The lower ends of the bell crank levers are secured to racks 14—15 respectively by a lost motion connection. The racks are mounted in transverse channels 16—17 respectively. These channels are mounted in the head 2 and are suitably secured therein. The racks 14—15 both engage a gear 18, which is journaled on a shaft 19 and adjacent the upper end thereof. The gear 18 is connected to the shaft 19 by a uni-directional clutch means including a toothed wheel 20 secured to the shaft, and a spring actuated dog 21 which is secured to the gear 18.

A disc 22 is secured in the tube 1 adjacent the top thereof, and the shaft 19 extends therethrough. A closure disc 23 is secured to the shaft 19 and rests upon the disc 22. The disc 22 is provided with a plurality of holes 24 which extend therethrough and the closure disc 23 is provided with holes 25. The holes 24—25 are brought into, and out of registry as the shaft 19 is rotated, as will be further described.

The shaft 19 is held in position against rotation by means of a star wheel 26 secured thereto. A pair of arms 27—28 are pivoted together at one end, and a spring 29 connects the other end of the arms. The arms are each provided with a roller 30 which enters the teeth of the star wheel to hold the shaft against rotation. One of the arms is pivotally secured to the disc 22 as shown at 31. A bottom closure 32 has a plurality of holes 33 extending therethrough. A pair of

discs 34—35 rest on the top and bottom of the closure 32, and these discs are provided with a plurality of openings 36—37 respectively which are brought into and out of registry with the holes 33. The discs 34—35 are both secured to the shaft 19 and are held tightly against the closure 32 by means of a spring 38 which presses against the disc 34 and against a rider 39 on the shaft.

The method of operation of my oil thief is as follows: The openings 33 and 24 are both closed by rotating the shaft 19 and the attached closure discs 34—35 and 23. When the thief has been lowered to the desired level, a sharp pull on the suspension line will cause the post 5 to travel upwardly until it is stopped by the head 6. The upward pull actuates the links 12—13 which in turn swing the bell crank levers 10—11 and move the racks 14—15, which in turn rotate the gear 18. At the completion of this movement, the spring 7 returns the post 5 to the original lowered position. The uni-directional clutch means including the toothed wheel 20 and the dog 21 has caused the shaft 19 to rotate and this opens the ports 24 and 33. The star wheel 26 and its co-acting parts, hold the shaft 19 against further rotation until the fitting 9 is again jerked in the same manner as previously stated so that the ports 24 and 33 are closed. The oil thief is now full and can be removed from the tank without loosing any of its contents.

Having described my invention, I claim:

1. An oil thief comprising a tube, closure means at the top and bottom of said tube, a fitting from which the tube is suspended, spring means attached to said fitting and urging the same towards the tube, a shaft attached to said upper and lower closure means, a gear mounted on said shaft, a rack engaging said gear, and means connecting said fitting and said rack whereby the rack is moved when said fitting is pulled away from the tube, and means on the shaft engaging said rack whereby the shaft is rotated to open and close said closure means.

2. An oil thief comprising a tube, closure means at the top and bottom of said tube, a shaft to which said closure means are secured, a gear on the shaft, a rack engaging said gear, a fitting, spring means urging said fitting towards the tube, a bell crank lever attached to the tube, one end of said bell crank lever being attached to the rack, and means connecting the other end of said bell crank lever and the fitting whereby said bell crank lever is swung when the fitting is pulled away from the tube.

3. An oil thief comprising a tube, closure means at the top and bottom of said tube, a fitting, from which the tube is suspended, spring means attached to said fitting and urging the same towards the tube, a shaft attached to said upper and lower closure means, a gear mounted on said shaft, a rack engaging said gear, and means connecting said fitting and said rack whereby the rack is moved when said fitting is pulled away from the tube, and means on the shaft engaging said rack whereby the shaft is rotated to open and close said closure means, and means engaging said shaft whereby accidental rotation of said shaft is prevented.

4. An oil thief comprising a tube, closure means at the top and bottom of said tube, a shaft extending through the tube, said closure means being secured to the shaft, a gear on the shaft, uni-directional clutch means connecting said gear and shaft, a rack engaging said gear, a fitting above the tube, a spring connected to said fitting and to the tube whereby the fitting is urged towards the tube, and means connecting said fitting and the rack whereby any movement of the fitting away from the tube will actuate said rack to rotate the shaft.

5. An oil thief comprising a tube, closure means at the top and bottom of said tube, a shaft extending through the tube, said closure means being secured to the shaft, a gear on the shaft, uni-directional clutch means connecting said gear and shaft, a rack engaging said gear, a fitting above the tube, a spring connected to said fitting and to the tube whereby the fitting is urged towards the tube, and means connecting said fitting and the rack whereby any movement of the fitting away from the tube will actuate said rack to rotate the shaft, means engaging the shaft whereby accidental rotation of the shaft is prevented.

6. An oil thief comprising a tube, closure means at the top and bottom of said tube, a shaft extending through the tube, said closure means being secured to the shaft, a gear on the shaft, uni-directional clutch means connecting said gear and shaft, a rack engaging said gear, a bell crank lever secured to the tube, one end of said bell crank lever engaging the rack, a fitting above the tube, a shaft extending from the fitting into the tube, a spring encircling the shaft, one end of the spring being secured to the tube and the other end to the shaft, and a link secured to the fitting and to one end of the bell crank lever whereby movement of the fitting away from the tube will swing the bell crank lever to actuate the rack.

7. An oil thief comprising a tube, a disc adjacent the top of the tube, said disc having a plurality of ports therein, a closure disc bearing against said first named disc, said closure disc having a plurality of ports therein adapted to mesh with the first named ports, a closure wall adjacent the bottom of the tube, a pair of closure discs bearing against the top and bottom of the closure wall, said clo-

sure wall having ports therein, and said last named closure discs having ports therein adapted to register with the ports in the closure wall, a shaft extending through the tube, all of said closure discs being secured to the shaft, a gear on the shaft, a rack engaging the gear, a fitting above the tube, spring means urging the fitting towards the tube, and means connecting said fitting and the rack whereby movement of the fitting away from the tube will actuate said rack to rotate the shaft.

8. An oil thief comprising a tube, a disc adjacent the top of the tube, said disc having a plurality of ports therein, a closure disc bearing against said first named disc, said closure disc having a plurality of ports therein adapted to mesh with the first named ports, a closure wall adjacent the bottom of the tube, a pair of closure discs bearing against the top and bottom of the closure wall, said closure wall having ports therein and said last named closure discs having ports therein adapted to register with the ports in the closure wall, a shaft extending through the tube, all of said closure discs being secured to the shaft, spring means surrounding the shaft, a rider on the shaft, said spring bearing against the rider and against the closure discs on top of the bottom closure wall, a gear on the shaft, a rack engaging the gear, a fitting above the tube, spring means urging the fitting towards the tube, a bell crank lever pivotally mounted on the tube, one end of said bell crank lever being connected to the rack, and a link connecting the other end of the bell crank lever and the fitting whereby movement of the fitting away from the tube will actuate the rack.

9. An oil thief comprising a tube, a disc adjacent the top of the tube, said disc having a plurality of ports therein, a closure disc bearing against said first named disc, said closure disc having a plurality of ports therein adapted to mesh with the first named ports, a closure wall adjacent the bottom of the tube, a pair of closure discs bearing against the top and bottom of the closure wall, said closure wall having ports therein and said last named closure discs having ports therein adapted to register with the ports in the closure wall, a shaft extending through the tube, all of said closure discs being secured to the shaft, spring means surrounding the shaft, a rider on the shaft, said spring bearing against the rider and against the closure discs on top of the bottom closure wall, a gear on the shaft, a rack engaging the gear, a fitting above the tube, spring means urging the fitting towards the tube, a bell crank lever lever pivotally mounted on the tube, one end of said bell crank lever being connected to the rack, and a link connecting the other end of the bell crank lever and the fitting whereby movement of the fitting away from the tube will actuate the rack, uni-directional clutch means connecting said gear and the shaft, a star wheel on the shaft, a pair of arms, said arms being pivoted together, one of said arms being pivotally secured to the first named disc, a spring connecting the other end of the arms, rollers on the arms, said rollers engaging the star wheel whereby accidental rotation of the shaft is prevented.

In testimony whereof, I affix my signature.

FREDERICK O. JOHNSON.