Aug. 29, 1933. B. J. PEPPER 1,925,056

EQUIPMENT FOR DISPENSING LUBRICATING OIL AND OTHER LIQUIDS

Filed Jan. 23, 1933 2 Sheets-Sheet 1

Fig. 1.

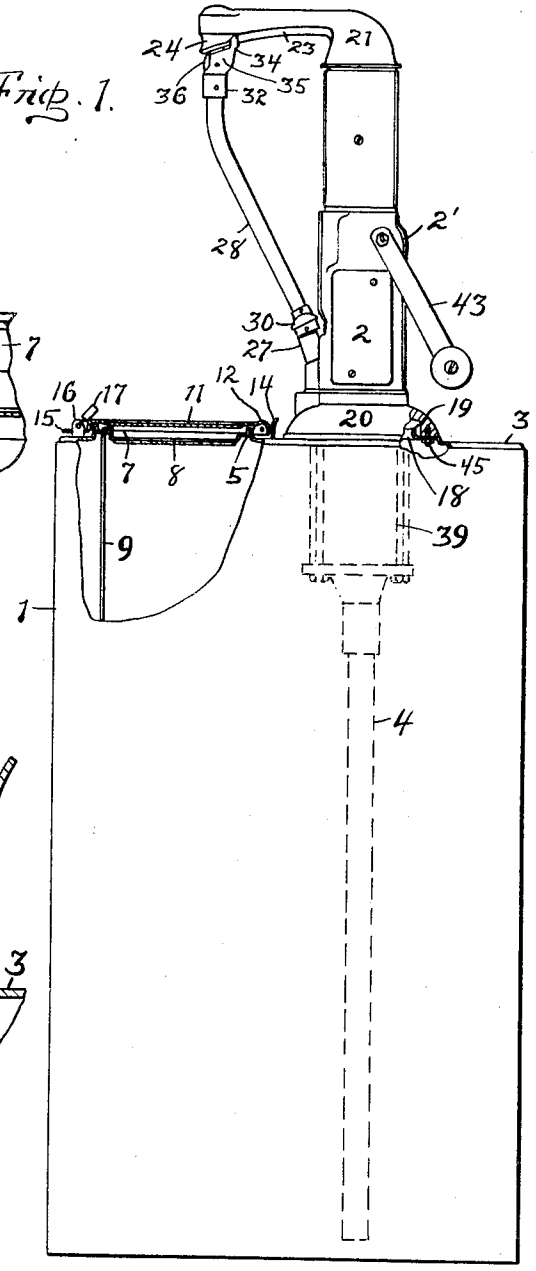


Fig. 2.

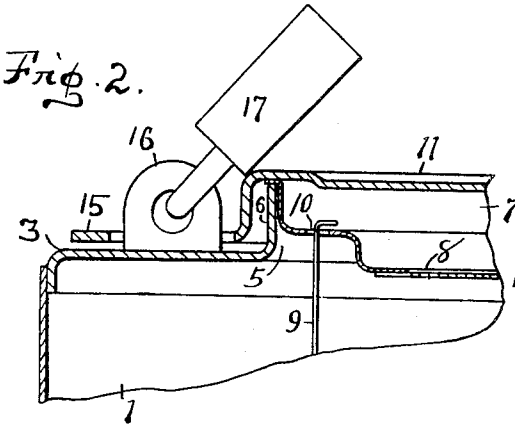
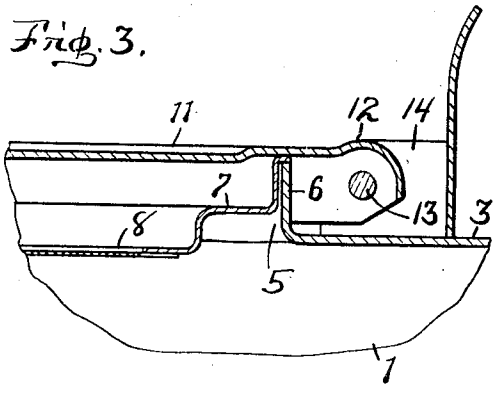


Fig. 3.



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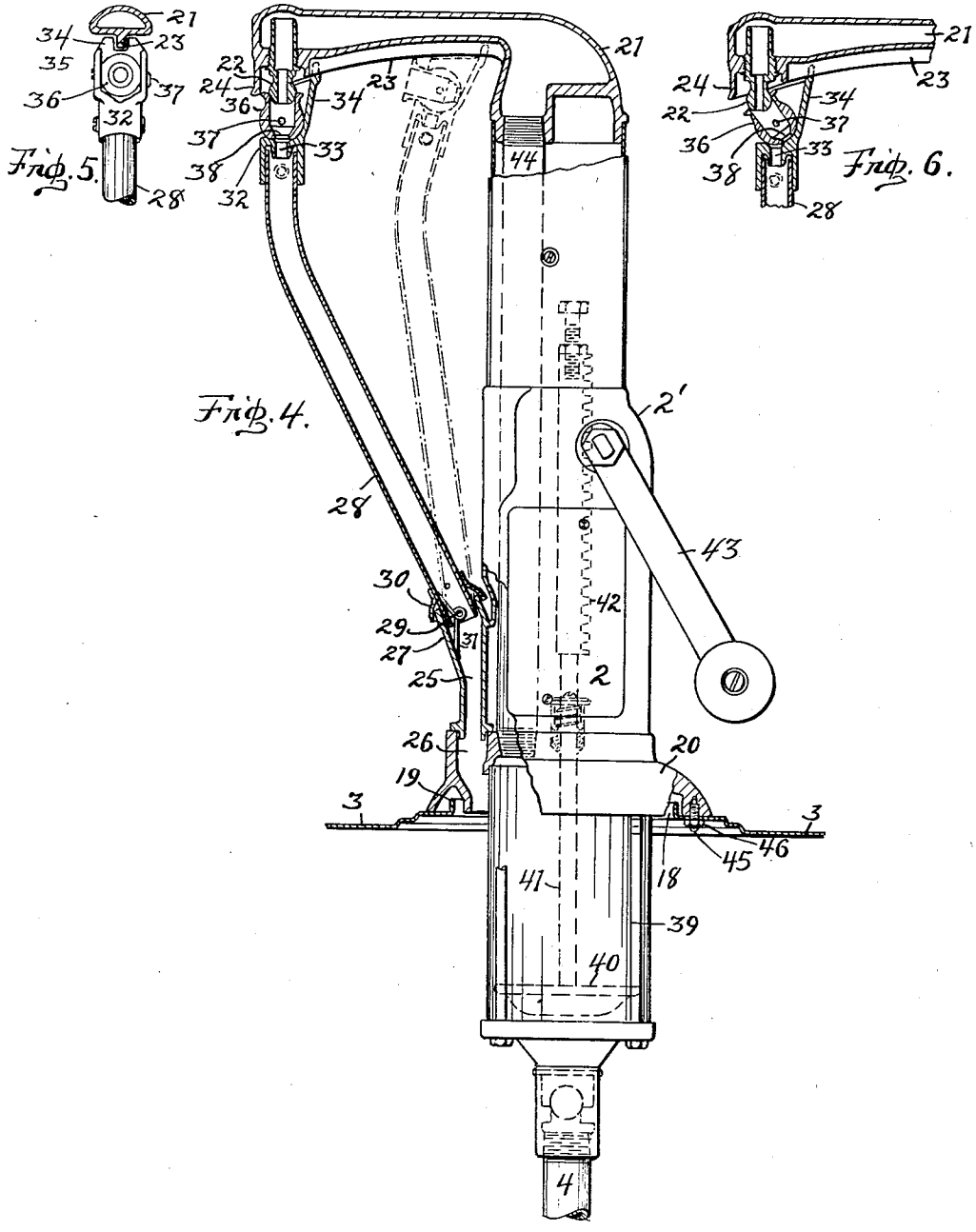


Fig. 5.

Fig. 6.

Fig. 4.

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UNITED STATES PATENT OFFICE

1,925,056

EQUIPMENT FOR DISPENSING LUBRICATING OIL AND OTHER LIQUIDS

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Application January 23, 1933. Serial No. 653,028

8 Claims. (Cl. 221—72)

This invention relates to improvements in equipment, for dispensing lubricating oil and other liquids, of that type consisting generally of a pump arranged in connection with a tank for the storage of liquid and which tank functions also as a pedestal or mount for the pump. One of the objects of the invention is to so construct the pump and the tank and secure the pump and tank together in such manner as to circumvent fraudulent or unauthorized filling and refilling the tank with liquids of inferior quality or spurious brands unauthorized by the proprietor or the agent in control of the supply.

Ordinarily, in equipment of this character, there is provided a drip tube arranged in connection with the pump for returning the afterflow or drip from the pump nozzle back into the storage tank and which may readily be moved from its normal or drip-receiving position to permit placing of a portable receptacle beneath the nozzle to be filled from the tank by operating the pump, and which will automatically return to its drip-receiving position upon removal of the vessel. In this manner waste of oil and accumulations thereof upon the exterior of the tank is prevented. In the usual structure the drip tubes are such that the storage tank may be refilled through the drip tube, or the pump may be removed so as to permit refilling of the tank through the opening therein provided for the pump. In the present instance an object of the invention is to prevent the passage of liquid into the storage tank through the drip tube except the afterflow or drippings from the nozzle, and other unauthorized refilling of the tank. Other objects and advantages of the invention will appear in the following description.

An illustrative embodiment of the invention is shown in the accompanying drawings, in which:—

Fig. 1 is a side elevation of an equipment in which the invention is embodied, portions being broken away;

Fig. 2 is an enlarged fragmentary vertical section of the tank and the lid for its fill opening with a lock applied to secure the lid in closed position;

Fig. 3 is another enlarged fragmentary vertical section of the tank and the pivoted lid for its fill opening;

Fig. 4 is a side elevation of the pump upon a scale larger than that of Fig. 1, portions thereof being cut away;

Fig. 5 is a detail view projected from Fig. 4, the pump spout being in section and with the drip tube in the position shown in dotted outline in Fig. 4; and

Fig. 6 is a detail vertical section showing the nozzle, the upper end of the drip tube and the tilting funnel in an intermediate position.

The illustrative embodiment of the invention consists of a lubricating oil dispensing equipment in which are incorporated in a preferred form a tank 1 for holding a supply of liquid in storage, and a pump 2 that surmounts and is secured to the top head 3 of the tank with its suction pipe 4 extending downwardly into the tank so that the stored liquid is withdrawn from the tank as required by operating the pump.

The head 3 of the tank 1 has a fill opening 5 encompassed by an upwardly projecting flange 6, and supported upon the top of the flange and extending into the fill opening is disposed a removable pan 7 having a screened opening 8 through which the liquid supply passes upon entering the tank. The purpose of the pan is to prevent foreign matter from entering the tank with the oil supplied through the fill opening. A gauge stick 9 of the usual type is provided which extends loosely through an opening 10 in the pan down into the tank by which the quantity of liquid contained in the tank may be determined.

A lid 11 is provided by which the fill opening 5 is closed, and has at one side a lug 12 that is pivotally secured upon a transversely disposed rod 13 which is securely positioned in a bracket 14 on the head 3 of the tank. The side of the lid opposite the lug 12 is provided with a hasp 15, and upon the head 3 of the tank is a stationary perforated lug 16 that projects through the hasp when the lid is in closed position, so that by applying a lock 17 to a lug unauthorized opening of the lid is prevented.

The tank also has another opening 18 in the head 3 which is encompassed by an upwardly extending flange 19, the opening being made to permit insertion into the tank of pendent portions of the pump.

The pump 2 has a vertically disposed frame 2' having an inseparable or integral base 20 at its lower end and a horizontal forwardly extending spout 21 at its top that is provided in its outer end with a nozzle 22.

The spout has a pendent arcuate guide 23 and an annular pendent flange 24 at the outer end of said guide that encompasses the lower or tip end of the nozzle and constitutes a shelter therefor.

The pump frame 2' has formed in its structure at the front thereof a throat 25 the lower end of which has communication with the tank 1 through a complemental passageway 26 made in

the base 20, and the upper end of said throat terminates with an outwardly inclined tubular protuberance 27 into which extends the lower end of a movable drip tube 23 which is pivotally secured in said protuberance by a transversely disposed pin 29 on which said tube has pivotal movement. Upon the lower end of said tube is secured an annular shield 30 the lower end of which encompasses the upper end of the protuberance 27 and constitutes a shelter therefor. A spring 31 conveniently mounted upon the pin 29 bears outwardly at one of its ends upon the inner wall of the tube at a point spaced above said pin and at its opposite or lower end against the inner wall of said protuberance so that thereby the tube is held normally in its outermost position.

The upper end of the tube 28 has secured thereon a head 32 having therein an inlet port 33 that has communication with said tube, and is provided also with an upwardly extending hood having a back 34 and sides 35. In said hood is disposed a funnel 36 that has pivotal movement upon a pin 37 that extends transversely through the sides 35 of the hood.

The upper end of said funnel is shaped conveniently so as to receive and fit snugly the tip of the nozzle 22 when the tube is in its normal position, and the passageway 38 in the lower end of the funnel registers with the inlet port 33 in the head when said port is axially alined with the bore of the nozzle. In this manner uninterrupted and exclusive communication is established between the nozzle and the drip tube through the funnel. Also, the top of the funnel, when in normal position, is disposed beneath the shelter 24 and between the sides of the hood which precludes access to the opening in the funnel. The top of the back 34 of the hood is bifurcated and extends astride the arcuate guide 23, the radius of which is centered approximately in the axis of the pin 29 upon which the tube 28 has movement so that lateral movement of the tube is prevented by said guide. When the tube 28 is moved from its normal position backwardly beneath the guide toward the pump frame the funnel 36 is caused to tilt in the hood upon its pivotal support because of the obstruction of the tip of the nozzle that projects into its upper end, and said funnel is held in its tilted position while the tube is out of its normal position by the guide 23 which engages the adjacent edge of the rim of said funnel. When thus held in tilted position the passageway 38 in the bottom of the funnel is out of alinement with the port 33 and thus communication between the funnel and the tube is thereby shut off.

The pump 2 has a pump cylinder 39 secured to its base 20 that preferably depends through the pump opening 18 in the head 3 of the tank and has therein a plunger 40 having a pump rod 41 that is provided with a rack and pinion mechanism 42 operated by a crank 43. The upper end of the cylinder 39 and the spout 21 have a pipe connection 44 that extends within the pump frame so that as the pump is operated liquid from the tank is drawn through the suction pipe 4 by the pump and expelled through the spout from the nozzle 22.

The base 20 of the pump frame is secured to the head 3 of the tank at suitable points surrounding the pump opening by any convenient expedient that precludes removal of the pump from the tank through operations applied externally with respect to the pump or tank. Such means, for example, consists in providing the base with studs (indicated by 45) that project from its lower face downwardly through corresponding openings in the head 3 of the tank upon the lower ends of which studs are applied from the interior of the tank corresponding nuts (indicated by 46) by which the base is held firmly in connection with the head of the tank in a manner that necessitates access to the interior of the tank to loosen or effect removal of the pump from the tank. Thus, when the fill opening is closed by the lid and the lock therefor is applied, filling of the tank through the pump opening is frustrated. The pump cylinder, its plunger and the operating mechanism therefor are of any suitable construction.

In operation, the lid is unlocked and opened and the tank filled with liquid by the authorized agent, after which the liquid is dispensed from the tank by an attendant as occasion arises. The dispensing operation is carried out by thrusting a receiving vessel against the drip tube toward the pump frame which causes the tube to swing backwardly and the funnel to tilt to such position that communication between the funnel and drip tube is shut off while the receiving vessel is held beneath the nozzle and filled as the pump is operated. After the desired quantity of liquid from the pump has been supplied to the receiving vessel, the vessel is removed which permits the drip tube and the funnel to automatically return to their normal positions, whereupon, any afterflow or drippings from the nozzle pass through the funnel and tube back into the tank.

The outward swinging movement of the drip tube is limited by contact of the upper end of the back 34 of the hood with the rear face of the flange 24 when the nozzle and the opening through the funnel are alined with the port 33 in the head. When thus positioned, and the pump is operated, the liquid delivered by the pump is returned through the drip tube into the tank. When the drip tube, however, is moved out of its normal position the funnel is tilted so that communication through the funnel and tube with the tank is effectively obstructed which prevents refilling of the tank through the drip tube.

As the shelter 24 covers the upper end of the funnel when in drip-receiving position, and when the drip tube is swung back, communication between the funnel and the tube is shut off, atmospheric condensations are prevented from entering the top of the tube. Also, seepage of moisture between the lower end of the tube and the protuberance 27 into the throat 25 is prevented by the shelter 30. Thus, when the eguipment is exposed to inclement weather, water is prevented from entering the storage tank.

I claim:

1. In a liquid dispensing esuipment, a storage tank for liquid having a fill opening and a lid for said opening provided with locking means therefor to prevent unauthorized filling of the tank through said opening, a pump mounted upon said tank, having a suction pipe extending into said tank, for dispensing stored liquid therefrom, means securing said pump on said tank that are inaccessible from the exterior with respect thereto, a movable drip tube communicating with said tank and provided with a funnel movably supported relative to the tube adapted to establish exclusive communication between the pump nozzle and the tube when said tube is in operating position, and disposed so that com-

munication between said funnel and the tube is shut off when said tube is moved from its operating position, and a guide operatively associated with the tube and funnel to limit movement of the tube and to confine the funnel to its shut-off position when said tube is moved from its drip-receiving position.

2. In a liquid dispensing equipment having a tank for the storage of liquid and a pump in connection therewith for withdrawing the stored liquid from the tank, a movable drip tube one end of which has communication with said tank, means associated with the other end of the tube and the pump spout for guiding the movement of said tube, and a funnel movably mounted in connection with the tube adapted to establish exclusive communication between the pump nozzle and the tube when said tube is in its operating position, and being operatively associated with said means so that communication between the funnel and said tube is shut off when said tube is moved from its drip-receiving position.

3. In a liquid dispensing equipment, a storage tank having a fill opening, a lid for closing said opening provided with a lock therefor, a pump connected with the tank for dispensing liquid therefrom, an adjustably movable drip tube having communication with said tank provided with a funnel movably supported thereon adapted to selectively establish exclusive communication between the pump nozzle and said tube, or shut off communication between the funnel and tube, and means to adjust said funnel automatically upon movement of said tube from one of its positions to the other.

4. In a liquid dispensing equipment, a storage tank, a pump connected with the tank for dispensing liquid therefrom, an adjustably movable drip tube having communication with said tank provided with a funnel movably supported thereon adapted to selectively establish exclusive communication between the pump nozzle and said tube, or shut off communication between the funnel and tube, and means to adjust said funnel automatically upon movement of said tube from one of its positions to the other.

5. In a liquid dispensing equipment, a storage tank, a pump connected with the tank for dispensing liquid therefrom and having a nozzle, a movable drip tube having communication with said tank and provided with a movable member adapted to have connection with said nozzle and establish exclusive communication between said nozzle and tube when said tube is moved into drip-receiving position, and means operably associated with said movable member so arranged that said member is actuated when said tube is moved from its drip-receiving position to shut off communication between said member and tube.

6. In a liquid dispensing equipment, a storage tank, a pump connected with the tank for dispensing liquid therefrom having a spout provided with a nozzle, a pendent shelter on said spout encompassing the tip of said nozzle, a movable drip tube having communication at one end with said tank and provided at its other end with a movable member adapted to have connection with said nozzle beneath said shelter and establish exclusive communication between said nozzle and tube when the tube is moved into drip-receiving position, and means operably associated with said movable member so arranged that said member is actuated when said tube is moved from its drip-receiving position to shut off communication between said member and tube.

7. In a liquid dispensing equipment, a storage tank, a pump connected with the tank for dispensing liquid therefrom provided with a nozzle, a tubular protuberance having communication with said tank, a movable drip tube one end of which is connected with said protuberance and has communication therethrough with said tank, a movable member secured on the other end of said tube adapted to establish exclusive communication between said nozzle and tube when the tube is moved into drip-receiving position, means operably associated with said movable member so arranged that said member is actuated when said tube is moved from its drip-receiving position to shut off communication between said member and tube, and a shelter surrounding the connection between said tube and protuberance.

8. In a liquid dispensing equipment, a storage tank, a pump connected with the tank for dispensing liquid therefrom provided with a nozzle, a tubular protuberance having communication with said tank, a movable drip tube one end of which is connected with said protuberance and has communication therethrough with said tank, a movable member secured on the other end of said tube adapted to establish exclusive communication between said nozzle and tube when the tube is moved into drip-receiving position, means operably associated with said movable member so arranged that said member is actuated when said tube is moved from its drip-receiving position to shut off communication between said member and tube, and shelters for the connections between the nozzle and said movable member and between the tube and said protuberance respectively.

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