Jan. 15, 1957 A. P. FOX ET AL 2,777,610

LUBRICANT DISPENSING APPARATUS

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FIG. 1.

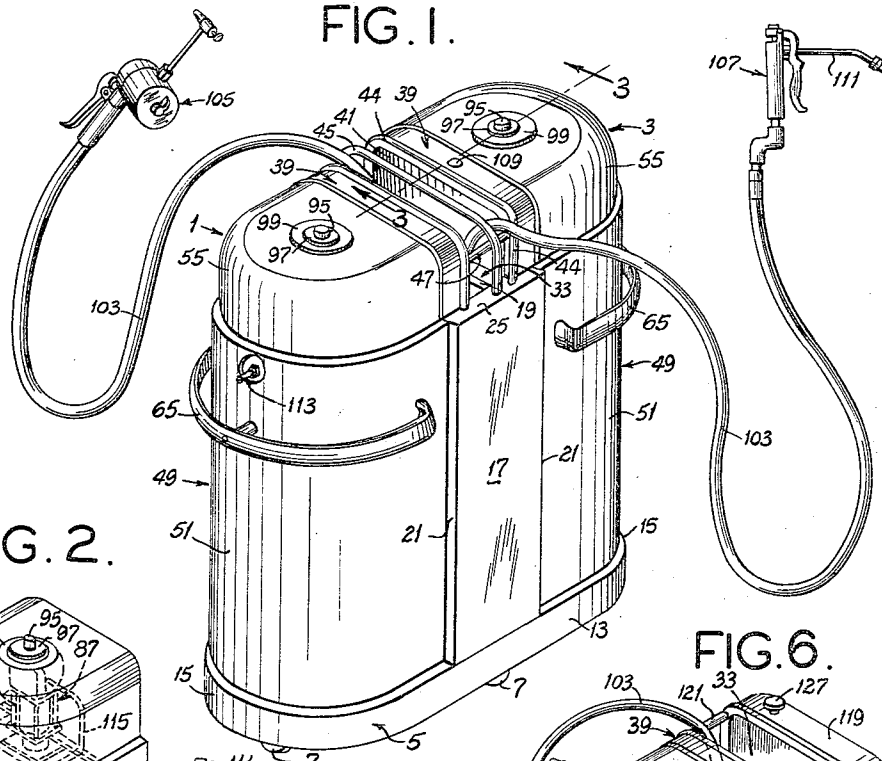


FIG. 2.

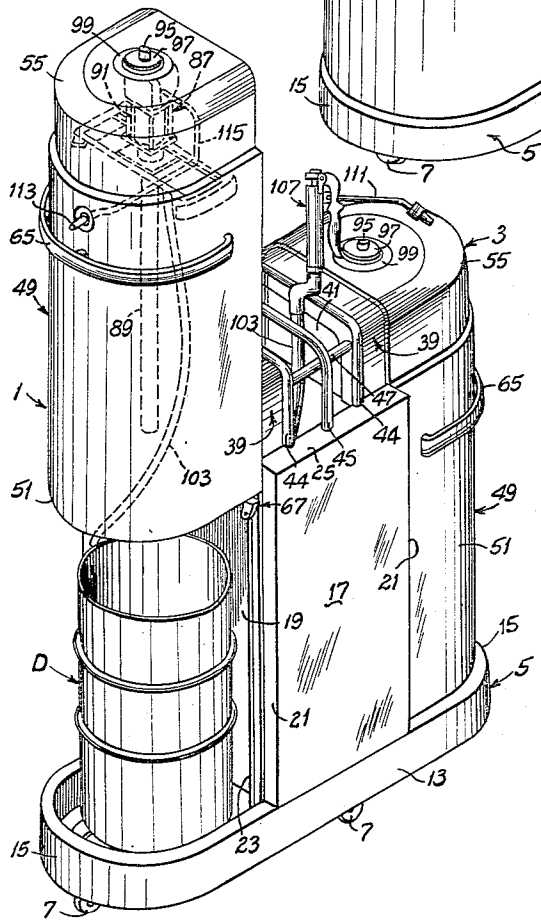
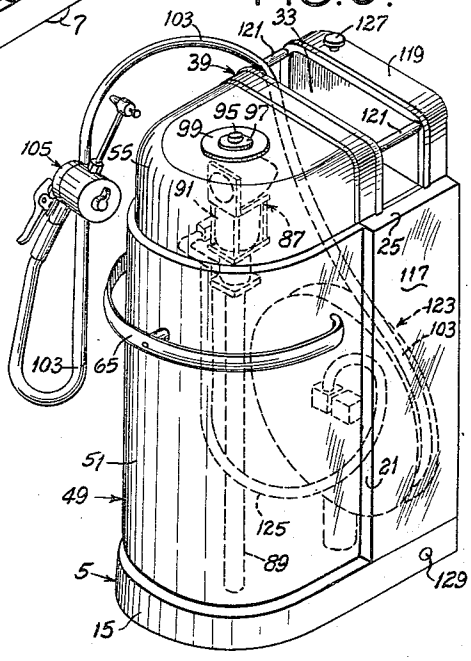


FIG. 6.



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LUBRICANT DISPENSING APPARATUS

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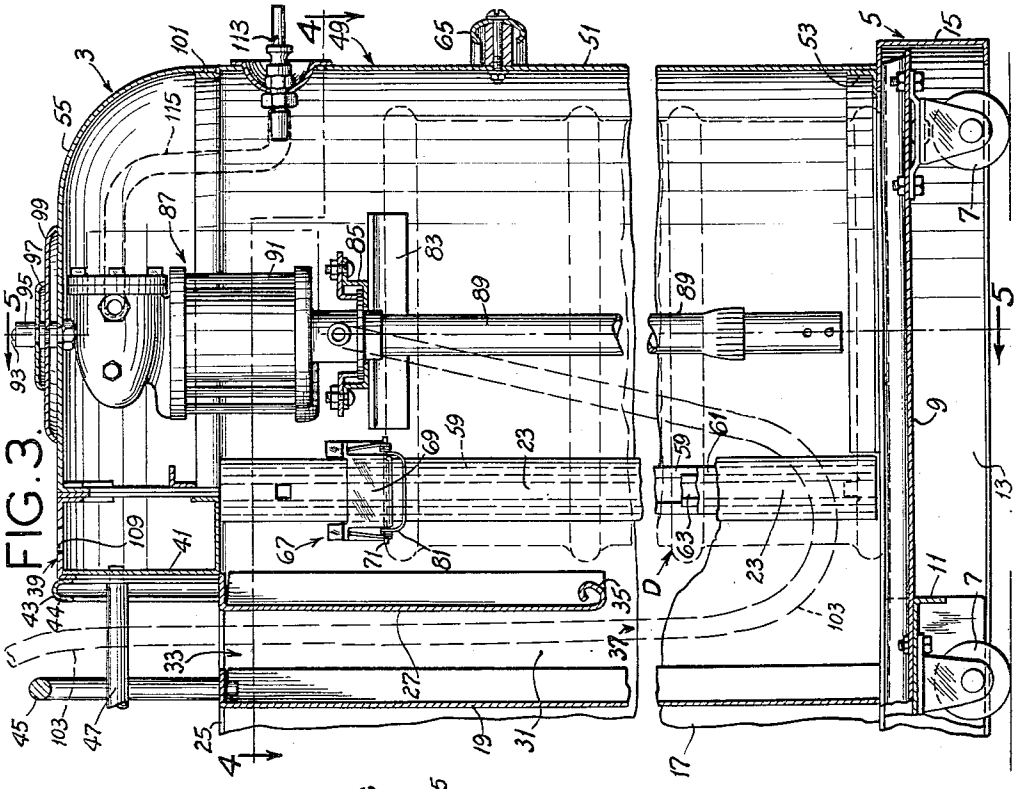


FIG. 3.

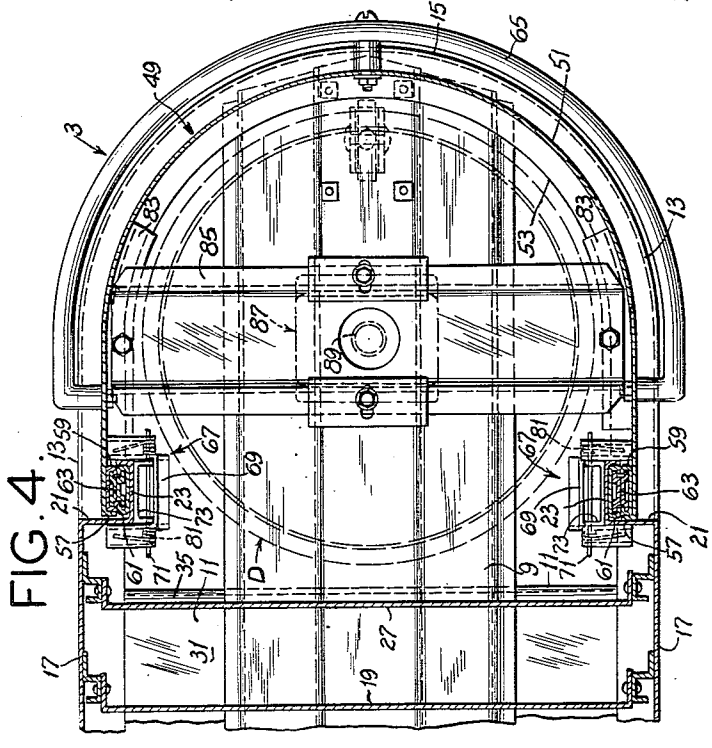


FIG. 4.

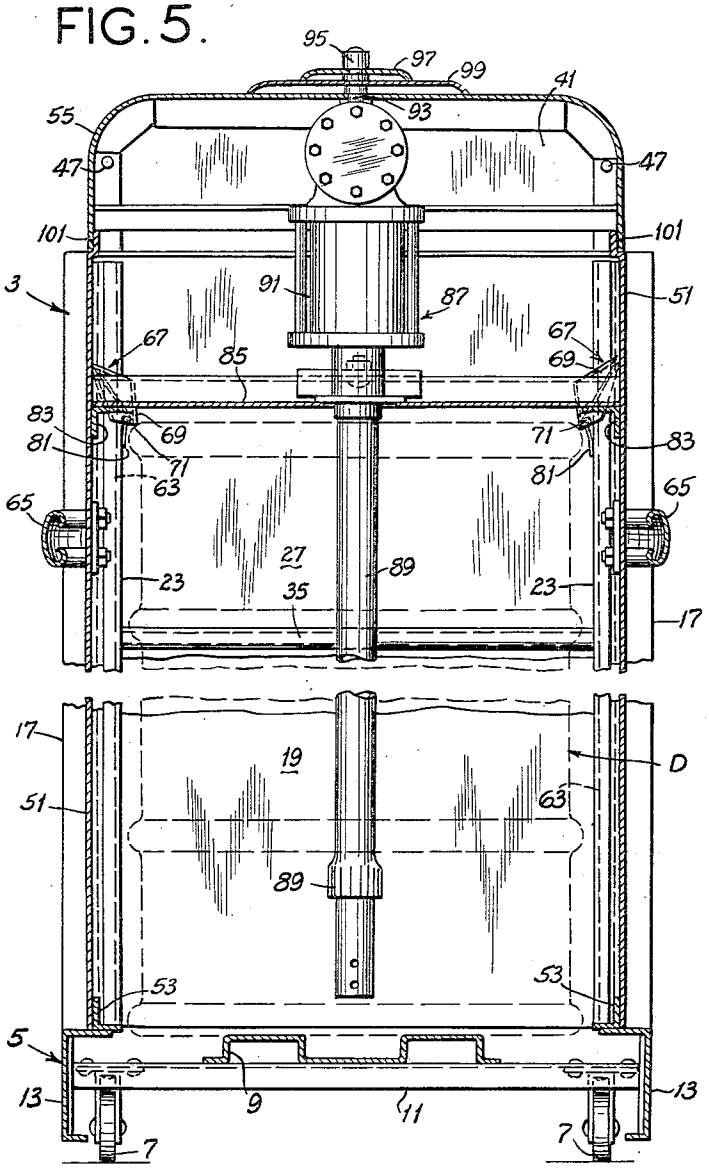
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LUBRICANT DISPENSING APPARATUS

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FIG. 5.



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2,777,610

LUBRICANT DISPENSING APPARATUS

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16 Claims. (Cl. 222—130)

This invention relates to lubricant dispensing apparatus, and more particularly to apparatus for dispensing lubricant via a hose from drums or the like.

Among the several objects of the invention may be noted the provision of a cabinet type of lubricant dispensing apparatus particularly suitable for use in service stations and garages for dispensing lubricant via a hose from commercial drums or the like, the apparatus comprising a compartment for out-of-the-way storage of the hose and a housing for enclosing a drum; the provision of apparatus of this class having a so-called lance pump for pumping lubricant from a drum through the hose, in which the pump is enclosed in the drum housing; the provision of apparatus of this class in which the drum housing is vertically slidable on the hose compartment between a lowered position wherein it coacts with the hose compartment to enclose a drum and a raised position for placing a full drum under the housing or removing an empty drum from the base; and the provision of apparatus of this class wherein the mechanical construction lends itself toward a pleasing appearance. Other objects and features will be in part apparent and in part pointed out hereinafter.

The invention accordingly comprises the constructions hereinafter described, the scope of the invention being indicated in the following claims.

In the accompanying drawings, in which several of various possible embodiments of the invention are illustrated,

Fig. 1 is a perspective of a mobile dual-unit apparatus of this invention for housing two drums of lubricant, the drum housings of both units being shown in lowered position;

Fig. 2 is a view similar to Fig. 1 showing one drum housing raised;

Fig. 3 is an enlarged vertical section taken substantially on line 3—3 of Fig. 1;

Fig. 4 is a horizontal section taken on line 4—4 of Fig. 3;

Fig. 5 is a vertical section taken on line 5—5 of Fig. 3; and,

Fig. 6 is a perspective illustrating a stationary single-unit apparatus of this invention equipped with a hose-winding reel.

Corresponding reference characters indicate corresponding parts throughout the several views of the drawings.

Referring to the drawings, there is shown in Figs. 1–5 a mobile lubricant dispensing apparatus having two individual dispensing units of this invention, the units being generally designated 1 and 3, for housing two drums containing different types of lubricant. For example, unit 1 may house a drum of chassis lubricant and unit 3 may house a drum of gear lubricant. As shown, the apparatus comprises a base 5 on casters 7. The base comprises a sheet metal base plate 9, which has lengthwise corrugations for stiffness, a channel-section central cross brace 11 under the plate 9, and a channel-section

skirt 13. The skirt has straight sides and semi-circular ends 15.

Fxed in central position on the straight sides of the skirt 13 are vertical side panels 17. A fixed transverse vertical partition 19 extends centrally across the base between the side panels. This partition constitutes an end panel or wall common to units 1 and 3. The portions of the panels 17 on one side of partition 19 form part of unit 1, and the portions of panels 17 on the other side of the partition 19 form part of unit 3. Inasmuch as units 1 and 3 are identical, only the unit 3 half of the apparatus is shown in Figs. 3–5, and it will be understood that parts shown to the right of partition 19 in Figs. 3 and 4 are duplicated to the left of the partition.

Panels 17 and partition 19 are generally of equal height and higher than a drum D of lubricant which is to be accommodated. Each panel 17 consists of a sheet metal plate having its vertical edge portions bent in to provide inturned flange sections 21 with outwardly facing vertical channels 23 projecting from the inner ends of the flange sections toward the respective end of the base (see Fig. 4). The panels 17 also have inturned top flanges 25 (see Figs. 1, 2 and 5). Each of units 1 and 3 has a vertical transverse plate 27 spaced from partition 19 toward the flange sections 21 extending between the side panels 17 across the top of the space bounded by the partition 19 and side panels 17. This plate 27 constitutes a forward end panel spaced from the edges of the side panels. Panels 17, partition 19, and plate 27 provide a hose-receiving compartment 31 having a top opening 33 defined by the top flanges 25 of panels 17 and the upper edges of partition 19 and plate 27. The lower edge of plate 27, which is spaced above the base, is rounded as by a bead 35, and the opening below the bead is designated 37.

Each of units 1 and 3 has a fixed cover section 39 secured to the top flanges 25 of panels 17 outward of the hose opening 33. Each of these fixed cover sections 39 has a vertical wall 41 adjacent the top of plate 27. Fixed to the wall 41 is a U-shaped plate 43 having a rounded bead 44 serving as a guard rail. A center guard rail 45, made of a length of round rod, spans the panels 17 above the central partition 19. Rollers 47 are journalled at their ends in openings in walls 41 of the fixed cover sections 39 adjacent their sides and extend from one wall 41 to the other within the guard rails.

Each of units 1 and 3 further comprises a vertically slidable shell generally designated 49 constituting a housing for enclosing a drum of lubricant placed on the base 5 outward of plate 27. Each shell 49 comprises a sheet metal sleeve or shell section 51 of U-shape in horizontal cross section corresponding to the form of the end portion of skirt 13. The bottom of the shell section 51 is open, being reinforced by an angle iron 53 which, in a lowered position of the shell, engages the top of the skirt 13 (see Figs. 3 and 5). The top of the shell section 51 is closed by a dome-like shell cover 55 which, when the shell is in its lowered position, appears as a continuation of the adjacent fixed cover section 39.

The vertical edges of the shell section 51 are bent in to form inturned flanges 57 (see Fig. 4). Secured to the inside of the shell section adjacent the flanges 57 are vertical slide channels 59. These face outwardly facing vertical slide channels 61 secured in the channels 23 at the edges of panels 17. Channels 61 constitute vertical track means. Slide members 63 of cruciform shape in vertical cross section are received in the slide channels 59 and 61 to key the shell section 51 to the vertical edges of panels 17 and to allow for vertical sliding of the shell 49 between a lowered position wherein its lower edge engages the skirt of the base and a raised position such as shown in the foreground in Fig. 2. In the raised posi-

tion of the shell, its lower edge is higher than the top of a drum placed on the base.

The shell is manually slidable upward to its raised position, having a combination bumper and handle **65** in convenient position to be grasped for lifting it, and is automatically latched in its raised position by spring latch means generally designated **67** mounted on the inside of channels **23** and engageable by the bottom of the shell. More particularly, each of the latch means **67** comprises a U-shaped latch member **69** pivotally mounted by means of a pivot pin **71** on a bracket **73** secured to the inside of the channel **23**. The member **69** is biased toward the latching position shown in Fig. 2 by a spring **81**. When the shell is in lowered position, one side of each of the latch members (the right side as viewed in Fig. 4) engages the inside of the shell so that the latch members are thereby held in retracted position against the bias of their springs. Upon raising the shell to the point where its lower edge is higher than the latch members, the latter snap outward into shell-supporting position (see Fig. 2), and the shell may then be lowered to rest upon the latch members. To lower the shell, the latch members are manually pushed inward.

At the sides of the shell section **51** adjacent its top are brackets **83** supporting a pump support **85** extending transversely across the shell. The pump support **85** carries a lance-type pump **87** in vertical position on the vertical axis of the semicylindrical contour of the shell section **51**. Pump **87**, which is bolted to the support **85**, is of a well-known type comprising a pump tube **89** for insertion into a drum and a motor **91** for operating a pump piston which works in the pump tube. Reference is made to such U. S. Patents as 1,925,832; 2,122,020; 2,187,684; 2,215,852; 2,269,423 and 2,298,920 for disclosures of such pumps. The pump tube **89** extends down from the support **85** and its lower end is somewhat above the lower end of the shell. The motor **91** in this case is an air-operated motor and extends upward into the shell cover **55**. At its upper end, the motor has a threaded stud **93** which extends through an opening in the shell cover **55**. A nut **95** is threaded down on the stud **93** against caps **97** and **99**. The shell cover **55** is removably telescoped with the shell section **51**, as indicated at **101**, and may be readily removed from the shell section upon removal of nut **95** and caps **97** and **99** for obtaining access to the pump, which may be removed for servicing.

As to each of units **1** and **3**, a hose **103** leads from the outlet of the pump through the opening **37** into the hose-receiving compartment **31** defined by panels **17**, partition **19** and plate **27**, and thence out through the top opening **33** of the hose-receiving compartment between the guard rails **43** and **45** and the rollers **47**. On the outer end of the hose of unit **1** is shown a metering valve **105**, and on the outer end of the hose of unit **3** is shown a control valve **107**. The fixed cover section **39** of unit **3** is shown as having an opening **109** for receiving the nozzle **111** of the control valve **105**. The hose in each case is of such length that it may reach a considerable distance from the respective unit, and the excess of length of hose is receivable in the hose-receiving compartment **31** for out-of-the-way storage when not in use. The shell section **51** of each of units **1** and **3** has an air coupler nipple **113** for attachment of an air hose to supply air to the motor **91** for operating the pump. Within the shell, a line **115** leads from the nipple to the motor **91**.

With the shell or housing **49** of unit **1** in raised position as shown in the foreground in Fig. 2, a full drum D may be placed on the base **5**. Then, by manually releasing the latch members **69**, the shell or housing **49** is lowered to enclose the drum. This enters the pump tube **89** into the drum. The open side of the housing **49** facing the panel **27** is closed by the hose compartment **31**. To pump lubricant from the drum, an air hose is coupled to the nipple **113** to supply air to the pump motor. Hose **103** of unit **1** is pulled out of the compartment **31** for application of the valve **105** on the end of the hose to the part to be lubricated. Upon completion of use of the hose, it may be pushed back into the compartment **31** for out-of-the-way storage. The rollers **47** serve as rotary guides for the hose. With the hose pushed back into the compartment, valve **105** rests on the guard rail **44** of unit **1** and the center guard rail **45**. To replace an empty drum with a full drum, housing **49** is manually raised and latched in raised position, whereupon the empty drum may be taken out and replaced by a full drum. It will be understood that unit **3** is used in the same way, except that in this case the nozzle **111** of the valve **107** may, if desired, be inserted in the opening **109** when the hose is pushed back into the hose compartment. The entire unit is easily moved from place to place by reason of its mounting on casters **7**.

Fig. 6 illustrates a stationary single-unit apparatus corresponding to unit **1** wherein the casters **7** are omitted, and further showing how a hose reel may be used in the hose-receiving compartment **31**. In this case, the panel **19** constitutes a back wall for the apparatus. The side panels are designated **117**. Instead of using the guard rail **45** of the dual-unit apparatus, a cover section **119** similar to the cover section **39** is used in order to provide for the mounting of the rollers **121** corresponding to the rollers **47**. A hose reel **123**, which may be of the type shown in U. S. Patents 2,279,156 or 2,499,909, or any other suitable type, is mounted on the base within the compartment **31**, with a length of hose line **125** leading from the pump outlet to the reel, and with the hose **103** wound on the reel. Hose line **125** is long enough to permit raising of the shell **49**. At **127** is shown a control knob for the reel extending through an operating in the cover section **119**. The nipple **113** is omitted, and air is supplied to the pump via a permanently installed air supply line (not shown) leading into the apparatus through an opening **129**. This line is such as to permit raising of the housing **49**. It will be understood that the reel need not be used in the case of the single-unit apparatus, and the hose **103** accommodated in the same manner as in Figs. 1–5.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As various changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

We claim:

1. Apparatus for dispensing lubricant from a drum, comprising a base for supporting a drum, a hose-receiving compartment fixed on the base, vertical track means on said compartment, a drum housing vertically slidable on said track means between a lowered drum-enclosing position on the base and a raised access position above the base, said housing having an open side closed by the compartment when the housing is in lowered position, an open bottom, and a top cover, a lance pump carried by the drum housing interiorly thereof for entry into a drum on the base upon lowering the housing from its raised position, the pump having an outlet, and a hose extending out of the compartment through a hose opening and having a connection with the pump outlet, said hose being adapted to be pulled out of the compartment for use and returned to the compartment for storage.

2. Apparatus as set forth in claim 1, further comprising means on the compartment for latching the housing in raised position.

3. Apparatus as set forth in claim 1 wherein the hose-receiving compartment loosely receives the hose.

4. Apparatus as set forth in claim 1 wherein the hose opening is in the top of the compartment.

5. Apparatus as set forth in claim 1 wherein the drum housing is of U-shape in horizontal cross section and its

vertical edges are vertically slidably associated with said vertical track means.

6. Apparatus for dispensing lubricant from a drum, comprising a base for supporting a drum, a hose-receiving compartment fixed on the base comprising side and end panels and having a hose opening, vertical track means at opposite sides of one end panel of the compartment, a drum housing of U-shape in horizontal cross section vertically slidably associated at its vertical edges with said track means facing one end panel and being slidable between a lowered drum-enclosing position on the base and a raised access position above the base, said housing being open at its side facing said one end panel and at its bottom and having a top cover, a lance pump carried by the housing interiorly thereof for entry into a drum on the base upon lowering the housing from its raised position, the pump having an outlet, and a hose extending out of the compartment through a hose opening and having a connection with the pump outlet, said hose being adapted to be pulled out of the compartment for use and returned to the compartment for storage.

7. Apparatus as set forth in claim 6, further comprising means carried by the side panels for latching the housing in raised position.

8. Apparatus for dispensing lubricant from a drum, comprising a base, side panels at the sides of the base spaced from one end of the base, transverse panels extending between the side panels defining therewith a hose-receiving compartment open at the top, the transverse panel toward said one end of the base being spaced from those edges of the side panels toward said one end of the base, vertical track means at said edges of the side panels, a drum housing of U-shape in horizontal cross section vertically slidably associated at its vertical edges with said track means, said housing facing said one transverse panel toward said one end of the base and being slidable between a lowered drum-enclosing position on the base and a raised access position above the base, said housing being open at its side facing said one transverse panel and at its bottom and having a top cover, a lance pump carried by the housing interiorly thereof for entry into a drum on the base upon lowering the housing from its raised position, the pump having an outlet, and a hose extending out of the hose-receiving compartment through the open top thereof and having a connection with the pump outlet, said hose being adapted to be pulled out of the compartment for use and returned to the compartment for storage.

9. Apparatus as set forth in claim 8 further comprising spring-biased latch members mounted on said edges of the side panels for latching the housing in raised position.

10. Apparatus as set forth in claim 8 wherein said edges of the side panels have inturned flanges and portions projecting from the inner ends of the flanges toward said one end of the base, with outwardly facing channels at said projecting portions constituting said track means, and wherein the housing has inwardly facing channels at its vertical edges, with keying members received in said channels for slidably keying the housing to the side panels.

11. Apparatus as set forth in claim 8 wherein there is a fixed cover section on the top of the side panels, the housing top cover being a continuation of the fixed cover section when the housing is lowered.

12. Apparatus for dispensing lubricant from a drum, comprising a base for supporting a drum, a hose-receiving compartment fixed on the base, vertical track means on said compartment, a drum housing vertically slidable on said track means between a lowered drum-enclosing position on the base and a raised access position above the base, said housing having an open side closed by the compartment when the housing is in lowered position, an open bottom, and a top cover, a lance pump carried by the drum housing interiorly thereof for entry into a drum on the base upon lowering the housing from its raised position, the pump having an outlet, a hose reel in the hose-receiving compartment, and a hose wound on the reel and extending out of the compartment through a hose opening and having a connection with the pump outlet, said hose being adapted to be pulled out of the compartment for use and returned to the compartment for storage.

13. Apparatus for dispensing lubricant from a drum, comprising a base for supporting a drum, a hose-receiving compartment fixed on the base, vertical track means on said compartment, a drum housing vertically slidable on said track means between a lowered drum-enclosing position on the base and a raised access position above the base, said housing having an open side closed by the compartment when the housing is in lowered position, an open bottom, and a top cover, a lance pump carried by the drum housing interiorly thereof for entry into a drum on the base upon lowering the housing from its raised position, the pump having an outlet, and a hose extending out of the compartment through a hose opening and having a connection with the pump outlet, said hose being adapted to be pulled out of the compartment for use and returned to the compartment for storage, the top cover of the drum housing being removable, and the pump at its upper end having a detachable connection with the cover.

14. Apparatus for dispensing lubricant from a drum, comprising a base for supporting a drum, a hose-receiving compartment fixed on the base comprising side and end panels and having a hose opening, vertical track means at opposite sides of one end panel of the compartment, a drum housing of U-shape in horizontal cross section vertically slidably associated at its vertical edges with said track means facing one end panel and being slidable between a lowered drum-enclosing position on the base and a raised access position above the base, said housing being open at its side facing said one end panel and at its bottom and having a top cover, a lance pump carried by the housing interiorly thereof for entry into a drum on the base upon lowering the housing from its raised position, the pump having an outlet, and a hose extending out of the compartment through a hose opening and having a connection with the pump outlet, said hose being adapted to be pulled out of the compartment for use and returned to the compartment for storage, the top cover of the housing being removably telescoped on the housing and the pump at its upper end having a detachable connection with the cover.

15. Apparatus for dispensing lubricant from a drum, comprising a base for supporting a drum, a hose-receiving compartment fixed on the base comprising side and end panels and having a hose opening, vertical track means at opposite sides of one end panel of the compartment, a drum housing of U-shape in horizontal cross section vertically slidably associated at its vertical edges with said track means facing one end panel and being slidable between a lowered drum-enclosing position on the base and a raised access position above the base, said housing being open at its side facing said one end panel and at its bottom and having a top cover, a lance pump carried by the housing interiorly thereof for entry into a drum on the base upon lowering the housing from its raised position, the pump having an outlet, and a hose extending out of the compartment through a hose opening and having a connection with the pump outlet, said hose being adapted to be pulled out of the compartment for use and returned to the compartment for storage, the lower edge of said one end panel being spaced above the base to provide an opening from the compartment to the drum-receiving space enclosed by the housing, and the hose extending from the compartment through said opening to the pump outlet.

16. Apparatus for dispsensing lubricant from a drum, comprising a base for supporting a drum, a hose-receiv-

ing compartment fixed on the base comprising side and end panels and having a hose opening, vertical track means at opposite sides of one end panel of the compartment, a drum housing of U-shape in horizontal cross section vertically slidably associated at its vertical edges with said track means facing one end panel and being slidable between a lowered drum-enclosing position on the base and a raised access position above the base, said housing being open at its side facing said one end panel and at its bottom and having a top cover, a lance pump carried by the housing interiorly thereof for entry into a drum on the base upon lowering the housing from its raised position, the pump having an outlet, and a hose extending out of the compartment through a hose opening and having a connection with the pump outlet, said hose being adapted to be pulled out of the compartment for use and returned to the compartment for storage, the

lower edge of said one end panel being spaced above the base to provide an opening from the compartment to the drum-receiving space enclosed by the housing, and a reel in the hose-receiving compartment for winding up the hose, a connection being made from the pump outlet to the reel via a hose extending through said opening and of such length as to allow sliding the housing to its raised position.

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