

March 25, 1941.

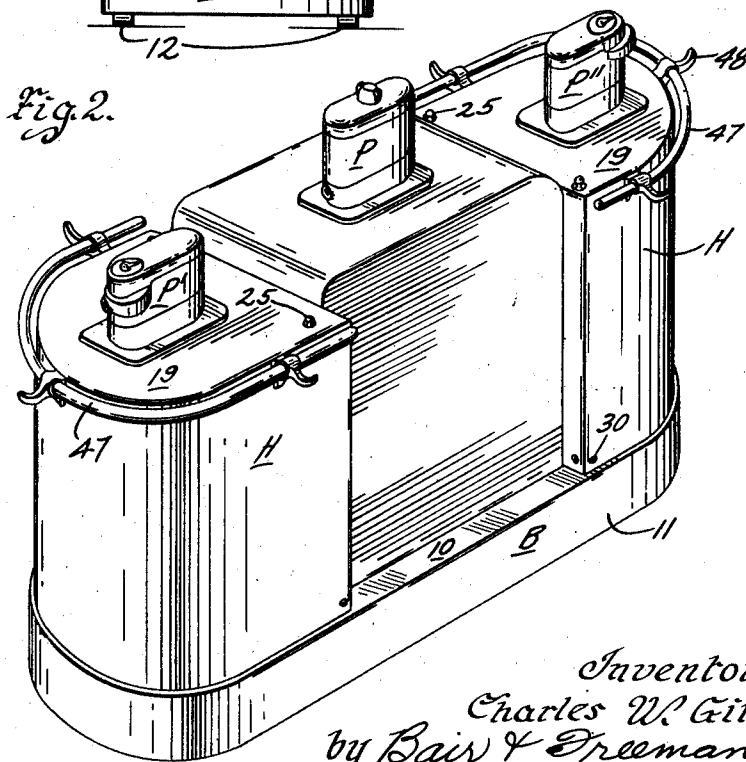
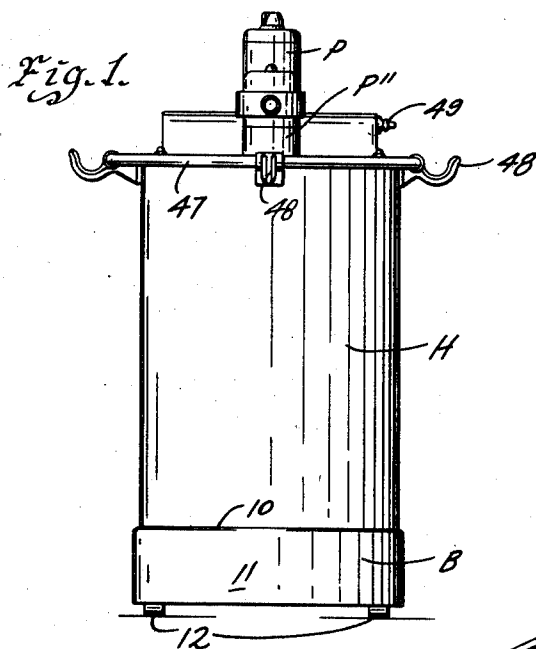
C. W. GINTER

2,236,095

CABINET FOR LUBRICANT DISPENSING APPARATUS

Filed Sept. 23, 1937

4 Sheets-Sheet 1



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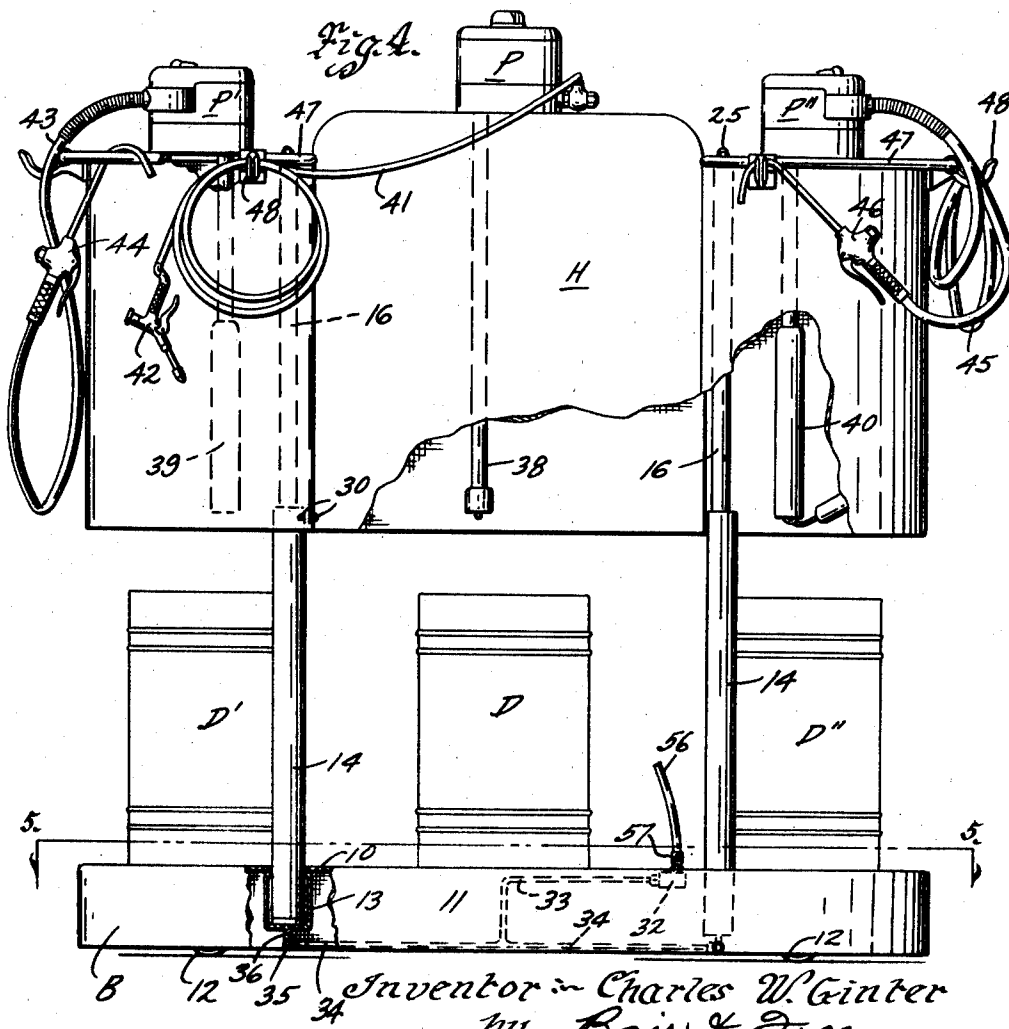
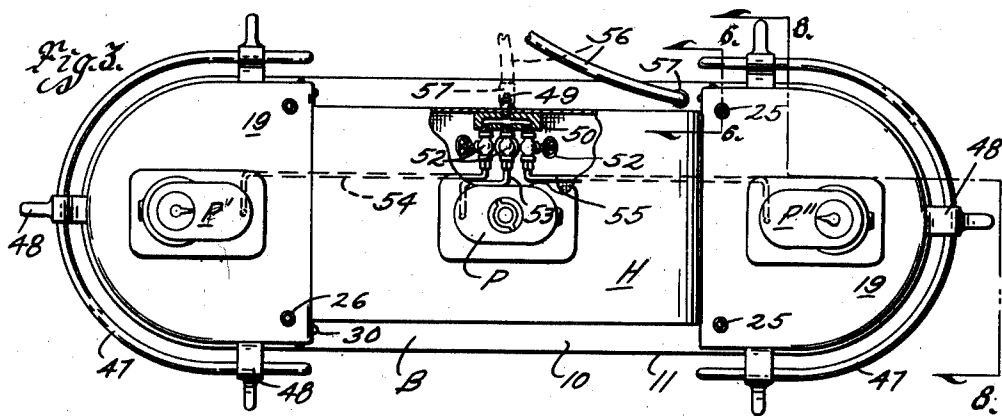
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CABINET FOR LUBRICANT DISPENSING APPARATUS

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4 Sheets-Sheet 2



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4 Sheets-Sheet 3

Fig. 5.

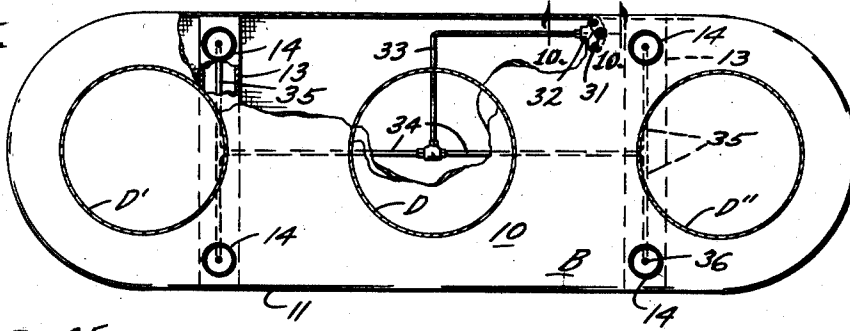


Fig. 6.

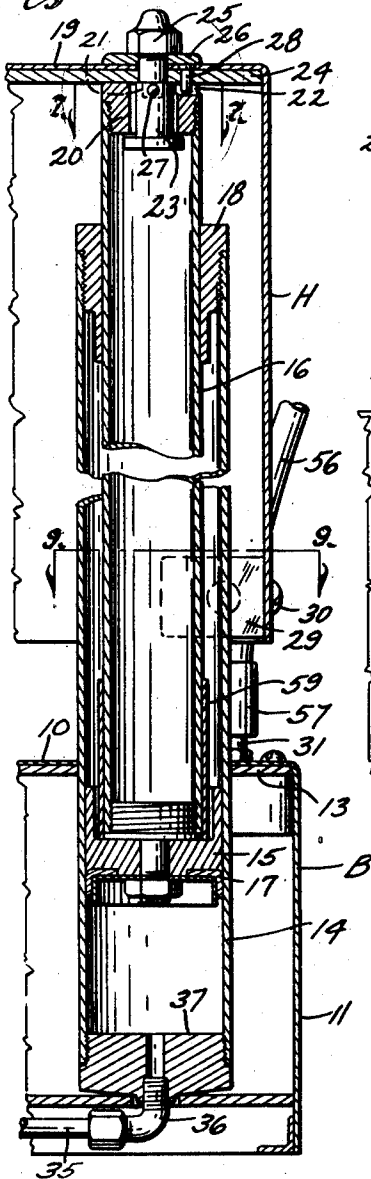


Fig. 7.

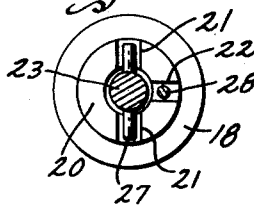


Fig. 8.

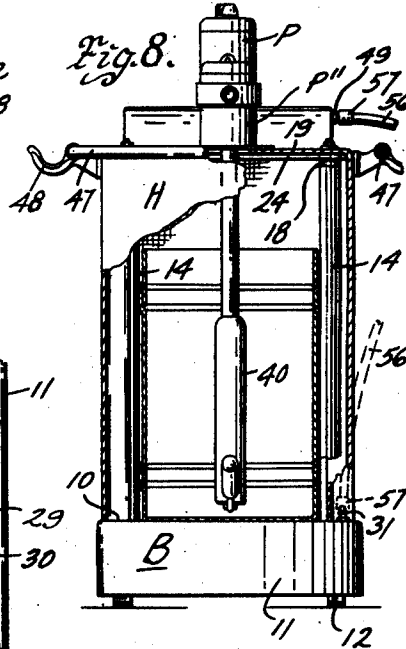


Fig. 9.

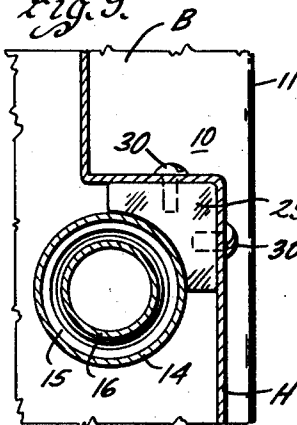
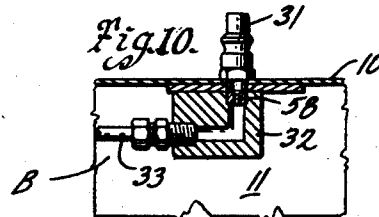


Fig. 10.



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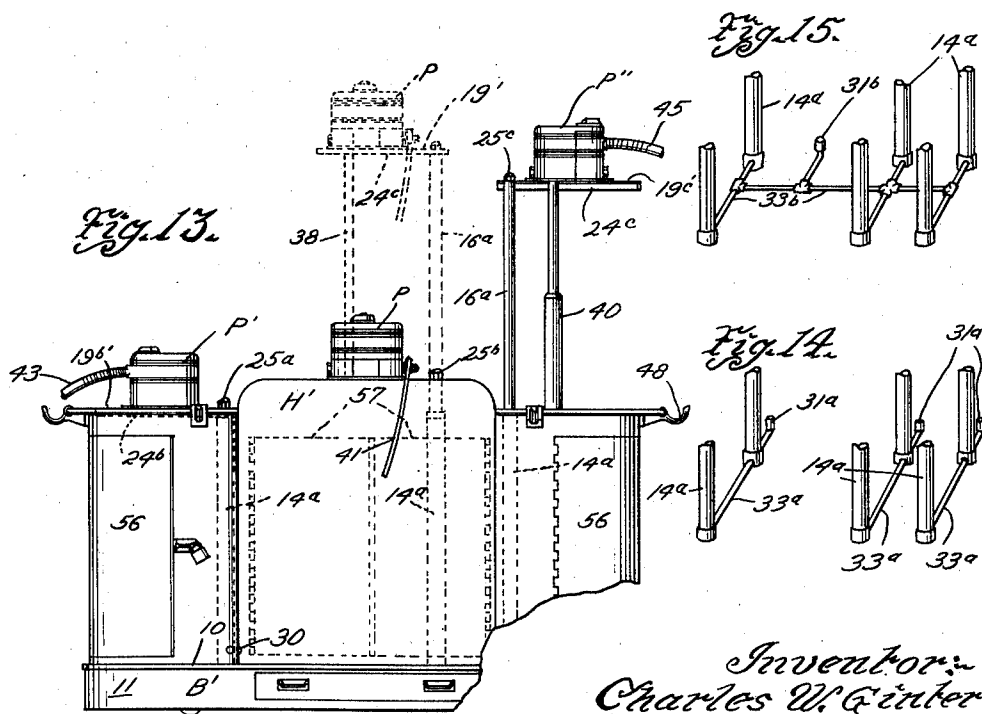
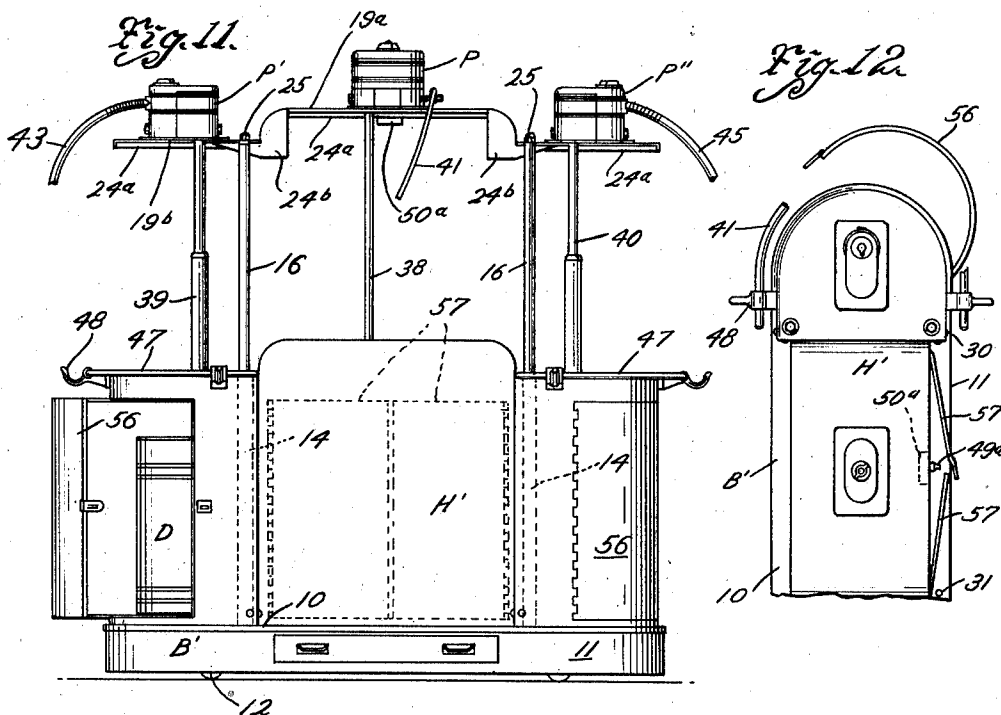
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CABINET FOR LUBRICANT DISPENSING APPARATUS

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4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE

2,236,095

CABINET FOR LUBRICANT DISPENSING
APPARATUS

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Application September 23, 1937, Serial No. 165,378

5 Claims. (Cl. 312—151)

An object of my invention is to provide a cabinet designed for dispensing apparatus, such as that used to dispense lubricant and the like in an automobile service station, the cabinet being of simple construction and inexpensive from the standpoint of manufacture.

Another object is to provide a cabinet for lubricant dispensing apparatus which includes a base for supporting lubricant drums or similar containers, a neat appearing housing for normally enclosing or concealing the drums, and readily operable means for elevating the housing when desired to gain access to the drums for removing empty ones and replacing them with filled ones.

Another object is to provide the housing constructed for carrying pumping mechanism for the contents of the different drums or containers, the pumps being preferably mounted on the top of the housing and having intake pipes depending therefrom to positions within the containers. The intake pipes terminate adjacent the bottoms of the drums for extracting substantially all the contents of the drums by operation of the pumps.

Still another object is to provide a complete dispensing unit preferably mounted on wheels so that it is readily portable about a service station and which can be readily connected with an available compressed air hose for operating the dispensing pumps, the unit including a fluid pressure operated means for elevating the housing thereof relative to its base, so that it is possible to utilize compressed air for the purpose of elevating the pumps relative to the lubricant drums and thus extract the pump intake pipes therefrom when it is desired to change drums.

A further object is to provide a cabinet wherein the drums of lubricant can be normally concealed, yet ready access may be had thereto when desired without the necessity of having to manually lift the concealing housing off the drums or manually remove the pumps from position with their intakes depending into the drums.

A further object is to provide a dispenser cabinet having fluid pressure operated means for raising the enclosing housing thereof, a nipple connection being provided for such means and there being fluid pressure operated pumps carried by the housing. The pumps are supplied with compressed air from a second nipple with which an air chuck is normally connected, the chuck being disconnectible therefrom and connectible with the first nipple when it is desired to raise

the housing for the purpose of replacing empty lubricant drums on the base with filled drums.

A further object is to provide the fluid pressure operated means for raising the enclosing housing in the form of a plurality of cylinders and pistons, the pistons being rigidly supported relative to the base of the apparatus and the pistons being movable relative thereto, the pistons having piston rods extending upwardly to the top of the enclosing housing and loosely connected therewith to avoid any possibility of binding when fluid pressure is supplied to the plurality of cylinders for raising the housing.

Still a further object is to provide guiding projections on the housing which engage the cylinders to further prevent binding of the apparatus during the elevating operation.

A further object is to provide the enclosing housing with hooks or other supports mounted thereon for lubricant hoses and nozzle valves of the lubricating apparatus, so that when the housing is raised, these hoses and nozzle valves will also be raised to a position where they do not interfere with replacing the lubricant containers on the base of the apparatus.

Still a further object is to provide a modified form of the apparatus in which the top only of the housing and the pump intakes are raised for extracting the intakes from the lubricant drums, the walls of the housing having doors through which access can be had to the interior of the housing for changing the lubricant drums therein.

Still a further object is to provide for lifting the pump intakes individually if desired instead of lifting all of them simultaneously, as in the preferred embodiment of my invention.

With these and other objects in view, my cabinet consists in the construction, arrangement and combination of the various parts thereof, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 is an end elevation of a cabinet for dispensing apparatus and the like embodying my invention.

Figure 2 is a perspective view of the same.

Figure 3 is a plan view, a portion being broken away to illustrate connections of the fluid pressure or compressed air supply to the different lubricant pumps.

Figure 4 is a front elevation showing the housing for enclosing the lubricant drums elevated to a position for permitting replacement of the

drums, this figure showing the hoses and nozzle valves which are omitted from Figures 1, 2 and 3.

Figure 5 is a sectional view on the line 5-5 of Figure 4, showing the arrangement of fluid pressure operated elevating means for the housing and the fluid pressure connections therefor.

Figure 6 is an enlarged, sectional view on the line 6-6 of Figure 3 showing one of the fluid pressure operated elevating mechanisms in detail.

Figure 7 is a sectional view on the line 7-7 of Figure 6, showing a connection between the fluid pressure operated elevating mechanism and the enclosing housing.

Figure 8 is a sectional view on the line 8-8 of Figure 3, showing the relation of one of the pumps to a lubricant drum when the cabinet is in its normal operating position.

Figure 9 is a sectional view on the line 9-9 of Figure 6 showing a guiding means for the housing during its elevating operation.

Figure 10 is an enlarged, sectional view on the line 10-10 of Figure 5, showing a restricted passageway for the fluid pressure to the elevating means for the purpose of avoiding excessively rapid elevation of the housing.

Figure 11 is a side elevation of a modified form of structure in which the top only of the housing is raised by the lifting means.

Figure 12 is a plan view thereof.

Figure 13 is a side elevation of another modified form of structure.

Figure 14 is a perspective diagram of fluid pressure connections for the apparatus shown in Figure 13; and

Figure 15 is a similar view of another form of fluid pressure connections therefor.

On the accompanying drawings, I have used the reference character B to indicate a base and H an open bottom housing for the base. Pumping mechanisms are illustrated at P, P' and P''.

The base B comprises a top wall 10 and a peripheral depending wall 11. Within the base B, suitable wheels 12 are provided, whereby the base is portable for convenience in changing it from one position to another about a service station. Some of the wheels 12 may be castor wheels to facilitate steering of the apparatus in transferring it from one position to another.

Within the base B and extending laterally thereof, I provide a pair of rectangular reinforcing tubes 13 for the purpose of supporting vertically arranged lifting cylinders 14. The cylinders 14 are bolted to the reinforcing tubes 13. The tubes 13 are welded to the base B, thus making the base, tubes and cylinders integrally connected so that the cylinders are fixed rigidly relative to the base. The cylinders extend upwardly through the top wall 10 of the base and terminate a substantial distance thereabove as illustrated in Figure 4.

As shown in Figure 6, I provide in each cylinder 14 a piston 15 with which is connected a tubular piston rod 16. Each piston 15 is provided with a cup leather 17 to seal the piston relative to the cylinder 14. The piston rods 16 extend through head fittings 18 of the cylinders 14 and are connected to top walls 19 of the housing H.

The means of connection is shown particularly in Figures 6 and 7 and includes an end plug 20 in the upper end of the piston rod 16. The plug 20 is provided with a transverse slot 21

and with a second slot 22. A shouldered bolt 23 extends through the top wall 19 of the housing H and through a reinforcing bar 24 with its shoulder engaging the bar. The outer end of the bolt is provided with a clamp nut 25 and a washer 26 is interposed between this nut and the wall 19. Thus the bolt 23 is rigidly connected to the top wall 19 and both the wall and the bolt are reinforced by the bar 24.

The shank of the bolt extends through a bore of the plug 20 and is somewhat longer than the height of the plug so as to provide slight play. Also the shank is somewhat smaller than the bore of the plug. Undesirable rotation of the piston rod relative to the top wall 19 is prevented by a cross pin 27 loosely mounted in the slot 21, this pin being a press-fit in the bolt 23 and extending therethrough as illustrated. A headed pin 28 extends downwardly from the wall 19 and loosely into the slot 22. The loose connection described in this paragraph prevents binding of the parts during the elevating operation which will hereinafter be described.

As a further means to prevent binding, I provide guide blocks 29 attached as by screws 30 to the wall of the housing H and loosely fitting against the circumferences of the cylinders 14 as shown in Figures 6 and 9.

To elevate the housing H to the position shown in Figure 4, it will be obvious that it is merely necessary to supply compressed air or other actuating fluid to the cylinders 14. I provide a nipple 31 to which compressed air may be supplied, this nipple being connected to the four cylinders 14. The means of connection comprises a fitting 32 attached to the top 10 of the base B and into which the nipple 31 is screwed, a conduit 33 of copper tubing or the like, a pair of branch conduits 34 and four other branch conduits 35. The conduits 35 connect with elbows 36 which in turn are connected with the lower heads 37 of the cylinders 14.

The base 10 is adapted for supporting lubricant containers such as drums D, D' and D''. The pumps P, P' and P'' are provided with intake pipes 38, 39 and 40 respectively. Normally the intake pipes depend to positions within the drums D, D' and D'' as shown in Figure 8 with their terminal ends closely adjacent the bottoms thereof, so that substantially the entire contents of the drums may be pumped out by the lubricant pumps and dispensed as desired.

In connection with the pump P, a lubricant hose 41 is illustrated, having on its discharge end a valve controlled nozzle 42. In connection with the pump P', a hose 43 is illustrated, the nozzle at its discharge end being illustrated at 44. Likewise the pump P'' has a hose 45 and a nozzle 46.

Supported on the housing H are a pair of rails 47. Their means of support comprises hook members 48. The rails 47 and the hook members 48 are provided for convenience of the operator in hanging the valve controlled nozzles and hoses thereon, so that they are supported relative to the housing H and can be elevated with it when the housing is elevated.

The pumps P, P' and P'' are supplied with actuating fluid such as compressed air from a second nipple 49 (see Figure 3). The nipple 49 is connected with a manifold 50 which supports control valves 52. From the control valves 52, air conduits such as copper tubing extend to the pumps P, P' and P''. These conduits are indicated at 53, 54 and 55 respectively. The valves 75

52 are for the purpose of shutting off the supply of air to one or more of the pumps if desired.

In the form of my invention shown in Figure 11, a base B' and housing H' are provided. The housing H' has side walls as does the housing H, but the top of the housing, designated as elements 19a, 19b and 19c are separate from the housing. In lowered position, the elements 19a, 19b and 19c rest on the open top of the housing to close it. The elements 19a, 19b and 19c are connected to the piston rods 16 for elevation thereby when the cylinders 14 are charged with actuating fluid.

To gain access to the interior of the housing H', I provide doors 56 and 57 mounted in the walls of the housing. The doors permit changing of the drums D, etc. when empty. Since the top elements 19a, 19b and 19c are not reinforced by the housing side, angle bars 24a may be provided for this purpose. Gusset plates 24a also aid in the reinforcing of the top elements against undesired distortion.

As shown in Figure 13, the top elements (designated 19a', 19b' and 19c') may be independent of each other, if desired. Each top element is supported by a pair of piston rods 16a. A pair of cylinders 14a is provided for each pair of piston rods.

The cylinders may be connected as by piping 33a (see Figure 14) and each pair have an individual nipple 31a for receiving actuating fluid. As an alternative arrangement, the piping may be arranged as at 33b in Figure 15, a single nipple 31b being provided for supplying fluid pressure simultaneously to all the cylinders.

Practical Operation

While the housing H is in its lowered position, as shown in Figures 1, 2 and 8, the cabinet can be wheeled to any desired position in a service station, and an available air supply hose 56 normally connected with the nipple 49 by a coupler fitting 57, such as shown in the Eastman Patent No. 2,069,434 of February 2, 1937. Such normal connection is shown in Figure 8 and by dotted lines in Figure 3.

Obviously any of the three pumps can be operated to dispense lubricant from its respective drum on the base 10. When any one of the drums has been exhausted of its supply of lubricant, the operator can disconnect the coupling 57 from the nipple 49 and connect it instead with the nipple 31, as shown in Figures 3, 4 and 6, and by dotted lines to Figure 8. This introduces compressed air to the four cylinders 14 for urging their pistons 15 upwardly.

The nipple 31 as shown in Figure 10, it will be noted, has a restricted bore at 58 which slows down the entrance of air to such an extent that the housing H is not lifted too quickly but complete elevation of the housing to the position shown in Figure 4 is accomplished in several seconds' time.

Within each cylinder 14 and surrounding the piston rod 16 is a stop sleeve 59 which, when it engages the head 18, limits the upward movement of the housing H. The housing will then be stopped in the position of Figure 4, in which position there is ample room below the lower edge of the housing to remove any of the empty lubricant drums and replace them with full ones.

During the removing and replacing operations, the air chuck 57 is left connected with the nipple 31 so as to keep the housing H in its raised position. Since the various hoses 41, 43 and 45

and the nozzles 42, 44 and 46 are supported relative to the housing H by the rails 47 and hooks 48, these parts will also be elevated with the housing so as to avoid any possibility of them interfering with the removal and replacement of the drums.

After one or more of the empty drums has been properly replaced with a filled one, it is merely necessary to remove the coupling 57 from the nipple 31 and reconnect it to the nipple 49. The weight of the housing and the pumps will cause the housing to return to its lowered position and exhaust the air from the cylinders 14 to atmosphere through the nipple 31. Here likewise the restricted opening 58 prevents a too sudden lowering of the housing H.

When the housing is lowered, it effectively conceals the lubricant drums and positions the pump intakes properly relative to them. Thus the unsightly and usually dirty and greasy lubricant drums may be effectively concealed by an ornamental, neat appearing and clean housing without any possibility of the grease or lubricant in the drums soiling the housing. From the standpoint of an efficient service station, cleanliness of this character is greatly desired.

In operating the form of device shown in Figure 11, the air supply chuck, normally connected with the nipple 49a and manifold 50a, is disengaged therefrom and engaged with the nipple 31. This operation causes raising of the pumps, their intakes and the top of the housing but leaves the side walls in their usual position. Any of the doors 56 or 57 may then be opened to gain access to the interior of the housing for replacement of the drums as desired.

When the lifting apparatus of Figure 13 is piped, as illustrated in Figure 14, any one of the pumps and their intakes can be raised independent of the others depending on which nipple 31a the air chuck is engaged with. The pumps P' and P are shown down and the pump P'' is shown in elevated position. The piping may be modified as in Figure 15 so that the pumps and intakes can be elevated simultaneously if desired instead of arranged for individual operation.

I accomplish the desired results of cleanliness and concealment of the unsightly lubricant drums and at the same time provide an apparatus which can be quickly operated without the necessity of having to manually lift the housing off the drums or manually lift the pumps to extract their intakes from the drums. This is all accomplished without the necessity of having to provide any complicated apparatus for elevating the housing. The elevating mechanism is readily operable by the hose 56 and coupling 57 which are already necessary for the actuating mechanism of the pumps P, P' and P'', and it is a mere matter of transferring the coupling 57 from one nipple to another to secure either elevation of the housing or operation of the pump.

The various types of apparatus I have illustrated serve as a convenient means to change lubricant drums without any problem as to where to put the housing which serves as a support for the pumps. Heretofore it has been customary to submerge pumps in lubricant drums and whenever it was necessary to change drums, the attendant always had the problem of what to do with the pump after removing it from the grease drum. With my apparatus it is merely necessary to elevate the pumps whereupon the drums can be changed while the pumps are supported in their elevated position, thus eliminating the

necessity of providing any other support for the pumps during drum-replacing operation. This convenience is had also without the necessity of manually lifting the pumps from the drums.

- 5 Some changes may be made in the construction and arrangement of the parts of my cabinet without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents, which
10 may be reasonably included within their scope.

I claim as my invention:

1. In a dispensing apparatus of the character described, a base, a housing supported on the
15 base, and means for elevating said housing relative to said base, said means comprising a cylinder, a piston and a piston rod, means for introducing fluid pressure to said cylinder, said cylinder being fixed to said base, a perforated collar
20 carried by said piston rod, a headed pin extending loosely through the perforation thereof and means to prevent rotation of said collar and piston rod relative to said housing.

2. In a lubricant dispenser cabinet, a base,
25 a housing structure associated therewith and extending upwardly therefrom, a lifting device interposed between said base and housing for elevating the housing relative to said base and means of connection between the lifting device
30 and said housing to prevent binding of the parts during lifting operation, said means of connection comprising a headed pin carried by the housing and a collar carried by said lifting device, said collar having a perforation receiving
35 said pin, said perforation being larger than said pin and smaller than the head thereof.

3. In a lubricant dispenser having a base and an open-bottom housing associated therewith, elevator means for the housing comprising cylinders located within said housing adjacent opposite walls thereof and fixed to said base, plungers
40 slidable within said cylinders, extending upwardly therefrom, and connected with said housing

adjacent the upper part thereof, and members interposed between said cylinders and the lower portions of the adjacent housing wall, said members partially embracing said cylinders in sliding engagement, the embracing portions of such members on opposite cylinders facing each other.

4. In a lubricant dispenser having a base and an open-bottom housing associated therewith, fluid pressure operated means for elevating the housing structure relative to the base, comprising cylinders fixed to said base, pistons slidable
10 in said cylinders, piston rods extending upwardly from said pistons and connected with said housing adjacent the upper portion thereof, and members fixed to said housing adjacent the lower portion thereof, said members having concave surfaces formed therein which receive a portion of the cylinders and thereby partially embrace the cylinders in sliding engagement.

5. In a lubricant dispenser having a base and an open-bottom housing associated therewith comprising a top portion and side walls depending therefrom, means for raising and lowering the housing comprising vertical cylinders fixed to said base at points adjacent opposite walls of
20 said housing, pistons slidable within said cylinders, extending upwardly therefrom and connected with said housing adjacent the upper part thereof, and means for preventing horizontal movement of the depending side walls relative to said cylinders consisting of members
25 interposed between said cylinders and the lower portions of the adjacent housing walls, thus precluding movement of the lower portion of said housing along a horizontal line joining two cylinders, said members having concave surfaces partially embracing said cylinders in sliding engagement, thus precluding movement of the lower portion of said housing along horizontal lines
30 at an angle to a horizontal line joining two cylinders.

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