March 4, 1947. K. S. CLAPP 2,416,819

CONCEALED LUBRICANT DISPENSING DEVICE

Filed Dec. 22, 1943 4 Sheets-Sheet 1

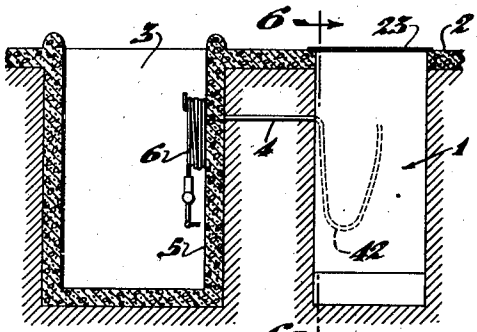


Fig. 1

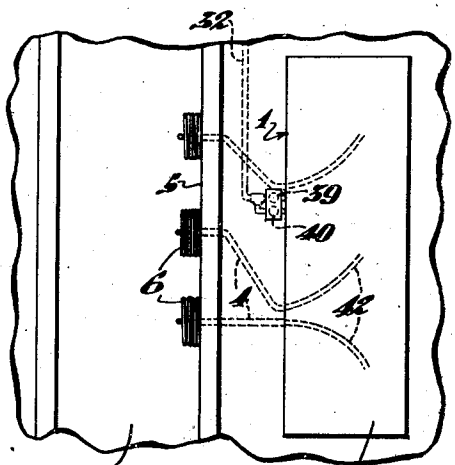


Fig. 2

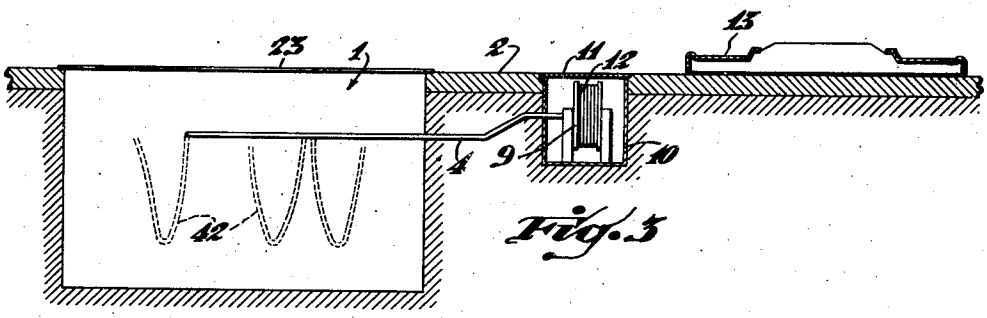


Fig. 3

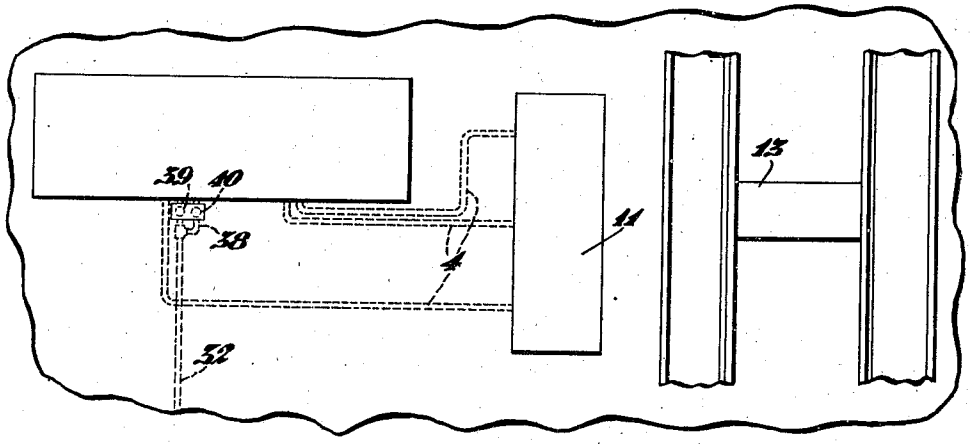


Fig. 4

INVENTOR.
Kenneth S. Clapp
BY Wood, Arey, Herron & Evans
Attorneys

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CONCEALED LUBRICANT DISPENSING DEVICE

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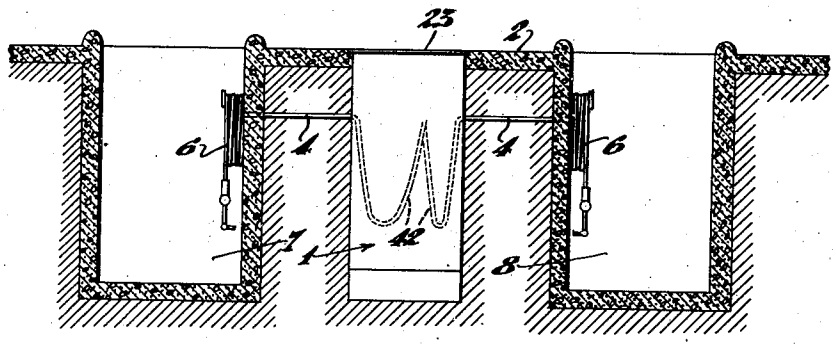


Fig. 5

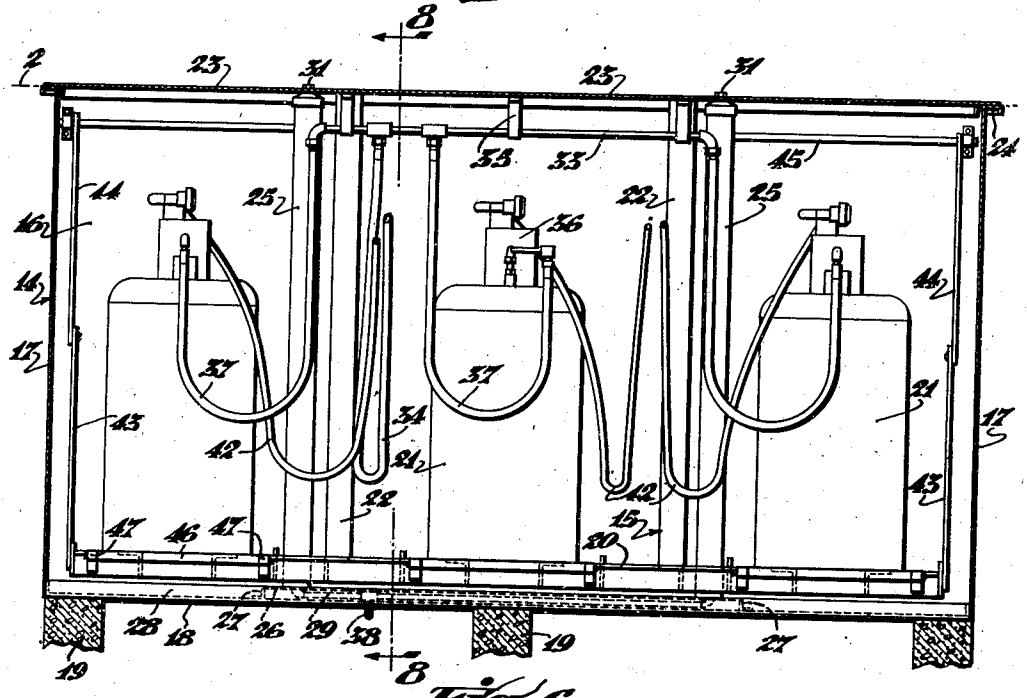


Fig. 6

INVENTOR.
Kenneth S. Clapp
BY Wood, Arey, Herron & Evans
Attorneys.

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CONCEALED LUBRICANT DISPENSING DEVICE

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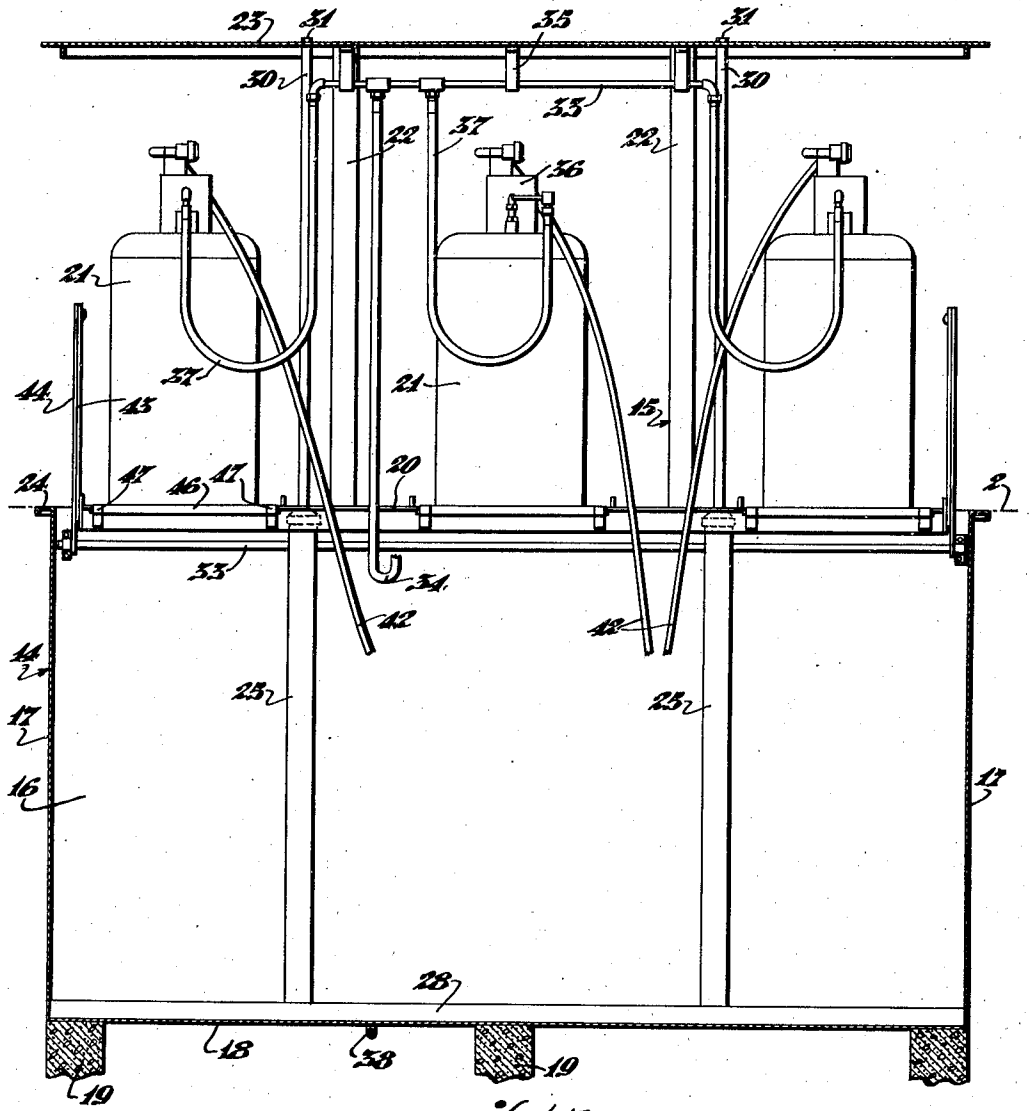


Fig. 1

INVENTOR.
Kenneth S. Clapp
BY Wood, Arey, Heron & Evans
Attorneys.

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CONCEALED LUBRICANT DISPENSING DEVICE

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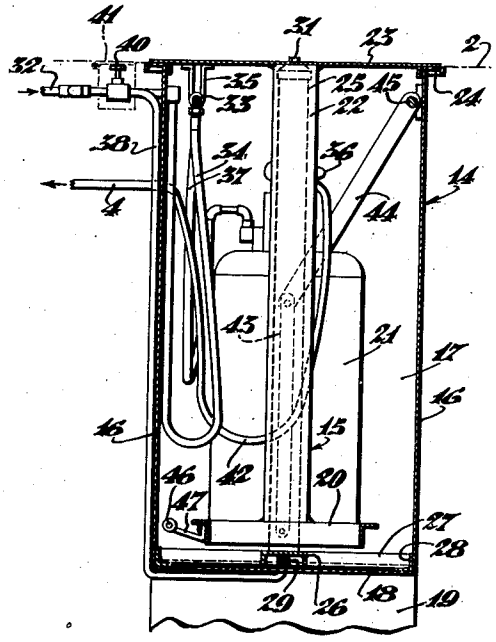


Fig. 8

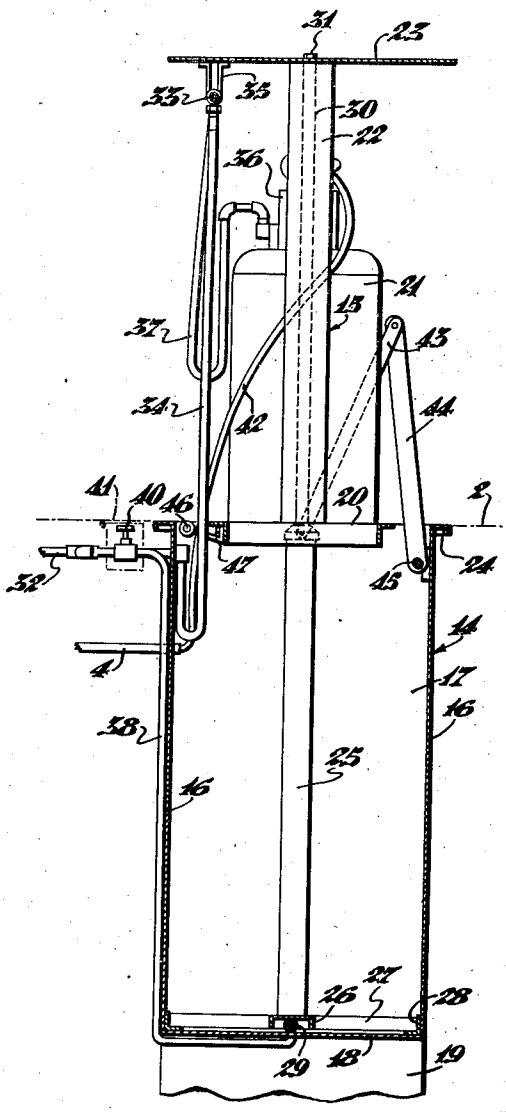


Fig. 9

INVENTOR.
Kenneth S. Clapp
BY Wood, Arey, Herron & Evans
Attorneys.

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CONCEALED LUBRICANT DISPENSING DEVICE

Kenneth S. Clapp, Cincinnati, Ohio

Application December 22, 1943, Serial No. 515,206

6 Claims. (Cl. 222—160)

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This invention relates to equipment for lubricating automobiles and comprises essentially an adaptation of the apparatus disclosed and claimed in my Patent No. 2,225,622, issued December 4, 1940. The object of the present invention is to provide a concealed lubricant dispensing device for use particularly in the lubrication of automobiles.

Another object of the present invention is to provide a lubricating system in which the lubricating equipment is disposed entirely below ground level or floor level, but with means for replacing drums of lubricant at ground level or floor level when the drums become exhausted. Two forms of the device are shown, one adapted for the lubrication of cars in pits, the other for the lubrication of cars disposed upon a lift. In each case, the drums containing the lubricant are disposed on the platform of an elevator countersunk below ground level or floor level. On each drum is mounted a device for removing lubricant therefrom, the device being detached from the drum to permit the drums to be interchanged. This device is usually and preferably air operated to minimize the fire hazard, though electrical means may be employed if desired.

The lubricant removing devices are each connected to a horizontally disposed conduit by means of a flexible tube. The horizontal underground conduits extend to the side walls of the pits and there connect to flexible conduits adapted to convey the grease to the part of the car to be lubricated.

In the second form shown in the drawings, the underground conduits extend to countersunk hose reels which can be used to lubricate a car elevated upon a lift.

Other objects and further advantages of the present invention will be readily comprehended from a further and detailed description of the drawings, in which:

Figure 1 is a diagrammatic cross sectional view of a grease pit with an underground lubricant dispensing device of the present invention disposed to the side thereof.

Figure 2 is a diagrammatic top plan view of the grease pit and lubricant dispensing device as disclosed in Figure 1.

Figure 3 is a diagrammatic sectional view of a modified form of the invention.

Figure 4 is a diagrammatic top plan view of the modified form of the invention as disclosed in Figure 3.

Figure 5 is a diagrammatic cross sectional view similar to Figure 1 but showing the lubricant dispensing device as used in connection with two grease pits.

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Figure 6 is a longitudinal sectional view of the lubricant dispensing device taken along the line 6—6, Figure 1.

Figure 7 is a longitudinal sectional view of the lubricant dispensing device similar to Figure 6 but showing the elevator platform containing the grease drums raised to floor level.

Figure 8 is a cross sectional view taken on the line 8—8, Figure 6.

Figure 9 is a cross sectional view similar to Figure 8 but showing the elevator platform raised to floor level as in Figure 7.

As illustrated in Figures 1 and 2 a lubricant dispensing device, indicated generally at 1, is disposed entirely below the ground or floor level 2 and in parallelism with a grease pit 3. Underground conduits 4 extend from the lubricant dispensing device to the side wall 5 of the grease pit and are there connected to flexible conduits 6 adapted to be used in greasing the parts of the car to be lubricated which is disposed above the pit in the conventional manner.

The lubricant dispensing device is shown closely adjacent to and parallel with the pit as described, but it need not be so positioned, for in many cases the actual positioning of the device is governed by the floor or ground space available. It may, therefore, be placed in any convenient spot and at any angle whatsoever with respect to the pit.

In many instances where service stations, repair garages or the like are equipped with a series of pits disposed in a line parallel to one another, one lubricant dispensing unit may be disposed between each other pair of pits and thereby service two pits. As illustrated in Figure 5, underground conduits 4 extend from both sides of a dispensing unit 1 to pits 7 and 8. Flexible conduits or hoses 6 are connected to these conduits as in the case of a single pit.

A further modification is illustrated in Figures 3 and 4 wherein the underground conduits 4 extend from the lubricant dispensing device 1 to countersunk hose reels 9. These reels may be enclosed in any suitable underground casing element 10 with a hinged lid 11. Hoses 12 disposed about reels 9 are adapted to lubricate cars elevated upon a lift 13. The lubricant dispensing unit, as in connection with a pit or pits, may be located in any suitable or convenient position with respect to the countersunk hose reels 9 and lift 13.

The lubricant dispensing device 1 comprises a

shell or casing element indicated generally at 14, and an elevator mechanism indicated generally at 15. The shell or casing 14 is composed of side walls 16—16, end walls 17—17 and a bottom wall 18, and is preferably constructed of sheet metal. This casing element 14 is sunk in the ground and rests on poured concrete supports or foundations 19 positioned as shown in Figures 6 and 7. The casing 14 is sunk to such a depth that the top edges of the side and end walls are at ground or floor level.

The elevator mechanism indicated generally at 15 comprises a platform 20 supporting grease drums 21 and upright supports 22 carrying a lid or cover plate 23 rigidly fixed to the upper ends thereof. The lid or cover plate 23 is of a size and configuration to overlie the turned-over edges 24 of the side and end walls of the casing element 14 and thus completely encloses the unit when the elevator is in "down" position, as shown in Figure 6. The entire unit is, therefore, below ground level and has no upwardly protruding parts.

A pair of air cylinders 25—25 are rigidly fixed at their lower ends to a longitudinal channel iron 26 which, in turn, is rigidly fixed to the bottom of the casing element 14 by means of the horizontal angle irons 27—27 and the longitudinal angle irons 28—28 which serve to join the side wall and bottom wall of the casing 14. When air is introduced under pressure through the longitudinal air conduit 29 to the lower ends of the air cylinders 25—25, pistons 30—30, rigidly fixed at their upper ends to the cover plate or lid 23 as by the bolts 31, will raise the elevator mechanism 15 carrying the grease drums until the bottoms of the drums reach ground or floor level. Empty grease drums may then be removed from the platform 20 and replaced by full drums. The air in cylinders 25—25 may then be released to return the elevator to its position below the ground or floor level.

An external air conduit 32 extending from the air compressor (not shown) projects through a side wall of the casing 14 and is connected to a longitudinally disposed air conduit 33 by means of a flexible hose or tube 34. Conduit 33 is fixed to the top plate or lid 23 by means of brackets 35 and conveys compressed air to the grease or oil pumps 36 by means of flexible tubes or hoses 37. Oil or grease pumps 36 are fixed to the tops of the drums 21 in the conventional manner. An external air conduit 38 extends from the conduit 32 to the longitudinal air conduit 29 to convey air to the elevator air cylinders 25—25. Valves 39 and 40 in conduits 32 and 38 control the flow of compressed air to the grease or oil pumps and air cylinders respectively, and may be located below ground level immediately adjacent a side of the casing 14. A hinged cover or lid 41 is provided over the valves 39 and 40.

Means for removing grease from the containers, such as grease pumps 36, are connected to the horizontally disposed conduits 4 by means of flexible grease or oil discharge tubes 42. Air intake tube 34 and grease or oil discharge tubes 42, as previously stated, are flexible and, as shown in Figures 6 and 8, the tubes fall in long, easy loops when the elevator is in "down" position and, as shown in Figures 7 and 9, are of a sufficient length to enable the elevator to be raised to ground level.

A stabilizer is provided which consists of arms 43 and 44 pivotally connected between the ends of the elevator platform 20 and a longitudinal shaft 45 fixed to one of the side walls 16 near the top edge thereof. This prevents any possibility of the two elevator pistons cocking or in any way becoming disaligned with respect to the casing 14 while in operation.

An elongated roller 46 fixed to the platform 20 by means of brackets 47—47 is provided adjacent each grease or oil drum to aid in removing empty drums and particularly in placing full grease or oil drums which are of a considerable weight in position on the platform.

In operation the elevator is raised so that its platform is at floor level. The drums of lubricant are then placed upon it and the pumps or means for withdrawing the lubricant from the containers are put into position above the containers. The elevator is then lowered so that its cover plate is substantially flush with the floor. When a car is to be lubricated it is driven into one of the pits or into the proximity of the hose reel and lubricated according to conventional technique. Instead of the hose reel any other desired type of device for applying the grease to the car may be employed. In fact, the lateral or horizontal, rigid conduit may be run to any desired location, the primary concept of this invention being the use of the elevator for the handling of the grease to be used, the flexible conduits between the drums mounted on the elevator, the rigid, horizontal conduit, and the flexible conduit at the other end of the rigid conduit for applying the lubricant immediately to the car.

Having described my invention, I claim:

1. A concealed lubricant dispensing device comprising an elevator having a platform on which drums of lubricant are adapted to be disposed, said elevator disposed in a recess, said recess countersunk below floor level, a cover plate for the elevator adapted to occupy a position substantially flush with the floor when the elevator is in "down" position, means for operating the elevator to dispose the platform with the drums of lubricant at floor level when in elevated position and the cover plate at floor level when in "down" position, means for removing lubricant from each of said drums, said means attachable to and detachable from the drums to permit the changing of drums, horizontal conduits below floor level extending to the wall of the recess in which the elevator is disposed, flexible connections between said latter means for removing the lubricant from the drums and adjacent ends of said horizontal conduits, and flexible means secured to the other ends of the horizontal conduits for conveying the lubricant to a point of use.

2. A concealed lubricant dispensing device comprising an elevator having a platform on which drums of lubricant are adapted to be disposed, said elevator disposed in a recess, said recess countersunk below floor level, a cover plate for the elevator adapted to occupy a position substantially flush with the floor when the elevator is in "down" position, means for operating the elevator to dispose the platform with the drums of lubricant at floor level when in elevated position and the cover plate at floor level when in "down" position, means for removing lubricant from each of said drums, said means attachable to and detachable from the drums to permit the changing of drums, horizontal conduits below floor level mounted in the recess in which the elevator is disposed, flexible connections between said latter means for removing the lubricant from the drums and said horizontal conduits, a pit for lubricating a car from below, said horizontal

conduits extending to the side walls of said pit, and flexible means secured to the ends of the horizontal conduits for conveying the lubricant to the part of the car to be lubricated.

3. A concealed lubricant dispensing device comprising an elevator having a platform on which drums of lubricant are adapted to be disposed, said elevator disposed in a recess, said recess countersunk below floor level, a cover plate for the elevator adapted to occupy a position substantially flush with the floor when the elevator is in "down" position, means for operating the elevator to dispose the platform with the drums of lubricant at floor level when in elevated position and the cover plate at floor level when in "down" position, means for removing lubricant from each of said drums, said means attachable to and detachable from the drums to permit the changing of drums, a horizontal conduit below floor level extended to the wall of the recess in which the elevator is disposed, flexible connections between said latter means for removing the lubricant from the drums and said horizontal conduit, and a hose reel countersunk below floor level, said hose reel connected with said horizontal conduit.

4. A concealed lubricant dispensing device comprising two pits for lubricating cars from below, an elevator mechanism countersunk in a recess below floor level in-between said pits, horizontal conduits disposed below floor level, said horizontal conduits extending from the side walls of the recess in which the elevator is mounted to the side walls of the pits, flexible connections for disposing grease in the cars to be lubricated, said flexible connections connected to the horizontal conduits extending from the side walls of the pits, a cover plate mounted on top of said elevator mechanism, said cover plate adapted to be substantially flush with the floor when the elevator is in "down" position, an elevator platform on which drums of lubricant may be mounted, said platform adapted to be substantially flush with the floor when the elevator is in "up" position to permit interchange of drums at floor level, means for removing lubricant from each drum, and flexible connections between said means and the horizontal conduits extending to the pits.

5. A concealed lubricant dispensing device comprising an elevator having a platform on which drums of lubricant are adapted to be disposed, said elevator countersunk in a recess below floor level, a cover plate for the elevator adapted to occupy a position substantially flush with the floor when the elevator is in "down" position, means for operating the elevator to dispose the platform with the drums of lubricant at floor level when in elevated position and the cover plate at floor level when in "down" position, means for removing lubricant from each of said drums, said means attachable to and detachable from the drums to permit the changing of drums, horizontal conduits below floor level extending to the wall of the recess in which the elevator is disposed, and flexible connections between said latter means for removing the lubricant from the drums and said horizontal conduits.

6. A concealed lubricant dispensing device comprising an elevator having a platform on which drums of lubricant are adapted to be disposed, said elevator disposed in a recess, said recess countersunk below floor level, a cover plate for the elevator adapted to occupy a position substantially flush with the floor when the elevator is in "down" position, means for operating the elevator to dispose the platform with the drums of lubricant at floor level when in elevated position and the cover plate at floor level when in "down" position, means for removing lubricant from each of said drums, said means attachable to and detachable from the drums to permit the changing of drums, a horizontal conduit below floor level extended to the wall of the recess in which the elevator is disposed, flexible connections between said latter means for removing the lubricant from the drums and an adjacent end of said horizontal conduit, and a flexible conduit connected to the other end of said horizontal conduit for applying lubrication.

KENNETH S. CLAPP.

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