

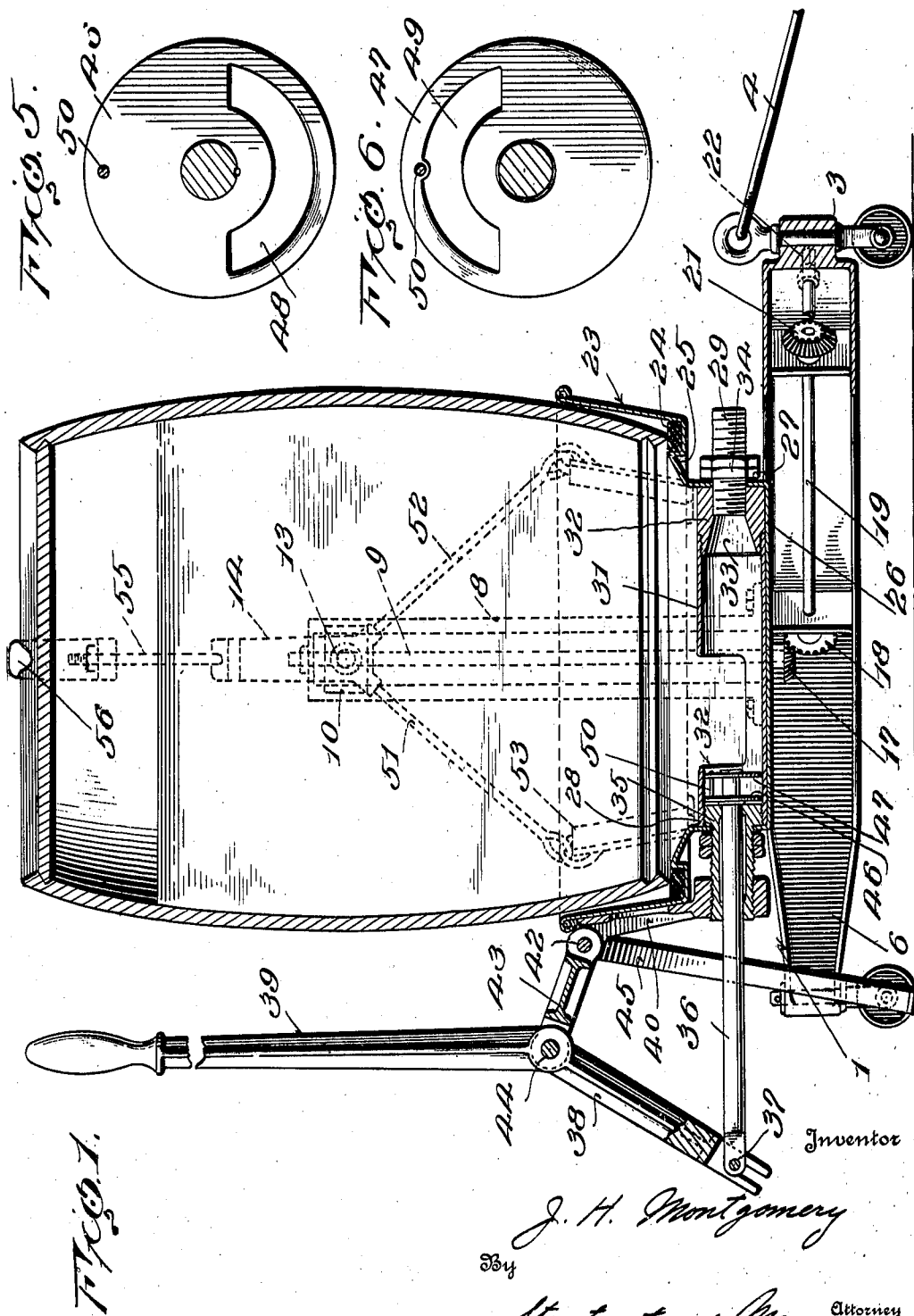
Feb. 19, 1924.

1,484,356

J. H. MONTGOMERY
GREASE DISPENSING DEVICE

Filed March 1, 1921

4 Sheets-Sheet 1



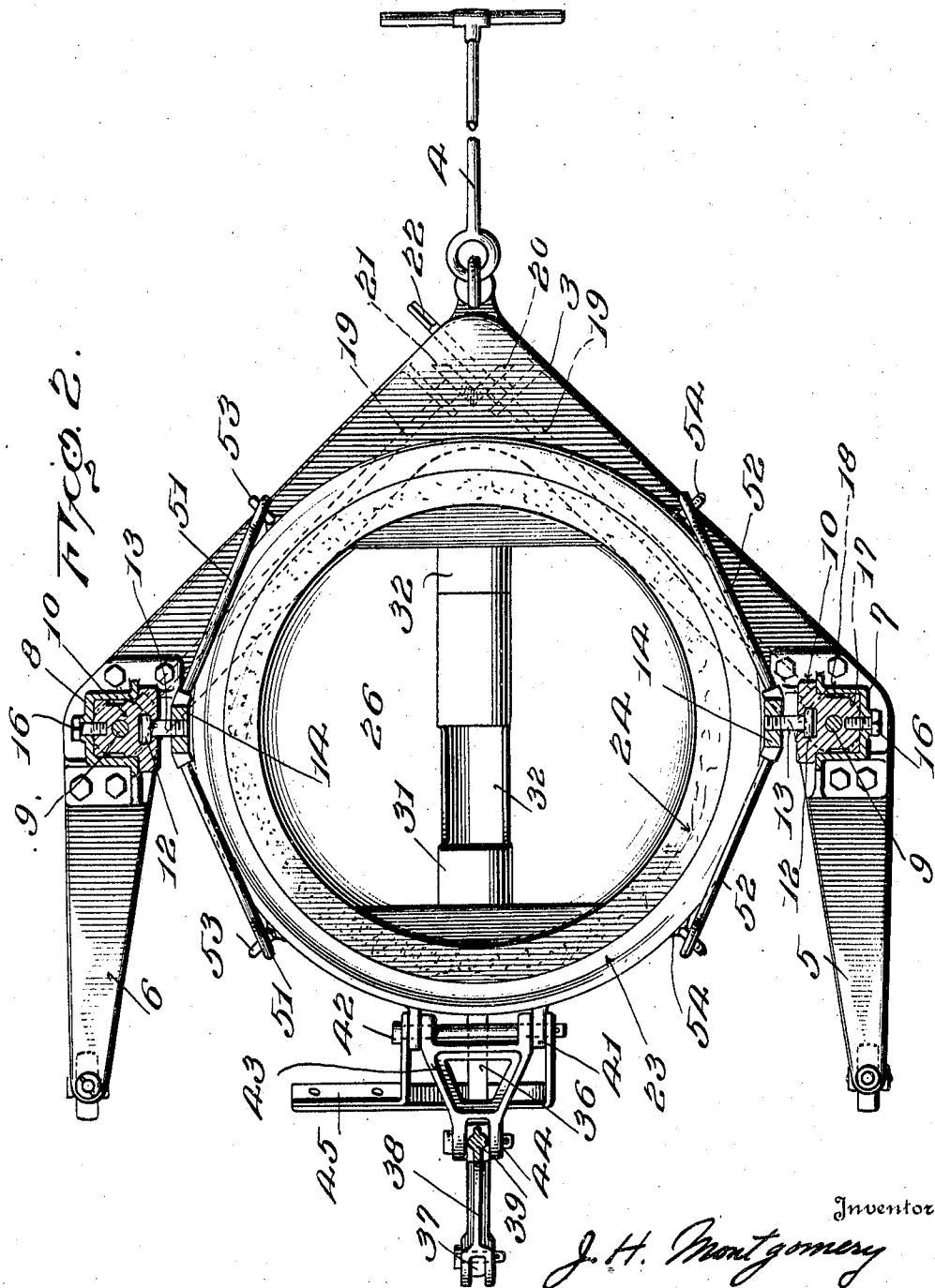
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Inventor

J. H. Montgomery

By

Sturtevant & Mason Attorneys

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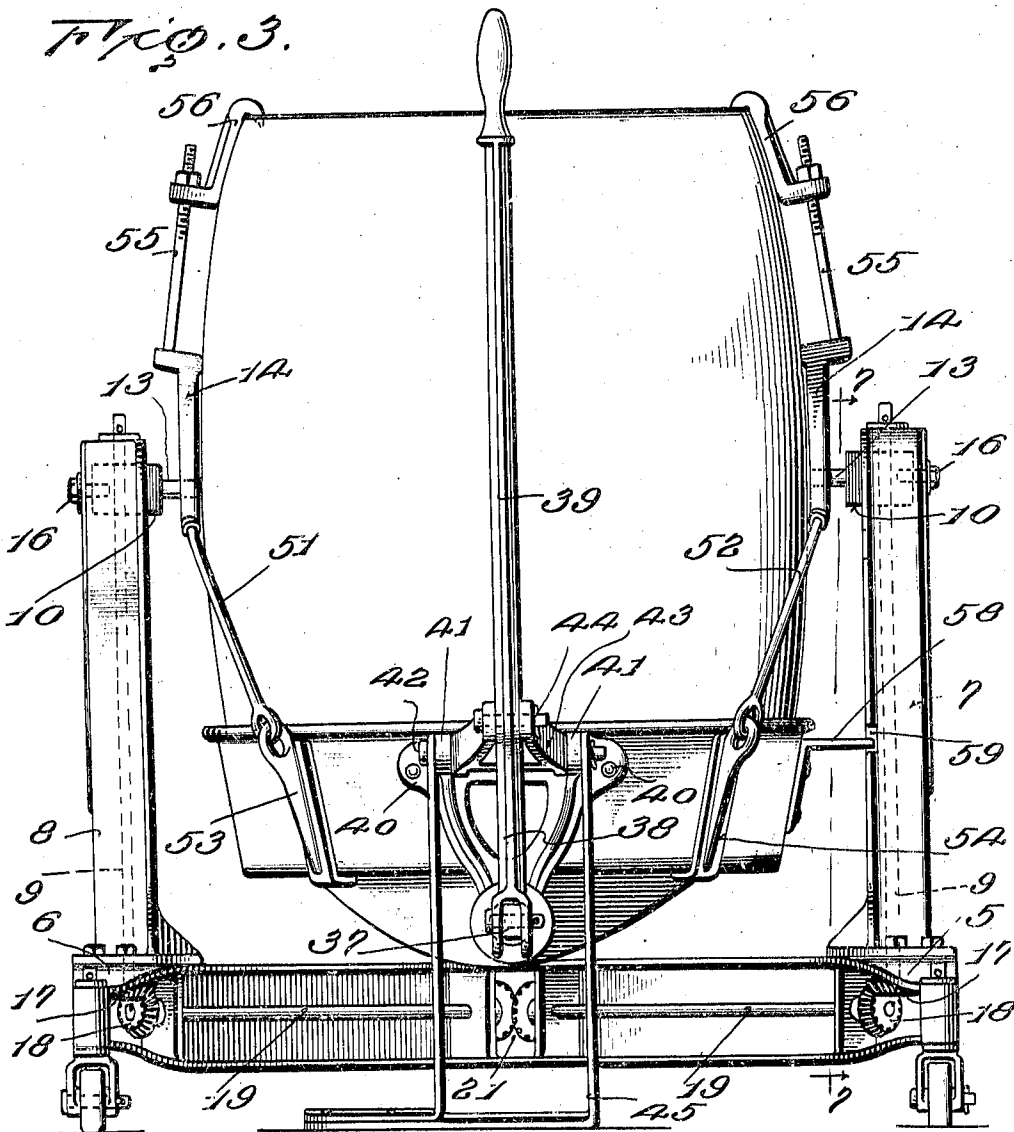
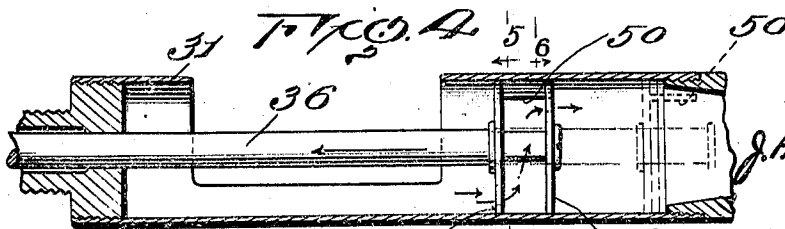
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Fig. 3.



Inventor
J. H. Montgomery

Sturtevant & Mason, Attorneys

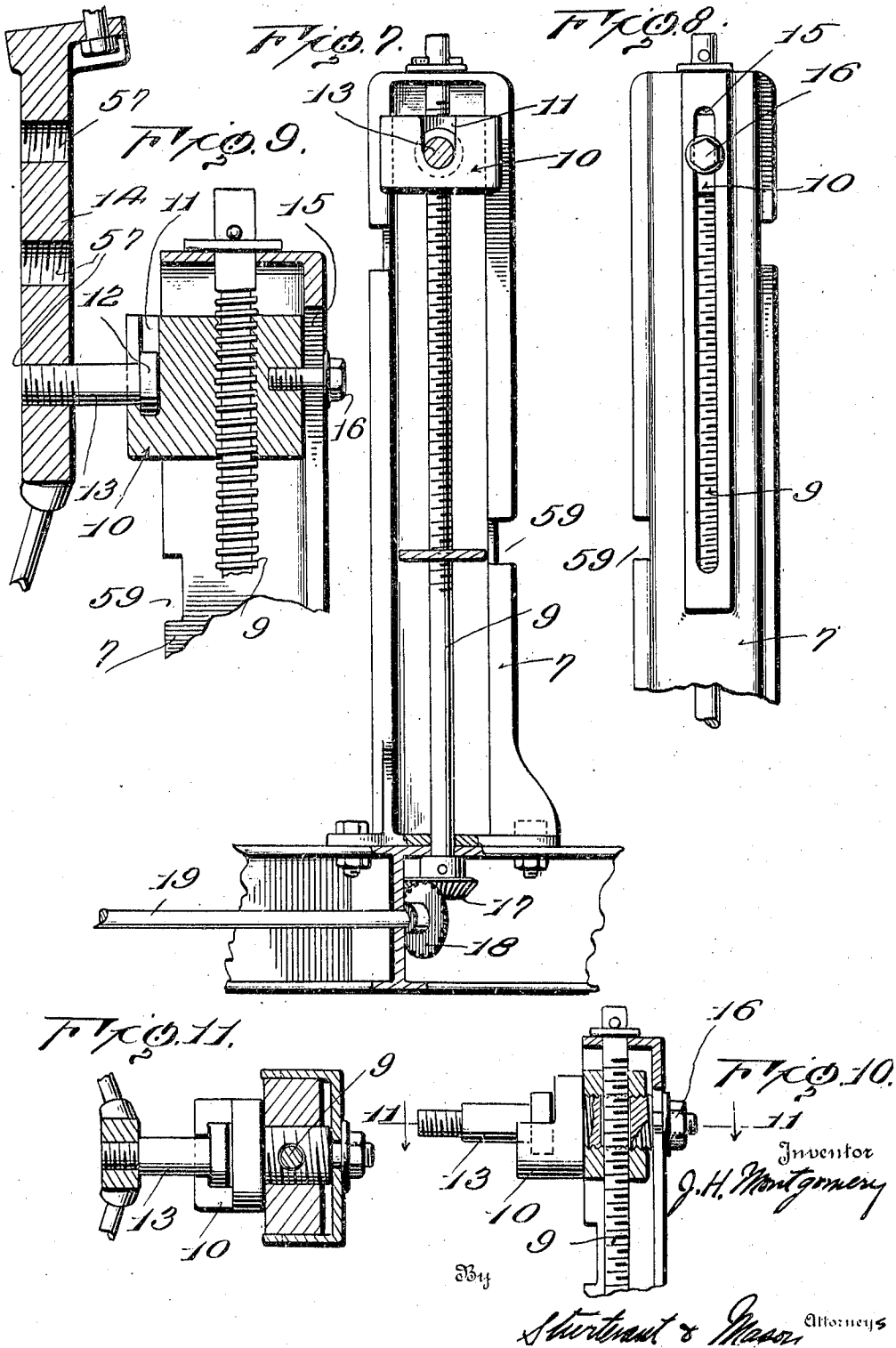
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UNITED STATES PATENT OFFICE.

JAMES H. MONTGOMERY, OF SAN FRANCISCO, CALIFORNIA.

GREASE-DISPENSING DEVICE.

Application filed March 1, 1921. Serial No. 448,763.

To all whom it may concern:

Be it known that I, JAMES H. MONTGOMERY, a citizen of San Francisco, in the county of San Francisco, State of California, have invented certain new and useful Improvements in Grease-Dispensing Devices, of which the following is a description, reference being had to the accompanying drawing and to the figures of reference marked thereon.

This invention relates to new and useful improvements in grease dispensing devices, and more particularly to a device whereby grease received in commercial barrels or receptacles may be dispensed directly from the receptacle or barrel in which it is received.

The apparatus herein disclosed is an improvement in the construction set forth in my prior Patent No. 1,338,519, granted April 27, 1920, wherein a truck is provided with a receptacle holder adapted to receive directly thereon a barrel of grease so that the grease is fed by its own weight from the open end of the barrel into the receptacle holder from which it is adapted to be forced out through a distributing nozzle on the holder by means of a manually operated piston. In order to place the barrel in position on the receptacle holder of this truck, it is necessary to first knock the head out of the barrel to invert the same, and then to position it on the holder of the truck.

One of the objects of the present invention is to provide a mechanism including a receptacle holder which can be clamped directly to the barrel after the head is knocked therefrom, which holder is constructed and arranged to be lifted with the barrel on to the truck and then inverted so that the lubricant will be fed downwardly by gravity to the discharging nozzle, from which it is forced by a manually operated piston member.

Another object of this invention consists in providing a truck and hoisting mechanism thereon constructed and arranged so that the truck may be moved into position whereby the hoisting mechanism may be connected to the barrel for lifting the barrel from the floor into a position so that it can be inverted for the purpose hereinbefore set forth.

Another object of this invention resides in the novel manner of arranging the barrel

hoisting mechanism with the movable barrel truck.

Still another object of this invention relates to the new construction of the barrel top closing member carrying the distributing nozzle, and the member for discharging the lubricant from the barrel through the nozzle.

Yet another feature of this invention resides in the peculiar construction of the reciprocable piston for feeding the lubricant through the nozzle, whereby the minimum resistance is offered to the back or idle stroke of the piston.

These and other objects will in part be obvious and will in part be hereinafter more fully disclosed.

Referring more particularly to the accompanying drawings:—

Figure 1 is an elevation, partly in section of the device inverted and seated on the truck;

Fig. 2 is a plan view partly in section of Fig. 1;

Fig. 3 is a side elevational view of Fig. 1, taken from the operating side thereof;

Fig. 4 is a detail view of the improved piston showing the manner of forcing the lubricant therethrough;

Figures 5 and 6 are end perspective views of the piston disks;

Figures 7 to 9, inclusive, are detail views partly in two sections of the barrel hoisting mechanism, and

Figures 10 and 11 are modifications thereof.

In general, the invention comprises a mobile truck or platform, preferably mounted on wheels, provided with spaced uprights formed with means thereon for vertically hoisting a barrel or other commercial grease container from a floor into a freely suspended position above or on the platform. The platform or truck is constructed so that it can be wheeled into position so that these hoisting arms can be disposed on opposite sides of the barrel. In addition, a closure is provided, which closure is adapted to tightly fit over that end of the barrel which has had the head knocked out, and means is provided for clamping this closure to the barrel and to the hoisting mechanism so that the barrel and the closure will thereafter move as a single unit. The closure is provided with a cylinder and piston workable

therein, which cylinder communicates with the closure and with a discharging nozzle which is adapted to distribute the lubricant as desired. Any suitable form of manual operating handle is connected to the piston for operating the same.

Referring more particularly to the accompanying drawings, the truck comprises a movable platform or support 1 preferably mounted on wheels or castors. In the embodiment shown, this truck is Y-shaped so that it can easily receive between the two arms of the Y, the lubricating barrel or other commercial lubricant container resting on the floor. The forward portion of this truck 3 is provided with an operating handle 4 for drawing it into position. The two spaced rearward arms 5 and 6 are provided with vertically extending columns 7 and 8 forming the standards for the hoisting mechanism. As shown clearly in Figures 7 to 11, each one of these columns 7 or 8 is bolted in any suitable manner to the main frame of the truck and forms a suitable bearing for a vertically extending threaded shaft 9 suitably journaled therein and adapted to receive the internally threaded blocks 10 provided with open-ended recesses 11 on their upper inner faces for freely receiving the heads 12 of bolts 13 threadedly engaging saddles 14 of the clamping mechanism hereinafter described. In order to hold the blocks 10 in position, the columns 7 and 8 are provided with suitable slots 15 to receive fastening bolts 16 threading into the blocks 10. The lower end of each of the shafts 9 is provided with bevel gears 17 meshing with similar gears 18 on horizontally arranged shafts 19 journaled in the base of the truck. The inner ends of these shafts 19 are provided with intermeshing bevel gears 20 and 21 so that they may be operated from a common source. In the present case, the extension 22 is preferably squared at the ends in order to receive an ordinary crank handle. By means of this neat and compact construction, the threaded shafts 9 are simultaneously rotated to adjust the blocks 10 vertically of their columns 7 and 8.

The mechanism for feeding the lubricant from the barrel to its source of distribution comprises an integral cover and pump mechanism consisting of a cap or barrel closing cover 23 provided with a circumferential sealing washer 24 upon which seats the barrel or container rim to prevent the lubricant from leaking at this point. This sealing rim 24 is preferably seated in the circumferential recess formed in the cover 23 by the circumferential spaced flange 25. This cover is provided with a closed end 26 preferably cylindrical in shape, and apertured at its opposite ends as at 27 and 28 to receive a discharge nozzle or

conduit 29 and a bearing block 35. Within this cylindrical portion of the cap 23 is mounted the feed cylinder 31 slotted as at 32 to provide a communication with the interior of the barrel when the barrel is clamped within the cover 23, and this cylinder 31 is provided with an apertured block 32' at one end having an outlet 33 communicating with the threaded end of the nozzle 29 which is held in position by any suitable means, such as the nuts 34. The opposite end of the cylinder is provided with a bearing block 35 threadedly engaging the cylinder 31 and the aperture 28 in the cover 23. Adapted to reciprocate in this cylinder is the piston member operated by means of a piston rod 36 passing through the bearing block 35 and formed at its outer end with a detachable connection 37 on the lower end of the manually operated lever 38. The preferred form of making this connection detachable is by means of the usual slot and pin connection. As a means for forming a bearing for the upper end 39 of the lever for operating the piston, there is provided a bracket member 40 fastened to the side of the cover in any suitable manner, which bracket member 40 is provided with spaced bearings 41 to receive a shaft 42, and a rigid extension 43 to provide a further journal for the shaft 44 on which the lever 39 is pivotally mounted. The brake member consisting of spaced downwardly depending arms 45 is journaled on the shaft 42 and hangs freely therefrom so as to engage the floor to hold the movable platform from movement in one direction.

The piston itself comprises two relatively movable disks 46 and 47, the first being rigidly connected to the piston rod 36 and the latter being mounted to slide freely thereon toward and away from the first piston disk 46. These respective disks are provided with non-registering slots or apertures 48 and 49 which, when the members are spaced apart, permit the free flow of lubricant through one disk across the space intervening and through the slot in the other disk. It will readily be seen from this construction, that when the disks abut one another, these non-registering apertures will prevent the flow of lubricant therethrough, and will act as a solid impervious piston face to force the lubricant which is in front of the piston outwardly through the discharge nozzle 23 to the discharge nozzle 29. This forward movement of the lubricant occurs on the forward stroke and after the disks are brought together. On the return stroke, the lubricant which has been fed by gravity into the cylinder 31 from the barrel and which is behind the piston, can flow through these openings 48 and 49 inasmuch as the disks have now become spaced on the rearward stroke, so that a minimum amount of resistance is offered to

the backward reciprocations of the piston, and at the same time, the maximum of grease or lubricant is fed in front of the pistons to be discharged on the next forward stroke.

5 As a means for preventing the apertures 48 and 49 of these respective disks 46 and 47 from becoming alined, there is provided a guide pin 50 secured rigidly on the disk 46 and passing freely through the aperture in
10 the disk 47.

The clamping means for securing the cover 23 to the barrel and for securing it to the threaded bolt 13 of the hoisting mechanism will now be described. This mechanism in
15 one form, comprises the two saddles 14, provided with attached links 51 and 52, to which are linked in any suitable manner, the clamps 53 and 54 adapted to engage the under side of the rim of the cover 31. These rods 51
20 and 52 are arranged in pairs on opposite sides of the barrel or container. Each saddle 14 has a pair of such rods or links connected thereto so that the barrel cover 31 is clamped at four points. The opposite ends of the
25 saddles 14 are provided with any suitable connections, preferably in the form of threaded bolts 55 which receive the clamps 56 having threaded adjustable connection to the bolts. The saddles 14, in turn, have a
30 plurality of spaced apertures 57 for adjustably receiving the threaded ends of the bolts 13, which bolts, as before described, are received in the sockets or recesses 11 of the adjusting block 10. By means of these threaded
35 apertures 57, the saddles 14 may be attached at any portion of the barrel or container, that is, the pivotal point 13 may be disposed at the portion of the barrel intermediate its ends at a position higher up. In this
40 manner, the pivotal point on which the barrel turns may be changed. So also, this series of apertures 57 provides a greater range of adjustment of the clamping members.

Figures 10 and 11 show a modification of
45 the means for holding the block 10 in adjusted position. In this instance, the bolts 16 threadedly engage the block 10 and are in turn provided with recesses through which the threaded shafts 9 freely pass.

50 From the above description it will be seen that when the head of the ordinary commercial barrel of lubricant is knocked out, the cover 31, together with the pump and feed cylinder, are placed thereover, the
55 clamping members 53 and 56 are placed in position, and tightly adjusted on the barrel so that the lubricant cannot leak out when the barrel is inverted, the packing ring 24 being especially provided for this purpose.
60 At this point, the truck or movable platform is moved into position as shown in Fig. 2 with the barrel straddling or arranged between the spaced arms 5 and 6. The blocks 10 being in lowered position, the studs 13 of the saddles 14 are slipped into the re-

cesses or slots 11 so that the saddles are connected to the hoisting mechanism. The crank handle applied to the end 22 of the shaft 19 journaled in the base is then rotated, and the
70 hoisting blocks 10 raised so that the barrel is lifted from the floor on to the truck and clear of the base thereof. The lever 39 is then swung to extreme rear position which permits the free rotation of the barrel to invert the same. The hoisting mechanism is
75 then lowered so that the barrel with the feed cylinder lowermost as in Fig. 1, will then rest on the truck platform. In this position, if desired, the stop 58 attached to the cover 31 will engage in the recess 59 in one of the
80 columns to prevent any forward movement of the barrel. This is the locking mechanism.

When it is desired to feed the lubricant from the barrel, the hand lever 39 is reciprocated so that the lubricant, which is gravity
85 fed by its own weight from the barrel through the slot 32 of the cylinder 31, is forced out of the discharge nozzle 29 on the forward movement of the piston. The brake member 45 prevents the rearward movement
90 of the movable platform. The forward movement of the platform is prevented in view of the fact that the truck is placed against the automobile while the lubricant is being fed
95 into the opening therein.

It will be obvious that minor changes in the details of construction and the arrangement of the parts may be made without departing from the spirit of the invention as
100 set forth in the appended claims.

Having thus described the invention, what I claim as new and desire to secure by Letters-Patent, is—

1. A device of the class described comprising a movable truck, hoisting means
105 mounted thereon, a closure for a lubricant container, means for attaching said closure to an open end of said container, means for connecting said container and attached closure to said hoisting mechanism, and means
110 for discharging lubricant from said closure.

2. A device of the class described comprising a movable truck including hoisting mechanism, means attachable to a lubricant
115 container for discharging lubricant therefrom and mechanism for connecting said container and attached discharging means to said hoisting mechanism for lifting said container onto the truck, and for permitting the free inversion of said container whereby the
120 lubricant therein is fed by gravity into said discharging means.

3. A device of the class described comprising a truck including hoisting mechanism, means attachable to a lubricant container for
125 discharging lubricant therefrom, means for pivotally connecting said container and attached discharging means to said hoisting mechanism whereby said container may be raised from the floor and swung on its pivot
130

to inverted position to feed the lubricant from the container into the discharging means.

4. A device of the class described comprising means attachable to a lubricant container for discharging lubricant therefrom, means for raising said container and attached discharging mechanism whereby said container may be inverted to feed the lubricant therein to the discharging means.

5. A device of the class described comprising a movable truck having spaced arms adapted to receive a lubricant container therebetween, hoisting mechanism on each arm, a lubricant discharging mechanism adapted to be attached to the open end of the lubricant container and means for attaching said container and attached discharging mechanism to said hoisting mechanism to raise the same so that the container may be inverted and placed on the truck.

6. A device of the class described comprising a truck having spaced arms adapted to

receive a barrel therebetween, upright columns on said arms, a threaded shaft vertically journaled in each arm, means journaled on said truck for rotating said shafts, a block on each column engaging the threads of said shaft, a closure attachable to the open end of a barrel, means for clamping said closure thereto, and means for detachably connecting said barrel and attached closure to said blocks whereby said barrel may be raised.

7. A device of the class described comprising a support including hoisting means, a closure, means for attaching said closure to the open end of a lubricant container, means for connecting said container and attached closure to said hoisting means to raise said container and closure into position to be inverted so that the lubricant will feed into said closure, and means carried by said closure for discharging lubricant therefrom.

In testimony whereof, I affix my signature.

JAMES H. MONTGOMERY.