

Feb. 7, 1933.

J. R. BATTLE

1,896,507

LUBRICANT COMPRESSOR

Filed Feb. 28, 1930

3 Sheets-Sheet 1

FIG. 1.

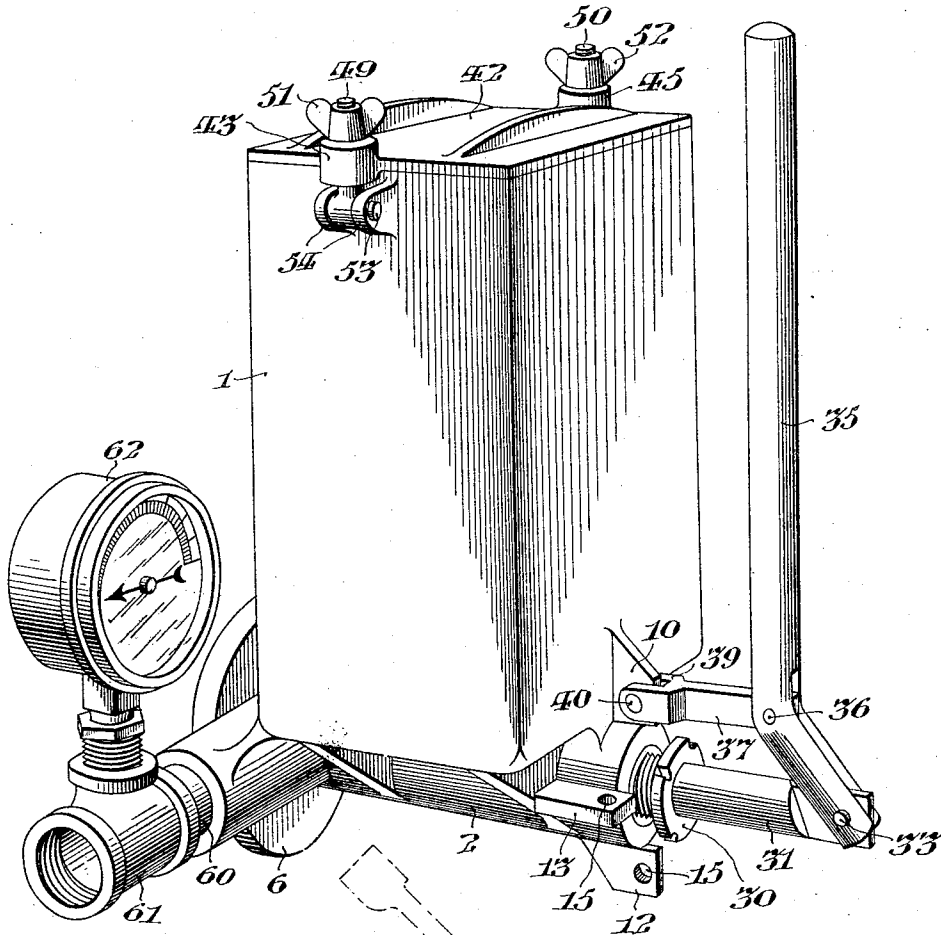
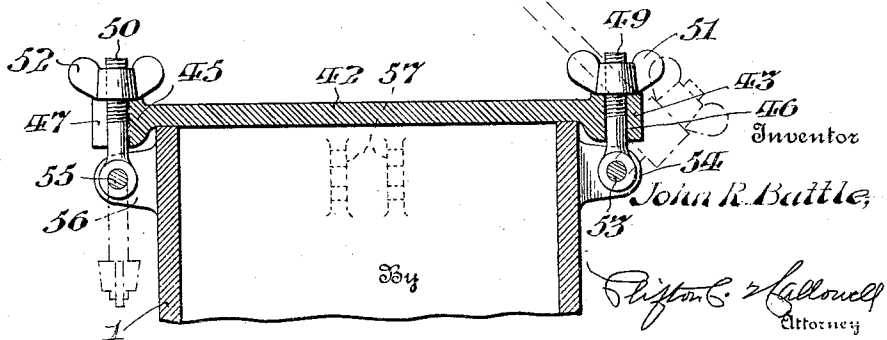


FIG. 2.



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FIG. 3

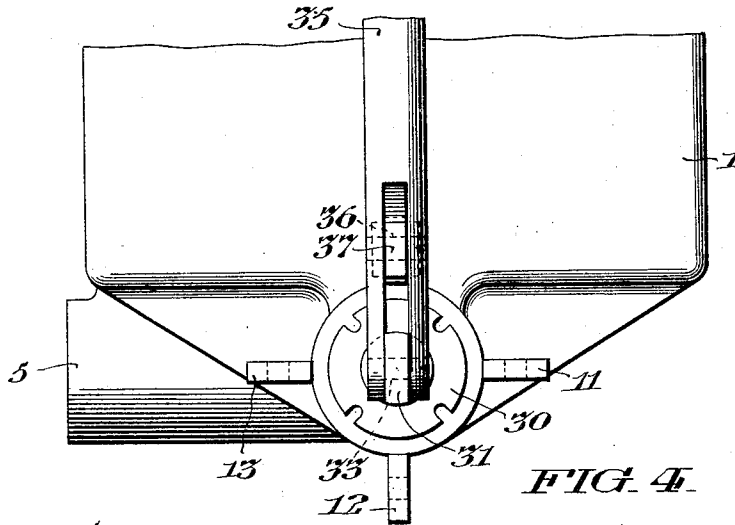


FIG. 4

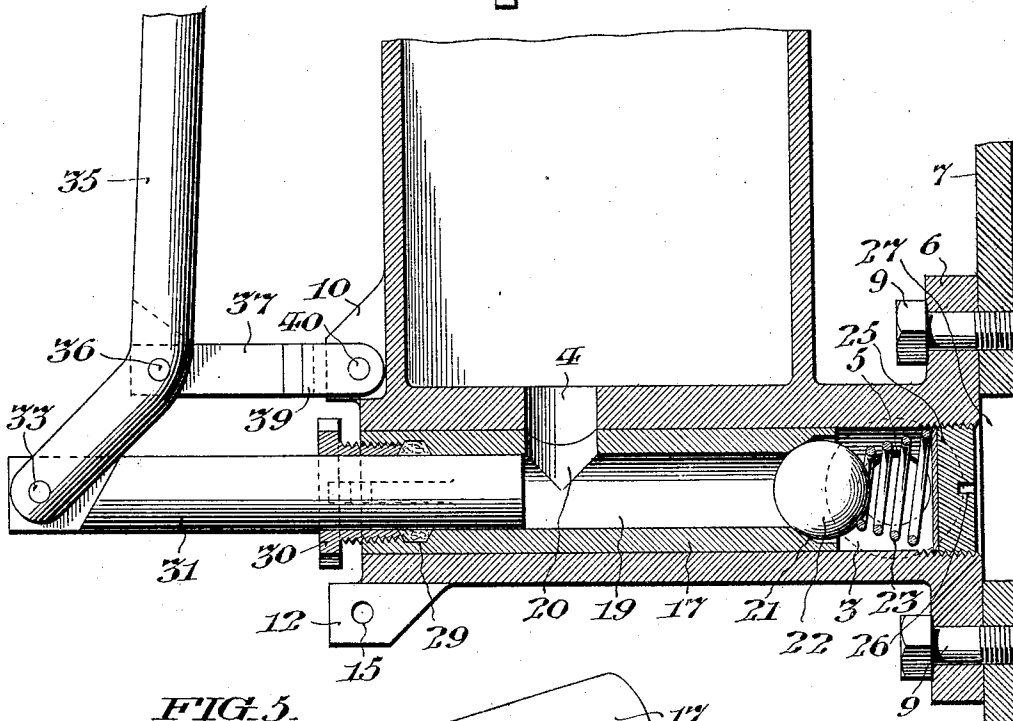
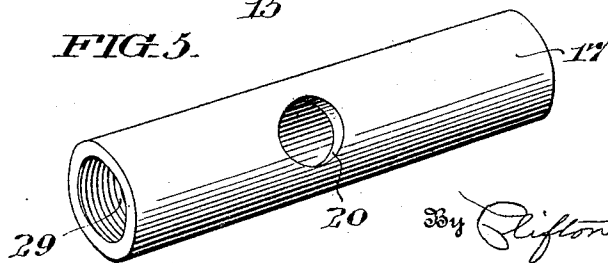


FIG. 5



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3 Sheets-Sheet 3

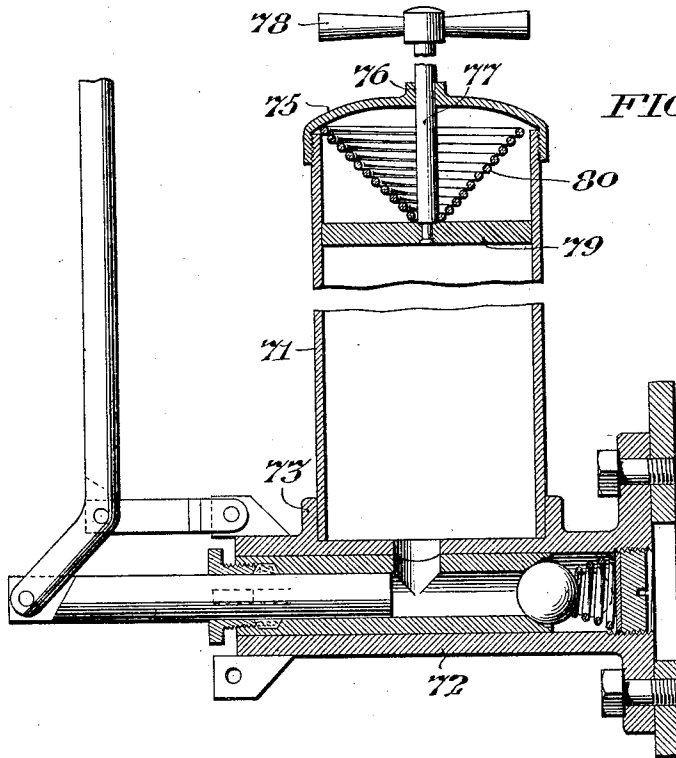
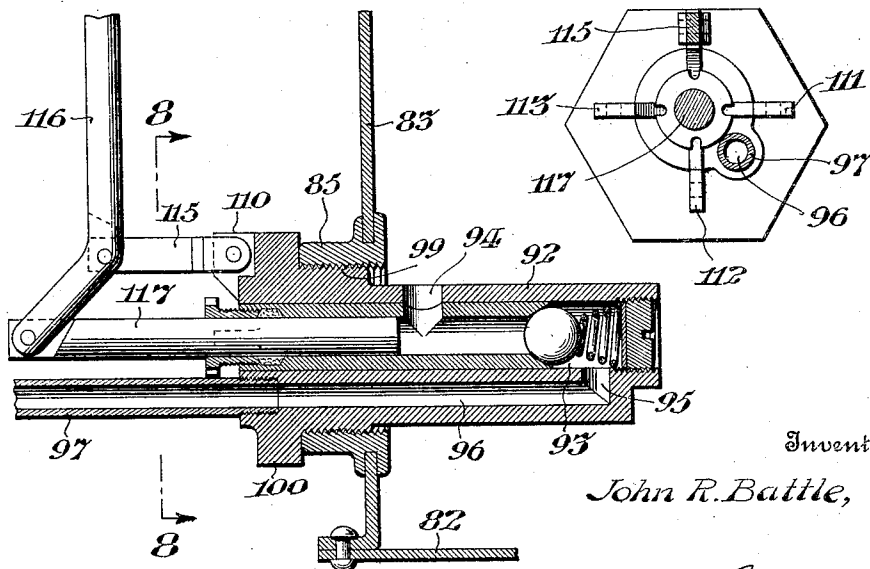


FIG. 6.

FIG. 7.

FIG. 8.



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## UNITED STATES PATENT OFFICE

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A CORPORATION OF DELAWARE

## LUBRICANT COMPRESSOR

Application filed February 28, 1930. Serial No. 432,055.

My invention relates particularly to that class of lubricant compressors that have a hand operated pump arranged to receive lubricant from a reservoir and to force it through a suitable outlet conveyor to one or more bearing lubricating devices, and is especially directed to that type of lubricant compressors that is commonly employed as central feed system compressors.

10 The principal objects of my invention are to provide a lubricant compressor that is flexible in its adaptation to different conditions and positions for use, that is of simplified construction, and that is inexpensive to manufacture.

15 Other objects of my invention are to provide a lubricant compressor in which the parts subject to wear may be readily removed and replaced and the cooperative parts may be conveniently adjusted to adapt them to varying conditions of use.

20 Further objects of my invention are to provide a compression unit that may be adapted to compress either oil in fluid or semifluid state, or grease in any desired plastic condition with equal facility.

25 My invention includes a compressor unit embodying my invention that may be provided with a reservoir formed in unitary relation therewith, or the reservoir may be integrally attached thereto, or the compressor may be inserted in the bung of a container or drum serving itself as a reservoir from which the contents may be directly pumped by said 30 compressor.

35 Specifically stated, the form of my invention as hereinafter described comprehends a cast compressor unit having a bore in which a bushing providing a valve seat and a plunger bore may be forced, and having a plurality of relatively spaced lugs projecting therefrom with any one of which a plunger operating lever may be pivotally connected for the convenient reciprocation of a plunger 40 in the bore of said bushing.

45 My invention also includes all of the various novel features of construction and arrangement as hereinafter more definitely specified.

50 In the accompanying drawings, Figure 1

is a perspective view of a lubricant compressor constructed in accordance with my invention; Fig. 2 is a fragmentary central vertical sectional view of the upper portion of the body of said compressor showing the means for attaching the cover; Fig. 3 is a fragmentary front elevational view of the lower portion of the compressor shown in Fig. 1; Fig. 4 is a fragmentary central vertical longitudinal sectional view of said compressor taken axially through the pump bore showing certain parts in elevation for convenience of illustration; Fig. 5 is a perspective view of the pump bushing; Fig. 6 is a central vertical sectional view similar to Fig. 4, taken through the bore of the pump, but showing a modified form of reservoir particularly adapted for grease or heavy lubricant; Fig. 7 is a central vertical sectional view of another form of my invention taken through the bore of the pump but staggered to show the outlet passageway; and Fig. 8 is a transverse vertical sectional view looking toward the outer end of the pump casing and taken on the line 8—8 in Fig. 7.

75 The lubricant compressor shown in Figures 1 to 5 inclusive comprises the reservoir body 1 having the pump-casing 2 cast in unitary relation therewith and having the bore 3 extending longitudinally therethrough and provided with the inlet 4 and the outlet 5. The pump-casing 2 is provided at one end with the flange 6 serving as a means by which the structure may be attached to any form of support 7 of the bolts 9.

80 The forward end of the pump-casing 2 is provided with a plurality of lugs 10, 11, 12 and 13, each having suitably provided apertures 15 through which a pintle may be extended. Said casing 2 is provided with a removable and replaceable bushing 17 having the bore 19 connected by the aperture 20 with the inlet 4 and said bushing 17 is provided at its inner end with a conical seat 21 for the ball check-valve 22 which is normally pressed against its seat by the spring 23, the tension of which may be varied at will by the screw 25 having the screw-driver slot 26 by which said screw 25 may be adjusted through the opening 27 in the support 7.

The forward end of the bushing 17 is provided with a stuffing-box 29 having the gland 30 through which the pump plunger 31 extends into the bore 19 of the bushing 17. Said plunger 31 is connected by the pintle 33 to the plunger actuating lever 35, which is connected by the pintle 36 with the link 37 having its bifurcated end 39 connected by the pintle 40 with any selected one of the lugs 10, 11, 12 or 13 so that, as will be obvious, the pump actuating lever 35 may be connected with the lug 10, as best shown in Fig. 1, so that said lever extends upwardly, as indicated in said figure; or its link 37 may be connected with the lug 15 so that said lever 35 extends downwardly in a position directly opposite to that shown in Fig. 1; or the link 37 may be connected with either of the lugs 11 and 13 so that the position of the lever 35 may extend horizontally either towards the right or the left as desired, and in accordance with the varying conditions that may be found at the place where the lubricant compressor is to be employed.

For instance, if said compressor must occupy a position close to the floor, then the lever 35 will extend upwardly; if, on the other hand, it must be placed in an elevated position, the lever may be extended downwardly; and similarly, if there should be anything in the way of the actuation of the lever, it may be extended in any other position, as desired. Obviously, the arrangement shown and described is highly flexible in its mode of operation.

The lubricant compressor body 1 is conveniently provided with the cover 42 which may be clamped down upon the upper perimetral edge of the body 1 to form a tight joint, said cover being provided with the oppositely extending bosses 43 and 45, the former having the aperture 46 and the latter having the slot 47 which respectively receive the swing-bolts 49 and 50 having the wing-nuts 51 and 52 respectively. The swing-bolt 49 is provided with the pintle 53 extended through the lugs 54 which project from the wall of the body 1 and the swing-bolt 50 is connected by the pintle 55 extended through the lugs 56 projecting from the opposite wall of said body 1.

Similarly, the remaining walls of the body 1 may be provided with lugs 57 so that the swing-bolt 49, which serves as a hinge for the cover 42 permitting it to be swung open, as indicated by the dot-and-dash lines in Fig. 2, may be engaged with any of the lugs on the four sides of the body 1, so that the cover 42 may open in any desired position with respect to the four sides of said body. As will be obvious, the swing-bolt 50 will be disposed opposite to the position of the swing-bolt 49 irrespective of the position of the latter, and in order to open the cover 42 the wing-nut 52 of the swing-bolt 50 may be loosened and swung through the slot 47 and permitted to

hang pendant, as indicated in dot-and-dash lines in Fig. 2. Obviously, the above-noted arrangement provides for the cover to be opened in any position to afford the greatest convenience.

As shown in Fig. 1, the outlet 5 may be connected with line piping 60, which may include the T-fitting 61 for the convenient attachment of a pressure-gauge 62, which indicates the pressure on the lubricant being forced through the outlet 5 and the line connection.

In the form of my invention shown in Fig. 6, which is particularly adapted for grease or heavy lubricant, the lubricant-containing body 71 may be formed of a tubular shell integrally connected with the pump-casing 72 which has the upturned flange 73 forming a pocket into which the lower end of the tubular shell of the casing body 71 may be engaged in any suitable manner. In other respects the pump-casing 72 is similar to the pump-casing 2 shown and described with respect to Figs. 1, 3 and 4.

The body 71 may preferably be exteriorly threaded at its upper end to receive the threaded cap 75 through the central aperture 76 of which the stem 77 having the operating handle 78 of the plunger 79 extends, said plunger 79 being normally forced downwardly upon the lubricant contained in the body 71 by the spring 80, so that there is always sufficient pressure upon the lubricant to force it through the inlet into the bore of the pump and in position to be forced forwardly through the outlet by the plunger.

The form of my invention shown in Figs. 7 and 8 is particularly adapted to be engaged in the bung of a drum or container for lubricant, which may include the side walls 82 and the head 83 provided with the threaded bung-ring 85. In this form of my invention, the pump-casing 92 has the bore 93 and is provided with the inlet 94 and the outlet 95 which is connected through the passageway 96 extending parallel through said casing with the pump-bore 93 and connected by the pipe line 97 to any desired point of delivery.

Said pump-casing 92 is exteriorly threaded at 99 to engage the threads of the bung-ring 85 and is provided with the hexagonal boss 100 by which it may be readily engaged in threaded relation with said bung-ring 85. This pump-casing 92 is provided with attachment plugs 110, 111, 112 and 113 projecting forwardly from the forward face of the hexagonal boss 100 to afford convenient attaching means for the link 115, to which the lever 116 may be connected to actuate the plunger 117.

My invention is advantageous in that the lubricant compressor may be provided with a pump-casing which may be formed of cast metal and the bore thereof be provided with

a bushing which may be driven or forced into said bore to afford a plunger receiving bore, the reciprocation of which plunger is arranged to force the lubricant through the outlet of said lubricant compressor, and said bushing will be formed to afford a seat for the check-valve and also be provided with a stuffing-box and gland, all of which may be conveniently removed and replaced as a unit when worn.

I do not desire to limit my invention to the precise details of construction and arrangement as herein set forth, as it is obvious that various modifications may be made therein without departing from the essential features of my invention as defined in the appended claims.

Having thus described my invention, I claim:

1. A lubricant compressor provided with a pump bore having an inlet and an outlet and provided with a plurality of relatively spaced attaching means disposed about the mouth of said bore, a bushing of uniform diameter throughout having a bore disposed in said pump bore and affording a valve-seat, a check-valve engaged with said seat and associated with said outlet, a plunger mounted to reciprocate in said bore, a lever arranged to be pivotally connected with any one of said attaching means and operatively engaged with said plunger to effect its reciprocation in said bore.

2. In a device of the class described, the combination with a lubricant reservoir having a pump-casing provided with an inlet and outlet and having a plurality of attaching means spaced about the mouth of said casing, a replaceable bushing of uniform diameter throughout affording a valve-seat disposed in said pump-casing and having a bore forming communication between said inlet and said outlet, a check-valve cooperative with said valve-seat, a plunger mounted to reciprocate in said bore and to force lubricant in opposition to said check-valve through said outlet, and a lever operatively connected with any one of said attaching means capable of operation in relatively different radial positions and arranged to effect reciprocation of said plunger.

3. In a device of the class described, the combination with a lubricant reservoir having a pump-casing provided with an inlet and an outlet and having a plurality of attaching means spaced about said casing, a replaceable bushing of uniform diameter throughout having a valve-seat disposed in said pump-casing and having a bore forming communication between said inlet and said outlet, a check-valve cooperative with said valve-seat, yielding means tending to force said valve against said seat, a plunger mounted to reciprocate in said bore and ar-

anged to force lubricant in opposition to said check-valve through said outlet, and a lever operatively connected with any one of said attaching means arranged to effect reciprocation of said plunger.

4. In a device of the class described, the combination with a lubricant reservoir having a pump-casing provided with an inlet and an outlet and having a plurality of lugs spaced about the mouth of said casing, a replaceable bushing of uniform diameter throughout affording a valve-seat disposed in said pump-casing and having a bore forming communication between said inlet and said outlet, a spherical check-valve cooperative with said valve-seat, yielding means tending to force said valve against said valve-seat, means arranged to vary the operative effect of said yielding means on said valve, a plunger mounted to reciprocate in said bore and to force lubricant in opposition to said check-valve through said outlet, and a lever operatively connected with any one of said lugs arranged to effect reciprocation of said plunger.

5. A lubricant compressor provided with a pump bore having an inlet and outlet and provided with a plurality of relatively spaced attaching means disposed about the mouth of said bore, a bushing of uniform diameter throughout, having a bore, disposed in said pump bore and affording a valve-seat, a check-valve engaged with said seat and associated with said outlet, a plunger mounted to reciprocate in said bore, a lever arranged to be pivotally connected with any one of said attaching means and operatively engaged with said plunger to effect its reciprocation in said bore.

6. An apparatus for supplying lubricant under pressure to a lubricator, comprising a lubricant reservoir, a cylinder having intake and discharge ports, the intake port communicating with the reservoir, a tube communicating with the discharge port and adapted to be connected to the lubricator, a piston in the cylinder, a lever connected to the piston, and means for connecting the lever to the cylinder for extension therefrom in an upward or downward or lateral direction, said means including radially arranged lugs fixed to the reservoir and the cylinder, and a link engaging the lever and a selected lug.

7. An apparatus for supplying lubricant under pressure to a lubricator, comprising a lubricant reservoir, a cylinder having intake and discharge ports, the intake port communicating with the reservoir, a tube communicating with the discharge port and adapted to be connected to the lubricator, a piston in the cylinder, a lever having an arm slotted for the reception of one end of the piston, an element pivoting the arm to the piston, a link pivotally connected at one end in the slot of

the arm, and radial lugs about one end of the cylinder for connecting the link to the cylinder for extension therefrom in an upward or downward or lateral direction.

5 In witness whereof, I have hereunto set my hand this 27th day of February A. D 1930.

JOHN R. BATTLE.

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