Jan. 18, 1938. P. I. SCHULTZ ET AL 2,105,991

DISPENSING DEVICE

Original Filed Feb. 1, 1936

Fig. 1

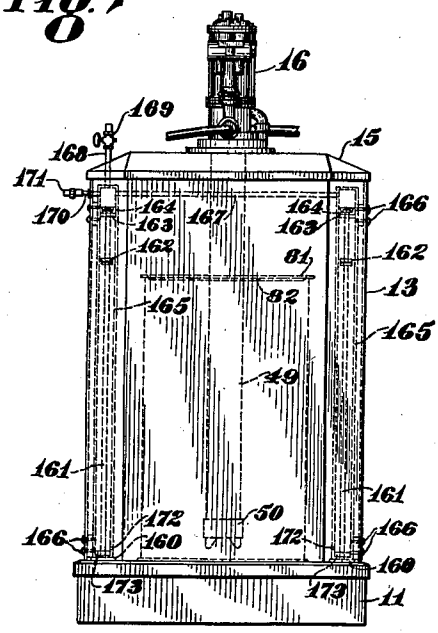
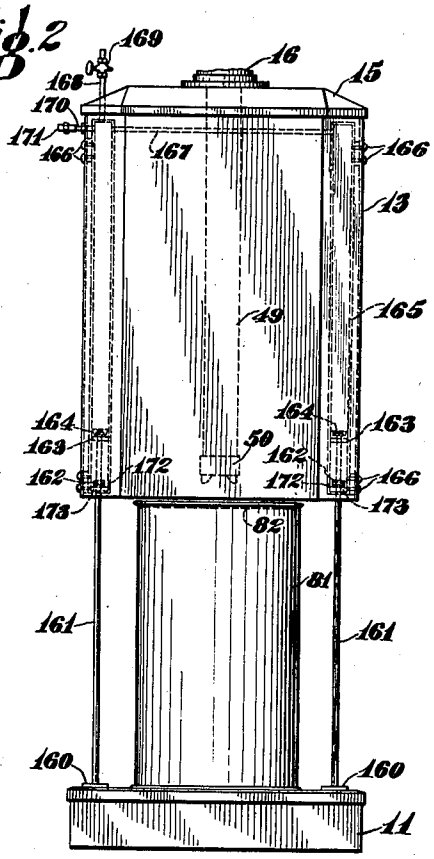


Fig. 2



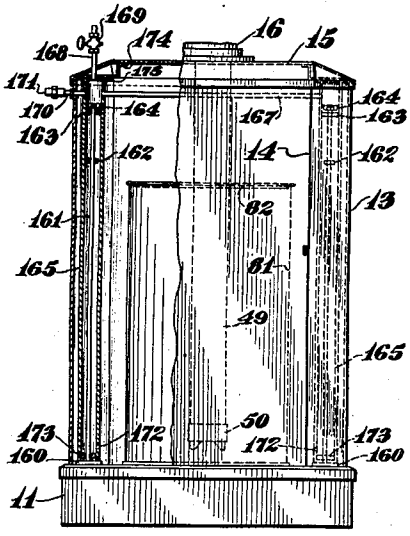


Fig. 3

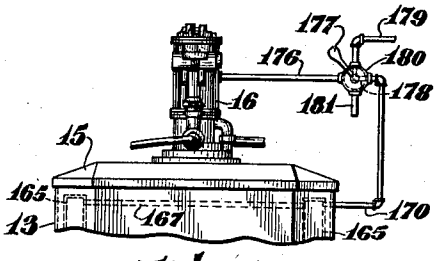


Fig. 4

INVENTORS
Paul I. Schultz &
James J. Pelouch

BY George V. Woodling
ATTORNEY

Patented Jan. 18, 1938 2,105,991

UNITED STATES PATENT OFFICE

2,105,991

DISPENSING DEVICE

Paul I. Schultz and James J. Pelouch, Cleveland, Ohio, assignors to The United States Air Compressor Company, Cleveland, Ohio, a corporation of Ohio

Original application February 1, 1936, Serial No. 61,982. Divided and this application April 22, 1937, Serial No. 138,434

12 Claims. (Cl. 221—85)

This is a divisional application divided from co-pending application, Serial No. 61,982, filed February 1, 1936.

Our invention relates, in general, to dispensing devices and more particularly to devices for pumping lubricating oils and greases out of their "original container", and conducting the oil and grease directly from the "original container" to the parts to be lubricated, and also for holding the "original container" from which the contents are being removed.

An object of our invention is to provide a device for holding and supporting an "original container", while the contents are being removed through an opening in the top of the container.

Another object of our invention is to provide a means by which a pumping device may be moved in and out of operative position in respect to the said container with a minimum of effort.

A still further object is to provide a pumping system which is supported in a floating manner in a relative position to a container from which the contents are to be removed.

Another object is to provide a support or holding member for holding an "original container" and through the side of which the container may be moved without hindrance of the pumping device extending into the container.

Another object of our invention is to provide a suitable enclosure for an "original container" while the contents of the "original container" are being removed.

Another object is to provide a compartment for enclosing an "original container" which compartment with a pump mounted thereon may be raised and lowered by means of compressed air or other fluid, so the "original container" may be moved sidewards from beneath the compartment.

Another object is to provide a mechanism operated by compressed air or other compressible fluid for the raising of the pump above the "original container" so that the "original container" may be moved sidewards out of a side of the compartment.

Other objects and a fuller understanding of our invention may be had by referring to the following description and claims taken in combination with the accompanying drawing, in which:

Figure 1 shows a side view of our device in which the compartment is raised by means of compressed air or other fluid under pressure, the compartment being shown in lowered position;

Figure 2 shows the device illustrated in Figure 1 with the compartment in raised position;

Figure 3 represents a form of our device in which the cover and pump is raised by compressed air or other fluid under pressure, the compartment remaining in lowered position; and

Figure 4 shows a partial view of the form of device shown in Figures 1 and 2, but with a different means provided for introducing the compressed air or other fluid under pressure to the cylinders.

Our device comprises a base 11 and compartment 13 with its depending parts. The detailed construction of the compartment, cover, base, pump, inlet member, base, door, and other parts is shown and described in co-pending application, Serial No. 61,982, filed February 1, 1936.

A form of our invention is illustrated in Figure 1 wherein the compartment 13 with its depending parts, the cover 15, and the pump 16 are raised by means of compressed air or other fluid under pressure. The description will refer to the lifting fluid as compressed air, but it is understood that when compressed air is stated it means other fluids as well. Mounted upon the base 11 are the two piston stems 161 on each side of the compartment and within the walls of the compartment 13, which piston stems 161 are secured to the base 11 by means of the flanges 160. Each cylinder 165 encloses a piston stem 161 so that the piston stem 161 is telescoped within the cylinder 165. Upon the upper end of the piston stem 161 is a conventional piston 164 which is slidably engageable within the walls of the cylinder 165. Immediately below the piston 164 is the supporting washer 163 for the piston 164. Farther down on the piston stem 161 is a guide washer 162. The cylinders 165 are each attached to the sides of the compartment 13 on opposite sides of the compartment 13 by means of the threaded bolts 166.

Air or other fluid is introduced into the cylinders 165 by pressing a nozzle from a source of compressed air against the valve 171, which valve 171 is adapted to permit air to go inwardly toward the cylinders, but which prevents air from escaping out again through the valve. The compressed air introduced through the valve 171 travels through the pipe 170 into the cylinder shown on the left hand in Figure 1 and also through the pipe 167 into the cylinder shown on the right hand. There is an exhaust pipe 168 in connection with the cylinder on the left hand and with the cylinder on the right hand through the medium of the pipe 167. A petcock 169 is

mounted on the exhaust pipe 168 so that when the petcock is turned in one direction, the exhaust pipe 168 is closed and when turned in another direction, the exhaust pipe 168 is opened.

In operation, in order to raise the compartment 13 and to insert or withdraw the container 81 from under the compartment, air from a source of compressed air is inserted through the valve 171. When the compartment is to be raised, the petcock 169 is placed in a closed position so that the air will not escape through the exhaust pipe 168. This compressed air introduced into the tops of the cylinders 165 causes relative movement between the walls of the cylinders 165 and the pistons 164. Since the pistons 164 and piston stems 161 are secured in a permanent position, the compressed air raises the cylinders 165. As the cylinders 165 rise relative to the pistons 164, air in the lower part of the cylinders 165 is expelled. To provide for the escape of the air in the lower part of the cylinders 165, we provide escape openings 172 in the walls of the cylinders 165, which gives a smooth and gradual operation.

In order to prevent the wobbling of the piston stem within the walls of the cylinders 165, especially when in a raised position, we provide the guide washers 162, which being mounted part way down from the piston 164, act as a brace. Secured in the bottom of the cylinders 165 are the washer blocks 173 which act to cushion the striking of the guide washers 162 upon the bottom of the cylinder wall. The guide washers 162, in engaging the blocks 173, prevent the cylinders 165 from rising beyond the position permitted by reason of the guide washers 162 engaging with the blocks 173.

In Figure 2, the same device as was shown in Figure 1 is illustrated, but shows the compartment in a raised position. When in this position, the inlet member 49 and end 50 of the pump 16 are raised up out of the opening 82 in the container 81 which sets below the raised compartment. In this manner the "original container" 81 may be moved sidewards on and off the base 11. As is illustrated, the action of the compressed air has raised the cylinders 165 and caused the block washers 173 inserted in the bottom of the cylinders 165 to engage the guide washer 162.

When it is desired to lower the compartment again, it is necessary to permit the compressed air in the upper portion of the cylinders 165 to escape through the exhaust pipe 168 and the petcock 169 by turning the petcock 169, thus exhausting the compressed air and permitting the cylinders 165 to be lowered. After the exhaustion of the compressed air, the device again assumes the position shown in Figure 1. In Figure 1 and Figure 2, the compartment and the cover are permanently joined together.

In Figure 3, we show a modified form of the utilizing of compressed air for the raising of the inlet member out of the "original container". In this form, the cover 15 rises up off the top of the compartment 13 and the sides of the compartment 13 are securely fastened to the base 11 and a door 14 is provided on one side of the compartment 13 permitting the insertion and withdrawal of the "original container" through the side of the compartment 13. In this form shown in Figure 3, the compartment 13 remains secured to the base 11, but the cover 15 is raised by means of compressed air. In order to provide a brace for the top of the cylinder to engage the cover, we provide angle members 174 which are suitably engaged by bolts or welding to the top of the cover 15. The upper portion of each of the cylinders 165 is provided with a shoulder 175 adapted to engage respectively the lower surface of the angle members 174. The shoulders 175 are welded or otherwise secured to the angle members 174. In this way, the cylinders 165 are rigidly secured to the cover 15. In other particulars, the construction is similar to that shown in Figures 1 and 2. It is readily seen that the operation is the same, except that the action of the compressed air upon the cylinders and the pistons causes the cylinders to rise, which lifts only the cover 15 and the pump and inlet member instead of raising the whole compartment.

In Figure 4, we illustrate a modification of the device shown in Figures 1 and 2. In this modification instead of manually applying a hose leading from a supply of compressed air to the pipe leading to the cylinders, the air supply to the pump is utilized. As shown in Figure 4, a pipe 179 leads from a source of compressed air and is directed to the multiple valve 180 through the L-shaped opening 178 in the valve 180. By turning the handle 177, the L-shaped opening in the valve 180 is positioned so that the open ends of the L-shaped opening will communicate with any two of the adjoining pipes, the pipe 179, the pipe 176 to the pump, the exhaust pipe 181, and the pipe 170 to the cylinders. When the lifting mechanism is to be operated and air is to be introduced into the cylinders 165, then the valve 180 is adjusted so that the compressed air from the pipe 179 is conducted through the valve 180 and into the pipe 170 to the cylinders 165. After the compartment has been raised, and it is desired to exhaust the air in the cylinders 165, the valve 180 is adjusted so that the compressed air in the cylinders 165 is let out through the pipe 170 through the valve 180 and out through the exhaust pipe 181. In this way, the turning of the handle 177 of the valve 180 will operate either the pump, or the lifting mechanism so as to raise or lower the compartment 13.

It can be seen that the use of compressed air or other compressible fluid may be utilized for easy raising and lowering of the inlet member 49 in and out of the "original container" 81 and providing an easy and simple manner of changing its position relative to the compartment 13. When the modification shown in Figures 1 and 2 is used, the "original container" 81 is moved sidewards under the compartment when raised. When the modification shown in Figure 3 is used, the "original container" 81 is put through the side of the compartment 13 by opening the door 14 and by raising the inlet member 49 upward so as not to hinder the sideward move of the "original container" 81.

The illustrations shown are especially adapted for use in dispensing grease, oil, or other lubricant capable of being pumped or forced through a conduit. However, it is to be understood that this device may be used for dispensing any fluid capable of being pumped or forced through a conduit regardless of its viscosity.

The great advantage resulting from the use of our invention is apparent from an inspection of this device. For example, when our device is used in dispensing grease for lubricating automobiles, the grease need not be taken out of the "original container" and placed in another container, as would ordinarily be done. By using our device, the grease may be transmitted directly

from the "original container" through the pumping device and conduit right to the mechanical parts to be greased. A further advantage is seen in that the "original container" need not be lifted up and dropped down into a compartment, but may be slid sidewards into the enclosing compartment.

A still further advantage is that compressed air or other fluid may be utilized for raising the compartment or for raising the cover and pump as required.

Although we have described our invention with a certain degree of particularity, it is understood that the present disclosure has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to without departing from the spirit and the scope of the invention as hereinafter claimed.

We claim as our invention:

1. A device for dispensing fluid from a container through an opening in the top of the container comprising, in combination, a holding member for accommodating said container, said holding member having a side portion through which said container may be moved, a cover for said holding member, a pump supported by said cover, the said pump having an inlet member adapted to be inserted through the opening of the container into said container, the said inlet member being adapted to be raised out of said container so that the container may be moved through the side portion of said holding member, and adapted to be lowered into said container so that fluid therein may be removed, and fluid means supported by said holding member for raising said inlet member.

2. A device for dispensing fluid from a container through an opening in the top of the container comprising, in combination, a holding member for accommodating said container, a base for said holding member, said base being adapted to support said container within said holding member, a pump supported by said holding member, the said pump having an inlet member extending downwardly into said holding member and being adapted to be lowered through the opening in the top of the container into said container and being further adapted to be raised out of said container so that said container may be moved sidewards on said base in and out from said holding member, and fluid means connected to said holding member for raising said inlet member.

3. The combination of a support for a container of fluid, said container having an opening in its top for the removal of the fluid, a pump for removing said fluid, said pump having an inlet member for inserting through said opening into the container, means for supporting the pump over the container with the inlet member inserted in the container, and fluid means connected to said supporting means for raising the inlet member out of the container so that the container may be moved sidewards relative to said inlet member.

4. The combination of a holding member for accommodating a container of fluid, said container having an opening in its top for the removal of the fluid, a base for said holding member, a pump for removing said fluid, said pump having an inlet member for inserting through said opening into the container, a piston member and a cylinder member in telescopic connection, one of said members being in connection with said inlet member and the other of said members being in connection with and carried by said base, the combination of the piston member and said cylinder member being such that the introduction of fluid under pressure within the said cylinder member causes the members to spread apart thereby raising the inlet member above the container on said base.

5. The combination with a container adapted to contain pumpable fluid, said container having an opening in its top for the removal of said fluid, of a holder adapted to accommodate the said container, the said holder having a side through which said container may be moved into and out of said holder, a pump having an inlet member adapted to be inserted into said container for pumping said fluid, and hydraulic means connected to said holder for raising and lowering said inlet member through the opening in the container so that the inlet member may be raised for permitting the container to be moved through the side of the holder and so that the inlet member may be lowered for permitting the fluid to be pumped.

6. A device for dispensing fluid from a container through an opening in the top of the container comprising, in combination, a base for supporting said container, a piston member extending from and carried by said base, a cylinder member in telescopic connection with said piston member, a compartment for enclosing said container, the said compartment being carried by said cylinder member, a pump inlet member carried by said compartment, the said inlet member being adapted to extend downwardly into the opening of said container, means for introducing fluid under pressure into said cylinder member so as to raise said compartment and inlet member carried thereby, and means for releasing said fluid from the cylinder member so that said compartment may be lowered, the arrangement of the inlet member and base being such that the inlet member may be inserted in the opening in the container upon being lowered and may be withdrawn from said opening upon being raised.

7. A device for dispensing fluid from a container through an opening in the top of the container comprising, in combination, a base for supporting said container, a compartment extending from and carried by said base for said container, a cover for said compartment, a pump inlet member adapted to enter the opening of said container and carried by and extending downwardly from said cover, hydraulic means connecting said cover and said base, and means for operating said hydraulic means so that said cover and inlet member is lowered and raised relative to said base to move the inlet member in and out of the opening in the container.

8. In combination, a base for supporting a container having an opening in its top, a cover adapted to extend over the top of the container, a pump carried by said cover, said pump having an inlet member extending downwardly therefrom and adapted to enter the opening in said container, means for supporting said cover and pump, and hydraulic means for raising and lowering said cover and pump so that the said inlet member is withdrawn from and inserted into said opening in the container.

9. In combination, a base for supporting a container having an opening in its top, housing means for the container, said housing means having side wall means extending downwardly

toward the base, a piston member and a cylinder member in telescopic connection, one of said members being supported by the base and the other of said members being in connection with the housing means, a dispensing member through which fluid may be dispensed from the container, said dispensing member being supported by, and extending downwardly in, said housing means and into the said opening in the top of the container, means for introducing fluid under pressure into said cylinder member to raise the side wall means and the dispensing member to cause both to clear the container to facilitate the sideward insertion and removal of the container upon and from the base.

10. In combination, a base for supporting a container having an opening in its top, housing means for the container, said housing means having side wall means adapted to be opened through which the container may be inserted or withdrawn sideways into and from the housing means, carrier means supported by the housing means, a dispensing member through which fluid may be dispensed from the container, said dispensing member being supported by said carrier means and extending downwardly in said housing means and into the said opening in the top of the container, a piston member and a cylinder member in telescopic connection, one of said members being supported by the base and the other of said members being in connection with the carrier means, means for introducing fluid under pressure into said cylinder member to raise the carrier means and the dispensing member to cause the dispensing member to clear the container to facilitate the sideward insertion and removal of the container upon and from the base.

11. In combination, housing means for a container having an opening in its top, said housing means having side wall means arranged to be raised and lowered relative to the container, a dispensing member through which fluid may be dispensed from the container, means for supporting the dispensing member in a downward position within the housing means and at a distance from the said side wall means and causing it to extend into the container through the said opening in the top thereof, and fluid means for raising the dispensing member and the side wall means to cause both to clear the container to facilitate the sideward insertion and removal of the container into and from the housing means.

12. In combination, housing means for a container having an opening in its top, said housing means having side wall means through which the container may be inserted or withdrawn sideways into and from the housing means, a dispensing member through which fluid may be dispensed from the container, means for supporting the dispensing member in a downward position within the housing means and at a distance from the said side wall means and causing it to extend into the container through the said opening in the top thereof, fluid means for raising the dispensing member to cause it to clear the container to facilitate the sideward insertion and removal of the container into and from the housing means.

PAUL I. SCHULTZ.
JAMES J. PELOUCH.