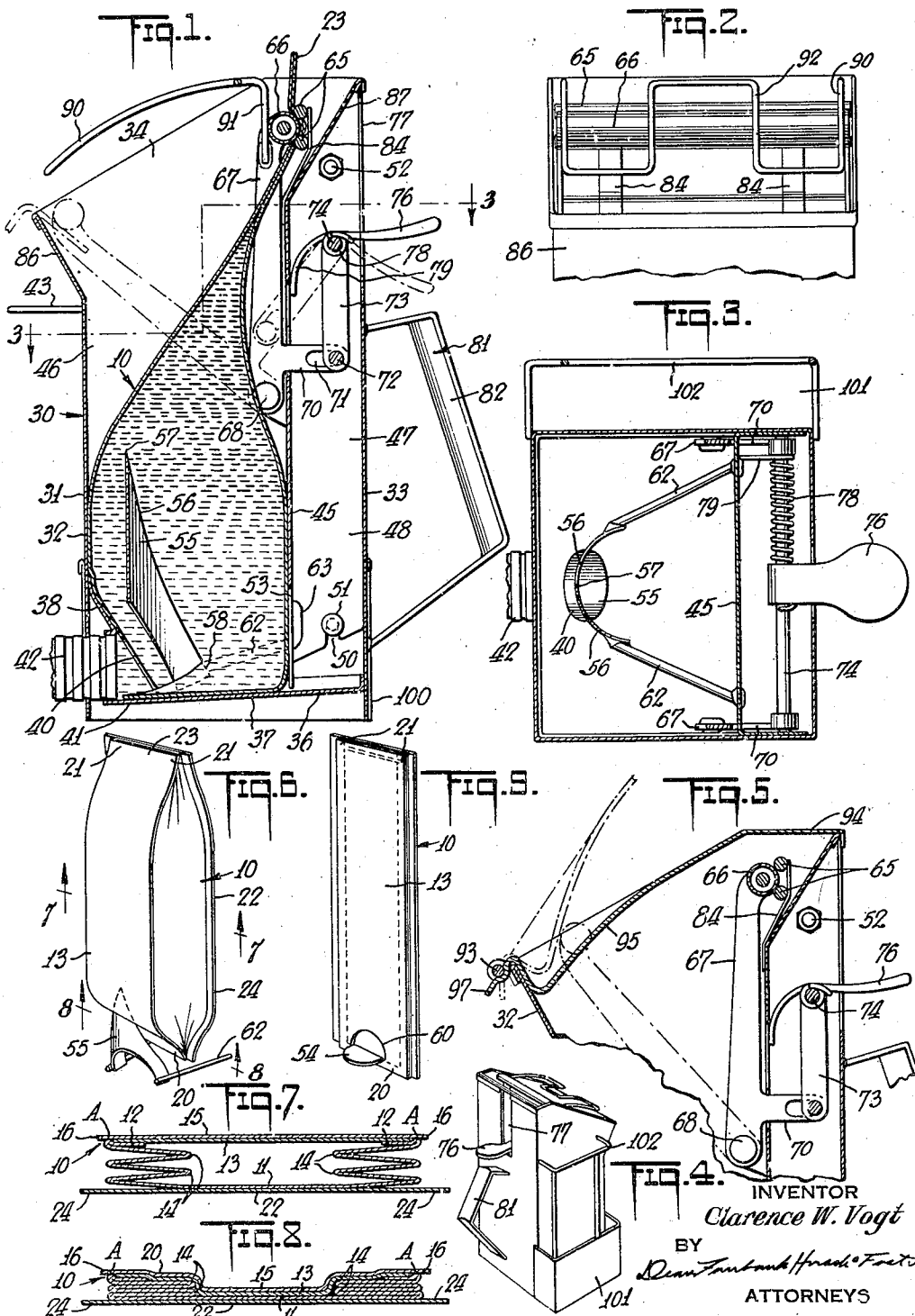


C. W. VOGT

DISPENSING RECEPTACLE

Filed Dec. 2, 1936



UNITED STATES PATENT OFFICE

2,206,985

DISPENSING RECEPTACLE

Clarence W. Vogt, Saugatuck-Westport, Conn.,
assignor, by mesne assignments, to Owens-
Illinois Glass Company, Toledo, Ohio, a corpo-
ration of Ohio

Application December 2, 1936, Serial No. 113,758

18 Claims. (Cl. 221—23)

In my copending application Serial No. 109,428, filed November 6, 1936, there is disclosed and broadly claimed a device for quickly emptying and stripping a flexibly walled container of its entire liquid contents. The form shown includes a dispensing receptacle having therein a stationary container-puncturing member within the lower portion thereof, and a pressure member for pressing the container against a platen surface at the upper part of the receptacle, so that when the punctured container is withdrawn, the contained liquid will be stripped therefrom. Such a device may be used to deliver lubricant to a receiver, such as the crankcase of an automobile, and is intended to effect the complete emptying of the container of its entire oil contents including that which would otherwise adhere to the inner walls of said container, or which would be slow in reaching the outlet of said container.

One object of the present invention is to provide a new and improved device of the general type referred to.

Another object is to provide a device of the general type referred to, having means for guarding the puncturing member so as to prevent accidental hand contact therewith and resultant injury to the operator.

Another object is to provide puncturing means for forming a drain opening of large cross-sectional area closely adjacent to or contiguous with the bottom of the container, to insure a faster outflow of liquid from said container, and to prevent the forming of oil retaining pockets in the lower portion of the container.

Still another object is to provide new and improved means for supporting the puncturing member so that said member may be easily taken out of the receptacle for sharpening or replacement.

A further object is to provide a device of the general type referred to, which may be easily assembled or disassembled.

Various other objects, features and advantages of the invention will be apparent from the following particular description and from an inspection of the accompanying drawing. In the drawing—

Fig. 1 shows a vertical section of one embodiment of the present invention, with the container punctured and ready to be drawn out of the receptacle with accompanying stripping action.

Fig. 2 is a front elevation of the upper portion of the device shown in Fig. 1,

Fig. 3 is a section taken on the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of the device of Fig. 1.

Fig. 5 is a vertical section through the upper end of another form of device embodying the present invention.

Fig. 6 is a perspective view of a type of flexible container that may be used in conjunction with the present invention, said container being shown in connection with the puncturing member.

Fig. 7 is a section taken on the line 7—7 of Fig. 6, but showing the bag partially collapsed.

Fig. 8 is a section taken through the bottom seam of the container, on the line 8—8 of Fig. 6, and

Fig. 9 is a perspective view of the collapsed punctured bag after it has been stripped of its entire contents.

In Figs. 5-8 is shown a form of flexibly walled oil container 10 which may be used in conjunction with the present invention, and which is more fully disclosed and claimed in a copending application, but it must be understood that any other type of flexibly walled container may be used for the purpose of the present invention. In the form shown, the bag is made from thin flexible sheet material in strip form, which is progressively collapsed and sealed longitudinally at the edges and transversely at spaced points along the length thereof, and which is then transversely cut intermediate of the ends of the sealed portion to form the complete hermetically sealed collapsed bag 10.

The bag 10 is formed primarily of impervious flexible sheet material which may be sealed by heat and pressure, or by the use of adhesives or solvents. For instance, it may be material sold under the name of "Pliofilm," which is made from a chlorinated rubber compound, and which is thermoplastic and readily vulcanized or sealed at a temperature of approximately 115° C., so that overlapping sections thereof may be sealed together by the application of heat and pressure.

The bag 10 is formed of a sheet 11 of Pliofilm or other material referred to, having its side sections 12 heat sealed to the sides of a narrower sheet of Pliofilm 13 along its entire length to form a tube. The sheet 11 is tucked inwardly from the sides of the sheet 13 to form a pair of infolds 14 on each side of the collapsed bag. These infolds 14 are narrow so that the inner fold edges of one pair of infolds do not abut or overlap the inner edges of the opposite pair of infolds,

but are spaced a substantial distance from said latter edges.

Cemented or otherwise secured to the Pliofilm sheet 13 to form a laminated wall therewith, is a reinforcing sheet 15 made of paper or other flexible sheet material which will not be injuriously affected by the application of sufficient heat and pressure to effect sealing, fusing or vulcanizing of the Pliofilm. In order that the corner of the bag 10 along the side edges of the sheet 15 be strong when in fully charged condition, said sheet 15 extends beyond the side edges of the Pliofilm sheet 13 to form marginal extensions 16, and portions of the side sections 12 of the Pliofilm sheet 11 project outwardly beyond the side edges of said sheet 13, and are directly glued or cemented at A to said marginal extensions. Such sealing by adhesive and by attachment of the sheet 11 directly to the paper sheet 15 at the corners, has a reinforcing effect which will compensate for any weakening resulting from heating and softening of the Pliofilm at the corners.

In the forming of the bag, the continuous tube in collapsed condition is sealed transversely thereacross over an area which is then transversely severed, so that the portion of the sealed area on one side of the line of severance forms the bottom seal 20 across the entire width of the bag 10 as shown in Fig. 8, while the portion of the sealed area on the other side of the line of severance forms the side seals 21 in the top of the next succeeding bag, the portion of said latter bag between said side seals 21 forming an opening through which the latter bag may be filled.

After the bag has been filled, the opening thereof is permanently sealed by heat-sealing together the facing Pliofilm linings of said opening. The sealing across the tube is effected by heat and pressure so that all of the superposed layers of Pliofilm are autogenously bonded together and to the sheet 13. The bottom seal 20 will consist of two thicknesses of Pliofilm sealed together at the center, and seven thicknesses of Pliofilm sealed at the side edges.

Since the sealing across the tube is effected by a single heat-sealing operation, non-uniformity in the number of overlapping Pliofilms across the width of the collapsed tube might, under some circumstances, cause the overheating of the center portion of the tube whereby the overheated section of the Pliofilm sheet 11 along said center portion might stick to the platen member forming part of the sealing apparatus. In order to avoid the liability of this happening, a paper sheet 22 may be cemented or otherwise secured to the Pliofilm sheet 11 across an area extending slightly beyond the inner edges of the side seals.

The two paper sheets 15 and 22 on opposite sides of the container serve not only for the purpose referred to but may also serve to carry advertising or other printed notices.

The container of Fig. 6 has a capacity which is greater than the amount of oil stored therein so as to compensate for the change in volume of oil due to changes in the temperature thereof. The air from the head space above the liquid level is exhausted so that the opposite walls of the upper portion of the container may come together as shown in Fig. 6 to form a comparatively long flap 23.

The containers as shown in Fig. 6 lend themselves to efficient storage and transportation in trays of the multiple compartment type. If the compartments of these trays be of such size as

to snugly receive one of said containers, the sediment or other foreign material collecting in the bottom corners of the compartment might, under some circumstances, puncture the container and cause leakage thereof. In order to avoid this possibility, the paper strip 22 extends beyond the outer edges of the infolds 14, so that when the container is placed in a tray compartment with the paper strip 22 facing downwardly, the marginal extensions 24 of said strip 22 beyond said infolds will fold upwardly along the side walls formed by said infolds 14 and thereby protect the bottom corners of the bag from direct contact with foreign matter which may have collected in the corners of the tray compartment.

In the specific embodiment of the invention shown in Figs. 1-3, there is provided a receptacle 30 which is so designed as to receive a suitable flexibly walled container in upright position. In the specific form shown, the receptacle comprises a tubular shell 31 of rectangular cross-section having a front wall 32, a rear wall 33 and side walls 34. The bottom of the receptacle may be formed by a plate 36 connected to the tubular shell 31 by any suitable means, as for instance soldering, and having a substantially horizontal section 37 spaced from the bottom of the tubular member 31, and an oblique section 38 extending to the front wall 32. This oblique section 38 is provided with an opening 40 and has a discharge nozzle 41 connected thereto in communication with said opening. A flexible hose 42 may be connected to the nozzle 41, and passes through the front wall 32, and its delivery end is adapted to be inserted in the inlet of a lubricant receiver to be filled. The end of said hose may be provided with a hook (not shown) for engaging a staple 43 connected to the front wall 32 so that said hose may be supported close to the receptacle in non-dripping position when not in use.

The bottom wall section 37 slants slightly downwardly towards the nozzle 41 so that the oil collected in the bottom of the receptacle will flow towards said nozzle.

Extending between the side walls 34 of the receptacle and spaced inwardly from the rear wall 33 is a plate 45 serving to form the rear wall of the container receiving chamber 46 of the receptacle and forming with said wall 33 a compartment 47 for receiving at least a portion of the stripper operating mechanism. This plate 45 is detachably secured within the shell 31 in any suitable manner. For instance it may be provided with a pair of side flanges 48 extending along the side walls 34 and having notches 50 at their bottoms for engaging buttons or studs 51 connected to said side walls 34 to hold said plate 45 against lateral movement. At the upper ends these flanges 48 may be connected to the side walls 34 by removable fastening means such as bolts 52.

The bottom of the plate 45 is provided with an opening 53 to afford free communication between the chamber 46 and the compartment 47, thereby preventing oil from being retained in said latter compartment during container discharging operations.

The puncturing member includes a knife 55 disposed within the lower portion of the container receiving chamber 46 of the receptacle and adjacent to the outlet opening 40. As an important feature of the present invention, this knife is constructed to form a knockout flap 54 in the bottom of the container so as to form a drain opening of substantial area. For that pur-

pose, this knife is of substantially U-shaped cross-section and is adapted to form a correspondingly shaped slit in the bottom of the container. In the specific form shown, this cross-section is somewhat semi-cylindrical and the knife 55 is provided with a pair of cutting edges 56 converging towards a sharp piercing point 57. The bottoms 58 of the cutting edges 56 extend approximately along the medial plane of the container receiving chamber 46 of the receptacle so that the knife 55 as it pierces the bottom of the container as shown in Fig. 6, makes a U-shaped slit 60 down to the bottom seam of the container as shown in Fig. 9. This slit 60 defines a drain opening which is of substantial area and which extends to the extreme bottom of the container, so that no liquid retaining pockets are formed in the bottom of the container on opposite sides of said drain opening.

As an important feature of the present invention, the knife 55 is supported on the detachable wall 45 so that said knife can be taken out of the receptacle for sharpening or replacement. For that purpose there is provided a pair of rods 62 soldered or otherwise connected at one end to the lower section of the knife 55, and having the other ends passing through the wall 45 and forming angular extensions 63 soldered or otherwise connected to said wall. The bottom of the knife 55 rests on the bottom wall 36 of the receptacle to support said knife against the pressure of the bag 10 during puncturing operation.

The stripping device comprises a pair of vertically spaced platen members in the form of rods 65 presenting platen surfaces for cooperation with a rotatable pressure roller 66. This pressure roller 66 is normally urged into pressure applying position with respect to the platen rods 65 as shown in Fig. 1, and is angularly movable into inoperative position shown dotted in Fig. 1 to permit the container 10 to be inserted between said pressure roller 66 and said platen rods 65. For that purpose, the pressure roller 66 is rotatably carried by a pair of similar lever arms 67 extending closely adjacent to the side walls 34 and pivoted respectively to said side walls at 68. In order to angularly move the lever arms 67 about their pivotal connection 68, each of said arms has an extension arm 70 passing through an opening in the plate 45 and having an elongated slot 71 through which passes the end of a rod 72. Fixed to the central portion of said rod 72 is one end of a lever arm 73, the other end being fixed to a rod 74 journaled in suitable bearings connected to the flanges 48 of the detachable wall plate 45.

The lever 73 is actuated by an operating mechanism in the form of a thumbpiece 76 extending through a slot 77 in the rear wall 33. The depression of the thumbpiece 76 in a clockwise direction as shown in Fig. 1 into the dotted position shown, causes the rotation of the rod 74 and the corresponding angular movement of the lever arm 73 so that the lever arm 67 carrying the pressure roller 66 is swung in a counterclockwise direction.

In order to normally maintain the pressure roller 66 in the pressure applying position shown in Fig. 1, there is provided a torsion spring 78 encircling the rod 74 and having one end 79 curved downwardly as shown in Fig. 1 and engaging the detachable wall 45 so that said rod 74 is urged in a counterclockwise direction. Under the action of the torsion spring 78, the stripping device will normally be in the position

shown in Fig. 1 and will be locked, so that the movement of the pressure roller 66 away from the platen rods 65 can be effected only by the actuation of the thumbpiece 76.

The receptacle 30 is provided with a handle 81 disposed below the thumbpiece 76 and preferably having a section 82 adapted to be conveniently grasped in the palm of the hand and slanting upwardly towards the receptacle, so that the thumbpiece 76 is conveniently accessible for operation by the thumb of the hand grasping said handle.

In order to provide resilient yield between the pressure roller 66 and the platen rollers 65 during stripping of the container so that said members may permit the extra thickness of the container, such as that along the bottom seam, to pass therebetween, the platen members 65 are welded or otherwise connected to a pair of spring plates 84 connected at their lower ends to the detachable wall plate 45.

By means of the construction so far described, the entire stripping mechanism and the knife 55 are supported solely on the detachable plate 45 and may be removed from the receptacle as a unit with said plate.

In order that the pressure roller 66 in inoperative position shown in dotted lines in Fig. 1 and the platen members 65 do not interfere with the dropping of a container in the chamber 46, the upper section 86 of the wall 32 and the upper section 87 of the detachable wall plate 45 are flared upwardly to form recesses to receive these members as shown.

As a feature of the present invention, means are provided for rendering the knife 55 inaccessible for container puncturing operation while the receptacle is not in use, so as to prevent the hand of the operator from coming in contact with said knife and being accidentally injured. In the specific form shown in Fig. 1, this means is in the form of a guard 90 which, when the receptacle is not in use, extends over the open end of the receptacle to prevent a hand from being inserted in the interior of the receptacle. This guard is formed of a wire having end extensions 91 soldered or otherwise connected to the lever arms 67 so that said guard 90 is actuated in unison with said lever arms, and having an intermediate U-shaped section 92 so that when this wire guard is in the dotted position shown in Fig. 1, said U-shaped section 92 clears the nozzle retainer 43.

In the construction shown in Fig. 5, the guard serves not only to prevent the insertion of the hand into the receptacle but also serves as a cover for the receptacle so that rain or other foreign matter does not find its way into said receptacle while it is not in use. In this form the guard is in the form of a cover plate 94 pivotally connected to the upper end of the front wall 32 of the receptacle by a hinge 93 and having a sloping section 95 presenting a cam surface which is engaged by the pressure roller 66 as it is moved in a counterclockwise direction. This riding of the pressure roller along the cam section 95 causes the cover plate 94 to swing open in a counterclockwise direction about the hinge 93 so that the upper end of the receptacle is uncovered to permit a container to be dropped therein.

In order to limit the open position of the cover plate 94, said plate has an extension 97 on its hinge section, which engages the oblique wall section 86 of the receptacle in limiting position,

to prevent further counterclockwise rotation of said cover plate 94. In this limiting position the cover plate 94 will be urged into the closed position shown in Fig. 5 by its own weight.

5 When filling a crankcase or any other lubricant receiver, it is quite often necessary to empty a number of containers into the receptacle. In order to provide a suitable and conveniently located receptacle for the containers as they are emptied, a plate 100 is connected to the bottom of one of the side walls 34 of the receptacle and is shaped to form a receptacle 101 therewith. Connected to this plate 100 and to said last mentioned side wall 34 is a wire frame 102 forming 10 with the receptacle 101 a basket. The containers as they are emptied, are dropped into this basket and held therein until the operation of filling the lubricant receiver is completed.

In the operation of the device, in order to 20 move the guard 90 of the construction of Fig. 1, or the guard 94 of the construction of Fig. 5, into position to permit dropping of a container into the receptacle, the thumbpiece 76 is depressed. This operation causes the pressure roller 66 to move into the dotted position shown, and said guards to move away from the upper end of the receptacle. While in this position, the container 10 is dropped into the chamber 46 and the piercing knife 55 forms a substantially semi-circular opening closely adjacent to the bot- 30 tom seam of the bag as shown in Fig. 9. The pressure on the thumbpiece 76 is then released and the pressure roller 66, under the action of the torsion spring 78, is moved into the position shown in Figs. 1-5.

The receptacle is of such height with respect to the container that when the container 10 is in said receptacle, a substantial portion of the container flap 23 will extend or may be held so that it extends above the platen members 65, so that when the pressure roller 66 returns into pressure applying position shown in Figs. 1 and 5, the upper portion of the container flap 23 will be caught between said pressure roller and said 40 platen members. The upper portion of the container flap 23 extending above the platen members 65 is grasped by the fingers and the container drawn upwardly. The combined drawing action on the container and the pressure action of the roller 66 causes the stripping of the container and the forcing out of its entire contents, to leave the stripped container in approximately the flattened or collapsed condition shown in Fig. 9.

55 In Fig. 1 the parts are shown in approximately the position which they would occupy after the bottom of the bag has been punctured, a portion of the contents has drained out, and the upper portion of the bag has partially collapsed, but before the stripping action begins. At this period in the operation, some of the oil may have drained around into the compartment 47 and more will flow into that compartment as the bag is pulled up through the stripping apparatus, but to simplify the illustration no oil is shown in that compartment.

Obviously various changes may be made in the details of construction and the relative positioning of the parts without departing from the 70 scope of my invention.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. A device for discharging the contents of a 75 flexibly walled container, including a receptacle

for receiving said container, a container puncturing member supported in said receptacle, means on said receptacle for collapsing and squeezing the punctured container whereby upon relative movement of said means and said container said container will be stripped of its entire contents, and means for rendering said puncturing member inaccessible for container puncturing operation whereby accidental hand contact with said puncturing means is prevented while the device is not in use. 5 10

2. A device for discharging the contents of a flexibly walled container, including a receptacle for receiving said container, a container puncturing member within said receptacle, means for collapsing and squeezing the punctured container, and a guard over said puncturing member for preventing accidental hand contact with said puncturing member while the device is not in use, said guard being movable to permit a container to be punctured by said member. 15 20

3. A device for discharging the contents of a flexibly walled container, including a receptacle for receiving said container, a container puncturing member supported in said receptacle, means normally preventing access of the container to said puncturing member, a container stripping member, a fingerpiece, and means responsive to the operation of said fingerpiece for operating said stripping member and rendering said puncturing member accessible for container puncturing operation. 25 30

4. A device for discharging the contents of a flexibly walled container, including a receptacle for receiving said container, a container puncturing member in said receptacle, protecting means normally preventing a container from being dropped into the receptacle onto said puncturing member, a member for collapsing and squeezing the punctured container to discharge the contents therefrom, and means for moving said second-mentioned member and said protecting means into operative position.. 35 40

5. A device for discharging the contents of a flexibly walled container, including a receptacle for receiving said container, a container puncturing member within said receptacle, a guard over said puncturing member for preventing accidental hand contact with said puncturing member while the device is not in use, a pressure applying member for collapsing and squeezing a punctured container within said receptacle, and means for moving said pressure applying member into and out of pressure applying position and for simultaneously moving said guard in or out of protective position with respect to said puncturing member. 45 50 55

6. A device for discharging the contents of a flexibly walled container, including a receptacle for receiving said container, a container puncturing member in the interior of said receptacle, a guard over said puncturing member to prevent accident contact of a hand with said puncturing member, a pressure applying member on said receptacle for collapsing and squeezing a punctured container whereby upon relative movement of said second mentioned member and said container said container will be stripped of its entire contents, said pressure applying member being movable into or out of stripping position, and engaging said guard during its movement to move said guard out of protective position with respect to said puncturing member whereby said puncturing member is rendered accessible for container puncturing operation. 60 65 70 75

7. A device for discharging the contents of a flexibly walled container, including a receptacle for receiving said container, a container puncturing member in said receptacle, a pressure applying member on said receptacle for collapsing and squeezing a punctured container whereby upon relative movement of said member and said container said container will be stripped of its entire contents, and a guard movable in unison with said pressure applying member into or out of protective position with respect to said puncturing member.

8. A device for discharging the contents of a flexibly walled container, including a receptacle for receiving said container and having a detachable wall, and means supported on said wall and removable therewith for collapsing and squeezing a punctured container whereby upon relative movement of said means and said container said container will be stripped of its entire contents.

9. A device for discharging the contents of a flexibly walled container, including a receptacle for receiving said container, a container puncturing member in the interior of said receptacle, and means on said receptacle for stripping a punctured container upon removal of the container from the receptacle, said puncturing member and said stripping means forming a removable unit from said receptacle.

10. A device for discharging the contents of a flexibly walled container, including a receptacle having a partition dividing said receptacle into a container receiving chamber and a compartment adjacent thereto, means in said receptacle for stripping said container of its entire contents, and operating means having at least a portion thereof in said compartment for moving said stripping means into and out of operative position.

11. A device for discharging the contents of a flexibly walled container, including a receptacle having a detachable partition dividing said receptacle into a container receiving chamber and a compartment adjacent thereto, means supported on said partition for stripping said container of its entire contents, and operating means on said partition and at least partially in said compartment for moving said stripping means into and out of operative position.

12. A device for discharging the contents of a flexible walled container, including a receptacle having two juxtaposed compartments, one for receiving a filled container and the other for receiving an empty container, said device having means for stripping the entire contents from said container into said first mentioned compartment.

13. A device for discharging the contents of a flexible walled container, including a receptacle having a partition wall extending from adjacent to the bottom to adjacent to the top, and a container puncturing member supported by said wall adjacent to the bottom of the receptacle.

14. A device for discharging the contents of a flexible walled container, including a receptacle for said container, a substantially vertical partition in said receptacle, a pair of laterally project-

ing arms on said partition adjacent to the bottom of said receptacle, and means carried by said arms and extending upwardly therefrom for forming a drain opening in the bottom of said container.

15. A device for discharging the contents of a flexibly walled container, including a receptacle for receiving said container, means on said receptacle for stripping said container of its contents, a loop handle rigid with one side of said receptacle and extending lengthwise thereof, a thumb piece directly above said handle and accessible to the hand which holds said handle, and means responsive to the operation of said fingerpiece for moving said stripping means.

16. A device for discharging the contents of a flexibly walled container, including a receptacle for receiving said container, and means on said receptacle for squeezing and collapsing the walls of said container as it is being withdrawn from said receptacle, comprising a pair of parallel platen rods near the top of said receptacle, and a pressure rod near the top of said receptacle substantially parallel to said platen rods, said pair of platen rods and said pressure rod being relatively movable away from each other transversely of their axes to permit insertion of a portion of said container therebetween, and relatively movable towards each other transversely of their axes into container collapsing position, said pressure rod in said position extending between said platen rods.

17. A device for discharging the contents of a flexibly walled container, including a receptacle for receiving said container, and means on said receptacle for stripping said container of its contents including a platen rod, a spring plate secured to said receptacle, and supporting said rod for limited resilient transverse yielding movement, and a pressure rod substantially parallel to said platen rod, and supported on said receptacle, said pressure rod being movable transversely away from said platen rod to permit insertion of a portion of said container therebetween, and movable transversely towards said platen rods to collapse said container.

18. A device for discharging the contents of a flexibly walled container, including a receptacle for receiving said container, and means on said receptacle for squeezing and collapsing the walls of said container as it is being withdrawn from said receptacle, comprising a pair of parallel platen rods near the top of said receptacle, a spring plate secured to said receptacle and resiliently supporting said rods in unison for resilient transverse yielding movement, a pressure rod parallel to said platen rods and supported on said receptacle, said platen rods and said pressure rod being relatively movable transversely away from each other to permit insertion of a portion of said container therebetween, and movable towards each other to collapse said container, said pressure rod in said container collapsing position extending between said platen rods.

CLARENCE W. VOGT.