

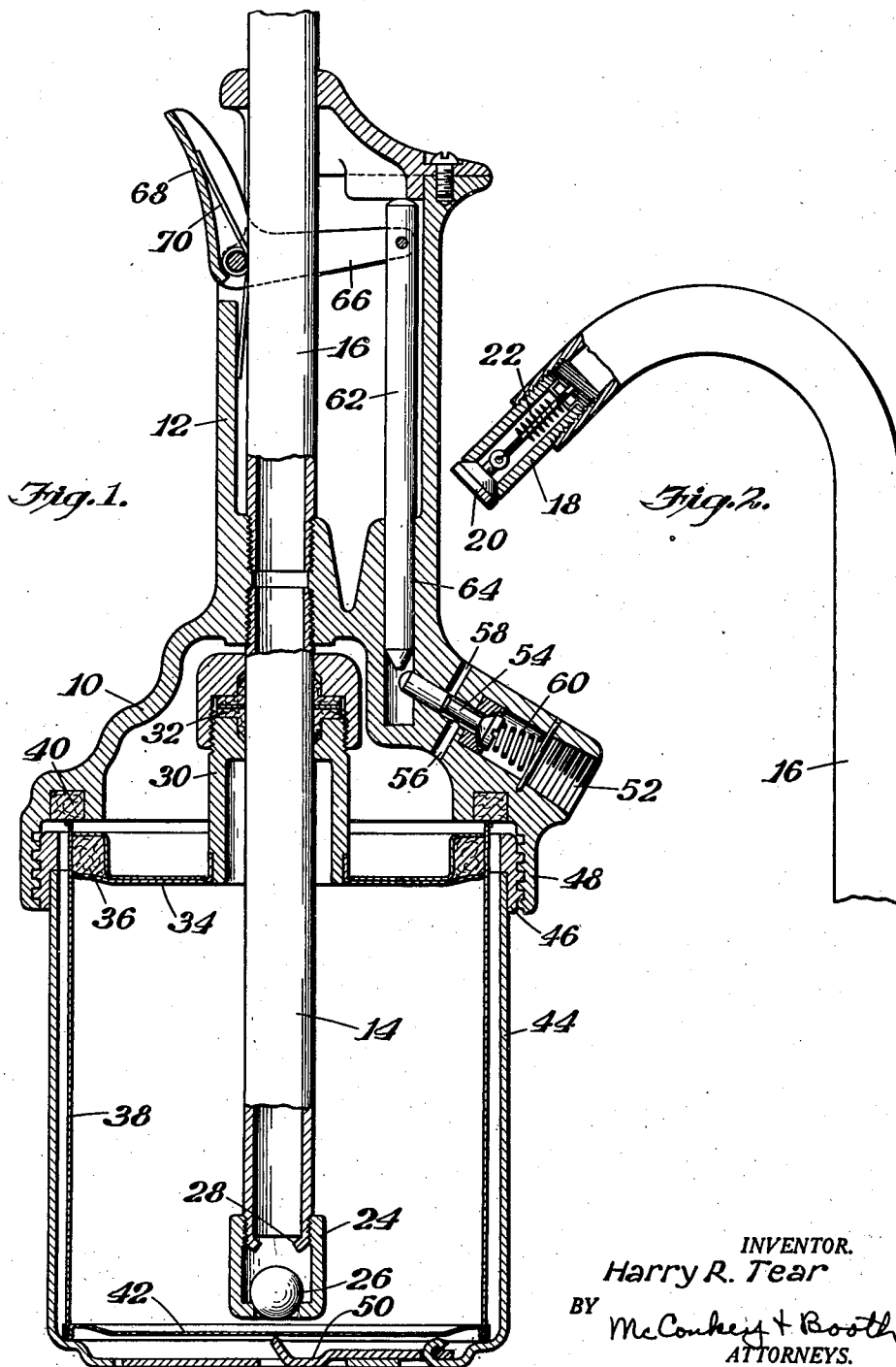
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DISPENSER

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## UNITED STATES PATENT OFFICE

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## DISPENSER

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10 Claims. (Cl. 221-47)

This invention relates to dispensers and more particularly to devices for dispensing under relatively low pressure the contents of factory filled containers.

5 The invention is particularly adapted to and is illustrated in connection with a lubricant dispenser for discharging the contents of factory filled containers into transmissions, differentials and the like. One of the objects of the invention is to provide a dispenser of this type which is simple and positive in its action and which removes substantially all of the contents of a container.

10 The dispenser is adapted for use with cylindrical, open-top containers or cans adapted to be closed during storage by any suitable type of cover, and it is another object of the invention to provide a dispenser for handling cans of this type.

15 Other objects of the invention relate to a dispenser in which the container is destroyed after being emptied and in which an empty container may be removed easily. Both of these objects may be accomplished simultaneously by providing a cutter to punch a hole in the container, thereby destroying the container so that it cannot be re-filled and at the same time admitting air to the container to permit easy removal thereof from the dispenser.

20 Other objects, advantages and novel features of the invention will be apparent from the following description when read in connection with the accompanying drawing, in which:

25 Figure 1 is a central section with parts in elevation of a dispenser embodying the invention.

Figure 2 is a view partly in section of the valved discharge nozzle used with the dispenser.

30 The dispenser shown is constituted by a head 10 having a handle portion 12 cast or otherwise formed integral therewith. A discharge tube having a lower section 14 and an upper section 16 extending through the handle portion 12 is rigidly secured to the head and the section 16 terminates in a suitable valved discharge nozzle 18. As shown, a valve 20 is urged by a spring 22 to seat against the end of the nozzle 18 to open under the influence of pressure and to close when the pressure is relieved thereby to prevent dripping. The lower end of the section 14 carries an enlarged cap 24 forming a housing for a ball check valve 26, the ends of the tube section being formed with projections 28 to prevent the ball 26 from seating in an upward direction.

35 A piston having a tubular hub 30 adapted to fit over the cap 24 is slidably carried by the tube

14 and has a packing 32 slidably sealing against the tube. The piston is completed by a disc portion 34 having a peripheral packing 36 adapted to seal against the inner surface of a cylindrical container 38. The container 38 has an open top adapted to seal against a packing ring 40 carried by the head 10 and a permanently closed bottom 42. During storage the container will be closed by a friction type lid or the like which is removed prior to its insertion in the dispenser.

40 In order to secure the container to the head a housing 44 is provided having an externally threaded ring 46 to be threaded to a circular flange 48 on the head. At its lower portion the housing 44 pivotally carries a knife 50 adapted to be operated manually to punch a hole in the bottom of the container, thereby not only destroying the container but also admitting air to it so it can be slid off of the piston.

45 The piston is adapted to be forced into the container by fluid under pressure supplied from a suitable source through a passage 52 past a valve 54 and through a passage 56 into the head above the piston. The valve 54 is shown in its exhaust position with the passage 56 communicating with an exhaust port 58. Fluid pressure entering the passage 52 tends to hold the valve in this position but if desired a spring 60 may be provided to supplement the action of the fluid pressure.

50 In order to operate the valve 54 a cam rod 62 is slidably mounted in a bore 64 in the head into which the end of the valve projects. A bell crank lever 66 is pivoted at its center on the handle portion 12 and has one end connected to the rod 62 while its other end projects outwardly in the form of a trigger 68. Preferably a spring 70 urges the lever 66 and rod 62 into the position shown.

55 If the trigger is pressed the rod 62 will be moved down to cam the valve 54 to the right thereby closing the exhaust port 58 and opening the passage 56 to the inlet passage 52. Fluid under pressure will flow into the head forcing the piston down through the container and displacing the contents thereof through the discharge tube. When the piston reaches the bottom of the container the trigger may be released and the cutter 50 may be operated to punch a hole in the container bottom. After the housing 44 has been removed, the container may be slid off of the piston, the hole cut by the cutter 50 admitting air to keep the container from becoming air locked.

While one dispenser has been described in detail it will be understood that many changes might be made and that the scope of the inven-

tion is not to be limited to the form shown and described or otherwise than by the terms of the appended claims.

What is claimed is:

5 1. A dispenser for use with an open top container comprising a head adapted to be secured over the open top of a container, a discharge tube rigidly carried by said head to project into the container, a piston slidably mounted on said  
10 discharge tube, means to force the piston into the container to dispense the contents thereof through said discharge tube, and means to punch a hole in the bottom of the container to admit air thereto to permit removal of the piston therefrom.

15 2. A dispenser for use with an open top container comprising a head, a housing detachably secured to said head to carry a container, a discharge tube rigidly carried by said head to project into the container, a piston slidably mounted on  
20 said discharge tube, and means carried by the housing to punch a hole in the bottom of the container to admit air thereto when the piston is removed therefrom.

25 3. A dispenser comprising a head having means for sealing engagement with the top of an open top container, a discharge tube rigidly carried by said head to project into the container, a piston slidably carried by the discharge tube,  
30 means to control admission of fluid under pressure into said head above the piston to force the piston into the container, and means to punch a hole in the container to admit air thereto when the piston is removed therefrom.

35 4. A dispenser comprising a head formed with a handle portion, means to secure an open top container to said head, a discharge tube carried by said head and extending through said handle  
40 portion and into the container, a valve carried by said head to control the admission of fluid under pressure thereto, and operating mechanism for the valve including a trigger mounted on the handle portion.

45 5. A dispenser comprising a head formed with a handle portion, means to secure an open top container to said head, a discharge tube carried by said head and extending through said handle portion and into the container, a piston slidably  
50 carried by said tube, a valve carried by said head to control the admission of fluid under pressure to the space above said piston to force it into the container, and operating mechanism for the valve including a trigger mounted on the handle portion.

55 6. A dispenser comprising a head formed with

a handle portion, means to secure an open top container to said head, a discharge tube carried by said head and extending through said handle portion and into the container, a piston slidably  
5 carried by said tube, a valve carried by said head to control the admission of fluid under pressure to the space above said piston to force it into the container, and operating mechanism for the valve including a trigger mounted on the handle  
10 portion, and means to punch a hole in the bottom of the container to admit air thereto when the piston is removed therefrom.

7. A dispenser comprising a head formed with a handle portion, a housing detachably secured to said head to carry an open top container, a  
15 discharge tube carried by said head and extending through the handle portion and into the container, a piston slidably carried by said tube, a valve to control admission of fluid pressure to the space above the piston to force it into the  
20 container, and means to operate the valve including a trigger adjacent the handle portion.

8. A dispenser comprising a head formed with a handle portion, a housing detachably secured to said head to carry an open top container, a  
25 discharge tube carried by said head and extending through the handle portion and into the container, a piston slidably carried by said tube, a valve to control admission of fluid pressure to the space above the piston to force it into the  
30 container, and means to punch a hole in the bottom of the container to admit air thereto when the piston is removed therefrom.

9. A dispenser comprising a head formed with a handle portion, a housing detachably secured  
35 to said head to carry an open top container, a discharge tube carried by said head and extending through the handle portion and into the container, a piston slidably carried by said tube, a valve to control admission of fluid pressure to  
40 the space above the piston to force it into the container, and a cutter pivoted on the housing to cut a hole in the bottom of the container.

10. In combination with an open top cylindrical container, a head having means for sealing  
45 against the top of the container, a discharge tube carried by the head and projecting into the container, a piston slidably carried by the discharge tube and adapted sealingly to engage the container wall, a housing enclosing the container and  
50 adapted to be detachably secured to the head, and means carried by the housing to punch a hole in the bottom of the container.

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