

Sept. 15, 1931.

W. H. HAST

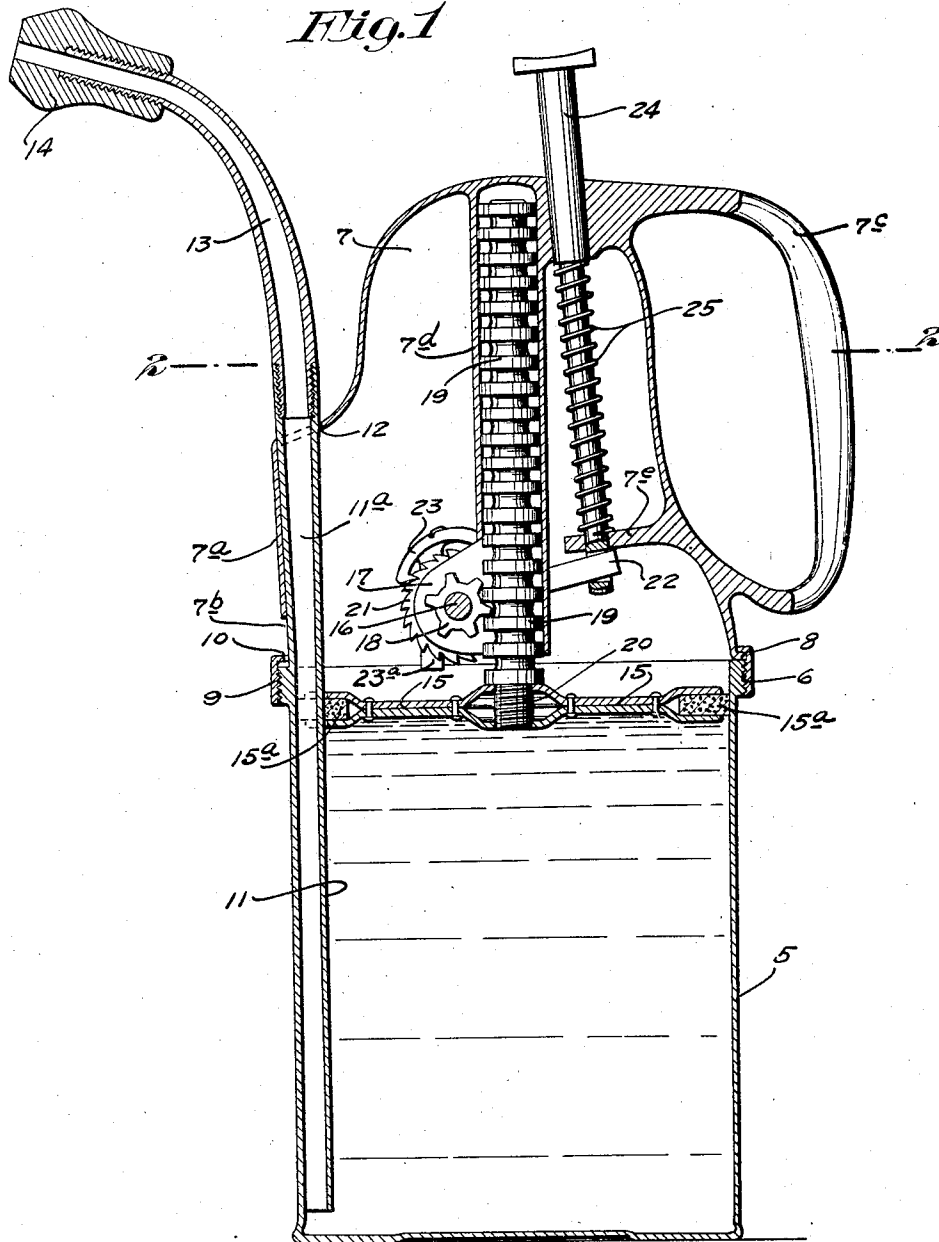
1,823,653

DISPENSER FOR OIL AND OTHER LIQUIDS

Filed Nov. 26, 1930

2 Sheets-Sheet 1

Fig. 1



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Fig. 2

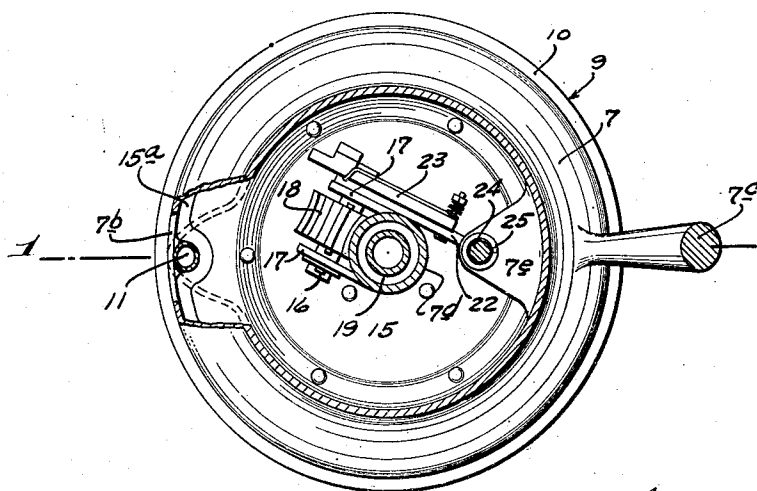


Fig. 4

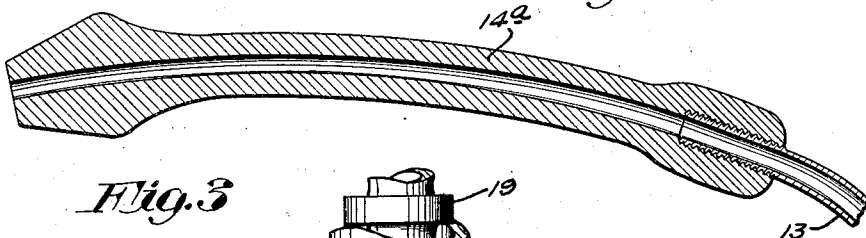
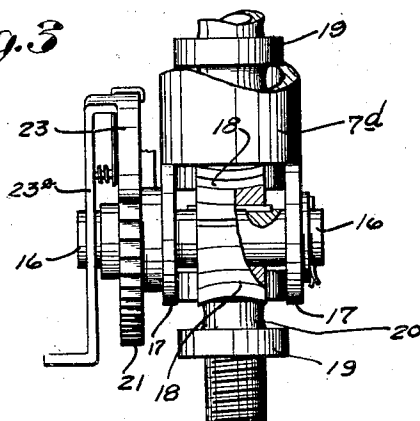


Fig. 3



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DISPENSER FOR OIL AND OTHER LIQUIDS

Application filed November 26, 1930. Serial No. 498,316.

My present invention provides an extremely simple and convenient device for dispensing liquids, the term being used in a liberal sense to include semi-liquids and all materials that will flow under pressure. Particularly, however, the present invention is designed as an improvement on the liquid dispenser disclosed and claimed in my pending application, Serial Number 488,896, filed October 15, 1930 and is so designed that it is especially adapted for use in the dispensing of lubricating oils or light greases and the proper application thereof to various parts of machines, automobiles and the like that require frequent or occasional lubrication.

From the above statement it, of course, follows that while the device is especially designed for dispensing lubricating oils, it is capable of various other uses such as the dispensing of condiments and the like.

In the accompanying drawings, which illustrate the present invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is a vertical section taken axially through the complete device on the line 1—1 of Fig. 2, some parts being shown in full;

Fig. 2 is a view chiefly in horizontal section on the line 2—2 of Fig. 1, but with some parts broken away;

Fig. 3 is a detail in front elevation showing the principal parts of the mechanism for progressively ejecting the oil or fluid material from the jar-like container of the device; and

Fig. 4 is an axial section showing a modified form of discharge nozzle.

The container for the liquid material, hereinafter for convenience designated as the oil container or tank is of cylindrical form normally open at its top and is indicated by the numeral 5. Preferably, this container is made of metal but may be made of any suitable material. At its upper edge, the container 5 is provided with an externally threaded rim 6, upon which is seated a dome-like cap 7 also preferably of metal and having an outstanding flange 8 directly resting upon the rim 6. The numeral 9 indicates an

annular clamping ring that is internally threaded and screwed onto the rim 6. This clamping ring 9 has an inturned flange 10 that engages the flange 8 and firmly clamps the cap to the container.

The container 5 is provided or formed with a discharge tube 11 formed directly against one wall of the container but terminating at its lower end above the bottom of the container. This discharge tube 11 extends above the container and through one outwardly offset portion 7^a of the cap 7; and this upwardly projecting portion 11^a of said tube is preferably round in cross-section and terminates above the top of offset portion 7^a of cap, being extended through a perforation 12 therein. An extension tube 13 is detachably secured by threaded engagement to the projecting upper end of the tube extension 11^a and, as shown, is provided at its discharge end with a nozzle 14. Here it should be noted that the flange 8 and the lower part of offset portion 7^a of the cap 7 are cut away at 7^b so as to permit the clamping ring 9 to be screwed upward and off from the rim 6 without lifting the cap.

Working in the cylindrical container 5 is a piston head or follower 15 of any suitable construction, but, as shown, is made up of pressed metal plates riveted together and holding a pliable peripheral gasket 15^a of cork or the like that closely engages the interior of the container. Also it is important to note that at one place, the piston 15 and its gasket 15^a are notched or cut in to closely fit the exposed adjacent surface of the discharge tube 11 and so as to maintain a tight joint therewith as well as with the interior walls of the container. Incidentally, it will be noted that this engagement with the tube 11 holds the piston against rotation. Also it will be noted that the cap 7 is provided at its rear side or that side opposite the tube 11 with a loop-like handle 7^c.

A short countershaft 16 is journaled in ears 17 formed on the sides of the lower portion of a sleeve 7^a which is rigidly secured to the cap 7 as shown by being formed integral with the top thereof and depending therefrom. A spur pinion 18 is secured to shaft 16 and

meshes with the teeth of a stem 19 that works slidably within the sleeve 7^a and, as shown, has annular teeth but might have teeth otherwise formed. The lower end of this stem 19 is secured to the piston 15, as shown, by threaded engagement at 20. To one end of the shaft 16 a ratchet wheel 21 is secured and on the same end of said shaft is pivotally mounted a small lever 22. A downwardly spring-pressed pawl or ratchet dog 23 is pivoted to lever 22 and the hook-like free end thereof normally engages the teeth of ratchet wheel 21. Dog 23 has a depending arm 23^a.

Mounted for vertical movements through the top of the cap 7 and through an interior lug 7^e of said cap is an actuating plunger 24 normally yieldingly pressed upward by a spring 25. In the lower end of plunger 24 is a diametrical slot through which the free end of lever 22 is projected. Fig. 4 shows a long nozzle 14^a adapted to be substituted on the projecting end of the extension tube 13 for said shorter nozzle 14, shown in Fig. 1.

The nozzles 14 and 14^a are preferably of rubber or somewhat flexible material so that their tips will seat with tight joints against bearings or the like to be lubricated. The flexibility of the long nozzle 14^a will permit bending thereof to reach points for lubrication sometimes not accessible with a rigid member.

When the container 5 is filled with material assumed in this particular instance to be lubricating oil or light grease, the piston 15 will be at its highest elevation shown in Fig. 1. Obviously, the plunger 24 can be depressed by the thumb of the hand holding the handle 7^e and for each depression of said plungers, the ratchet dog 23, acting on ratchet wheel 21 and through shaft 16 and pinion 18, will press piston 15 downward or toward the bottom of the container, thereby causing a definite amount of oil or grease to be ejected from the container through the stem 11—13 and nozzle 14. Of course, by repeated depressions of the plunger 24, any desired amount of grease may be ejected. When the piston has reached a position at or close to the bottom of the container and refilling is required, this may be readily accomplished as follows: First, the clamping ring 9 is unscrewed which permits the cap 7 to be raised on the forwardly projecting portion of the tubes 11^a and 13 far enough to bring the piston out of the container and then the cap can be rotated or swung side-ways on said tube so as to carry the piston from its position above the container and to open the top of the container for refilling with oil, grease or other material to be dispensed. When the cap has been raised from the container, the operator by pressing upward on the arm 23^a lifts dog 23 out of engagement with ratchet wheel 21 and then by upward pressure may quickly move piston

15 and its stem 19 upward and backward to initial or starting position.

After the container has been filled, the cap will be again swung to position and lowered, causing the piston to again enter the top of the container and then the cap can be again secured by the application of the clamping ring 9. These operations just described do not require complete separation of the cap from the container, but simply the removal thereof and of the piston from working positions. Of course, the said cap and the parts mounted thereon can be completely disconnected from the container either by taking off the nozzle 14 or by unscrewing the extension tube 13, but for ordinary refilling operations, this complete disconnection of the cap is not desirable.

As a device for lubricating various different parts of machines and mechanisms generally, this device will be found highly efficient and very convenient and, as indicated in the introductory statements, the device is capable of general use for the dispensing of various liquids that will quite readily flow under pressure including the various condiments, dressings and liquid materials which it is desirable to dispense in small quantities and to keep all the time sanitary and free from waste.

From the foregoing, it follows that the preferred form of the device described is capable of modification within the scope of the invention herein disclosed and claimed.

What I claim is:

1. A dispensing device of the kind described comprising a container having a discharge tube extending from a point near the bottom thereof and projecting far above its top at one side, a cap detachably secured to the top of said container, the upwardly projected portion of said discharge tube being extended through one side of said cap and said cap being capable of rotary and sliding movements on said tube whereby the cap, when disconnected from said container may be raised and swung laterally on said tube, a stem slidably mounted in said cap, a piston secured to the lower end of said stem and working in said container, and a hand-operated mechanism applied on said cap and operative on said stem to impart step by step movements to said piston to cause ejection of material from said container through said discharge tube.

2. The structure defined in claim 1 in which said discharge tube has an extension section detachably connected to the fixed portion of said tube at a point above and outside of said cap when the latter is secured to said container.

3. The structure defined in claim 1 in which said piston-carrying stem has rack teeth and the operating mechanism includes a pinion engaging said rack teeth, a plunger

projecting from said cap, and a pawl and ratchet connection between said plunger and pinion.

4. The structure defined in claim 1 in
5 which a portion of said discharge tube extends from the top downward along one side of the interior of said container to a point near the bottom of the latter, and said piston is notched so that it closely fits the inner portion
10 of said discharge tube as well as the interior of said container.

5. The structure defined in claim 1 in which said discharge tube has an extension section detachably connected to the fixed portion
15 of said tube at a point above and outside of said cap when the latter is secured to said container, the detachable section of said discharge tube having a detachable nozzle normally preventing said cap from being slid
20 off from the end of the discharge tube.

6. The structure defined in claim 1 in which said container has an externally threaded rim and said cap has an outturned base flange resting on said rim, in further
25 combination with a clamping ring having screw-threaded engagement with said threaded rim and provided with an inturned flange for clamping the flange of said cap onto said container.

30 7. The structure defined in claim 1 in which said cap has an outwardly bulged portion through which the discharge tube is passed, and said bulged portion being notched to permit said clamping ring to be unscrewed
35 and released while said cap is on said container.

8. A dispensing device of the kind described comprising a cylindrical container having a discharge tube, a portion of which
40 extends vertically along the inner portion of one side thereof, a cap detachably secured to said container, a stem slidably mounted in said cap, means mounted on said cap for imparting step by step axial movements to said
45 stem, and a piston connected to said stem and working in said container, said piston having a peripheral notch closely fitting the inwardly projected portion of said discharge tube.

In testimony whereof I affix my signature.

50 WILLIAM H. HAST.

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