Feb. 18, 1958 W. A. POTTER 2,823,832

CANNED OIL PUMP

Filed Dec. 28, 1953

Fig. 1.

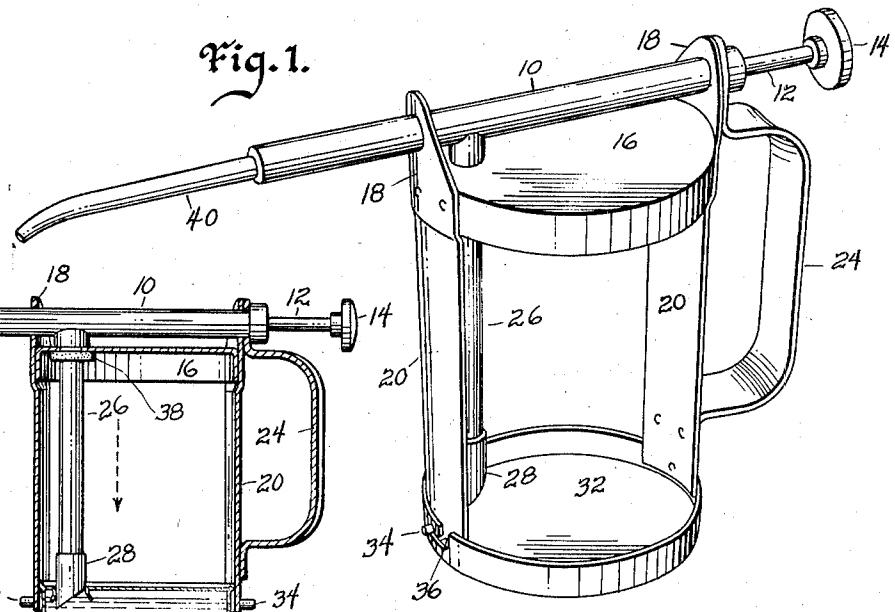



Fig. 2.

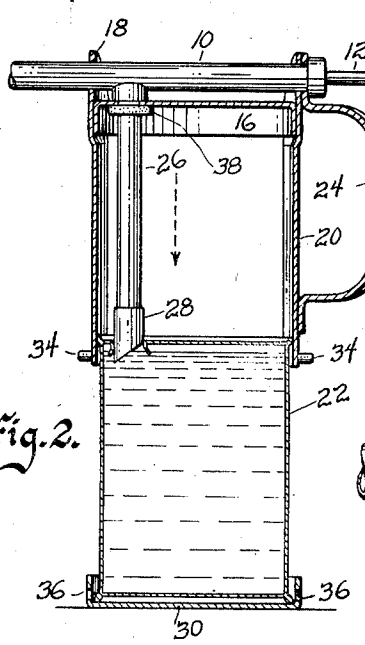
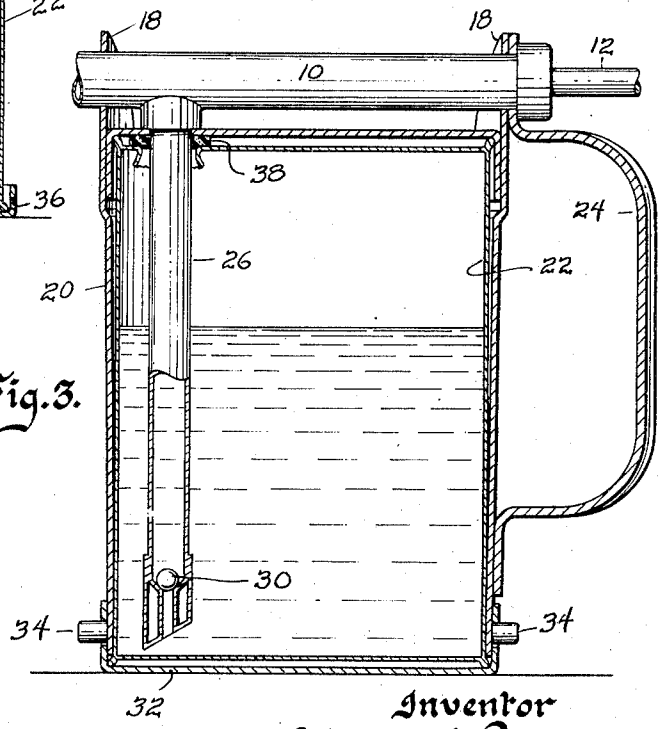



Fig. 3.




Witness
Edward P. Seeley

Inventor
Walter A. Potter
by Lendrum A. MacEachron
Attorney

United States Patent Office 2,823,832 Patented Feb. 18, 1958



2,823,832

# CANNED OIL PUMP

Walter A. Potter, Des Moines, Iowa

Application December 28, 1953, Serial No. 400,628

2 Claims. (Cl. 222—82)

My invention relates to the art of oil cans, and specifically it is a pump that can be associated with a can of oil that is sealed initially to make a pump type "oil can." The structure comprises a frame that is adapted to detachably embrace a can of oil, and a pump secured to the frame. The oil supply tube of the pump is equipped with a cutting head that punctures the can as the frame is placed about the can and the tube then extends into the can to connect the pump with the oil in the can. When the pump is actuated, the oil is drawn from the can and directed as chosen by the operator. The objects of my invention are to provide a canned oil pump that:

(1) Is quickly and easily assembled to an initially sealed can of oil to make a pump type "oil can."

(2) Automatically provides its own vent as the can of oil and frame are assembled into an "oil can."

(3) Requires no special tools to assemble the can and the frame into an "oil can."

(4) Avoids the oil spillage that frequently attends filling ordinary oil cans.

(5) Is inexpensive to manufacture and maintain. While these are the major objects of my invention, others may become clear from the following specification, drawings, and claims.

The drawings accompanying the specification are briefly described as follows:

Fig. 1 is a perspective view of the pump and frame assembled but without a can of oil in the frame.

Fig. 2 is a reduced, fragmentary, vertical sectional view of my canned oil pump and a can of oil showing the cutting head puncturing the can and

Fig. 3 is an enlarged, fragmentary, vertical sectional view of my canned oil pump and frame assembled around a can of oil.

Referring to the drawings wherein a given number always refers to the same part, I have used the number **10** to designate the barrel of an ordinary single action pump. The pump is actuated by pushing the rod **12** into the barrel. A button **14** on the end of the rod provides a surface on which the operator can push with comfort. A spring (not shown) returns the rod **12** at the end of each pumping stroke. The pump is secured to the frame top **16** by means of the ears **18** which are upward extensions of the guide arms **20** of the frame. These guide arms are curved to fit the contour of the ordinary initially sealed, cylindrical can of oil **22**. A handle **24** is secured to one of the guide arm frame sides. Secured to the pump and extending down through the top **10** of the frame and substantially parallel to the guide arms **20** is the oil supply tube **26**. At its lower extremity is the cutting head **28** which also incorporates the ball check valve **30**. The lower ends of the guide arms extend at least at far below the top of the frame **16** as does the lowest portion of the cutter head. This comparison between the length of the supply tube and cutter head and the guide arms is clearly shown in Figs. 2 and 3. When the upper portion of the frame is placed over a can preparatory to puncturing the can top with the cutter head, the guide arms embrace



the edges of the can before the cutting head contacts the can top. Because the cutter is spaced from the lower ends of the guide arms about the distance that the tube is from the upper ends of the guide arms, it is guided to the proper point on the top of the can to puncture so that the tube will align with the hole punched and have proper access to the inside of the can. In other words, the tube is spaced the same distance from the edge of the can when the frame is completely assembled around a can as the cutter head is puncturing the can top. Having the guide arms curved laterally as described and shown also aids in making sure that the frame is positioned directly over the can with one of the guide arms on each side of the can. The lower ends of the guide arms are provided with means for attaching them to the bottom **32** of the frame. I have used the bayonet lugs **34** on the guide arms and the bayonet slots **36** in the bottom for this purpose. It is a simple matter to connect the frame around a can, therefore, by simply inserting the lugs in the slots and turning the top of the frame slightly with respect to the frame bottom. Between the can top and the oil supply tube and the inside top of the frame is an oil seal designated **38**. This oil seal was intended to be made of solid resilient material that would resist deterioration when in contact with oil. By some human error the first seals that were sent to me by my supplier were made of sponge material instead of solid resilient material. I tried the sponge seals as a matter of curiosity and found that they were very satisfactory. The first seals were tried without making any vent for air to enter the can as the oil was removed. I believed that I would have to make a vent, but it proved unnecessary. Although the sponge seals kept the oil from leaking, they apparently let air enter the can. The only opening in the otherwise sealed can was the opening around the oil supply tube. I have concluded from this series of facts relative to the seal and the lack of any need for a separate air vent hole that the sponge holes were fine enough to prevent oil with its relatively high viscosity from getting through the seal at least during relatively short periods of time, but air could leak through the sponge material when the air pressure in the can became less than atmospheric. The pressure in the can would of course tend to be of a lower than atmospheric pressure, as the oil was pumped from the can. I can provide an air vent automatically, therefore, by using this sponge material seal which I call an air pervious oil seal. My cutting head also is not entirely obvious. It is made larger than the oil supply tube purposely to cut a hole at least slightly larger than the oil supply tube. By making the entrance hole slightly larger than the tube, I allow for minor variations between the position of the hole punched in the can top and the location of the tube when the frame is completely assembled around a can. Also of course this larger hole insures the correct operation of the air pervious oil seal. Any type of spout that is considered desirable may be used, and I have shown a conventional one designated by the number **40**.

While I have described my invention as being primarily one of a pump for canned oil, certain of the elements of my invention could also be of value used with ordinary oil cans. For that reason, in at least some of the claims I refer to the can as a reservoir rather than specifically as an initially sealed can of oil. It is obvious that an empty can could be refilled if necessary and resecured to the frame to be used as a reservoir for the pump. Such a reuse of the old can might be necessary if the only oil available when the oil in the can in the frame became exhausted were bulk oil.

I consider particularly important in my invention the air pervious oil seal; the combination of the frame with an initially sealed can of oil; the use of the guide arms

to position the frame over the can correctly; and various combinations of these elements and other structural details indicated above. It is clear that the canned oil pump shown and explained in the drawings and foregoing specification will accomplish the objects of my invention as set out above. Since the normal use of my invention would not entail attempting to fill a reservoir by pouring oil, much of the opportunity for spilling oil that attends the filling of the usual oil can is eliminated. Obviously no special tools are necessary to assemble the frame around a can. It is also clear to mechanics skilled in the art that it would be inexpensive to construct my frame as compared to fabricating the usual oil can reservoir. In many cases the oil put into oil cans of the usual type is purchased in cans. I take advantage of this fact and use the container in which the oil is purchased as the container or reservoir for my "oil can." Using the container in which the oil is sold as the tank of the oil can has another advantage also. Many of the conventional pump type oil cans that are discarded are "junked" because they have developed leaks. By using the can in which the oil is sold as the reservoir, I provide myself with a brand new reservoir each time the "oil can" is "filled." Having thus set out the structure and benefits of my canned oil pump, I specifically describe my invention in the following claims.

I claim:

1. In combination with an oil pump having an oil supply tube; an oil reservoir having only one opening



therein; means for securing said oil pump to said reservoir with the supply tube of said pump extending through the single opening of said reservoir; and an air pervious oil seal around said oil pump supply tube where it enters said reservoir; whereby said oil pump supply tube and said reservoir are sealed oil tight and said reservoir is vented by said air pervious oil seal.

2. In a new article of manufacture; a frame top; a pump secured to said frame top; an oil supply tube communicating with said pump and extending through said frame top; a cutting head on the lower end of said oil supply tube; an air pervious oil seal around said oil supply tube and adjacent said frame top; said frame top being free of puncturing structure other than said cutting head; and means for securing an initially sealed can of oil, that has been punctured by said cutting head, in close proximity to said frame top; whereby an initially sealed can of oil is secured in oil tight and vented relation to said frame top by said air pervious oil seal.

**References Cited** in the file of this patent

UNITED STATES PATENTS

| | | |
|---|---|---|
| 825,173 | Ansley | July 3, 1906 |
| 1,072,588 | Duncan | Sept. 9, 1913 |
| 2,086,467 | Brayan | July 6, 1937 |
| 2,091,737 | Longway | Aug. 31, 1937 |
| 2,140,257 | Butler | Dec. 13, 1938 |
| 2,660,338 | Dunn | Nov. 24, 1953 |