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LUBRICANT AND FUEL MIXING TANK

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Fig. 1.

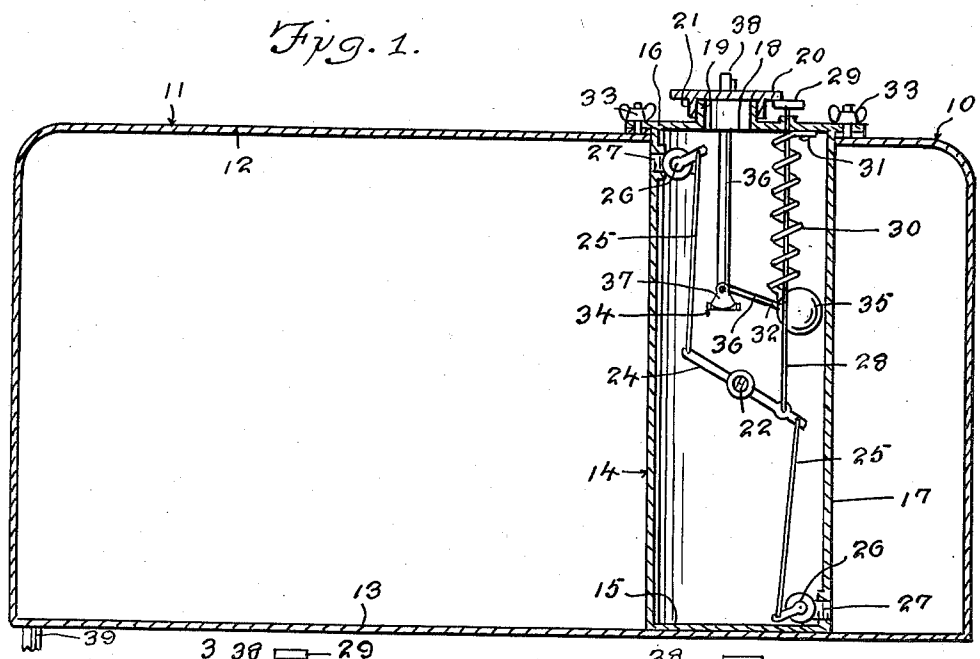


Fig. 2.

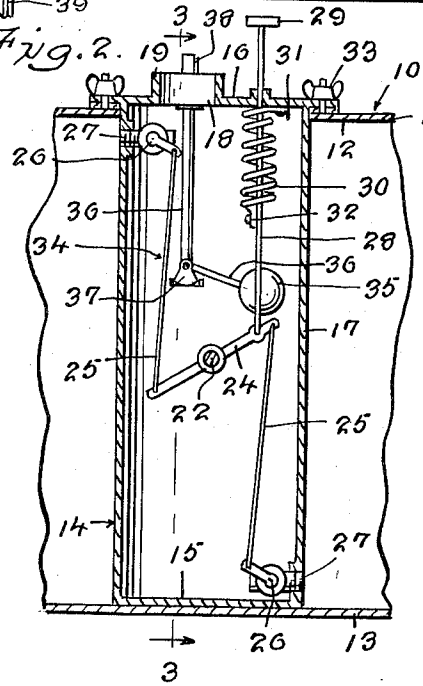
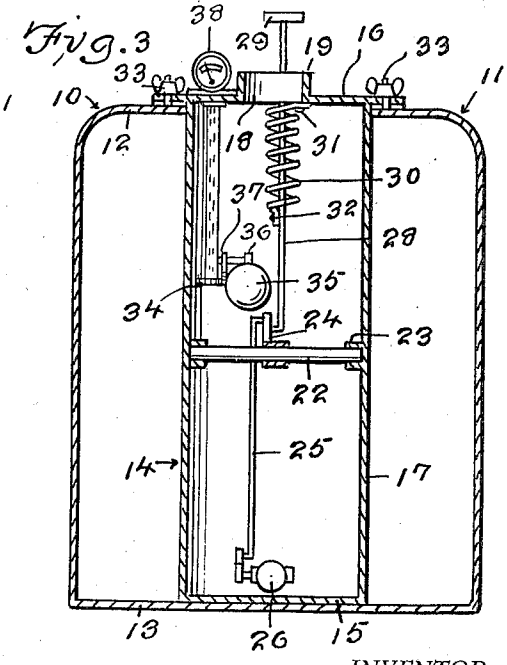


Fig. 3



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LUBRICANT AND FUEL MIXING TANK

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1 Claim. (Cl. 137—576)

This invention relates to a tank for use in mixing a lubricant and a fuel such as gasoline.

The object of the invention is to provide a mixing device which is adapted to be used for accurately mixing together a lubricant and fuel, as for example, when such a mixture is to be used for a two cycle gasoline engine or motor so that the lubricant and fuel can be automatically proportioned.

Another object of the invention is to provide a lubricant and fuel mixing device which includes a tank that has a container arranged therein, there being a valve mechanism for insuring that the lubricant and fuel are mixed in the proper proportions, as for example, when such a mixture is to be used for supplying fuel and lubricant to a gasoline engine such as an outboard motor or engine.

Another object of the invention is to provide a lubricant and fuel mixing tank which is extremely simple and inexpensive to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are used to designate like parts throughout the same.

Figure 1 is a longitudinal sectional view taken through the mixing device of the present invention, and showing the valves in open position.

Figure 2 is a fragmentary sectional view similar to Figure 1, but showing the cap removed and the valves in closed position.

Figure 3 is a sectional view taken on the line 3—3 of Figure 2.

Referring in detail to the drawings, the numeral **10** indicates the mixing device of the present invention which includes a hollow tank **11** that comprises a top wall **12** and a bottom wall **13**. The numeral **14** indicates a hollow container which is positioned in the tank **11**, and the container **14** includes a bottom portion **15** and a top portion **16** and the container **14** further includes an outer wall member **17**.

There is provided in the top portion **16** of the container **14** a filling opening **18**, and extending upwardly from the top portion **16** and surrounding the filling opening **18** is an externally threaded neck **19**. The numeral **20** indicates a cap or closure which includes a threaded collar **21** which is arranged in threaded engagement with the neck **19**.

Positioned within the container **14** is a horizontally disposed bar **22** which has its ends supported in bearing members **23**, Figure 3. The numeral **24** indicates a rocker arm which is mounted on the bar **22**, and a pair of links **25** extend in opposite directions from the rocker arm **24** and are pivotally connected thereto. The other ends of each of the links **25** are connected to valve members **26** which are arranged in engagement with conduit members **27**. The pair of valve members **26** are adapted to operate in unison, as the rocker arm **24** is moved.

A means is provided for moving rocker arm **24** so as to

cause the pair of valve members **26** to operate in unison, and this means comprises a plunger or rod **28** which slidably projects through the top portion **16** of the container **14**, and the rod **28** has its lower end connected to the rocker arm **24**. A handle **29** is mounted on the upper end of the rod **28**, and a spring member **30** is circumposed on the rod **28**, the spring member **30** being positioned within the container **14**. The upper end of the spring member **30** is adapted to be secured in place to the top portion **16** of the container **14** as at **31**, while the lower end of the spring member **30** is anchored to the rod **28** as at **32**. The numeral **33** indicates securing elements such as bolt and nut assemblies or screws which are adapted to be used for connecting the top portion **16** of the container **14** to the upper portion of the tank **11**.

The numeral **34** indicates a gauge mechanism which includes a buoyant body member **35** that has an arm **36** connected thereto, and the arm **36** serves to actuate a gear-rack device **37** which is used for actuating a dial gauge **38**. The numeral **39** indicates the outlet pipe or conduit which is adapted to be used for supplying the mixture of fuel and lubricant to the engine such as the two cycle gasoline engine or motor.

From the foregoing, it is apparent that there has been provided a simple and accurate device whereby lubricant and fuel can be mixed and supplied to an engine such as a two cycle gasoline engine and wherein the lubricant and fuel will be automatically proportioned. As shown in the drawings, there is a remote tank **11** which can be used for supplying fuel and lubricant to an outboard motor or other engine. Arranged within the tank **11** is an inner lubricant container **14** and this container is preferably symmetrical from top to bottom and when the container **14** is full, it will contain the exact amount of lubricant required to give a proper mixture to the fuel in the tank **11** when the tank also is full. The valves **26** provide a connection between the tank **11** and container **14** and these valves **26** are open and closed by means of the plunger **28**. When the plunger **28** is lifted by means of the handle **29**, the valves **26** are closed as shown in Figure 2, and when the plunger **28** is in lowered position as shown in Figure 1, the valves **26** are opened. If the tank **11** is to be filled with fuel, regardless of how much it might contain at the particular time, the cap **20** is opened or removed and the plunger **28** moves upwardly so as to close the valves **26**. Then, the container **14** is filled with the lubricant. Next, the plunger **28** is depressed and the tank is filled with fuel through the opening **18**. The lubricant and fuel will flow into the tank **11** through the conduit members **27**. When the tank **11** is in use, the plunger **28** remains depressed or in lowered position so as to permit a free flow of the mixture through the device. The numeral **38** indicates a dial gauge so that with the valves open, the dial gauge **38** will indicate the level in the main tank also, so as to eliminate the need of additional gauges. The lubricant is first added with the valves closed, and the amount is noted, and then the valves are opened and a similar amount of fuel is added.

With the plunger **28** depressed, the fuel is added and the increase is noted on the gauge. Then, the plunger **28** is lifted so as to close the valves **26**. Then, the lubricant is added until the gauge registers exactly the same increase as it did when the fuel was added and then the plunger is depressed so as to permit the fuel and lubricant to mix.

Thus, it will be seen that there has been provided a device for automatically proportioning lubricant and fuel, as for example, when such a mixture is to be used in a two cycle gasoline motor. The container **14** is preferably a separate unit from the tank **11** as shown in the drawings, and the bolts or screws **33** can be used for connecting or

anchoring the container **14** in place. The plunger **28** has its handle **29** arranged so that it will abut the cap **20** when the parts are in the position of Figure 1 so that when the filler cap **20** is removed, the plunger **28** will be released whereby the spring member **30** can urge the plunger **28** and its associated parts upwardly whereby the valves will be closed until the lubricant is added and the spring member **30** holds the valves closed while the plunger is up. Furthermore, since the handle **29** is under the cap **20**, the plunger will have to stay down and the valves will remain open while in operation.

The above description of the invention is for illustrative purposes only and it is understood that modifications may be made in the construction within the scope and spirit of the following claim.

What is claimed is:

In a lubricant and fuel mixer, a tank including a bottom wall and top wall, an outlet pipe extending from said bottom wall, a container positioned within said tank and including an outer wall member, a bottom portion and a top portion, there being a filling opening in the top portion of said container, a neck extending upwardly from said top portion and surrounding said filling opening, a cap including a collar engaging said neck, means

for removably securing the top portion of said container to the exterior surface of the top wall of said tank, a bar mounted in said container transversely thereof and intermediate the upper and lower ends thereof, a rocker arm mounted on said bar, a pair of links extending in opposite direction from said rocker arm and pivotally connected thereto, conduit members mounted adjacent the upper and lower ends of said container, a valve connected to each of said conduit members, and said links being connected to said valves, a rod extending through the top portion of said container and defining a plunger and said rod having its lower end connected to said rocker arm, a handle on the upper end of said rod for engagement with said cap to maintain said rod in depressed position and said valves in open position, and a spring member circumposed on said rod and positioned within said container.

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