

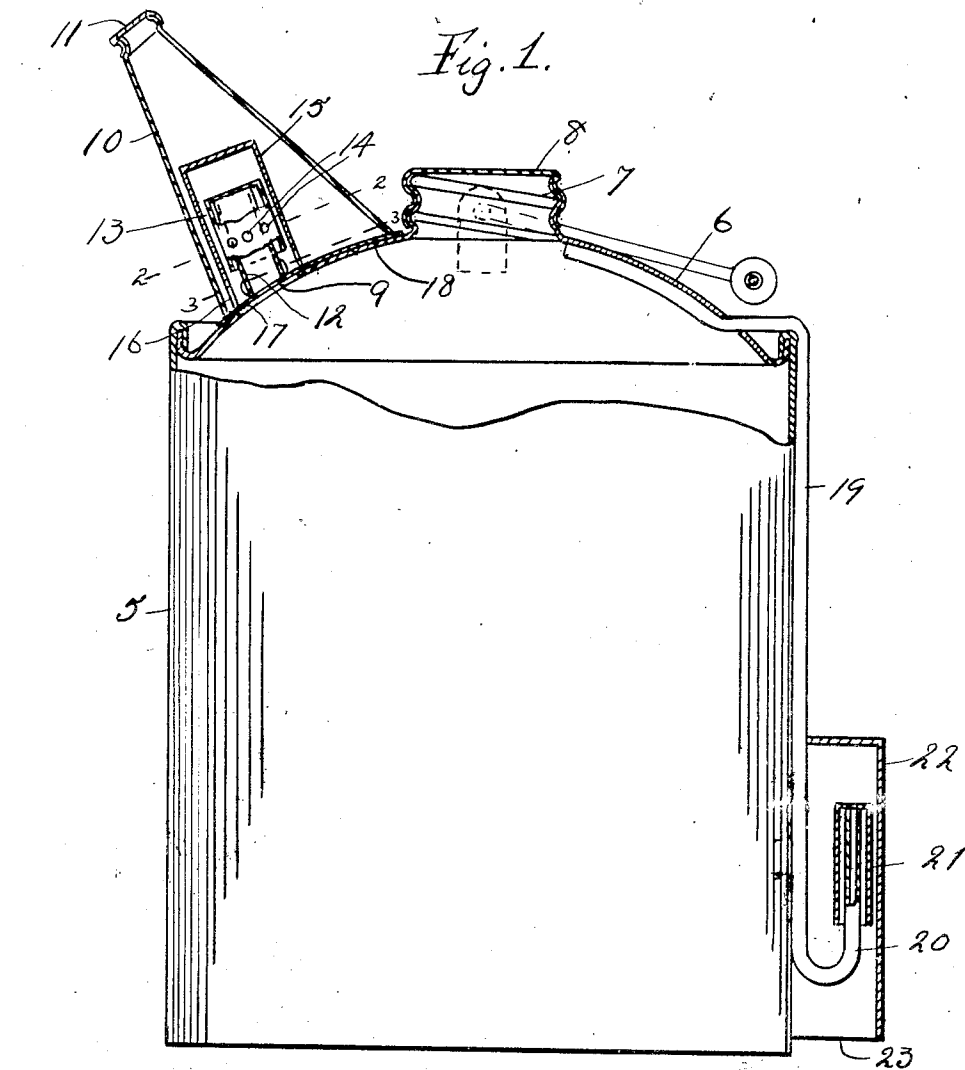
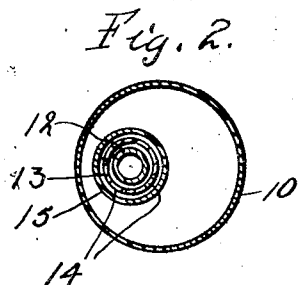
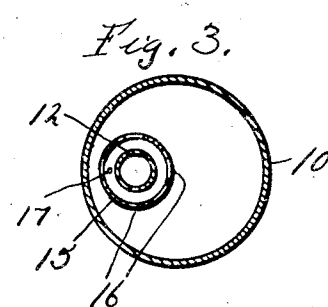
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SAFETY DEVICE FOR OIL CANS

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UNITED STATES PATENT OFFICE

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SAFETY DEVICE FOR OIL CANS

Application filed December 29, 1928. Serial No. 329,299.

My invention relates to new and useful improvements in a safety device for oil cans and has for one of its objects to generally improve the construction of such devices in order to simplify the same and reduce the cost of manufacture, due, primarily, to the fact that the device can be applied to any ordinary oil can in use at the present time.

Another object of the invention is to produce an inexpensive appliance by the use of which "back-firing" or the ignition of the oil will be effectually prevented and which will operate automatically.

Another object of the invention is to provide for automatically feeding air to the can during the time oil is being poured therefrom through the spout.

With these ends in view, this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction in detail, referring by numerals to the accompanying drawings, forming a part of this application, in which:

Fig. 1, is a side elevation of an oil can with my improvement applied thereto and having parts broken away and shown in section to illustrate details of construction.

Fig. 2, is a section on the line 2—2 of Fig. 1.

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

In carrying out my invention as herein embodied, 5 represents any ordinary oil can, the top 6 of which is provided with the usual filling opening 7 normally closed by a cap 8 having threaded connection with the flange forming the filling opening and said top is also provided with an opening 9 as an outlet to a spout.

Where the can is to be remodeled and fitted with my invention, the spout thereof is removed, but where the can is to be manufactured originally with my improvement, the usual spout is eliminated. In either case, the substantially frusto conical spout 10 is connected to the top 6 of the can so that the opening 9 communicates with the interior of said spout and the outer end of said spout, may, if found

desirable, be closed by a screw threaded cap 11.

Within the spout 10 and communicating with the interior of the can through the opening 9 is a discharge tube 12 open from end to end. The outer end of said discharge tube is normally closed by an inverted cup-shaped valve 13 which telescopes on the discharge tube and is free to slide lengthwise thereof within certain limits, as will be presently described, and the end wall of said valve acts as the closure when seated on the outer end of the discharge tube. The side wall of the cup-shaped valve is provided with a number of perforations 14 intermediate its ends and preferably adjacent its inner open end to allow for a fairly free flow of oil from the discharge tube when the valve 13 is unseated by tipping the oil can.

The discharge tube and its valve are enclosed by a casing 15 which is fixed to the top of the can between the discharge tube and the spout and said casing in addition to providing a circuitous passageway through which the oil must flow also acts as a stop to limit the opening movement of the valve 13, and said casing at or near its point of connection with the can is provided with a number of outlet openings 16, the aggregate area of which is substantially equal to that of the outer end opening of the spout. The top 6 of the can is preferably provided with a return or drain aperture 17 within the course of flow of the oil and preferably between the discharge tube and its casing so that any oil left in the passageway between the discharge and the outlet end of the spout will drain back through said aperture into the can. Where the top 6 is of concavo-convex or dome formation, said aperture 17 is formed on the lower side of the discharge tube.

While I have described the foregoing parts of my invention as being secured to the top of the can, they may be made as a unitary structure in which case the spout, casing and discharge tube are all fixed to an attaching plate 18 and this attaching plate is then soldered or otherwise united to the top 6 of the oil can so that said attaching plate

becomes a part of the can top and wherever "top" is referred to, it is intended to cover the attaching plate as well.

In order to provide for the proper outflowing of the oil, an air vent must be furnished, and for this purpose, I have projected one end of a tube 19 through a wall of the can and carried or positioned the upper end thereof adjacent the filling inlet, while the other end is carried down along the outside of the can and then bent back upon itself to form the upstanding tail piece 20 about which it disposed the inverted cup-shaped valve 21 slidably mounted on the tail piece which is adapted to be closed by the end wall of the valve when the latter seats on the end of said tail piece as shown in Fig. 1. The inlet end of the vent pipe 19 is enclosed by a housing 22 secured to a wall of the can in any suitable manner and open at the bottom ends for the admission of air as shown at 23, but the upper or opposite end of said housing is closed and the enclosing or end wall acts as a stop to limit the outward or opening movement of the valve 21, thus preventing the latter from being displaced from the tail piece.

During the operation of the device, when the can is tilted for the purpose of pouring out oil, the valve 13 will slide outward on the discharge tube 12 until it strikes the closed end of the casing 15 where further movement will be stopped but the outer end of the discharge tube 12 will be open. Simultaneously, the valve 21 will slide outward on the tail piece 20 until it strikes the closed end wall of the housing 22 where further movement thereof will be stopped, but the intake end of the vent tube 19 will be open. Oil will now flow through the discharge tube 12 and then through the valve 13 between the walls thereof and the walls of said discharge tube into the casing 15, thence through the openings 16 into the spout and out through the open end thereof and at the same time air flowing through the open end of the housing 22 will pass between the walls of the valve 21 and the tail piece 20, thence through the vent tube and into the can for displacing the oil which flows out.

When the can is returned to or near its normal vertical position to stop the discharge of oil, the valve 13 is seated on the top of the discharge tube by gravity and simultaneously the valve 21 is seated on the upper open end of the tail piece 20 of the vent tube and communication between the interior and exterior of the can is practically cut off and said valves remain seated until the can is again tilted for pouring. Any oil which may have remained in the spout or its component parts at the time the can was returned to the vertical position, will drain back through the aperture 17 into the can.

It will be seen that by my improvement,

backfiring or the ignition of the oil in the can is absolutely prevented, since, if the stream issuing from the spout should become ignited after the can is tilted back toward normal upright position, sufficiently far to cause the stream of oil to be interrupted between the can and a fire on which the holder of the can may be pouring oil, combustion cannot extend beyond the length of the interrupted stream including the small quantity of oil remaining in the spout, the oil within the can being cut off by the valve. The frequent occurrence of fatal accidents due to the use of the ordinary oil can by careless persons in kindling fires and for other purposes, clearly indicates the practical value and importance of an appliance which can be installed without evolving complicated mechanism or large cost and which will operate as an effective safeguard.

Of course I do not wish to be limited to the exact details of construction as herein shown, as these may be varied within the limits of the appended claims without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is:—

1. A safety device for oil cans including an oil can, a discharge tube carried by the can and communicating with the interior thereof, an inverted cup-shaped valve telescoping on the discharge tube, a casing surrounding the discharge tube and its valve and having holes therethrough adjacent its point of connection with the can, a spout connected with the can and surrounding the casing, and means to automatically admit air to the interior of said can.

2. The structure set forth in claim 1 wherein the means to admit air comprises a vent tube having its upper end projected into the can and the lower end positioned on the outside of the can and turned back upon itself to provide a tail piece, an inverted cup-shaped valve telescoping on said tail piece, and a housing carried by the can and surrounding said tail piece and its valve and provided with an opening for the admission of air.

3. In a device of the kind mentioned, an oil can, a frusto conical spout carried thereby, a discharge tube open from end to end and connected with the can within the spout, an inverted cup-shaped valve telescopically mounted on the discharge tube, the end wall of said valve adapted to seat on the outer end of the discharge tube for normally closing the same, said valve having perforations in its side wall, a casing secured to the can and surrounding the discharge tube and its valve and coacting with said valve to limit the unseating movement thereof, said casing having holes forming communications between the interior thereof and the interior of the spout, and said can having a drain

opening within the space between the discharge tube and its casing.

4. The structure set forth in claim 3 in combination with an air vent tube positioned on the outside of the can and having its upper end projecting into said can and terminating adjacent the top thereof, a tail piece formed by bending the lower end of the vent tube upward, an inverted cup-shaped valve telescopically mounted on the tail piece with the end wall of said valve coacting with the end of the tail piece to close the vent tube, and a housing secured to the can and surrounding the tail piece and valve and provided with an opening for the admission of air, a portion of said housing coacting with the valve to act as a stop for limiting the unseating movement of said valve.

In testimony whereof, I have hereunto affixed my signature.

BENEDETTO BUCCIERI.