

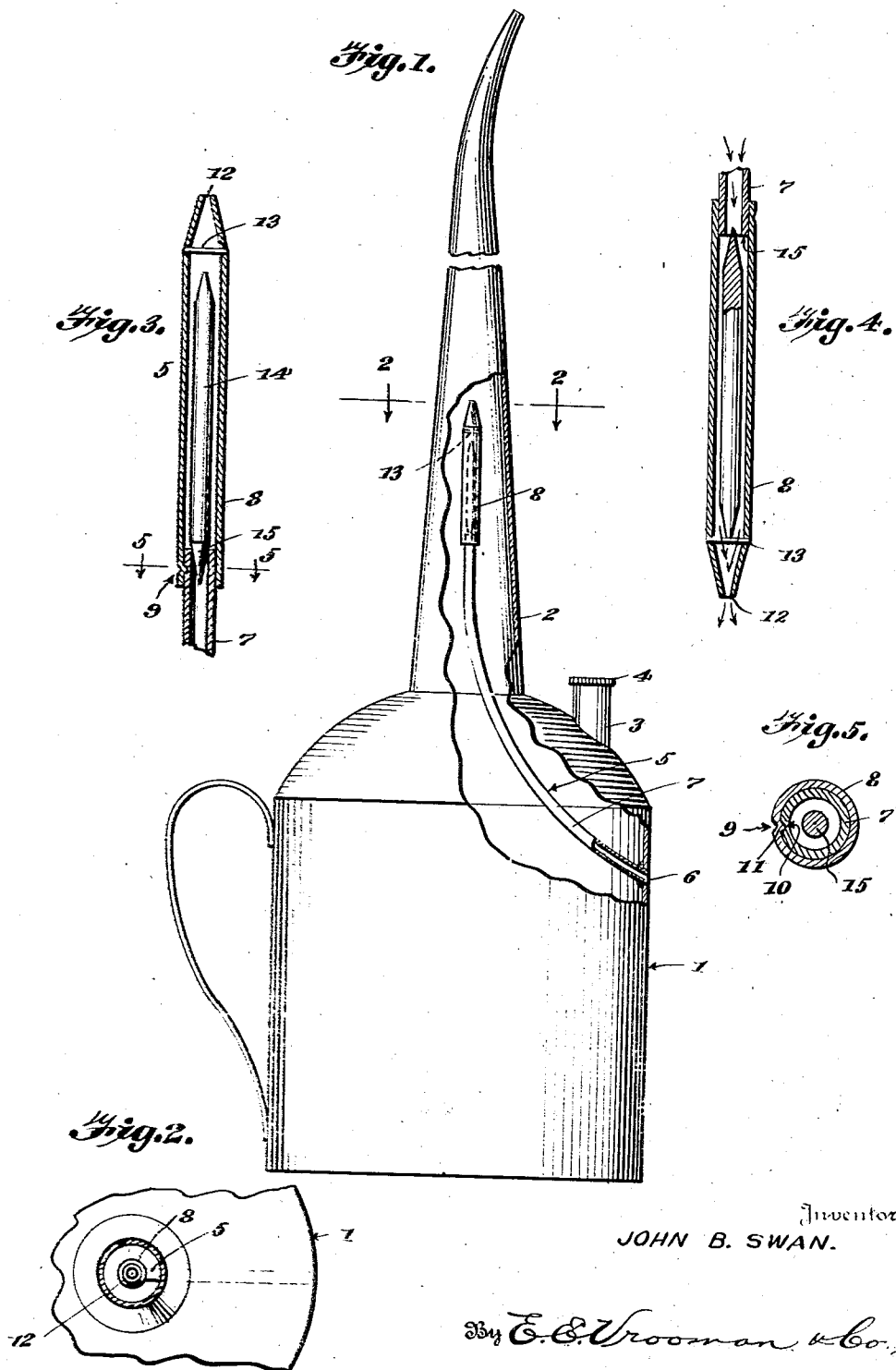
Dec. 7, 1943.

J. B. SWAN

2,336,313

AIR VENT OILER

Filed Nov. 21, 1941



Inventor,
JOHN B. SWAN.

By *E. E. Vrooman & Co.*
Attorneys

UNITED STATES PATENT OFFICE

2,336,313

AIR-VENT OILER

John B. Swan, Gladstone, Mich.

Application November 21, 1941, Serial No. 420,031

5 Claims. (Cl. 221-39)

This invention relates to an air-vent oiler, and the principle of the invention can be applied to all kinds of oil cans.

An object of the invention is the provision of simple novel and efficient means for supplying air to the spout of an oiler whereby the oil will flow freely through the spout when the oiler is in operation.

Another object of the invention is to provide a workable device to prevent back-flow of oil through the air pipe to the outer surface of the can and to eliminate any air vent in the oiler cap, in order to keep the outer surface of the can free from oil.

A still further object of the invention is to provide a workable device for control of oil from the spout by stopping the air supply at point of intake.

Another object of the invention is the provision of novel and efficient valve means as a unitary part of an air tube arranged in the oiler.

A still further object of the invention is the construction of a novel and efficient valve device on the air tube of an oiler, the valve of the device being protected practically completely from contact with the oil, whereby the valve will not stick like an exposed ball valve would do.

With the foregoing and other objects in view, my invention comprises certain novel constructions, combinations, and arrangements of parts as will be hereinafter fully described, illustrated in the accompanying drawing, and more particularly pointed out in the appended claims.

In the drawing:

Figure 1 is a view in elevation of an oiler, showing part broken away for the purpose of disclosing the interior structure of the oiler.

Figure 2 is a sectional view taken on line 2-2, Figure 1 and looking in the direction of the arrows.

Figure 3 is an enlarged vertical sectional view of the upper part of the air tube, showing particularly the valve device thereof.

Figure 4 is a view similar to Figure 3 with the exception that this view shows a valve device in an open or inverted position.

Figure 5 is a sectional view taken on line 5-5, Figure 3 and looking in the direction of the arrows.

Referring to the drawing by numerals, 1 designates the container while 2 is the spout. A filler 3 is provided having a closed cap 4.

In the container 1 and spout 2 is positioned an air tube 5, which communicates at its lower end 6 with the outer atmosphere. This tube is

securely fastened in position upon the container. The air tube 5 comprises the primary section 7 extending up into spout 2, and upon the upper or inner end of section 7 is an enlarged auxiliary section 8. For securing the two sections of the air tube 5 together a novel lock 9 is provided. This lock 9 comprises a socket 10 (Fig. 5) formed in the primary section 7 and a registering detent 11 formed in the auxiliary section 8, whereby the sections are securely fastened together.

The outer end of the auxiliary section 8 is reduced, presenting a small aperture 12 for the air to pass freely through, but affording a relatively small opening for any oil to attempt to enter the auxiliary section 8. A transverse stop pin 13 is placed within the auxiliary section 8 for the purpose hereinafter specified. A solid cylindrical valve 14 is slidably mounted in the auxiliary section 8, this valve being pointed on its ends. The inner pointed end rests upon the valve seat 15 constituted by the inner extreme end of the primary section 7. When the oiler is in its normal position (Figs. 1 and 3) the valve 14 will be resting upon its seat 15, but when the oiler is inverted, for discharging oil, the upper or outer end of the cylindrical valve 14 will be resting against the pin 13 as shown in Figure 4, whereby the outer air will readily pass in the air tube and be discharged out of the end 12 insuring of free flow of oil out of spout 2.

The solid cylindrical valve 14 will immediately seat (Fig. 3) when the oiler is moved to an upright position, thus closing the air tube 5 and retaining what air is in the auxiliary section 8 around it and preventing the oil from flowing into the air tube. Thus it will be seen that by entirely enclosing the valve 14 it will not stick like an exposed ball valve would do, and further the instantaneous seating of the valve on its seat 15 causes an air-seal around the entire valve within its solid casing or section 8, whereby back-flow of oil is prevented at the discharge end 12, which is a decided improvement and of great importance and advantage.

The air vent 5 runs up into the spout 2 above the level of the oil in the can. The spout 2 at such place is considerably larger than the small end of the spout where the oil flows out. When the spout 2 of the can is turned down for the oil to flow out, unless air is admitted into the spout on the can, oil will be prevented from flowing from the end of the spout 2. When the operator desires to use the can, he can turn the spout down and the needle valve 14 slides down through

force of gravity and strikes the bar 13. This allows the valve seat to be opened at 15 and this permits air to flow past said valve seat and around the needle valve and out the spout. As air is thus introduced into the spout the atmospheric pressure in the can is overcome and the oil will flow through from the end of the spout.

Besides relieving the atmospheric pressure the invention will obviate the back flow of oil through the air vent to the outside of the can, which condition obtains with reference to the cans commonly in use. The engineer's gloves soon become saturated with oil and some of the oil is wasted.

Another reason for inserting the air vent into the spout is this: Where the air vent opens merely into the top of the body of the can, oil rushes into the large end of the spout and the action of the air introduced lower down in the can is too slow. The oil being generally fairly heavy, the result has been that the average locomotive engineer cuts a piece off of the smaller end of the spout, so that the oil will flow faster. When this is done, there is a great deal of oil wasted, because the oil flows out at times much faster than is necessary, and there being such a large quantity of oil going out the spout when the can is turned upright, some of the oil runs down on the outside of the spout and down on the body of the can itself.

Still another reason for my novel device is that in the type of oilers in use at present, which, of course, has an air vent, the valve mechanism becomes so loose that oil works out of the body of the can around the valve adjustment device.

To summarize, the air is introduced in the spout through an air vent or intake, so that it will be near to the small end of the spout where the oil goes down, thus affording quicker action. The air is not introduced to mix with the oil, but to relieve the atmospheric condition caused by pouring oil from the can. Further, my novel device places the end of the air vent above the oil level, so that the oil can flow back to the inside of the can when the oiler is not in use, and it stops the flow of oil back through the air outlet to the outside of the can.

Therefore, it will be seen that I have provided a novel and efficient construction which will prevent back-flow of oil through the air tube 5, while at the same time insuring of plenty fresh air being discharged into the spout, resulting in free discharge of oil from the oiler when it is in use. My novel construction also insures of a clean and tidy oiler with no oil leaking onto the outer surface of the container and the spout thereof.

The pin 13 allows of sufficient sliding movement of the valve 14 to insure positive action thereof. The weight of the cylindrical solid valve 14 is sufficient to cause it to promptly seat as in Figure 3 or promptly open as shown in Figure 4, insuring at all times of a free flow of fresh air to the spout when the oiler is in operation.

In those types of oil cans in which they are operated by ordinarily pressing on the bottom thereof, if my invention is applied to such cans, the air supplied thereto will be so positive as to eliminate the necessity of such pressure.

While I have described the preferred embodiment of my invention and illustrated the same in the accompanying drawing, certain minor changes or alterations may appear to one skilled

in the art to which this invention relates during the extensive manufacture of the same and I, therefore, reserve the right to make such alterations or changes as shall fairly fall within the scope of the appended claims.

What I claim is:

1. In an oiler, the combination with a container provided with a spout, of an air tube fastened at its lower end to the side of said container and extending up into said spout, said air tube opening at its lower end upon the outside of said container, and said air tube being provided within the spout with a valve device, said valve device being provided with a reduced discharge end extending in the direction of the discharge end of said spout.

2. In an oiler, the combination with a container provided with a spout, an air tube including a primary and an auxiliary section, said primary section fastened at its lower end to the side of said container and extending up into said spout, said primary section opening at its lower end upon the outside of said container, said auxiliary section entirely within said spout, said primary and auxiliary sections being provided with a lock fixedly securing said sections together, and valve means within said auxiliary section and normally entirely seated on said primary section.

3. In an oiler, the combination with a container provided with a spout, of an air tube comprising a primary and an auxiliary section, said primary section within said container and fastened thereto and extending at its upper end into said spout, said primary section opening at its lower end upon the outside of said container, said auxiliary section entirely within said spout, said primary section being provided with a socket near its upper end, said auxiliary section being provided with a detent near its lower end, said detent seated in said socket, and valve means within said auxiliary section and normally seated on said primary section.

4. In an oiler, the combination with a container provided with a spout, of an air tube comprising a primary and an auxiliary section, said primary section fastened at its lower end to said container, said auxiliary section entirely within said spout, said primary section opening at its lower end upon the outside of said container, said primary section extending into the spout and having its upper end in the lower end of said auxiliary section, said upper end of said primary section constituting a valve seat, a valve within said auxiliary section and normally resting on said valve seat, and a pin extending across said auxiliary section near its upper end for limiting movement of said valve within said auxiliary section.

5. In an oiler, the combination with a container provided with a spout, of a sectional air tube freely mounted within said spout and fastened at its lower end to said container, said air tube opening at its lower end upon the outside of said container, a pin in one of the sections of said air tube, and a movable valve in the section of said air tube provided with said pin, and said valve being adapted to rest upon the end of one of said sections for closing the air tube or resting against said pin when said air tube is in an open position.

JOHN B. SWAN.