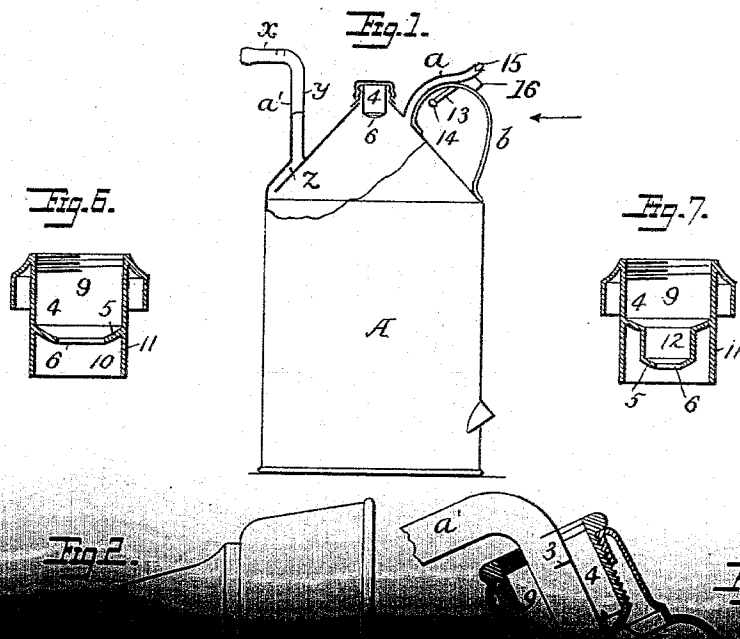


(No Model.)

C. N. TYLER.
CAN.

No. 495,073.

Patented Apr. 11, 1893.



UNITED STATES PATENT OFFICE.

CHARLES N. TYLER, OF BUFFALO, NEW YORK.

CAN.

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To all whom it may concern:

Be it known that I, CHARLES N. TYLER, a citizen of the United States, residing at Buffalo, Erie county, State of New York, have invented certain new and useful Improvements in Cans, of which the following is a specification.

My invention has for its object to improve cans and other vessels which are adapted to be filled from a spouted vessel—whereby the filling may be the more quickly and easily accomplished without danger of spilling any of the liquid being poured from one vessel to the other; and also to render it possible to easily return the liquid from the vessel filled to the spouted filling vessel without danger of waste or spilling.

The invention therefore consists of a certain form of filling tube which may be applied to or made a part of any vessel which it is intended to fill with a liquid from a spouted filling vessel, and it also consists in a certain improvement in the spout of the filling vessel.

These improvements will be described in detail hereinafter, and are illustrated in the accompanying drawings, wherein,

Figure 1 is an elevation of a spouted filling oil can, having my invention applied thereto. Figs. 2 and 3 are sectional views partly in elevation illustrating the process of filling a spring bottom oil can. Fig. 4 is an elevation, partly in section, of a filling can and a lamp having my invention applied thereto, they being shown in the position occupied while filling the lamp. Fig. 5 is an elevation of the same vessels, showing their positions when the oil is being drained from the lamp into the can. Figs. 6 and 7 are vertical sections of filling tubes of somewhat different forms from those shown in the other figures. Fig. 8 is an inverted plan view of a filling tube showing another feature of my invention. Fig. 9 is a view of the stopper and vent tube looking in the direction of the arrow, Fig. 1.

In the drawings A, represents a spouted filling oil can provided with my invention; B a spring bottom oil can, and C a lamp each provided with certain features of the invention.

α is the vent tube of the filling can and α' the pouring spout. This spout is preferably of the shape shown, that is the nozzle end α ex-

tends practically horizontally and is at right angles or substantially so to the portion 3 which rises from the body of the can, and this part in turn rises from another portion z inclined to the port y , and which for convenience lies upon and is secured to the cone shaped top of the can. The spout α' under certain conditions of its use, acts as a siphon, the two parts x and z serving as the legs of the siphon. The end of the nozzle portion x of the spout is flared as at 1, near the end, the immediate end however being by preference drawn in or reduced somewhat in size as shown at 2, these features of construction being best shown in Figs. 2 and 3. The nozzle is thus made substantially bulb shaped so that it may readily pass into and out of the filling orifices to be hereinafter described. A spout of this kind may be made from brass tube the parts 1 and 2 being formed by the process of spinning the metal, or the spout may be made of other material and given the desired shape in any suitable way. Upon the surface of the spout are two or three marks or scratches 3, for a purpose which will be described.

The orifice in each one of the vessels A, B and C, through which it is filled is provided with another feature of the invention which acts in combination with the spout just described. As this part of the invention is the same whether applied to one kind of a vessel or another, I will first confine my description, in detail, to the can A. α^2 is the filling opening arranged, as in ordinary cone hopper cans, at the apex of the top, and adapted to be closed by a screw cap. 4 is a short tube which extends into the can, from the opening α^2 , its lower end being partly closed by a transverse concave plate 5, having a centrally arranged hole 6, through it. This hole should be of less diameter than the tube 4, and about the size of, or a little larger than the enlarged portion 2, of the spout α' . In vessels having vent tubes or openings such as the can A and the lamp C,—where the space around the wick acts as a vent,—the aperture 6, is preferably of such size that only the part 2, of the spout nozzle will pass through it, while in vessels without a vent opening such as the can B, the hole 6, is preferably large enough to allow the portion 1 of the spout to pass through it

into the body of the can. The opening 6 through the plate 5 may be of the irregular shape shown in Fig. 8 that is, having one or more portions 16 which extend outward beyond the general line which bounds the opening, and which portions serve as vents to permit the ingress or egress of air from the interior of the can when the opening 6 is covered by the end of the spout a' . The concave partition plate 5, divides the interior of the can into two chambers of very unequal size the one 10, below the plate being the body of the can which is to be filled, and the other 9, a small overflow chamber in the tube 4, above the plate.

To understand the operation of the invention it will be supposed that the can B, is to be filled from the can A, and reference is made particularly to Figs. 2 and 3. The can B, is first turned into a substantially horizontal position and the filling opening thereof passed over the spout a' , until the edge 7, of this opening comes opposite the first scratch mark 3, from the end of the spout. The parts are then in the position shown in Fig. 2, that is, the enlarged portion 1, of the spout is situated in the hole 6, practically filling the same and closing the opening from the interior of the can B, except through the can A. The cans are now turned so that oil will flow from the can A, into the can B, and the can B, is moved so that the edge 7, of its filling opening will come opposite the second scratch mark 3, when the parts will occupy the positions shown in Fig. 3, the enlarged portion of the spout being within the can B, and there being a space 8, around the spout between it and the plate 5. Through this space the air freely passes as indicated by the arrows, and the can may be rapidly filled until the liquid reaches the plate 5, when the liquid covering the opening 6, the flow momentarily ceases, and a sound—as of a slight concussion, is heard. The can should now be quickly returned to a position intermediate between that shown in Figs. 2 and 3 and then separated. When in this position all liquid in the chamber 9, above the partition plate 5, will be siphoned back into the can A, and when separated the can B, will be found to be full to the plate 5, and that no liquid has been spilled or run over upon the outside of either can. As the nozzle tapers gradually backward from the enlarged portion 1 and the latter closes the opening 6, practically air-tight it will be seen that a graduated flow can be secured by adjusting the nozzle can B, between the two positions shown in Figs. 2 and 3.

The can B, can be easily emptied into the can A, by means of this invention without danger of spilling or wasting any liquid. To do this the filling opening of the can B, is slipped over the spout a' , until they occupy the position shown in Fig. 2 or any intermediate position between that and the positions shown in Fig. 3. If now the can B, be elevated higher than the end of the spout the

liquid will flow from the can B, through the spout into the can A, the spout acting as a siphon and the air rushing in to displace the oil in the can B, through the annular space 8. This inrushing current of air effectively prevents the liquid from escaping from the body of the can into the chamber 9, and hence there is no waste or over-running.

In pouring into and from vessels having vent openings other than the filling openings the operation is practically the same as that just described, the difference being that the air passing into or out from the filled vessel through such vent opening instead of through the filling orifice,—and this further difference that in such cases it is preferable to have opening 6, of such size that only the portion 2, of the nozzle can pass through it, as an annular vent opening 8, around the nozzle is not then required.

In some cases, particularly upon lamps, it is desirable to extend the tube 4, below the plate 5, as shown at 11, in Figs. 6 and 7. When a filling device of this construction is used and the vessel is filled until the liquid reaches the lower edge of the tube the air which is confined between under face of the plate 5, the inside of the tube 4 and the surface of the liquid is forced up through the opening 6, and this will cause a bubbling sound which will act as an alarm giving notice that the vessel is filled to the proper height.

In Fig. 7, in addition to the overflow chamber 9, there is a lower and smaller one 12, of less diameter being about the size of the spout nozzle, and having the opening 6, in its lower end. The chamber 12, is formed by a tubular extension of the diaphragm 5. This construction forms a sort of socket or receptacle 12, for the end of the nozzle by which it is held against slipping away from the opening 6, particularly when a liquid is being poured from the vessel having this tubular filling device back into the filling can. It is used upon lamps of large size.

While I have thus far only described a certain novel construction as being adapted to be used in combination with the filling tube having a partially closed bottom, yet it will be evident that the invention may be worked even with an ordinary filling spout such as are in common use upon filling oil cans, though of course such a spout lacks many of the advantages which have been pointed out as incident to a spout constructed as hereinbefore specifically described.

The filling tube need not be a separable part added to the can, but may be formed by the neck or short tube frequently formed on cans and other vessels surrounding the openings thereto.

13 is a stopper or plug adapted to close the open end of the vent tube a . It consists of a stem passing loosely through an aperture in the handle b , of the can and having one end enlarged as at 14, to prevent accidental withdrawal of the stem, and the other end hooked

as at 15, so that it may be inserted into the open end of the vent tube.

16 is a socket situated between the vent tube *a*, and the handle *b*, and adapted to receive the hooked end 15, of the stem and hold it when the stopper is removed from the end of the vent tube, as shown in Fig. 4.

Without limiting myself to the precise construction and arrangement of parts shown and described, I claim—

1. A can or similar vessel provided with a filling tube extending into the vessel, such tube having a transverse partition plate with a tubular extension forming chambers 9 and 12, the smaller one having an opening into the can, substantially as set forth.

2. A can having a vent tube in combination with a stopper or plug therefor, consisting of

a hooked stem; loosely mounted in some part of the can adjacent to the vent tube, substantially as set forth.

3. A can having a vent tube in combination with a stopper or plug therefor, consisting of a hooked stem, loosely mounted in some part of the can adjacent to the vent tube, and a socket adapted to receive the hooked end of the stopper or plug when it is removed from the vent tube, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES N. TYLER.

Witnesses:

JAMES SANGSTER,
A. C. TYLER.