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A. T. C. HALE

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SPOUT FOR OIL DRUMS, CANS, FIRE EXTINGUISHERS, AND THE LIKE

Filed March 18, 1931

FIG. 1.

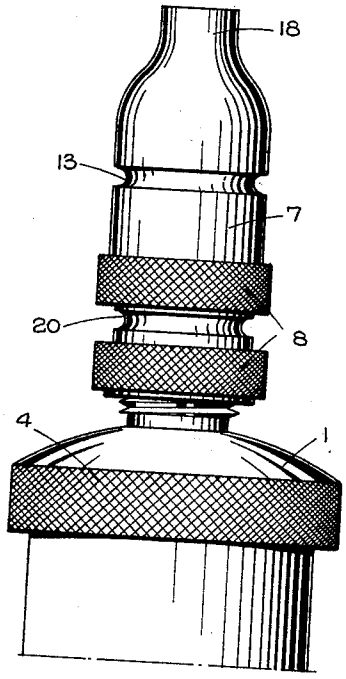


FIG. 2.

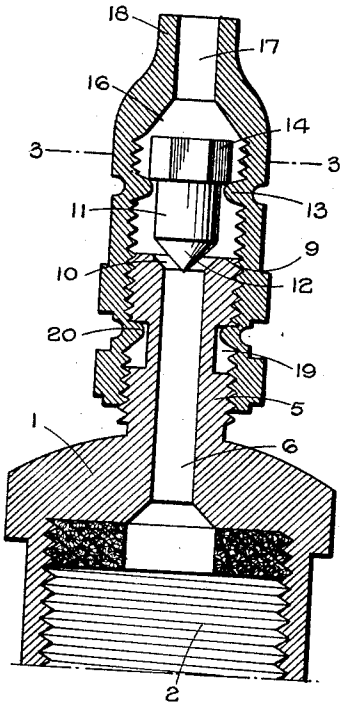
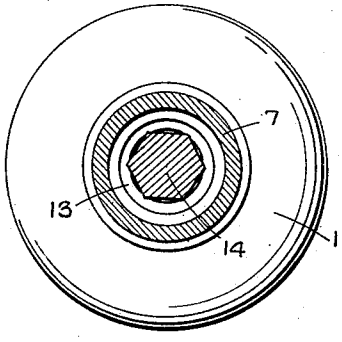


FIG. 3.



Inventor:
Alfred T. C. Hale
by Richard E. Babcock
Attorney

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UNITED STATES PATENT OFFICE

ALFRED THOMAS CORBYN HALE, OF BIRMINGHAM, ENGLAND, ASSIGNOR OF ONE-HALF TO A. G. PARKER & COMPANY LIMITED, OF BIRMINGHAM, ENGLAND, A COMPANY OF GREAT BRITAIN

SPOUT FOR OIL DRUMS, CANS, FIRE EXTINGUISHERS, AND THE LIKE

Application filed March 18, 1931, Serial No. 523,613, and in Great Britain December 2, 1930.

This invention relates to improvements in spouts for drums, cans, fire extinguishers or other containers for oil or liquid and refers more particularly to pouring spouts for heavy oil such as for instance engine oils and heavy fuel oil.

With oils of this type or other liquids where the flow is sluggish and the rate of flow relatively slow owing to the viscosity of the oil, it is desirable to have means whereby the flow may be positively cut off near to the end of the spout in order to reduce delay caused by draining the heavy oil from the body of the spout.

It is therefore one of the objects of the present invention to provide an improved spout having a positively operated lift valve located in said spout and near the end thereof.

According to one feature of my invention I provide a spout for drums, cans or other containers for oil comprising a nozzle adapted to screw on to an attachment member integral with or fixed to said container and a lift valve enclosed in said nozzle and adapted to close the oil passage through said attachment member, said valve being moved positively, to open or close said passage, by rotating said nozzle on said attachment member.

According to a further feature, the spout comprises an attachment member by means of which said spout is attached to said container, a nozzle rotatable on said attachment member, a lift valve enclosed in said nozzle and adapted to close the oil passage through said attachment member, said valve being moved positively to open or close said passage by means of portions on said nozzle engaging said valve.

A further object of my invention is to provide means for preventing the removal of said nozzle from said attachment member.

According to a still further feature the nozzle is provided with one or more pressed in portions which are adapted to work in an annular channel on said attachment member whereby said nozzle can be rotated on said attachment member but is prevented from being screwed from said member.

According to a still further feature the attachment member is provided or formed with a seat with which said lift valve is adapted to engage for closing the oil passage through said attachment member.

The valve may have a conical or part conical or other suitably shaped portion engaging a correspondingly shaped seat on said attachment member.

According to a still further feature of my invention the nozzle is provided with one or more projections or portions engaging a shoulder or head on said valve for raising and/or lowering same.

One of these projections may be in the form of an annular cannelure pressed in the body of said nozzle after said valve has been inserted therein and adapted to raise said valve from its seat for opening the oil passage.

The head or shoulder on the valve may be of hexagonal or other noncircular form which can be engaged by said cannelure without closing the passage of oil between them.

A further projection or portion may be provided on or in said nozzle adapted to engage the head, on the opposite side to that engaged by said cannelure, for closing said oil passage when desired.

Referring to the drawings:—

Figure 1 shows an outside side elevation of a preferred form of spout constructed in accordance with this invention.

Figure 2 shows a longitudinal section of same.

Figure 3 shows a plan view taken on the line 3, 3, of Figure 2.

In the prefered construction illustrated by the accompanying drawings the spout comprises an attachment member 1 having an internally screw threaded portion 2 by means of which the attachment member and the spout are fixed to the drum or other oil container, a washer 3 of cork or other suitable material being inserted in this screw threaded portion to form a liquid tight joint between the attachment member and the drum.

This attachment member is conveniently of cylindrical form and is provided with a knurled portion 4 to facilitate the attachment to the container or instead of this portion a hexagonal or other noncircular por-

tion may be provided so that the spout may be fixed to the container by means of a suitable tool.

The attachment member is also provided with a screw threaded extension 5 through which passes the oil passage 6, a nozzle or spout 7 being internally screw threaded and adapted to screw on the threaded portion 5 of the attachment member.

This nozzle may be of any convenient form or length and is provided with one or more knurled portions 8 by means of which the nozzle may be rotated on the threaded portion 5 of the attachment member.

In the end 9 of the threaded shank 5 a valve seat 10 is formed, this being of part conical form and a lift valve 11 is provided in the nozzle, this valve having a conical portion 12 adapted to engage the part conical seat 10.

This portion 12 may be of any other convenient shape and may be part circular in cross section, the seat 10 on the attachment member being shaped to correspond.

The valve 11 is moved on to or from the seat 10 by means of projections on the nozzle so that when the nozzle is rotated on the threaded shank 5 the valve is raised or lowered from or on to its seat.

One of these projections comprises an annular cannelure 13 pressed in the body of the nozzle after the valve has been inserted therein and this cannelure is adapted to engage a shoulder or head 14 on the body of the valve.

The head or shoulder is of hexagonal shape as shown in Figure 3 so that although the cannelure can engage the corners of the head or shoulder for raising the valve, the oil passage is not closed as the oil can pass through the spaces left between the cannelure and the flats on the head.

The head or shoulder 14 is shown of hexagonal form but may be of any other non-circular form in cross section so that spaces are left between the flats of the head and the cannelure 13.

For closing the oil passage after the valve has been raised from the seat 10, the nozzle is formed with a portion of reduced internal diameter as shown at 16 so that when the nozzle is rotated in the direction opposite to that in which it is rotated for raising the valve from its seat this portion 16 engages the head or shoulder 14 at the opposite side to that engaged by the cannelure 13 and the valve is moved downwardly into engagement with the seat 10 to close the oil passage from the container.

The portion 16 leads to the outlet passage 17 and the end of the nozzle may be of reduced diameter as at 18 to conform to the internal shape of the nozzle.

In order to prevent the nozzle being screwed entirely from the threaded shank 5 an annular channel 19 is formed in the shank 5 and projections or a cannelure 20 are pressed in the body of the valve to work in this channel 19 so that although the nozzle can be rotated on the threaded shank 5 it cannot be removed entirely therefrom owing to the projection or cannelure engaging the end of the channel 19.

This pressed in portion is conveniently formed between the knurled portions 8 on the nozzle.

Instead of pressing a cannelure round the entire periphery of the nozzle, one or more projections may be pressed into the body of the nozzle after it has been screwed into position on the attachment member, these projections then forming the equivalent of the cannelure 20.

Similarly projections may be pressed in the body of the nozzle near the upper end thereof to replace the cannelure 13 or the portion 16 of reduced diameter so that the lift valve can be moved in one or both directions by means of these projections when the nozzle is rotated on the threaded shank 5.

I claim:—

1. A spout for liquid containers having in combination an extension having a liquid passage through which the liquid passes from the container, a nozzle rotatably mounted on said extension, a lift valve contained in said nozzle and portions within said nozzle body for moving said valve positively to open or close the passage through said extension when said nozzle is rotated thereon.

2. A spout for liquid containers having in combination an attachment member adapted to be fixed to the container, said attachment member having a liquid passage therethrough, a nozzle rotatably mounted on said attachment member, a lift valve contained in said nozzle and portions within said nozzle body for moving said valve positively to open and close the passage through said attachment member, when said nozzle is rotated thereon.

3. A spout for liquid containers having in combination an attachment member adapted to be fixed to the container, said attachment member having a liquid passage therethrough and a valve seat formed round the delivery end of said liquid passage, a nozzle rotatably mounted on said attachment member, a lift valve contained in said nozzle, a portion of said valve being adapted to be engaged with said valve seat and portions within said nozzle body for moving said valve positively to open and close the passage through said attachment member, when said nozzle is rotated thereon.

4. A spout for liquid containers having in combination an attachment member adapted to be fixed to the container, said attachment member having a liquid passage therethrough and a valve seat formed round the delivery end of said liquid passage, a nozzle rotatably mounted on said attachment mem-

ber, a lift valve contained in said nozzle, a portion of said valve being adapted to be engaged with said valve seat, a shoulder on said valve and internal projections on said nozzle, said valve being moved positively to open and close the passage through said attachment member, when said nozzle is rotated thereon, by the engagement of said projections with said shoulder.

5. A spout for liquid containers having in combination an attachment member adapted to be fixed to the container, said attachment member having a liquid passage therethrough and a valve seat formed round the delivery end of said liquid passage, a nozzle rotatably mounted on said attachment member, a lift valve contained in said nozzle, a portion of said valve being adapted to be engaged with said valve seat, a head on said valve and internal projections on said nozzle on each side of said head, said valve being moved positively to open and close the passage through said attachment member when said nozzle is rotated thereon by engagement of said projections with said head.

6. A spout for liquid containers having in combination an attachment member adapted to be fixed to the container, said attachment member having a liquid passage therethrough and a valve seat formed round the delivery end of said liquid passage, a nozzle rotatably mounted on said attachment member, a lift valve contained in said nozzle, a portion of said valve being adapted to be engaged with said valve seat, a head on said valve, said head being of noncircular cross section and internal projections on said nozzle on each side of said head, the projection on said nozzle adapted to raise said valve from said seat being pressed into the body of said nozzle after said valve has been inserted therein, said valve being moved positively to open and close the passage through said attachment member when said nozzle is rotated thereon by the engagement of said projections with said head.

7. A spout for liquid containers having in combination an attachment member adapted to be fixed to the container, said attachment member having a liquid passage therethrough and a valve seat formed round the delivery end of said liquid passage, a nozzle rotatably mounted on said attachment member, a lift valve contained in said nozzle, a portion of said valve being adapted to be engaged with said valve seat, a head on said valve, said head being of noncircular cross section and internal projections on said nozzle on each side of said head, the projections on said nozzle adapted to raise said valve from said seat being pressed into the body of said nozzle after said valve has been inserted therein and being in the form of an annular cannelure, said valve being moved positively to open and close the passage through said attachment member when said nozzle is rotated thereon by the engagement of said projections with said head.

8. A spout for liquid containers having in combination an attachment member adapted to be fixed to the container, said attachment member having a liquid passage therethrough, a nozzle rotatably mounted on said attachment member, a lift valve contained in said nozzle, a shoulder on said valve, and internal projections on said nozzle, said valve being moved positively to open and close the passage through said attachment member when said nozzle is rotated thereon by the engagement of said projections with said shoulder, and means for preventing the removal of said nozzle from said attachment member while permitting relative movement therebetween.

9. A spout for liquid containers having in combination an attachment member adapted to be fixed to the container, said attachment member having a liquid passage therethrough, a nozzle rotatably mounted on said attachment member, a lift valve contained in said nozzle, a shoulder on said valve, and internal projections on said nozzle, said valve being moved positively to open and close the passage through said attachment member when said nozzle is rotated thereon by the engagement of said projections with said shoulder, and a pressed in projection on said nozzle being adapted to work in a channel in said attachment member for preventing the removal of said nozzle from said attachment member while permitting relative movement therebetween.

10. A spout for liquid containers having in combination an attachment member adapted to be fixed to the container, said attachment member having a liquid passage therethrough, a nozzle rotatably mounted on said attachment member, a lift valve contained in said nozzle, a shoulder on said valve and internal projections on said nozzle, said valve being moved positively to open and close the passage through said attachment member when said nozzle is rotated thereon by the engagement of said projections with said shoulder and an annular cannelure pressed into said nozzle and adapted to work in a channel in said attachment member for preventing the removal of said nozzle from said attachment member while permitting relative movement therebetween, said cannelure engaging the sides of said channel to form a liquid tight joint between said nozzle and said attachment member.

11. A spout for liquid containers having in combination an attachment member adapted to be fixed to the container, said attachment member having a liquid passage therethrough, a nozzle rotatably mounted on said attachment member, a lift valve contained in said nozzle, a head on said valve and in-

ternal projections on said nozzle on each side of said head, said valve being moved positively to open and close the passage through said attachment member when said nozzle is rotated thereon by the engagement of said projections with said head and an annular cannelure pressed into said nozzle and adapted to work in a channel in said attachment member for preventing the removal of said nozzle from said attachment member while permitting relative movement therebetween, said cannelure engaging the sides of said channel to form a liquid tight joint between said nozzle and said attachment member.

In witness whereof I affix my signature.

ALFRED THOMAS CORBYN HALE.