

April 3, 1956

M. B. CYRUS

2,740,280

CIGARETTE LIGHTER FILLER VALVE

Filed March 12, 1954

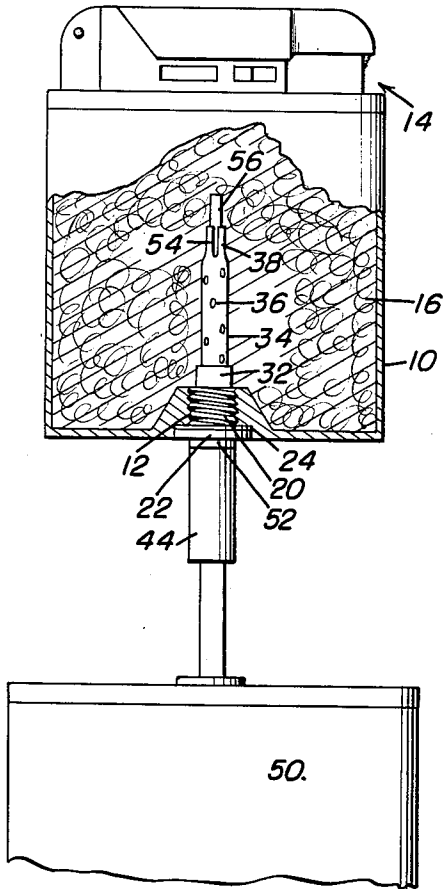


Fig. 1

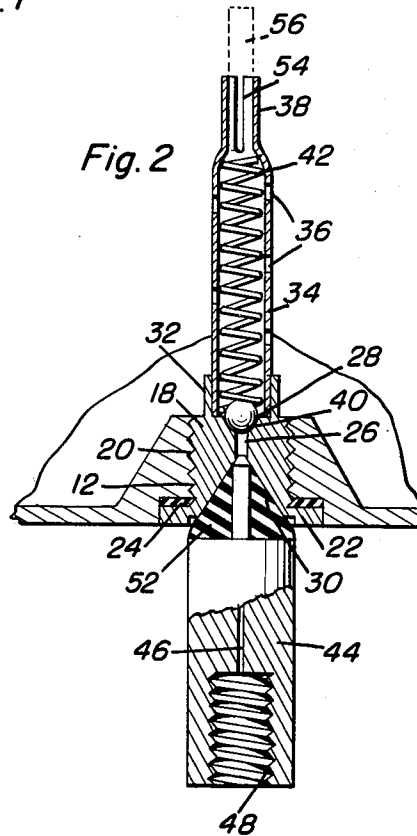


Fig. 2

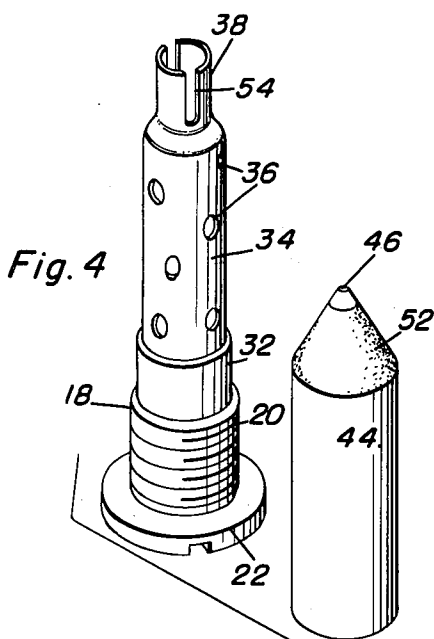


Fig. 4

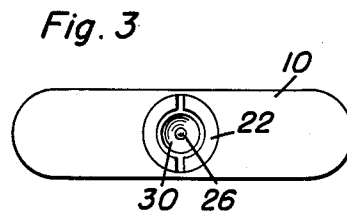


Fig. 3

Merle B. Cyrus
INVENTOR.

BY *Chance A. O'Brien*
and *Harvey E. Jacobson*
Attorneys

1

2,740,280

CIGARETTE LIGHTER FILLER VALVE

Merle B. Cyrus, Scio, Oreg.

Application March 12, 1954, Serial No. 415,938

2 Claims. (Cl. 67—7.1)

This invention relates to a cigarette lighter filler valve and more particularly to an attachment for a cigarette lighter whereby the packing in the lighter may be saturated with fluid in a convenient manner.

Another object of this invention is to provide a cigarette lighter filler valve having a check valve therein normally urged to its closed position for restricting the flow of fluid from the lighter and which valve is urged to an open position by the pressure of fluid from a container.

Another object of this invention is to provide a cigarette lighter filler valve for attachment to cigarette lighters which includes novel means for retaining a spare flint in the lighter.

A further object is to provide a cigarette lighter filler valve having a fluid receiving opening countersunk at its entrance and a nozzle for engagement with the countersunk portion for attachment on the container to reduce to a minimum the fluid wasted during the filling of a lighter.

A yet further object of this invention is to provide a cigarette lighter filler valve which is simple and practical in construction, strong and reliable in use, small and compact in structure and otherwise well adapted for the purposes for which the same is intended.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a side elevational view partly in section showing a cigarette lighter with the improved filler valve mounted thereon and with a container connected thereto for supplying fluid to the lighter;

Figure 2 is an enlarged sectional view of the cigarette lighter filler valve forming the subject of this invention;

Figure 3 is a bottom plan view of a cigarette lighter having the improved cigarette lighter filler valve mounted thereon; and,

Figure 4 is an enlarged perspective view of the cigarette lighter filler valve and the nozzle for attachment to a container made in accordance with this invention.

Referring now particularly to the accompanying drawings, there is disclosed a conventional cigarette lighter 10 having an internally threaded filler port 12. The cigarette lighter 10 is provided with the usual mechanism 14 for igniting a wick. The cigarette lighter 10 is also provided with the conventional packing 16 which is adapted to be saturated with fluid for conveying the same to the wick of the lighter.

The cigarette lighter filler valve forming the subject of this invention includes a plug 18 which is externally threaded as at 20. The plug 18 is provided with a radially extending flange 22 at one end thereof which is adapted to engage the bottom of the cigarette lighter 10. A suitable gasket 24 may be disposed on the plug 18 in engagement with the flange 22 for providing a seal between the flange 22 and the bottom of the lighter 10.

2

The plug 18 is provided with a longitudinally extending bore 26. Conical recesses 28 and 30 are provided in the opposite faces of the plug 18 and intersect the bore 26. The conical recess 28 is adapted to be disposed interiorly of the lighter 10 and the conical recess 30 is adapted to be disposed exteriorly of the lighter 10.

The inner end of plug 18 is provided with a longitudinally extending sleeve 32 which is concentric with the bore 26. Received within the sleeve 32 is a cage 34 which extends inwardly into the lighter 10. The cage 34 is provided with a plurality of apertures 36 in the side walls thereof. The inner end of cage 34 is provided with a hollow extension 38 of reduced diameter in comparison to the main body of the cage 34.

A check valve comprising a ball 40 is adapted to be seated in the conical recess 28. A coil spring 42 is disposed within the cage 34 and engages the ball 40 at one end and the junction of the extension 38 with the main body 34 of the cage forms an abutment for the other end of the spring 42. Thus, the spring will resiliently urge the ball 40 into sealing engagement with the bore 26. When fluid is forced through the bore 26 the pressure thereof will unseat the ball 40 allowing the fluid to flow into the cage 34 and through the apertures 36 into the packing 16.

In order to prevent the loss of fluid when transferring the fluid from a container to the lighter a special nozzle is provided for seating within the conical recess 30. The nozzle is formed of a body 44 having a longitudinally extending bore 46 therein. One end of the body 44 is provided with an enlarged aperture which is internally threaded as at 48. This aperture is adapted to receive the nozzle of a container 50 of suitable lighter fluid. The other end of the nozzle is provided with a tapered face complementary to the conical recess 30. The portion of body 44 having the tapered face thereon is preferably formed of an insert 52 of flexible material. Thus when the nozzle is inserted in the conical recess 30 the flexible material will form a seal with the conical recess 30 preventing the loss of fluid.

If desired, the entire body 44 can be formed of the resilient material. The nozzle of the container 50 may be applied to the conical recess 30. The extension 38 is provided with elongated slots 54 extending from the free end thereof. This will render the extension 38 resilient so as to frictionally retain spare flints 56 therein for storage purposes.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed as new is as follows:

1. An integral detachable lighter filler valve assembly for use with a lighter having an internally threaded filling port in communication with a fuel compartment containing a fluid absorbing material, said valve assembly including a plug element including on opposite sides thereof conical recesses intersecting and in communication with a longitudinal bore, an annular flange portion extending from one of the sides of the plug surrounding one of said conical recesses for sealing engagement with the lighter, said one recess providing a readily available filling opening, said other conical recess defining a valve seat for a ball check element, a longitudinally extending sleeve, concentrically disposed about said other conical recess, an elongated cage element for extending into said lighter and fluid absorbing material contained therein being se-

cured to said sleeve at one end and including a reduced diameter flange portion at the other end, a plurality of longitudinally disposed apertures extending substantially along the length of said cage for distributing fuel there-through, a ball check engageable in said other conical recess, a compression spring interposed in said cage between said ball check and said reduced diameter flange portion of said cage, and means adapted to sealingly engage said one conical recess for applying fuel under pressure against said ball check for permitting longitudinally pressure distribution of fuel through the lighter when in an upright position whereby release of said pressure permits ready sealing of the ball check in said other conical recess, said cage element including at the reduced diameter portion an annular sleeve having portions defining a plurality of longitudinal slots for resiliently and frictionally engaging spare flints retained therein.

2. A lighter filler valve as set forth in claim 1 wherein said means adapted to sealingly engage said one conical

recess includes a nozzle element having a longitudinal bore extending therethrough, and including on one end a conical tip conforming to the configuration of said one conical recess for sealing engagement therein.

References Cited in the file of this patent

UNITED STATES PATENTS

881,241	Hubbard	Mar. 10, 1908
1,632,987	Zerk	June 21, 1927
1,775,423	Donovan	Sept. 9, 1930
1,786,723	Stein	Dec. 30, 1930
2,554,658	Bolsey	May 29, 1951
2,643,535	Strumhas	June 30, 1953

FOREIGN PATENTS

371,713	Germany	Mar. 17, 1923
677,327	Great Britain	Aug. 13, 1952