April 3, 1956 M. B. CYRUS 2,740,280

CIGARETTE LIGHTER FILLER VALVE

Filed March 12, 1954

Fig. 1

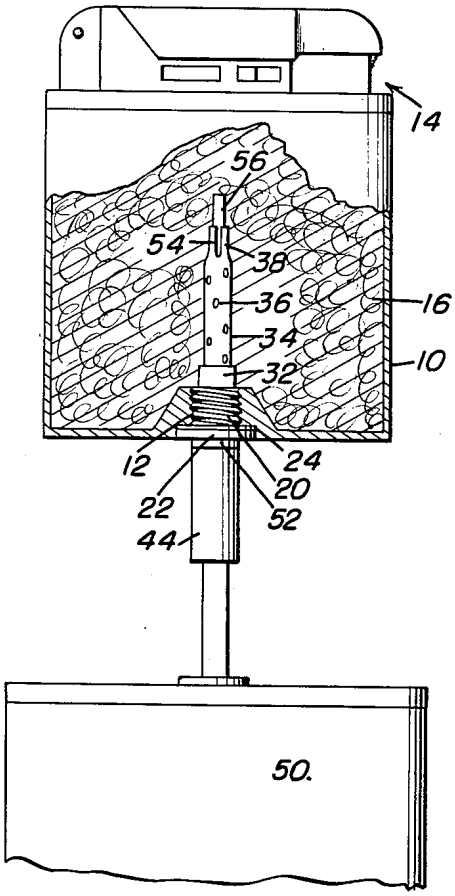


Fig. 2

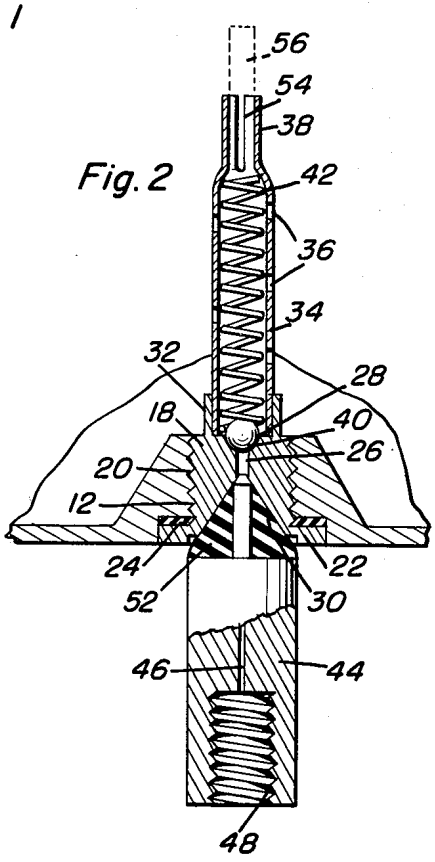


Fig. 4

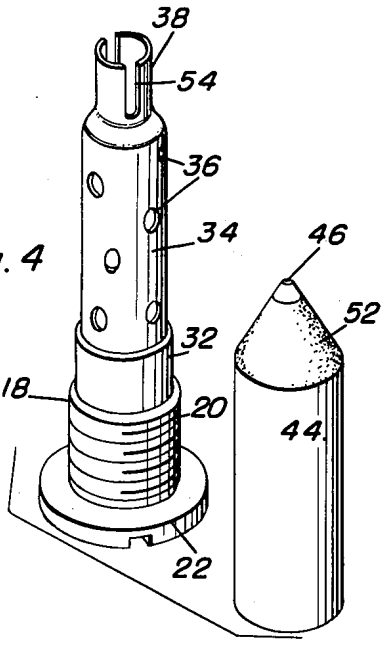
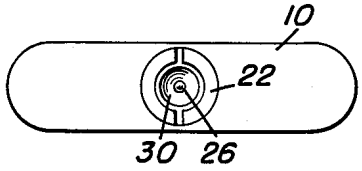


Fig. 3



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United States Patent Office 2,740,280 Patented Apr. 3, 1956

2,740,280

CIGARETTE LIGHTER FILLER VALVE

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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**.

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 complemental 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 therethrough, 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.

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