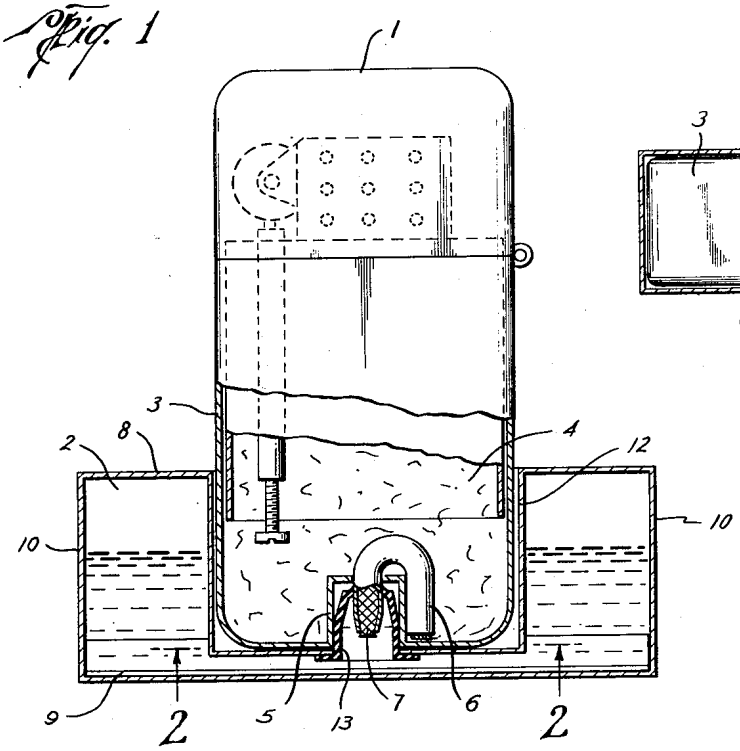
Feb. 8, 1955 G. L. DAVIS 2,701,673

METHOD AND MEANS FOR FILLING CIGARETTE LIGHTERS

Filed Dec. 22, 1952

Fig. 1



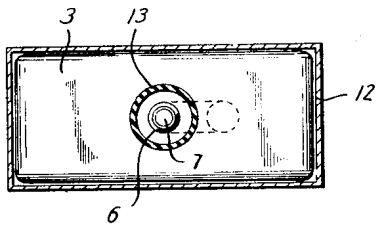


Fig. 2

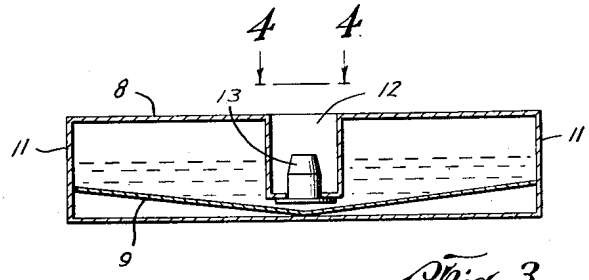


Fig. 3

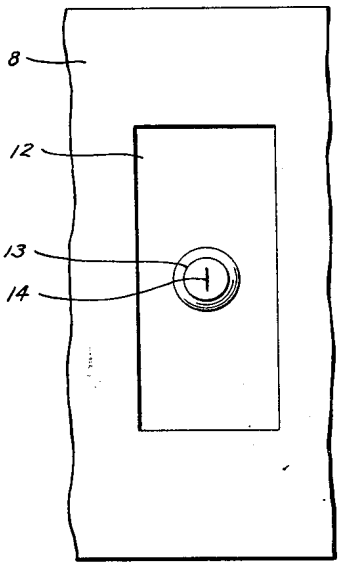


Fig. 4

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United States Patent Office 2,701,673 Patented Feb. 8, 1955

2,701,673

METHOD AND MEANS FOR FILLING CIGARETTE LIGHTERS

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Application December 22, 1952, Serial No. 327,315

2 Claims. (Cl. 226—27)

The invention concerns a method and means for filling cigarette lighters with volatile, combustible fluid.

The invention contemplates a method of filling cigarette lighters in which the fluid reservoir of the lighter is connected to a receptacle containing a supply of fluid, by connecting means having a capillary or wicking action, and the connection is maintained for a substantial period of time whereby the mass of absorbent material with which the fluid reservoir is filled becomes saturated with fluid.

The invention further contemplates a method of the type described in which the connecting means has a syphon action.

The invention further contemplates an arrangement in which a conventional lighter is modified to include filling means comprising a tubular connecting member which extends outwardly from the fluid reservoir of the lighter and is filled with absorbent material having a capillary or wicking action, the tubular connecting member being open at both ends and the inner end thereof being surrounded by the mass of absorbent material with which the fluid reservoir is filled.

The invention further contemplates an arrangement of the type described in which the tubular connecting member is bent 180 degrees intermediate its ends, the inner end thereof being wholly enclosed within the body of the lighter and being disposed at a somewhat lower elevation than the outer end whereby the tubular connecting member is capable of acting as a syphon.

The invention further contemplates a filling receptacle adapted to be used in conjunction with a lighter having filling means of the type described, the receptacle having a self sealing opening adapted to receive the outer end of the tubular connecting member forming a part of the lighter.

The invention further contemplates an arrangement of the type described in which a depression is formed in the body of the lighter, surrounding the tubular connecting member, adapted to receive an upstanding, tubular connecting member forming a part of the filling receptacle, as hereinafter described.

The invention further contemplates a filling receptacle of the type described having filling means including an upstanding, tubular connecting member which is receivable within the depression formed in the body of the lighter, the upstanding, tubular connecting member being formed of resilient material and having a self sealing opening in the end thereof adapted to receive the outer end of the tubular connecting member forming a part of the lighter.

The invention further contemplates an arrangement of the type described in which a depression, adapted to receive the lighter bodily, is formed in the body of the filling receptacle surrounding the upstanding, tubular connecting member.

The invention further contemplates an arrangement of the type described in which the connecting members are reversed, the tubular connecting member forming a part of the lighter being transferred to the filling receptacle and a self sealing opening being formed in the body of the lighter.

The invention further contemplates an arrangement of the type described in which the body of the filling receptacle is formed of resilient material, whereby the lighter may be filled by simply squeezing the body of the receptacle.

The invention further contemplates an arrangement in which a self sealing opening, adapted to receive a filling nozzle of any kind, is formed in the body of the lighter.

The invention will be readily understood by referring to the following description and the accompanying drawing, in which:

Fig. 1 is a view in elevation, partly in section, showing a lighter and a filling receptacle embodying the invention, in operative position, as they appear during the filling operation.

Fig. 2 is a sectional plan view taken on the line 2—2 of Fig. 1.

Fig. 3 is a sectional view in elevation, taken at right angles to the view shown in Fig. 1, of the filling receptacle only.

Fig. 4 is a plan view taken on the line 4—4 of Fig. 3.

Referring to the drawing, the numeral **1** designates a conventional type of cigarette lighter which has been modified to include the features of the invention, while the numeral **2** designates a filling receptacle embodying the invention.

The lighter **1** includes a body or casing **3**, which is generally rectangular in shape. The casing **3** encloses a fluid reservoir which is filled with a mass of absorbent material **4**, in the usual manner. The lower end of the casing **3** is depressed inwardly to form an upstanding bell shaped portion **5**, which is open at its lower end and adapted to receive an upstanding, tubular connecting member forming a part of the receptacle **2**, as hereinafter described. A tubular connecting member **6**, which is of smaller diameter than the bell shaped portion **5** and is bent 180 degrees intermediate its ends, is disposed within the casing **3** so that one end thereof extends outwardly and downwardly into the bell shaped portion **5** while the other end is wholly enclosed within the casing **3** and extends downwardly to a point near the lower end thereof. The tubular member **6** is open at both ends, and is filled with a mass of absorbent material **7** having a capillary or wicking action. The inner end of the tubular member **6** is surrounded by the mass of absorbent material **4**, whereby the absorbent material **7** is in direct contact with the absorbent material **4**. The inner end of the tubular member **6** is disposed at a somewhat lower elevation than the outer end, whereby the tubular member **6** is capable of acting as a syphon, and fluid is prevented from flowing in reverse direction thru the tubular member **6**.

The filling receptacle **2** preferably is made of resilient, plastic material and comprises a hollow body, which is generally rectangular in shape and has a top **8**, a bottom **9**, a pair of side walls **10** and a pair of end walls **11**. The bottom **9** is sloped downwardly from the ends toward the middle, so that fluid contained within the receptacle tends to flow by gravity toward the middle thereof. The top **8** is depressed inwardly at its middle to form a well **12** which is generally rectangular in shape and is disposed transversely with respect to the receptacle **2**. The well **12** is open at the top and is adapted to receive bodily the lower end of the lighter **1**. A tubular connecting member **13**, which preferably is made of resilient, plastic material and is receivable within the bell shaped portion **5** of the lighter **1**, extends upwardly from the bottom of the well **12**. A self sealing opening **14**, adapted to receive the outer end of the tubular connecting member **6** of the lighter **1**, is formed in the upper end of the upstanding, tubular connecting member **13**. The upstanding, tubular connecting member **13** forms a fluid tight seal with the bell shaped portion **5**, and any drip which may occur is collected in the well **12**.

In operation, the lighter **1** is placed in the well **12** of the receptacle **2**, so that the upstanding, tubular connecting member **13** is received within the bell shaped portion **5** and the outer end of the tubular connecting member **6** is received within the self sealing opening **14**. The connection between the lighter **1** and the receptacle **2** is maintained for a substantial period of time whereby the absorbent material **4** becomes saturated with fluid.

The invention may be modified in various ways without departing from the spirit and scope thereof.

I claim:

1. The combination of a cigarette lighter having a fluid reservoir containing a mass of absorbent material adapted

to receive a volatile, combustible fluid, the casing of the lighter being depressed inwardly to form an upstanding, bell shaped portion, open at its lower end, and a tubular connecting member disposed within the casing and having one end thereof extending downwardly and outwardly into the bell shaped portion, the tubular member being open at both ends and being filled with a mass of absorbent material, the tubular member being bent 180 degrees intermediate its ends, the inner end of the tubular member being disposed within the fluid reservoir, with the absorbent material thereof in direct contact with the absorbent material of the fluid reservoir, and the inner end of the tubular member being disposed at a somewhat lower elevation than the outer end whereby the tubular member is capable of a syphon action.

2. In combination with a cigarette lighter as described in claim 1, a receptacle adapted to contain a supply of fluid, the receptacle being depressed inwardly to form a well adapted to receive the lighter bodily, and a tubular connecting member extending upwardly from the bottom

of the well, the tubular connecting member of the receptacle being receivable within the bell shaped portion of the lighter and having a self sealing opening in its upper end adapted to receive the outer end of the tubular connecting member of the lighter.

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