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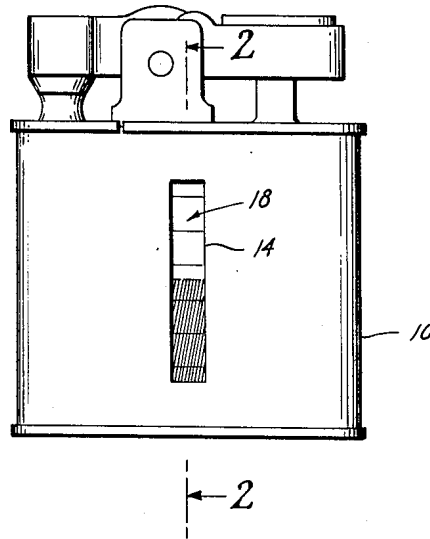
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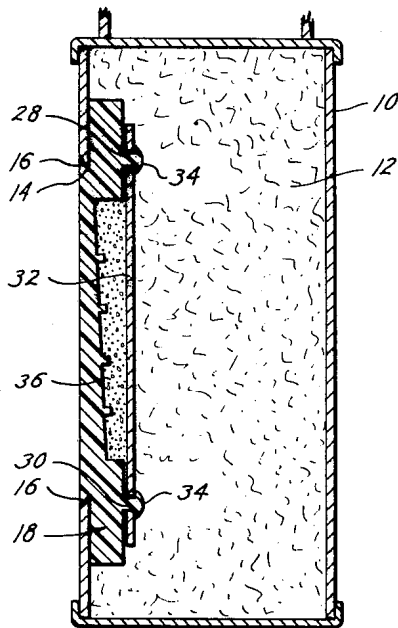
FLUID CONTENT GAUGE FOR LIGHTER

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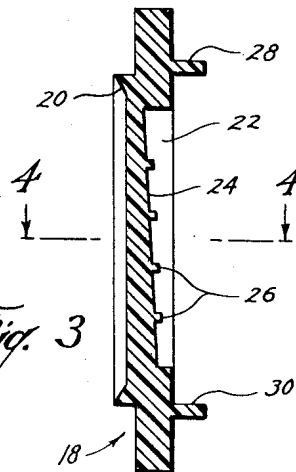
*Fig. 1*



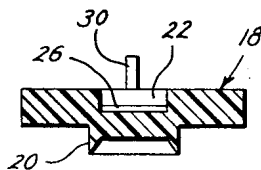
*Fig. 2*



*Fig. 3*



*Fig. 4*



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**FLUID CONTENT GAUGE FOR LIGHTER**

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4 Claims. (Cl. 73—73)

This invention relates to a fluid content gauge for lighters, and more particularly to a device for indicating the amount of fluid present in a receptacle such as a cigarette lighter fuel container.

In cigar and cigarette lighters of conventional design a fuel receptacle is provided, which is usually filled with absorbent material, such as cotton, which is saturated with a suitable liquid fuel, such as gasoline. As customarily constructed, such lighters have no means for indicating the condition of the fuel content of the receptacle, so that there is no means of knowing when the fuel supply should be replenished, with the result that such lighters often become inoperative without warning, thus causing great annoyance and inconvenience to the user.

An important object of the present invention is to provide a gauge for use with a fluid storage receptacle of the kind referred to, whereby the above disadvantage is overcome and the amount of fluid present in the receptacle will be evident at all times, so that the fluid may be replenished before the receptacle becomes entirely empty.

Another object of the invention is the provision of a gauge which may be easily applied to lighter structures of the kind referred to without extensive modification of the construction of the fuel storage receptacle.

A further object of the invention is to provide a gauge for the fuel receptacles of cigarette lighters and similar containers, which is of simple design and rugged construction, having few parts, and which is unlikely to become broken or out of order.

The above and other important objects and advantages of the invention will best be understood from the following detailed description, constituting a specification of the same, when considered in conjunction with the annexed drawings, where —

Figure 1 is a front elevational view of a lighter embodying the invention;

Figure 2 is a fragmentary, cross-sectional view, on a somewhat enlarged scale, taken along the line 2—2 of Figure 1, looking in the direction indicated by the arrows, and illustrating the manner in which the gauge is applied to a lighter;

Figure 3 is a vertical, central, cross-sectional view of the body of the gauge before its application to the lighter; and

Figure 4 is a cross-sectional view taken along the line 4—4 of Figure 3, looking in the direction indicated by the arrows.

Referring now to the drawings in greater detail, the numeral 10 designates the casing forming the fuel receptacle of a lighter of conventional construction, which in the present illustration is that of a conventional cigar or cigarette lighter.

The casing 10 is adapted to be packed with suitable absorbent material, indicated at 12, such as cotton, to retain a suitable liquid fuel, such as gasoline, and is provided with a conventional wick and igniting mechanism. In a lighter of this type the absorbent material in the

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fuel receptacle is saturated with liquid fuel, and since there is no visible liquid level, it has not been possible heretofore to make use of any gauge means of conventional construction to indicate the amount of fuel present, with the result that the fuel supply often becomes entirely exhausted without warning and at a time which causes great inconvenience to the user.

In the present illustration the casing 10 is provided with a window opening 14, which may be of any suitable shape and size, and which is preferably provided with an inwardly beveled margin 16, as best seen in Figure 2.

The opening 14 is closed by a translucent body or member 18, formed of transparent or translucent material, such as plastic, or the like, which is of somewhat greater area than the area of the opening 14, and is formed with an outwardly extending portion 20 adapted to project through the opening, and to be pressed into intimate contact with the inwardly beveled margin 16 about the opening to retain the member in position within the casing, and to form a fluid tight seal therewith about the opening. In applying the translucent member 18 to the casing the member is positioned in the casing with the portion 20 extending through the opening 14, and by heating the outwardly extending portion 20 the same may be brought to a softened condition and pressed into intimate contact with the inwardly beveled margin 16 as indicated in Figure 2.

The translucent member 18 is also formed with a recess 22 which opens inwardly of the casing, and whose bottom wall slopes downwardly and inwardly. The bottom wall of the recess 22 may be provided with longitudinally spaced inwardly projecting ribs 26, for a purpose later to be made apparent.

Upper and lower lugs 28 and 30 may also be formed on the inwardly facing side of the member 18, and a cover-plate 32 having perforations corresponding to the lugs 28 and 30 is positioned over the recess 22, and retained in place by softening the outer ends of the lugs 28 and 30 and pressing the material to form rivet-like heads thereon, as best indicated at 34, 34 in Figure 2. The cover-plate may be of opaque material, or material which is contrasting in color to that of the transparent body 18.

The recess 22 is filled with a finely divided or powdered material 36 which is insoluble in the fuel, and which does not react with the same, and this material is retained in the recess by the cover-plate 32. When the fuel employed is gasoline, or some other commonly used lighter fluid, the powdered material 36 may be powdered glass, powdered alum, or other suitable inert material which is not appreciable soluble in the lighter fluid.

The finely divided material 36 may be translucent material or one which forms a distinctly contrasting shade or color to that of the member 18 when wetted with the fuel in the container. Such materials as powdered glass and powdered alum have been found to give desirable results when used for this purpose, but it will be apparent that any of numerous other substances having similar properties could be utilized depending upon the particular kind of fluid employed, the color and translucency of the member 18, and other conditions obtaining, and it is not desired, therefore, that the invention be limited to the particular substance mentioned therein.

In making use of the invention as described above, the absorbent material 12 in the casing is saturated with lighter fluid, which passes between the cover-plate 32 and the transparent member and penetrates the powdered material 36, which becomes thoroughly wetted with the fluid. Due to the wetting of the powder by the lighter fluid, and the variation in the thickness of the body of the powder from one end of the recess 22 to the other end

thereof, the transparent body 18 in the window opening will have a darkened or wetted appearance, as long as the absorbent material is thoroughly saturated with the lighter fluid. As the lighter fluid is used up, however, the absorbent material becomes less saturated, and due to the variation in thickness of the body of the powder, the darkened or apparently wetted area appears to recede from the upper end of the window opening toward the bottom thereof, as the amount of lighter fluid decreases, thus substantially indicating the amount of lighter fluid which still remains in the receptacle.

The ribs 26 in the recess 22 appear as lines across the window opening, and furnish a scale by which the amount of fuel in the casing may be substantially gauged. When the fuel has been entirely consumed the absorbent material within the casing will be substantially dry and the transparent body within the window opening will have a light or dry appearance from end to end of the opening.

It will thus be seen that by the use of the invention as described above, an efficient, accurate, and simple means is provided whereby the condition of the fluid in a storage receptacle of the kind referred to is at all times indicated, so that adequate warning is given before the fuel supply becomes exhausted, whereby the lighter may be maintained at all times in condition for use.

While the invention has been disclosed in connection with a particular embodiment of the same, it will be understood that this is intended by way of illustration only, and that numerous changes can be made in the construction and arrangement of the various parts without departing from the spirit of the invention or the scope of the appended claims.

Having thus clearly shown and described the invention, what is claimed as new and desired to secure by Letters Patent is:

1. In a lighter having a fluid fuel container provided

with a window opening, a translucent member disposed in said opening and having an elongated recess therein opening inwardly of the container opposite said opening, said recess varying in depth from end to end thereof and having longitudinally spaced ribs therein, and a mass of finely divided material substantially filling said recess.

2. In a lighter having a fluid fuel container provided with a window opening, a translucent body in and closing said opening and having an elongated recess therein opening inwardly of the container opposite said opening, said recess varying in depth from end to end thereof, a mass of finely divided material filling said recess, and a cover plate positioned over said recess.

3. In a lighter having a fluid fuel container provided with a window opening, a translucent body in and closing said opening and having an elongated recess therein opening inwardly of the container opposite said opening, said recess varying in depth from end to end thereof and having longitudinally spaced ribs therein, a finely divided material substantially filling said recess, and a cover plate positioned over said recess.

4. In a lighter having a fluid fuel container provided with a window opening, a translucent body in and closing said opening and having an inside inwardly opening recess of varying depth from end to end and of smaller dimensions than said opening to provide a translucent portion surrounding the recess, and a mass of finely divided material filling the recess.

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