July 17, 1934. R. JOHN 1,967,191

PACKAGE

Filed Jan. 24, 1933 4 Sheets-Sheet 1

Fig. 1.

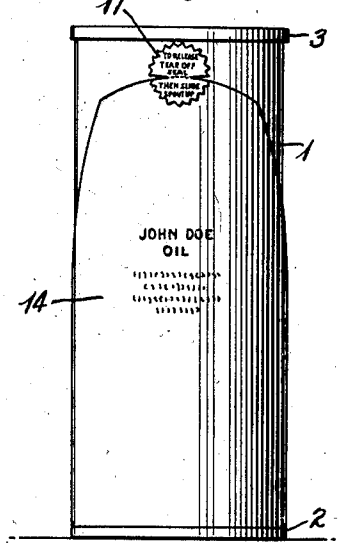


Fig. 2.

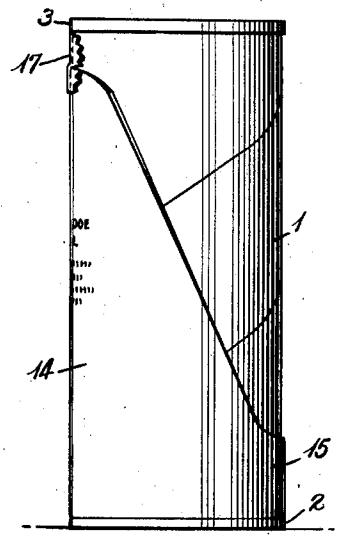


Fig. 3.

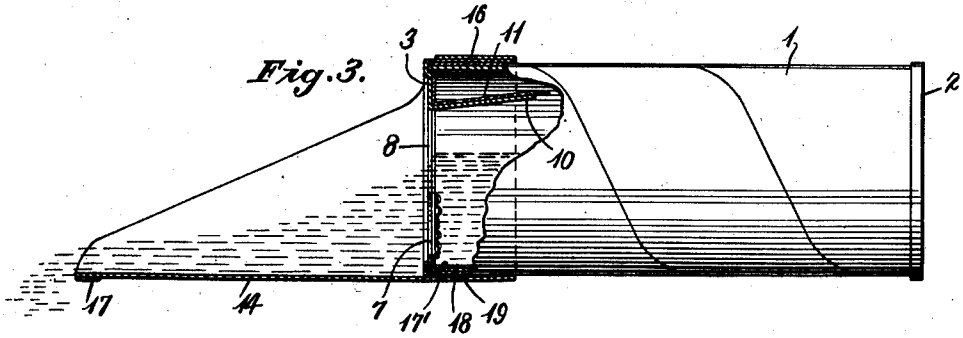
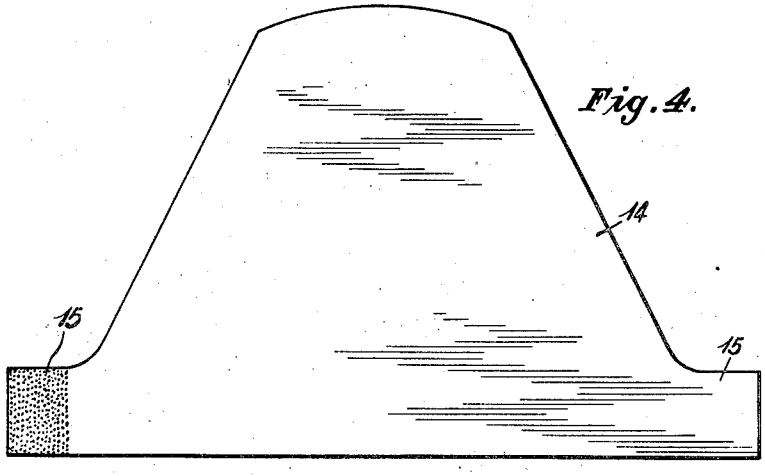


Fig. 4.



Inventor
Robert John
By Thomas Thomas
Attorneys

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Fig. 8.

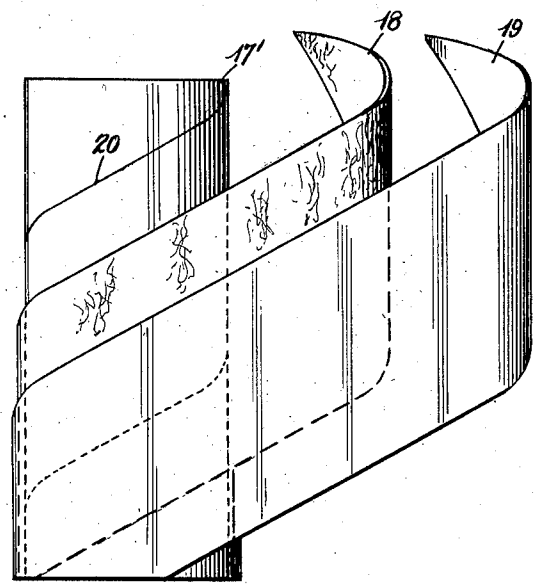


Fig. 5.

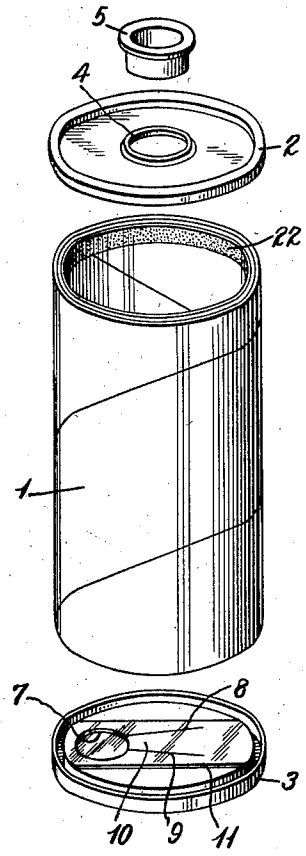


Fig. 6.

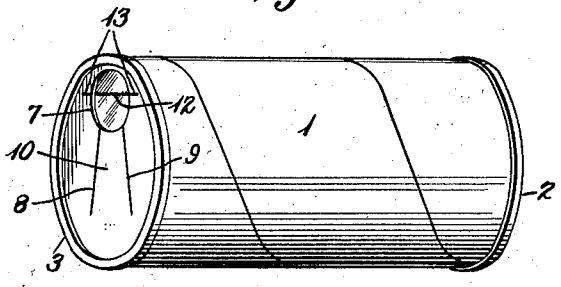
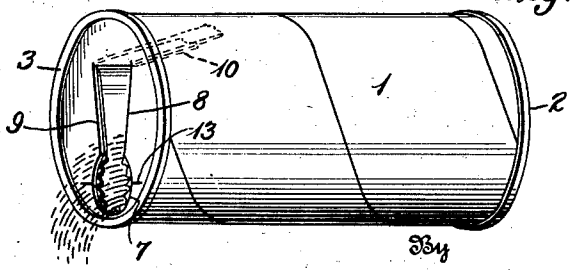


Fig. 7.



Inventor
Robert John

By Bacon & Thomas

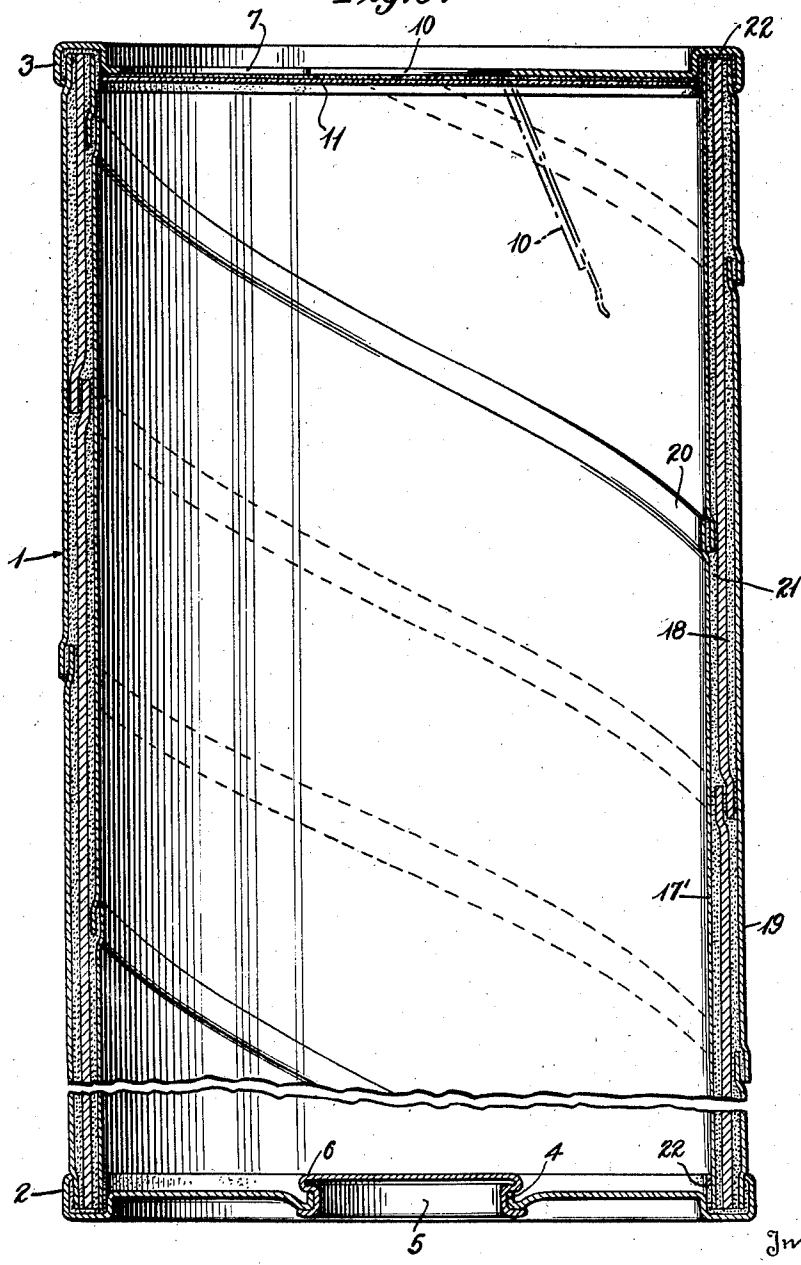
Attorneys

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Fig. 9.



Inventor

Robert John

By

Attorneys

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Fig. 10.

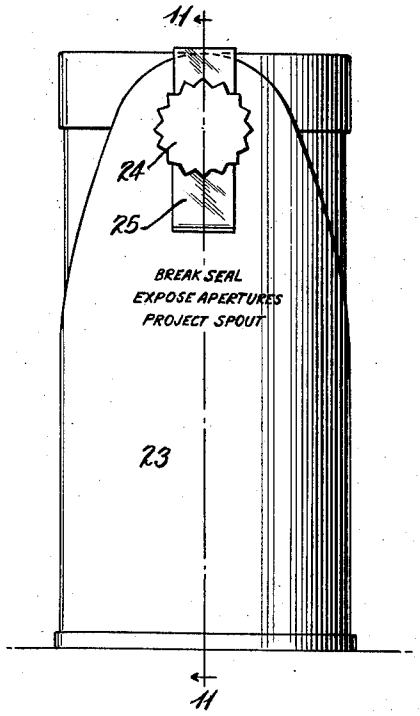
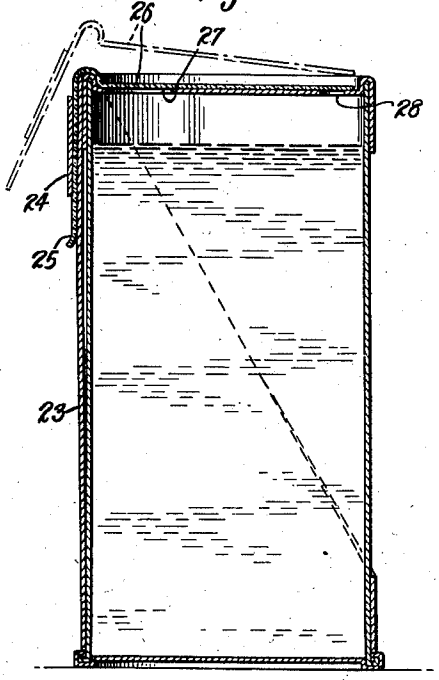


Fig. 11.



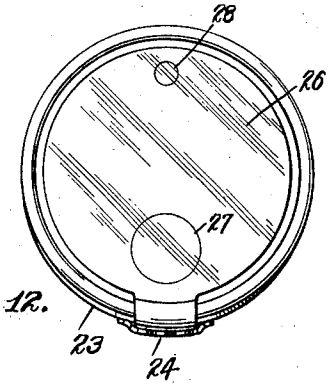
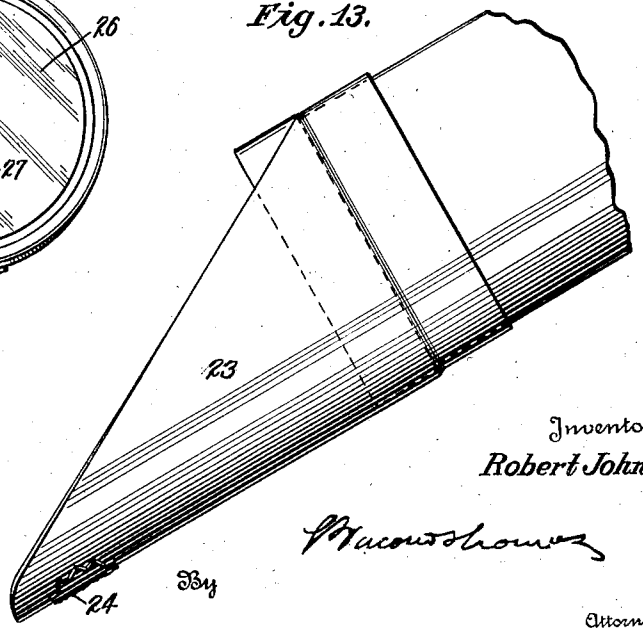


Fig. 12.

Fig. 13.



Inventor
Robert John

By Macauslan & Howes

Attorneys

Patented July 17, 1934 1,967,191

UNITED STATES PATENT OFFICE

1,967,191

PACKAGE

Robert John, New York, N. Y., assignor to International Patents, Ltd., Dover, Del., a corporation of Delaware

Application January 24, 1933, Serial No. 653,340

8 Claims. (Cl. 229—3.1)

This application is a continuation in part of my application, Serial No. 621,710, filed July 9, 1932 and entitled "Oil package".

This invention relates to a dispensing "single use" oil container made of a material capable of being destroyed after use, as by burning, and which has particular utility for storing and dispensing lubricating oils for motor vehicles.

Another object of the invention is to provide a pouring spout of fibrous material containing printed matter thereon which is adapted to be projected into a position where it will discharge oil into the crank case which will discolor the same to prevent reuse without detection.

Another object of the invention is to provide instrumentalities associated with the container which so disfigure or destroy the container as to constitute telltales against unauthorized reuse in addition to the discoloration of the combined pouring spout and label, aforesaid.

Another object of the invention is to provide a container fabricated of paper or cellulose products with a light transmitting window by virtue of which the character and/or quantity of the confined oil may be readily ascertained; which container because of its composition may easily be destroyed by burning following a single use.

Another object of the invention is to provide the discharge opening of the top with a transparent window which preferably is disposed eccentrically with respect to the top and which is capable of being poked inwardly to break the same, which top is provided with a tongue for swinging the broken transparent window inwardly out of the path of movement of the oil to be discharged from said opening into the spout, aforesaid, and to likewise enlarge said discharge opening to facilitate pouring therefrom.

A still further object of the invention is to provide a filling aperture in the bottom of the container, as distinguished from the top, whereby the oil companies employing the container may fill the same through the bottom and thereafter permanently and irremovably secure a plug, as by swaging, following the filling operation.

A still further object of the invention is to provide indicia on either the top or the transparent window or both which can be used for measuring the quantity of the confined oil when the container is placed in a horizontal position with the window uppermost.

From another aspect the invention comprehends a fabricated container having three (or more) layers of laminations, the innermost layer being of grease-proof character but of insufficient moisture-proof character to prevent adherence of a cementitious material thereto; an intermediate protective barrier which is highly absorptive for both grease and water and an outermost layer which is of substantially water repellent character, the various layers being integrated together to form a strong, durable, leak-proof structure.

The invention comprehends numerous other and additional advantages which will be apparent to those skilled in the art from a reading of the following specification in conjunction with the drawings attached hereto and forming a part hereof in which:

Figure 1 represents an elevation showing my pouring label and seal applied thereto.

Figure 2 is a similar view at right angles to Figure 1.

Figure 3 is a view showing my transparent window and tongue pushed inwardly and the pouring spout projected into operative position.

Figure 4 is a plan view of the spout 14.

Figure 5 is an exploded perspective view of the container parts in their disassembled positions.

Figure 6 is a view of the container in a position where its contents may be viewed and determined through the transparent window and the indicia therefor.

Figure 7 is a view of the container showing the tongue pushed inwardly to enlarge the pouring aperture and to swing the torn transparent window out of the path of the flow of oil.

Figure 8 is an elevation showing the manner of wrapping the wall laminations.

Figure 9 is an enlarged, greatly exaggerated, vertical sectional view of the container.

Figure 10 is an elevation of a modification.

Figure 11 is a section on line 10—10, Figure 10 of this modification.

Figure 12 is an end view thereof.

Figure 13 is an elevation showing the spout extended into pouring position.

Referring now more particularly to the drawings wherein like designating characters indicate corresponding parts 1 indicates my container generally which, as will be hereinafter explained, is made of fibrous material. This container is provided with a metallic bottom 2 and a metallic top 3 preferably made of tinned iron. The bottom has a filling aperture 4 and a closure plug 5. The plug 5 is fitted into the filling aperture after the can has been filled with lubricating oil by the oil companies utilizing the same and is then secured in place by expanding it as by a swaging operation according to well known

methods usually practiced in the art to increase the inside diameter as at 6, shown particularly in Figure 9, to such an extent that removal would destroy the matrix in which it rests so that if an attempt were made to replace this plug it would not be oil tight and detection could readily be ascertained of its tampered condition. The filling aperture provided by the bottom stamping may be made by punching a hole, say one inch in diameter either centrally or eccentrically and as stated the swaging operation renders the filling aperture impermeable to liquids. As will be appreciated by those skilled in the art, a gasket or compound lining may, if necessary, be interposed between the plug 5 and the flange of the closure 2.

The top 3 is provided with a discharge aperture 7 located substantially one sixteenth of an inch inside one of the final edges of the top, from which discharge aperture I provide two lateral cuts 8 and 9, preferably divergingly disposed, which extend approximately one and one-half inch each, said cuts being spaced apart approximately one inch and extend substantially one and one-half inches away from the discharge aperture toward the farther side of the top. These cuts define a tongue 10 which is bendable downwardly to a vertical position as will be hereinafter explained, thereby enlarging the size of the discharge aperture and permitting quick discharge of the oil by reason of the fact that more air may enter the container.

On the underside of the top is located a strip of nitro-cellulose film 11 which covers both the discharge aperture 4 and the cuts 8 and 9, which film extends at least one quarter of an inch beyond said cuts and is cemented to the under part of the top or instead of cementing it may be adhered by the employment of a solvent or any other means well known in the art whereby said cellulose film may be affixed to metal.

As is well known, due to the expansibility of liquids, it is obvious that the finished container for practical purposes should never be filled completely with oil but should comprise an air space over the liquid to avoid bursting when subjected to high temperatures. I find that such an air space may be conveniently of such dimensions that when the package, aforesaid, is placed horizontally level with the discharge aperture uppermost the line of its liquid content will fall within the area of the window provided by the discharge aperture with its transparent cellulose covering. Having thus determined the point to which the liquid will cover the window for a given quantity, I draw or print a line on the cellulose window as at 12 or on the top opposite thereto as at 13 and at right angles to the cuts, aforesaid, in the metallic top, above described, and in such position that when the package is held horizontally level the liquid content will coincide with the drawn or printed line in the window thus affording the opportunity of estimating the contents of the package without opening it. Of course, in actual practice, this level indicating line may be produced automatically in the can factory on all composite top ends during the process of making the ends and before the ends are secured to the fibre body.

After the package has been filled and assembled in the manner above described it is capable of usual storage and shipment and may conveniently be opened by pressing down upon the transparent cellulose window covering the aperture and by continuing such pressing effort until portions of the metal forming the tongue between the cuts are bent downwardly into a vertical position as shown clearly in Figure 3. The top thus becomes distorted and incapable of reuse or reconstruction in such a way as to deceive intelligent purchasers. It is to be particularly noted that the transparent window composed of the cellulose film is positioned on the inside of the top as shown in Figure 5 and that, therefore, the pressure exerted against it improves the adhesion to the top; that when the window is poked inwardly, that portion still adheres to the top but the window is placed entirely out of the path of the oil flow; that the window is affixed to the package independently of the filling aperture in the bottom of the container and that because of the construction and arrangement of the parts a receptacle is provided which is incapable of legitimate reuse and which also has the capability of discharging the lubricating oils at the required rate of speed directly into the crank case without the necessity of employing a funnel customarily used by filling station attendants.

An important characteristic of my invention relates to the pouring spout 14 shown in Figures 1 to 4, inclusive, which is made of fibrous material and containing printed matter on the exterior thereof thereby to cause it to function as an advertising label. This pouring spout has tab portions 15 which encircle the can and are adhered together as at 16 independently of the oil package and thus has a capability of sliding relative to the package into its projected operative position, as shown in Figure 3. Before doing so, however, I preferably provide a seal 17 which must first be broken before sliding the pouring spout to its position shown in Figure 3. Obviously some of the oil as it pours from the spout will be absorbed by the fibrous combined label and pouring spout and will cause the printed matter thereon to be obliterated or discolored. Consequently, this adjunct constitutes an additional telltale against reuse and provides a convenient manner of dispensing without a funnel.

The side wall structure disclosed, particularly in Figure 9, is of a fibrous constituency and may be destroyed by burning to avoid the problem of accumulation and the expense of disposal at filling stations as is true in the case where metal cans are employed. This side wall structure is preferably composed of three layers of spirally wound paper designated 17', 18 and 19. These windings, shown in Figure 8, are so preformed as to separate the abutting unions of each layer, one from the other, and being accomplished by methods well known in the existing arts. For the inner layer 17' I preferably employ a parchmentized paper of approximately five thousandths of an inch in thickness; by parchmentized I mean rag or wood pulp paper which has been subjected to the action of sulphuric acid 59 (fifty-nine) degrees Baumé or otherwise treated with an acid, an alkali or cupra-ammonia to render it largely impervious to greasy substances and somewhat impervious to the absorption of moisture. In forming this inner layer 17' I lap the spirally found material by one quarter of an inch more or less, as at 20, and apply to the outer surface thereof, in the process of forming the tubing, any of the well known gelatinous glues or pastes, either animal or vegetable or compositions thereof such as are commonly used, in such a way that the lapped portions are pasted together and indicated generally as at 21. Next I apply a layer of wood pulp paper known as chip board in one or more laminations, to the thickness of approxi-

mately fifty thousandths of an inch, such chip board being pasted with any of the suitable and well known glues or pastes adapted to make adhere and to prevent it from too rapidly absorbing the paste or glue on the outer surface of the parchmentized paper.

I thereupon apply a layer of glazed partially water-proof paper 19, such as paper with a casein coating, over the chip board intermediate layer 18. As a result of these operations there is provided an outer layer which is substantially repellent to the absorption of moisture from the air, a middle layer for bulk and strength, of dense, inexpensive material which has the capabilty of absorbing both moisture or grease if in contact with them and an inner layer which is quite repellent to moisture but not sufficiently so repellent to moisture as to prohibit the use of soluble glues or pastes in cementing it together. This inner layer 17' has applied thereto a grease repellent glue which completely covers the same and for adhering the bulking intermediate layer thereto, the glue filling any pin holes which may exist. It is to be particularly observed that the glue is placed on the outside of the inner layer as shown at 21 and therefore is not in contacting relation with respect to the lubricating oil confined by the container. Therefore, there is no danger of the glue or other coating materials which may be employed peeling or entering the body of oil which would materially affect the lubricating properties thereof.

The procedure for manufacturing my package is somewhat as follows: If a one quart container is being made I make the spirally wound body in such a way that it has an inside diameter of three and one-quarter inches and it is then cut into lengths of seven and one-half inches. The tops and bottoms are stamped out of tinned iron or other suitable material having a thickness of approximately fifteenth thousandths of an inch and is so blanked as to fit snugly into the side wall tubing and with such an overlap as to enable the tops and bottoms to spin into permanent affixation by conventional methods well known in the art. Before applying the tops and bottoms of the package I dip each end of the cut-off tubing in a solution of cellulose acetate having a consistency of thick syrup and commonly known as "airplane dope". The dip is merely sufficient to cover the raw edges of the paper and extends on the side walls approximately one eighth of an inch. This coating is indicated at 22. Subsequent to this treatment I insert my metal blanks and spin them into permanent affixation and the cellulose acetate solution performs not only the function of sealing the raw edges of the layers of paper but additionally forms a fillet or gasket between the paper and the metal blanks, constituting the tops and bottoms of the container and serves the purpose of cementing the same to the paper body thereby insuring firmer and liquid-tight affixation. This is clearly shown in Figure 9.

After the top has been prepared with the discharge aperture 7 and with the cuts or slits 8 and 9 extending outwardly therefrom, the transparent cellulose window is affixed as aforesaid whereupon I insert the top of the paper container and roll or spin it into permanent affixation with the cellulose acetate binder to firmly secure the same in place.

Having now affixed a top to the paper body of the container, as described, I prepare the bottom stamping by punching a hole of one inch in diameter either centrally or eccentrically and secure it in place in the same manner as the top is secured. The oil company then fills the container from the bottom and applies the closure plug 5 thereto, preferably by swaging, as above described. Obviously, the plug cannot be removed without damaging the container. The instrumentalities for securing the plug to the filling aperture are extremely simple and inexpensive when contrasted with the involved apparatus which may be employed by the companies utilizing metal containers with no discharge aperture in the top thereof.

The parchmentized paper constituting the inner layer 17 does not contaminate the oil and being free of protective coatings on the interior thereof it is not chemically reactive with the oil. Additionally it is important to note that the parchmentized material has very small side wall retention for the oil as the surface tension thereof is quite small as compared with metals or other materials heretofore known to the container art. Pouring, therefore, may be readily accomplished at the filling station in a minimum of time.

Referring now to the modification shown in Figures 10 to 13, there is provided an apron shaped label having desirable printed matter thereon and decorated, if desired, which label is designated 23. It is slidably affixed around the package by means of gluing its tabs together as shown at 15 in the preferred form, without however, gluing any portion of the label to the package. The label is provided with a seal 24 which secures it to a tearing tail 25, which tearing tail is attached to, or provided as a continuation of, a transparent disc 26 secured to the outside of the metallic top and covering the discharge opening 27 and the vent opening 28. In operation the tail 25 is grasped and raised upwardly which breaks the seal 24 thereby releasing the label for sliding movement relative to the package and continued movement of the tail tearing the disc 26 from its adhered relationship with respect to the metal top, as shown in Figure 11, thereby exposing the discharge opening 27 and the vent 28. This disc 26 is of transparent cellulose material and after it has been swung as indicated the label is projected to the position shown in Figure 13 and the oil may thereafter be readily discharged into the crank case.

It will thus be seen that my invention provides a protection to the public for preventing the substitution of another oil or adulterated oil which constitutes a grave problem for the oil industry today and that, furthermore, the package is easily and speedily opened and its contents dischargeable without requiring funnels or special opening tools. It is further to be observed that the problem of disposal by the service stations is materially minimized because the paper characteristic of the invention renders it suitable for substantial destruction by burning as contra-distinguished to the metallic containers now employed which rapidly accumulate and require constant removal to junk yards or other places of disposal. Furthermore, in point of economy the present device may be made at an expense substantially less than metallic oil containers now commercially employed.

In the foregoing description of my invention I have chosen a single embodiment purely for the purpose of illustration in accordance with the patent statutes but I realize that any departure may be made therefrom without departing from the scope of the invention as comprehended by reasonable interpretation of the following claims.

Thus, for example, instead of employing parchmentized paper a sheeting of cellulose xanthate, cellulose acetate, cellulose nitrate or synthetic rubber may be used, with a probable lesser degree of efficiency. Furthermore, the adhesives may be either water soluble or soluble in other solvents such as alcohol, acetone, amylacetate, acetate acid or other well known solvents capable of dissolving carbonaceous substances which form an adhesive; the character of the inner layer may be also varied and the nature of the coating of the outer layer may be likewise varied. The tops and bottoms of the can may be of any other metal than tinned iron or of treated paper or any substance capable of forming a union within the inside walls of the package and being repellent to oils.

Having thus described my invention, I claim:

1. An oil container comprising a laminated wall structure having an inner layer of parchmentized material which is relatively grease-proof, an intermediate bulking layer possessing grease, water-absorptive and capillary characteristics and an exterior layer which is relatively water-repellent, said wall structure being characterized by the capability of the intermediate bulking layer to absorb any oil or moisture which may work through the inner or outer layer respectively, and means for preventing the capillary discharge of such absorbed oil or moisture, said means comprising a thermoplastic material covering the raw edges of the wall structure, and metal ends secured to the opposite edges of said wall structure and adhered to said thermoplastic substance.

2. An oil container comprising a fibrous laminated wall structure having an inner layer of relatively grease-proof material, such as parchmentized paper, an intermediate bulking layer possessing grease, water-absorptive and capillary characteristics, and an exterior layer which is relatively water-repellent, said fibrous wall structure being characterized by the capability of the intermediate fibrous bulking layer to absorb any oil or moisture which may work through either the inner or outer layers respectively, means for preventing the discharge of such absorbed oil or moisture, said means comprising a thermoplastic material covering the raw edges of the wall structure and extending along the inner and outer wall faces thereof, and container ends having grooves for receiving the ends of the containers and adhered by said thermoplastic substance whereby the thermoplastic substance constitutes the dual function of preventing the discharge of its absorbed substances and of forming a luted joint with the container ends.

3. An, oil container comprising a laminated fibrous wall structure having an inner layer of oil-resistant material, an intermediate bulking layer possessing substantial grease, water-absorptive and capillary characteristics, and an exterior layer of relatively water-repellent material, said wall structure being characterized by the ability of the intermediate bulking layer to absorb any oil or moisture which may work through the inner or outer layer respectively, end closures for said wall structure, and means for preventing the capillary discharge of said oil or moisture, said means comprising a thermoplastic substance covering the raw edges of the wall structure and constituting a luted joint between the wall structure and the end closures.

4. An oil container comprising a laminated wall structure having an inner grease-resistant layer, a relatively thick intermediate bulking layer possessing substantial grease, water-absorptive and capillary characteristics, and an exterior layer which is substantially more water-repellent than the intermediate layer, said wall structure being characterized by the capability of the intermediate bulking layer to absorb any oil or moisture which may work through the inner or outer layer respectively, each of said layers being cemented together into a unitary structure, container ends secured to said wall structure and being shaped to provide grooves for receiving the ends of the wall structure, means for preventing the capillary discharge of any oil or moisture which may be absorbed by the intermediate lamination, said means comprising a thermoplastic cement covering the raw edges and extending into the groove portions of the container ends whereby to form a luted joint.

5. An oil container comprising a fibrous laminated wall structure having an inner layer of relatively grease-proof material, an intermediate bulking layer possessing substantial grease, water-absorptive and capillary characteristics, and an exterior layer of relatively water-repellent material, each of said layers being cemented together to form an integrated structure, said structure being characterized by the capability of the intermediate bulking layer to absorb any oil or moisture which may work through the inner or outer layer respectively, and means for preventing the capillary discharge of such absorbed oil or moisture, such means comprising a thermoplastic substance covering the raw edges and portions of the inner and outer faces of the wall structure, and metal ends secured to the wall structure by spinning the same thereon whereby the interposed thermoplastic substance serves the additional function of assisting the affixation of the ends and of filling any irregularities between the ends and the wall structure.

6. A container for liquids, such as oils, comprising a fibrous wall structure having an inner surface of oil-resistant material, an intermediate bulking layer possessing substantial grease and water absorptive characteristics, and an exterior surface which possesses relatively greater water-repellent characteristics than the bulking layer, said wall structure being characterized by the ability of the intermediate bulking layer to absorb any oil or moisture which may work through the inner and outer surfaces respectively, metal end closures for said wall structure secured to the edges thereof and having annular flange portions adapted to receive the edges of the wall structure, and a sealing compound interposed between the edges and the flange portions of the ends and extending downwardly along the inner and outer surfaces of the wall structure whereby to function as a seal against the discharge of any liquid absorbed by said structure and as a sealing compound between said structure and said end closures.

7. A liquid container comprising a laminated wall structure having an inner surface of relatively grease proof character, a bulking layer possessing grease, water absorptive and capillary characteristics, and an exterior surface which is less absorptive than said bulking layer, said wall structure being characterized by the capability of the bulking layer to absorb any oil or moisture which may tend to pass through the structure from within or without, and means for preventing the capillary discharge of such absorbed oil or moisture, said means comprising a sealing compound covering the raw edges of

the wall structure, and metal ends secured to the opposite edges of the wall structure.

8. A container having a tubular fibrous body structure terminating in annular raw edges at both ends, the central portion of such structure being of fibrous consistency and lesser density and compactness than the inner and outer surfaces whereby the central portion is capable of absorbing liquids which may tend to pass through said structure from either within or without, and end closures secured to said edges and having annular flanged portions adapted to receive the raw edges of said body, and a sealing compound interposed between said raw edges and said flanged portions of the ends and functioning both as a seal against the discharge of any liquid absorbed by said structure and as a sealing medium between said structure and said end closures.

ROBERT JOHN.