

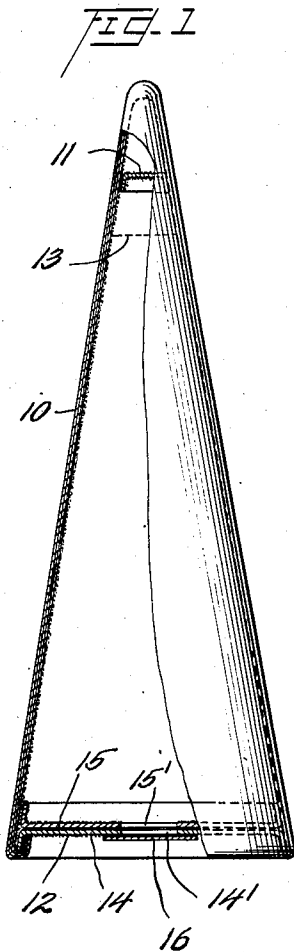
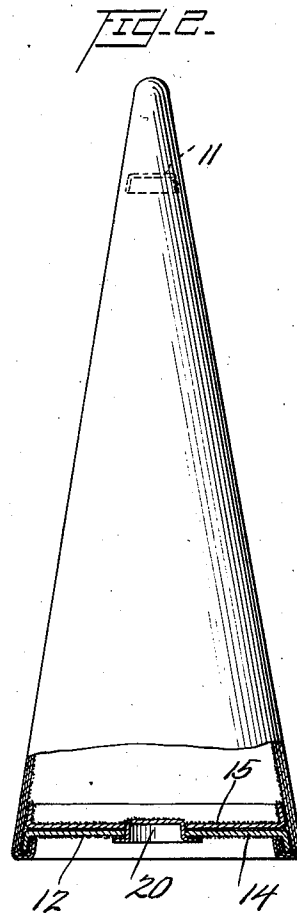
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CONTAINER

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CONTAINER

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This invention relates to containers for the packaging, transportation and dispensing of commodities and particularly to containers fabricated of paper and primarily intended for dispensing of liquids such as lubricating oils.

It has heretofore been suggested that paper containers of self-supporting type and conical in form might advantageously be employed for the packaging and dispensing of lubricating oils. A paper container, after being emptied, can of course be readily disposed of by burning and where the paper container is conical in form it comprises a convenient pouring funnel in itself, after its nose or apex has been severed. However, this type of container has never been commercially used, one difficulty being to so fabricate it that leaks will not develop during transportation and handling. A primary purpose of the present invention is to provide a paper container of the conical type which may be economically fabricated, is self-supporting at all times, and which will withstand the shock and abrasion incident to rough handling without developing leaks. One feature of the improved container is the provision of a transverse partition or bulkhead within the container and closely adjacent the nose or apex thereof, this partition dividing the container into two non-communicating compartments, a major compartment in which the liquid commodity is placed, and a minor compartment adjacent the apex which is entirely empty. It is the apex of the container which is most likely to fail or develop leaks when the container is roughly handled and, by the provision of the bulkhead or partition referred to, the liquid contents of the major compartment is prevented from escaping even though the apex may have become severely damaged.

It is also a matter of some practical difficulty to provide a closure for the larger end or bottom of such a container which adequately retains its liquid contents at all times and it is a further object of the invention to provide an improved bottom construction for a tubular container primarily intended for liquids. This bottom construction comprises essentially two discs, each provided with a peripheral flange, the discs being positioned in face to face relationship with the flanges extending in opposite directions axially of the container, these flanges being attached to the conical inner surface of the container by a suitable adhesive. A paper container for liquids must be necessarily interiorly coated with some coating composition which prevents penetration of the liquid into the fibrous walls of the con-

tainer. Where oils are to be packaged and dispensed this coating composition may comprise glue and I select glue in order to make use of this coating as the means for attaching the flanges of the bottom discs to the inner wall of the container and also as the means for attachment of the bulkhead or partition to such inner wall, thus simplifying the process of manufacture and making it possible to produce a container of the type above described at lowest possible cost.

Two such containers are illustrated in the accompanying drawing by way of example. It will be appreciated by those skilled in the art that certain features of the invention may be incorporated in containers which are not truly conical, as for instance in cylindrical paper containers, although primarily the invention is directed to the production of an inexpensive and thoroughly satisfactory paper container of the conical type.

In the drawing:

Figure 1 is a side elevation of a container, partially broken away, to disclose the bulkhead and bottom construction; and

Figure 2 is a similar view, partially broken away to show a slightly different type of bottom construction.

The conical body portion of the container is indicated at 10, the transverse bulkhead or partition at 11, the bottom or end closure being generally indicated at 12. The body portion 10 is fabricated by winding upon a conical mandrel a generally semi-circular paper blank which has preferably previously been coated with a suitable adhesive, the resulting cone being two or more plies in thickness and the several plies being secured together by the adhesive applied prior to the winding operation. The cone is trimmed at its large end in the customary manner and after it has dried its small end or apex is rounded and closed, for instance by pressing the same against a rapidly rotating die. If this closing operation is properly effected the annular edge of the body at the small end will be laterally and inwardly deflected and caused to merge into a continuous structure, exteriorly polished and ordinarily strong and well able to withstand substantial shock without damage. After the container is charged with the liquid, however, it is comparatively heavy and, if dropped for any distance in such manner that it falls with its apex end downwardly so as to strike a solid object, there is a strong likelihood that its apex will be opened to permit the escape of the con-

tained liquid. In order, therefore, that no such escape of liquid may occur even though the nose or apex of the container be severely damaged, the bulkhead 11 is inserted. This bulkhead preferably comprises a paper disc having a continuous peripheral frusto-conical flange, the outer surface of which is adapted to seat against the inner surface of the container body 10. It is spaced rather closely to the apex end of the container and divides the container into two compartments, a minor compartment which lies above the bulkhead and a major compartment which lies below. The normal level of the liquid in the container may be as indicated by the line 13.

The bottom closure comprises two paper discs 14 and 15, disposed in close parallel relationship, and each having a continuous peripheral frusto-conical flange, the outer surface of which is adapted to closely engage the conical inner surface of the body 10, these flanges extending in opposite directions axially of the container. As will be observed, the margin of container body 10, at its base or large end, is inwardly and upwardly deflected so as to envelop and retain the peripheral flange of the lower bottom disc 14. The discs are provided with registering apertures 14' and 15' through which the liquid to be packaged may be introduced when the container, as thus far assembled, is inverted. After charging, this charging opening may be closed by a circular disc such as indicated at 16 in Figure 1 or a paper plug such as indicated at 20 in Figure 2.

All surfaces of the container which are or may possibly be exposed to its liquid contents are, prior to charging, coated with a coating substance or material, resistant to the action of the contained liquid, to prevent penetration of the liquid into the fibrous walls of the paper members which, together, comprise the container. Where oils are used the coating substance may conveniently be glue, which will resist the action of oils, and glue is used preferably inasmuch as it likewise comprises an adhesive by means of which the bulkhead 11 and the bottom discs 14 and 15 may be attached to the inner wall surface of the body. After the formation of the conical body 10 and after the adhesive with which the original blank was coated has dried, the leak-proofing substance which is employed is applied to the entire inner surface of this cone or body. The bulkhead or partition member 11 is dipped in the leak-proofing substance and inserted in the cone until positioned as shown in Figure 1. The bottom members 14 and 15 are likewise dipped in the coating material just prior to insertion within the large end of the cone. Hence all surfaces of the container are coated and, inasmuch as the partition 11 and bot-

tom members 14 and 15 are applied to the body 10 while the coating composition thereon is still in liquid condition, the coating composition itself likewise comprises a bonding material for securing these members in position. The closure disc 16 is likewise dipped in the coating material prior to application and, in the event that a closure cap such as indicated at 20 in Figure 2 is applied, this is also dipped prior to application.

The bulkhead member 11 may be inserted through the filling opening after the bottom members 14 and 15 have been applied, if desired. Preferably the lower margin of the body 10, or the margin of this conical body immediately adjacent its large end, is inturned after the coating material has completely dried. After charging and closing of the container it may be coated exteriorly, on all surfaces, with a coating composition, to prevent the penetration of moisture into the exposed surfaces of the container, which would tend to weaken the wall of the container.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A container for liquids comprising a hollow conical paper body, a closure for the larger end of said body, and a partition or bulkhead within the container adjacent the apex end thereof which serves to prevent passage of liquid to said apex.

2. A container for liquids comprising a hollow multi-ply conical paper body the apex of which has been rounded over and closed by pressure, and a partition within the said body closely adjacent the apex thereof to retain the liquid contents in the event that the apex closure is damaged.

3. The combination set forth in claim 2 in which the partition member comprises a paper disc with a frusto-conical flange, the outer surface of said flange bearing closely against the inner surface of said body and being attached thereto by an adhesive.

4. The method of making paper containers which comprises separately forming a conical body portion and a plurality of spaced circular partitions or bulkheads, each of a diameter equal to that of the circular section of the cone of the body portion at which they are to be disposed, coating the interior surface of the body with a leak-proofing substance of adhesive nature, and successively inserting the bulkheads up to their limit of movement with the cone and into contact with the adhesive covered interior surface whereby they are secured thereto by means of said coating substance.

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