April 3, 1962 F. L. JONES 3,028,032

REVERSIBLE SEALING AND DRAIN COUPLING

Original Filed March 1, 1954

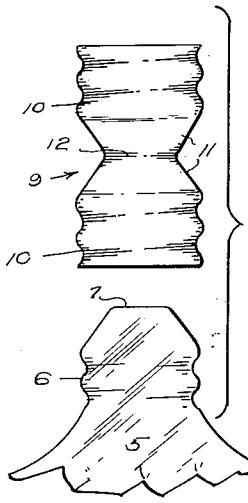


Fig. 1.

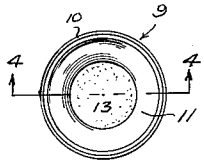


Fig. 2.

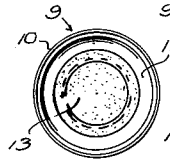


Fig. 3.

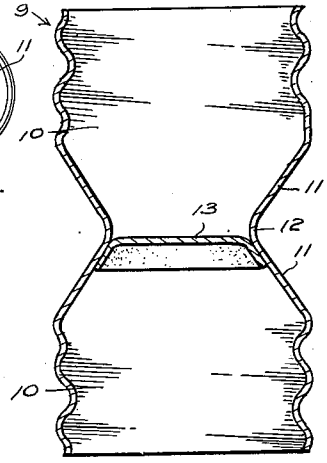


Fig. 4.

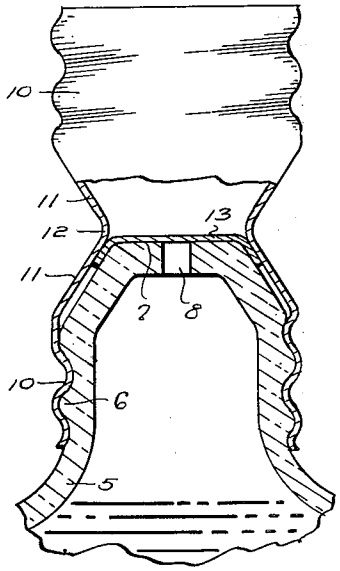


Fig. 5.

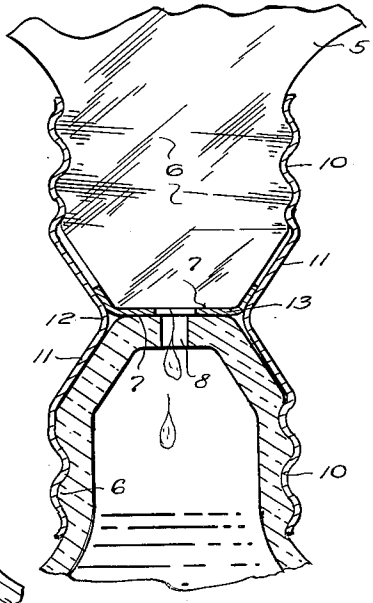


Fig. 6.

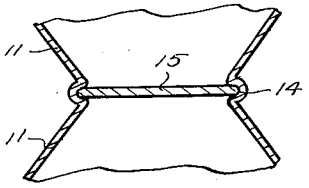


Fig. 7.

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3,028,032
REVERSIBLE SEALING AND DRAIN COUPLING

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Substituted for abandoned application Ser. No. 413,118, Mar. 1, 1954. This application July 14, 1960, Ser. No. 43,702

1 Claim. (Cl. 215—43)

This invention relates to a screw type bottle cap and has particular reference to such a device that is reversible to serve jointly as a sealing cap and as a drainage coupling for draining the contents of one bottle to another. This application is a substitute for the application filed March 1, 1954, Serial No. 413,118, allowed March 27, 1956, and forfeited by the non-payment of the final fee.

Various fluids such as hair creams, face lotions or the like having a relatively high viscosity which is dispensed in various containers, some of which are provided with a reduced discharge opening and it becomes difficult to dispense all of the fluid, due primarily to the fact that a considerable portion thereof adheres to the sides of the bottle with the result that the average individual usually discards the bottle after the major portion of the fluid has been used, thus wasting a portion of the fluid due to its slow flowing characteristics and it is an object of the present invention to provide a combined cap and coupling device whereby a relatively exhausted bottle may be inverted and connected with a new bottle to stand in a vertical position overnight or for other given periods whereby the remaining fluid will be gradually drained downwardly into the new bottle.

The invention contemplates a novel form of coupling cap that is provided with identically threaded open ends corresponding to the conventional threads upon the neck of a bottle and with the coupling device intermediate its ends being provided with a fracturable seal that normally seals the original bottle in its initial application.

The invention further contemplates a coupling cap that may be readily stamped or otherwise formed from various suitable materials such as metal, plastic or a hard rubber and with the device being of such size as will not greatly increase the height of the receptacle nor interfere with the commercial packing or storage of the receptacle.

The invention will be more readily understood during the course of the following description, reference being had to the accompanying drawings wherein has been illustrated a preferred form of the device and wherein like characters of reference are employed to denote like parts throughout the several figures.

In the drawings:

FIGURE 1 is a side elevation of a coupling cap and associated bottle neck constructed in accordance with the invention,

FIGURE 2 is a top plan view of the device,

FIGURE 3 is a bottom plan view of the device,

FIGURE 4 is an enlarged vertical section, taken substantially on line 4—4 of FIGURE 2,

FIGURE 5 is a view similar to FIGURE 4 with parts in section and part in elevation showing the device in sealing engagement with the threaded neck of a bottle,

FIGURE 6 is a view similar to FIGURE 4 but showing the device in an inverted manner for coupling the neck portions of two bottles together and,

FIGURE 7 is a fragmentary vertical section illustrating a modified form of seal.

Referring specifically to the drawings, there has been illustrated fragmentarily a neck portion 5 of a well-known container presently on the market. The neck portion 5 is provided with the usual threads 6. The upper or discharge end of the neck 5 has been shown as being frusto conical having a flat top portion 7 and a relatively small

discharge opening 8. It will be clearly apparent, however, that the invention will be modified to accommodate it to various containers having neck portions of different shapes and while the device to be described has been shown in connection with a glass or similar container, it follows that the invention is applicable to other containers, such as metal cans or the like.

The coupling cap of this invention is indicated as a whole by the numeral 9 and comprises oppositely opening and axially aligned threaded sleeves 10. To accommodate the device to the form of container illustrated, the sleeves 10 are connected by tapered sleeve portions 11, corresponding substantially to the frusto conical head of the neck portion 5. The sleeves 10 and sleeve portions 11 are preferably cast or stamped from a single tubular section of material. The sleeve portions 11 each provide a reduced neck portion 12 that is disposed intermediate the open ends of the sleeves 10. Rigidly fixed within the coupling at a point adjacent the neck portion 12 is a fracturable sealing disk 13 which may be formed of cardboard, plastic, metal foil or any other material which may be easily punctured. As shown in FIGURE 5, the disk 13 serves to effectively seal the opening 8 as the device is employed upon the bottle neck 5 as the original closure cap. The cap is thus removed and replaced throughout the use of the bottle in the customary manner.

In use, when the contents of the bottle have been substantially exhausted and a new bottle is purchased, the operator removes the cap from the new bottle and then by using a sharp instrument, punctures a hole through the disk 13, at which time the original cap is inverted and screwed in position upon the old bottle after which, the old bottle is inverted with its attached cap and the opposite threaded sleeve 10 is engaged with the neck portion of the new bottle and the bottle then arranged in an upright position and left to stand for a reasonable length of time, during which time the remaining fluid in the old bottle will drain outwardly into the new bottle, as clearly illustrated in FIGURE 6, thus making it possible to utilize the entire contents of the bottle which heretofore has been wasted due to its slow flowing qualities. After the old bottle has been completely drained, it is removed together with the original coupling having the fractured disk 13 and the whole discarded. The new cap is then engaged with the new container. It may be found desirable that the manufacturer of the coupling caps shall furnish additional disks 13 which may be conveniently replaced by the operator thus providing for a coupling cap that may be purchased separately from the bottle for continuous use.

An example of a replaceable sealing disk has been illustrated in FIGURE 7 wherein the sleeve portions 11 are stamped to provide a shallow groove 14 wherein a sealing disk 15 may be easily snapped into position.

It will be apparent from the foregoing that an extremely simple and highly desirable device has been provided which will result in a considerable saving in the cost of fluids of relatively high viscosity. The device is readily adapted as the closure and drainage coupling on each bottle or container or it may be furnished as an accessory for use with bottles or other containers that are normally provided with the conventional cap. While the sleeve portions 11 have been shown as generally conical to a reduced neck portion 12, it will be apparent that the sleeve portions 11 may be in the form of a straight cylindrical connection type between the threaded sleeves 10 whereby the device is adaptable to container necks that are formed substantially cylindrical in shape. The device has a wide range of use upon containers for various slow flowing fluids, such as hair and skin lotions, oily substances, syrup or the like. The device is extremely cheap to manufacture, is strong, durable and highly effective in use.

It is to be understood that the invention is not limited

to the precise design illustrated, but contemplates such changes as readily fall within the spirit or the scope of the subjoined claim.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

A combined sealing cap and drainage coupling for containers carrying viscous fluids, comprising a tubular body portion open throughout its length, the opposite ends of the body portion being identically threaded for engagement with threads formed upon container discharge necks, the body portion being provided intermediate its ends with a sealing disc that engages and seals the discharge neck of the container, the sealing disc being fracturable to permit the passage of a fluid from one container to another when the coupling is simultaneously connected to the discharge necks of two containers in end to end relation, the said body portion and the threads being stamped from a single section of tubular material, the body portion intermediate its ends being reduced in diameter and provided with an inwardly opening annular groove, the said fracturable sealing disc having a snapping seating engagement within the groove throughout its circumference.

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