

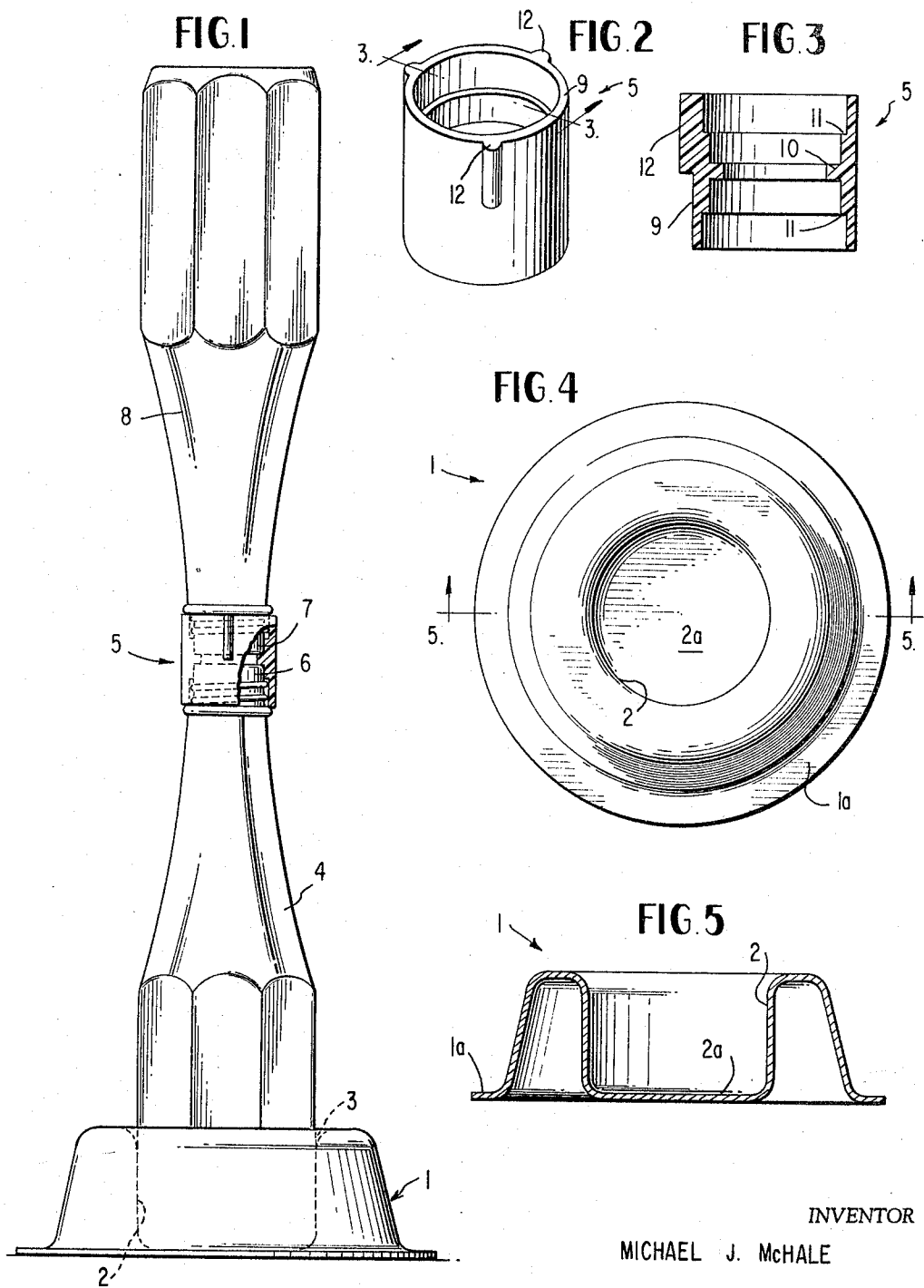
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M. J. McHALE
DRAINAGE ASSEMBLY

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2 Sheets-Sheet 1



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FIG. 6

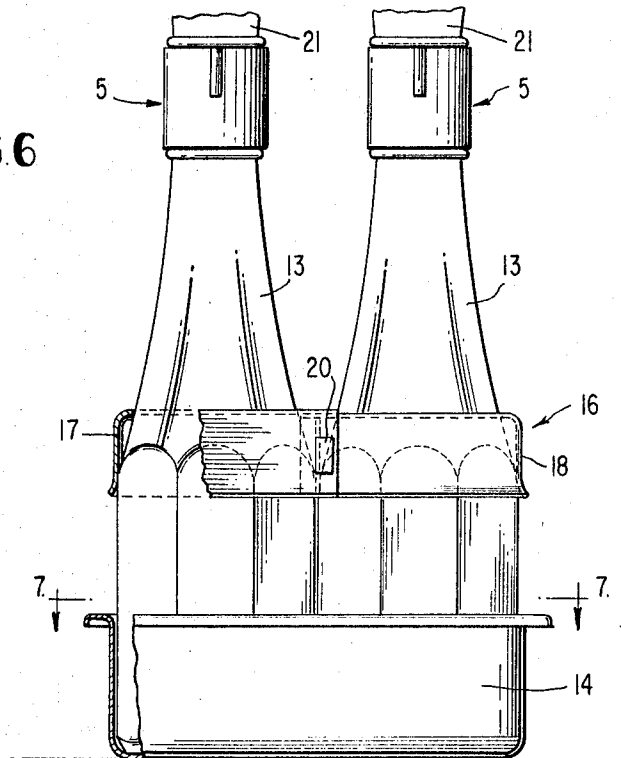


FIG. 7

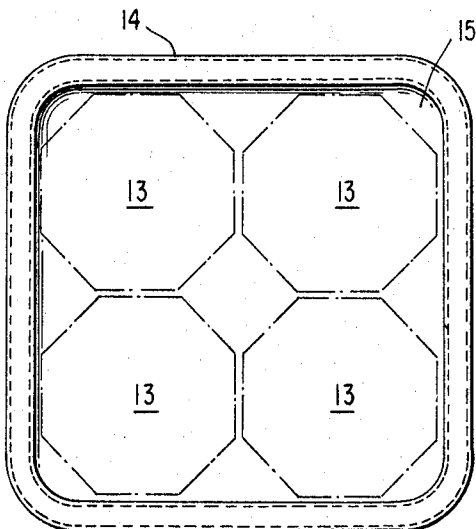
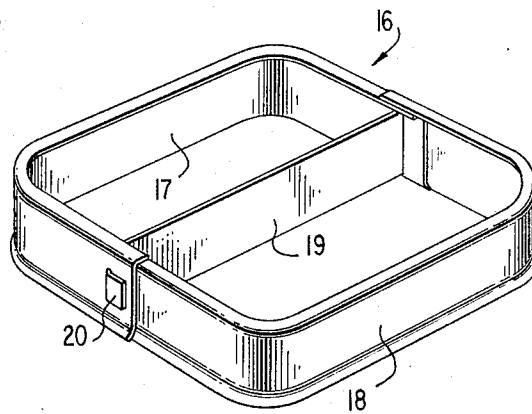


FIG. 8



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DRAINAGE ASSEMBLY

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3 Claims. (Cl. 141-364)

This invention relates to drainage of relatively viscous fluids from containers of such fluids, and more particularly to a drainage kit comprising an assembly of components adapted for cooperative support of the containers in coupled, stable, inverted position to drain the same.

Heretofore, it has been suggested to provide connectors or couplings adapted for connection to the neck portion of a bottle, jar, or the like, for supporting one container in inverted position on another for the purpose of draining the inverted container, or to effectively seal the joint between the containers. In one proposed arrangement, the coupling member comprises a body portion having threaded open ends for engagement with the threaded discharge necks of the containers, the body portion being provided with a frangible portion intermediate its ends. The coupling means is designed for dual functions; namely, to serve as a closure cap for a container, or to support one container in inverted position on another for drainage.

While the above described dual function coupling means is no doubt satisfactory and functions for its intended purposes, it is open to certain objections which are inherent in its design. From an economical standpoint, the provision of a substitute cap for the conventional closure cap furnished with the container is an unnecessary expense, for the reason that its closing function is destroyed as soon as the disc is removed or punctured. Additionally, since the combined closure and drainage cap is of the threaded type, if the containers are formed from glass, there is a possibility that when the disc is removed or punctured to permit drainage, the upper surfaces of the container outlets may come into direct contact as the coupling is turned down, with resultant chipping or cracking of the neck portions. Another disadvantage found in prior drainage arrangements is the lack of stability in the assembly when one container is supported in inverted position on another; this is particularly true when long, slender containers, such as ketchup bottles, are being drained.

After considerable research and experimentation, the drainage assembly of the present invention has been devised to overcome the above-noted disadvantages in known-types of drainage assemblies. The assembly of the present invention comprises, essentially, a base having a centrally recessed portion to receive the bottom portion of a container in seated, frictional engagement therewith, and a coupling member designed for slip-fit frictional engagement with the outlet portion of said container, and with the outlet portion of another container supported in inverted position thereon. The invention also comprehends simultaneous drainage of multiple sets of coupled inverted containers supported in nested relation in the recessed bottom member, the containers being maintained in stable supported position by means of a collar fitted over the neck portions of the contiguous sets of containers.

The coupling member employed to support one container in inverted position on another container to drain the same, is an important feature of the present invention. By reason of its improved design, the coupling is adapted for slip-fit frictional engagement with the outlet portions of the containers, to thereby facilitate its application and removal, and when used on glass containers the coupling prevents glass-to-glass contact of the upper surfaces of the outlet portions, thus eliminating cracking or chipping thereof.

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An object of the invention is to provide an improved drainage assembly for draining relatively viscous fluids from one container into another while supporting the containers in coupled, stable, inverted position.

Another object of the invention is to provide an improved drainage assembly for draining relatively viscous fluids from one container into another wherein a base member is provided having a recessed portion for receiving in seated, frictional engagement, the bottom portion of the container into which the viscous fluid is being drained.

Yet another object of the invention is to provide an improved drainage assembly for draining relatively viscous fluids from one container into another wherein a coupling member is adapted for slip-fit frictional engagement with the outlet portion of the container into which the viscous fluid is being drained and the outlet portion of the other container supported in inverted position thereon.

Still another object of the invention is to provide an improved coupling member for draining relatively viscous fluids from one container into another, the coupling member being adapted to interconnect the outlet portion of the containers and, when used with glass containers, being constructed and arranged to prevent glass-to-glass contact of the upper surfaces of the outlet portions thereby eliminating cracking or chipping thereof.

A further object of the invention is to provide an improved drainage assembly for simultaneously draining multiple sets of coupled inverted containers supported in nested relation in a recessed base member, and maintained in stable supported position by means of a collar fitted over the neck portions of the contiguous sets of containers.

A still further object of the invention is to provide an improved drainage assembly for draining relatively viscous fluids from one container into another, said assembly being characterized by simplicity in design, being inexpensive to manufacture, and being strong and durable even after long and continued use.

With these and other objects in view, which may be incident to my improvements, the invention consists in the parts and combinations to be hereinafter set forth and claimed, with the understanding that the several necessary elements, comprising my invention, may be varied in construction, proportions and arrangement, without departing from the spirit and scope of the appended claims.

In order to make my invention more clearly understood, I have shown in the accompanying drawings means for carrying the same into practical effect, without limiting the improvements in their useful applications to the particular constructions which, for the purpose of explanation, have been made the subject of illustration.

In the drawings:

FIGURE 1 is a side elevational view of the drainage assembly showing the coupling member, partially in section, supporting an inverted container on another container having its bottom seated within a base member;

FIGURE 2 is a perspective view of the coupling member;

FIGURE 3 is a sectional view of the coupling member taken along line 3-3 of FIGURE 2;

FIGURE 4 is a top plan view of the recessed base member;

FIGURE 5 is a sectional view of the base member taken along line 5-5 of FIGURE 4;

FIGURE 6 is a side elevational view, partially in section, showing the drainage assembly for simultaneously draining multiple sets of coupled inverted containers maintained in stable supported position by means of a collar fitted over the neck portion of the containers;

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FIGURE 7 is a top plan view of the assembly taken along line 7—7 of FIGURE 6; and

FIGURE 8 is a perspective view of the collar.

Referring to the drawings, and more particularly to FIGURE 1, the drainage assembly of the present invention comprises a base member 1 having a centrally recessed portion 2 for receiving the bottom portion 3 of a container 4 in seated frictional engagement therewith, and a coupling member 5 designed for slip-fit frictional engagement with the threaded outlet portion 6 of container 4, and with the threaded outlet portion 7 of another container supported in inverted position thereon.

As will be seen in FIGURES 2 and 3, coupling member 5 comprises a cylindrical sleeve 9 having an annular lip 10 formed on its inner surface intermediate the ends thereof, and a pair of shoulders 11 formed in the inner surface of the sleeve on opposite sides of the lip. By this construction and arrangement, the respective upper surfaces of the container outlet portions engage opposite planar sides of the lip 10 and the threaded portions of the containers engage the shoulders 11 which are positioned substantially intermediate the ends of the sleeve and the corresponding side of the lip, as shown in FIGURE 1. The coupling also includes a plurality of protuberances 12 formed on the outer surface of the sleeve to form a gripping surface for the user when placing the coupling on a container, to be described more fully hereinafter.

The base member 1 (FIGURES 4 and 5) for supporting the container, into which the viscous fluid is being drained, is in the shape of a frustum with the upper surface being bent back upon itself to form a circular recess 2 which receives the bottom portion of the container in seated frictional engagement therewith. The base member also includes an outwardly extending annular flange 1a which is positioned in the same horizontal plane as the bottom surface 2a of the recess to thereby further enhance the stability of the assembly.

In using the drainage kit of the present invention, container 4, into which the viscous fluid is to be drained, is placed in base member 1 and coupling member 5 is slipped over the container threaded outlet portion 6 so that the upper surface of the outlet portion engages one side of lip 10. Container 8 is then similarly connected to the coupling with the upper surface of the outlet portion 7 abutting the opposite side of lip 10. With the coupling so positioned between the bottles an effective seal is provided for draining the fluid from container 8 into container 4, and the lip 10 interposed between the upper surfaces of the container outlet portions maintains the outlet portions in spaced relation to each other to thereby prevent cracking or chipping thereof.

The design of the base member and coupling member enables the assembly to be readily formed from plastic substances such as Teflon, nylon, etc. and by reason of the fact that these plastic substances possess excellent anti-friction and sealing qualities, the plastic coupling member can be easily slipped onto the bottles and when so mounted provides an effective seal between the containers.

It will be apparent to those skilled in the art that the base member and coupling may be made in various sizes to accommodate various types of glass or plastic containers, such as bottles, cans, etc. containing relatively high viscous fluids such as ketchup, mustard, hair creams, face lotions, paint and the like. Whether these containers have threaded outlet portions or not is immaterial in using the coupling member of the present invention since the slip-fit design of the coupling readily accommodates it to all types of container outlets. Thus, for purposes of illustration, the assembly is shown in use on a familiar type of ketchup bottle having a long, narrow, tapered neck and an octagonal bottom portion. The average person, whether he be the individual homeowner or restaurateur, has experienced difficulty in dispensing all of the ketchup from this type of bottle, due primarily to the fact that a considerable portion thereof adheres to the

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sides of the bottle after the major portion of the ketchup has been used, thus, wasting a portion of the fluid due to its slow flowing characteristics. This waste of ketchup can amount to a considerable expense particularly in the case of a restaurateur who uses a myriad of ketchup bottles daily.

Therefore when it is desired to simultaneously drain multiple sets of coupled, inverted bottles, particularly in the case of a restaurant owner, the assembly shown in FIGURES 6 to 8 is employed wherein four bottles 13 are placed within a base member 14 having a rectangular recess 15 adapted to receive the bottom portions of the bottles in frictional engagement therewith. In order to hold the bottles in a nested, contiguous position within the base member, a collar 16 is fitted over the tapered neck portions of the bottles as shown in FIGURE 6, and comprises a pair of oppositely disposed channel members 17 and 18, each having the end portion of one of its legs overlapped by the end portion of the opposite leg on the other channel member. The collar also includes a transversely extending partition 19 having ear portions 20 extending through the overlapped leg portions and bent thereagainst to hold the channels together. When placing the collar on four bottles arranged as shown in FIGURE 7, the channel members 17 and 18 and partition 19 form a skirt which engages three sides of each bottle in the vicinity of the upper portion of the octagonal wall, and by forcing the collar downwardly a wedging action is produced causing the bottles to move inwardly towards each other so that adjacent bottles become contiguous on a fourth side. To complete the assembly, the coupling members 5 are connected to the outlet portions of bottles 13 and to the outlet portions of inverted bottles 21 in the same manner as described hereinabove.

By the construction and arrangement of the collar 16 and coupling members 5, it will be readily seen that a plurality of sets of coupled inverted bottles can be supported and maintained in a stable, nested relation while simultaneously draining the viscous fluid from the bottles, and while for purposes of illustration, a nest of four bottles has been disclosed, it is within the purview of the present invention to accommodate any number of bottles so long as three sides of each bottle are engaged by the collar and the fourth side of each bottle is engaged by the adjacent bottle.

While I have shown and described the preferred embodiment of my invention, I wish it to be understood that I do not confine myself to the precise details of construction herein set forth by way of illustration, as it is apparent that many changes and variations may be made therein, by those skilled in the art, without departing from the spirit of the invention or exceeding the scope of the appended claims.

I claim:

1. A bottle coupling device of the character described for draining relatively viscous fluids, such as ketchup and the like, from one bottle into another, comprising a cylindrical sleeve providing a slip-fit connection between the threaded neck portion of each bottle, an annular lip formed on the inner surface of the sleeve intermediate the ends thereof for limiting the ingress of the neck portion of each bottle into the sleeve, said lip extending radially inwardly from the inner surface of the sleeve and having plane surfaces normal to the longitudinal axis of the sleeve for maintaining the upper surfaces of the bottle outlets in spaced relation to thereby prevent cracking or chipping thereof, and a pair of annular shoulders formed on the inner surface of the sleeve on opposite sides of said lip, each shoulder being positioned substantially intermediate the respective end of the sleeve and the corresponding side of said lip, said shoulders being adapted to engage the threaded portion of the bottle neck to thereby form an effective seal between the bottles.

2. A bottle coupling device according to claim 1, wherein a plurality of circumferentially spaced, longitudinally

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extending protuberances are formed on the outer surface of the cylindrical sleeve to thereby provide gripping means to facilitate the insertion of the bottle necks into the sleeve.

3. In combination, a bottle coupling device and a base member supporting a bottle containing relatively viscous fluids, such as ketchup and the like, said coupling comprising a cylindrical sleeve slip-fitted over the threaded neck portion of the bottle and in frictional engagement therewith, and another bottle mounted in inverted position with its threaded neck portion inserted within the opposite end of the sleeve, an annular lip formed on the inner surface of the sleeve intermediate the ends thereof for limiting the ingress of the neck portion of each bottle into the sleeve, said lip extending radially inwardly from the inner surface of the sleeve and having plane surfaces normal to the longitudinal axis of the sleeve for maintaining the upper surfaces of the bottle outlets in spaced relation to thereby prevent cracking or chipping thereof, and a pair of annular shoulders formed on the inner surface of the sleeve on opposite sides of

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said lip, each shoulder being positioned substantially intermediate the respective end of the sleeve and the corresponding side of said lip, said shoulders engaging the threaded portion of the bottle necks to thereby form an effective seal between the bottles, whereby the viscous fluid may be drained from the inverted bottle into the first-mentioned bottle.

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