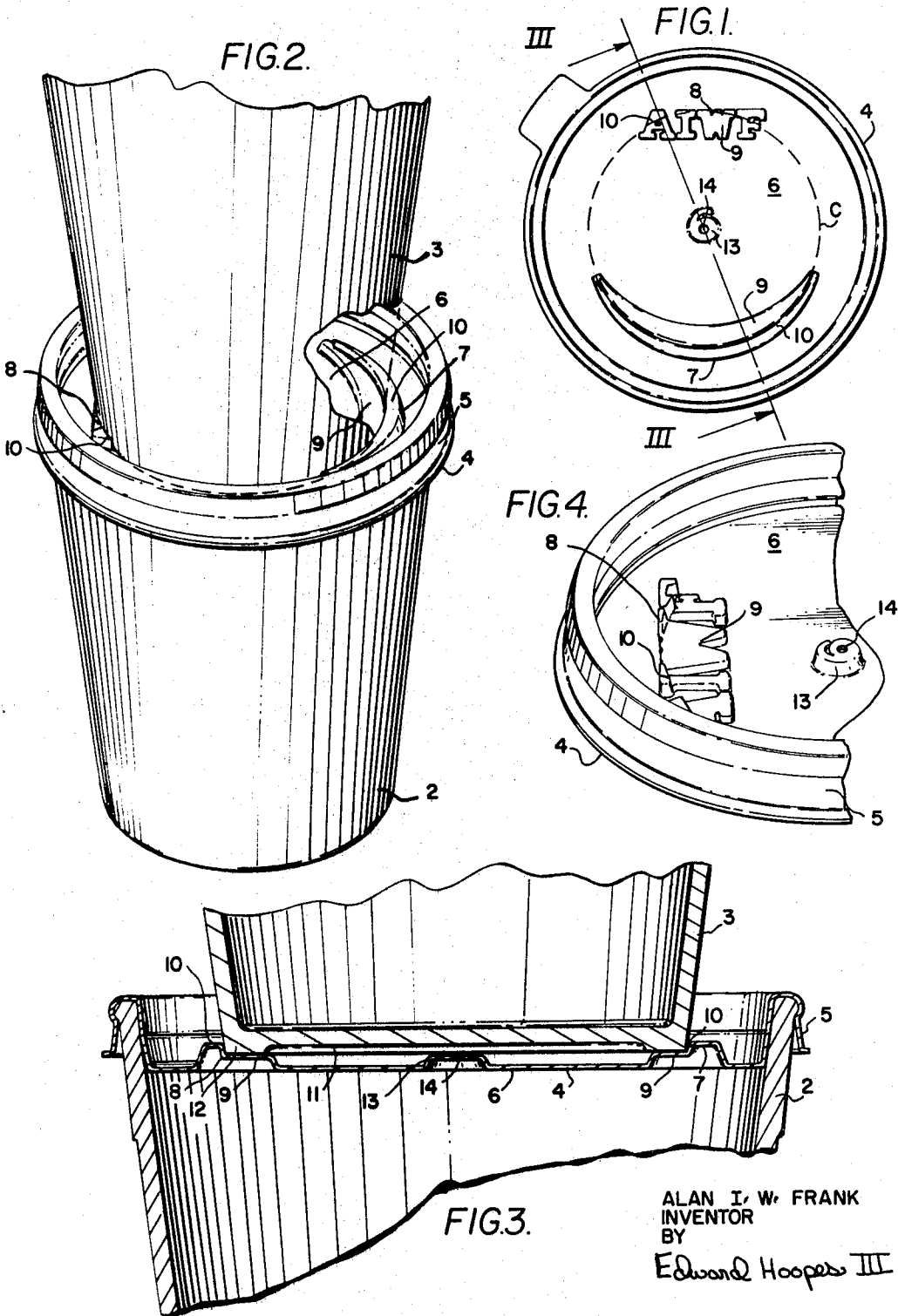


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A. I. W. FRANK
CONTAINER LID
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CONTAINER LID

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ABSTRACT OF THE DISCLOSURE

A container lid having an arcuate projection of at least about 60° with other projections in the same circle to position the bottom of a container stacked atop it. The lid has a central upward projection containing a vent hole. The structure is such that the vent hole is not closed by a stacked container.

This invention relates to a container lid of the type applied to a generally circular container which is larger at the top than at the bottom and which with the lid applied is adapted to have a similar container stacked atop it. My lid has improved means to position generally centrally of the lid the bottom of a container stacked atop it and improved means for venting the container to which the lid is applied while obviating sloshing of liquid out through the vent.

While my invention is of general application to containers of the type above mentioned I will for purposes of explanation and illustration describe the invention as embodied in a lid for a drinking cup of the type employed for coffee and other beverages which are "taken out" for consumption away from the place of sale. Such cups are made of various materials including plastic material and specially treated paper. They are generally tapered to larger diameter from bottom to top. Such containers when filled with a beverage, such, for example, as coffee, and closed by application of a lid are frequently stacked to facilitate simultaneous handling of a number of the containers. It is known to provide the lids of such containers with centering projections for centering the bottom of a container stacked atop the lid. I provide improved centering means facilitating rapid stacking.

My improved lid is circular to fit a generally circular container larger at the top than at the bottom and which with the lid applied is adapted to have a similar container stacked atop it. The lid has a peripheral portion adapted to seal to, and desirably within, the container and a transverse body portion having a plurality of upward projections disposed inwardly relatively to the peripheral portion. The peripheral portion may extend upwardly to a height above said plurality of upward projections and constitutes a downwardly open circular channel adapted to fit over the container rim. At least one of the upward projections of the lid has an inward face generally arcuately concave through an arc of at least about 60°. The upward projections serve to position generally centrally of the lid the bottom of a container stacked atop it. The arcuate projection extending through an arc of at least about 60° facilitates rapid stacking as it provides a readily visible abutment against which the bottom of the stacked container may be readily and quickly positioned without the necessity of accurately setting down the stacked container at the center of a plurality of relatively small relatively difficultly visible projections. The stacked container may be moved downwardly and laterally against the arcuate projection with assurance that it will properly position the stacked container atop the lid. The cooperating centering projections maintain it in position.

The inward positioning faces of the plurality of projec-

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tions of the lid lie substantially on the same circle, the circle being of such size that the bottom of the stacked container as snugly received in the circularly arranged upward projections. The circularly arranged upward projections preferably have their center at the center of the lid so that the stacked container is concentric with the lid.

The upward projections of the lid may be formed to provide seat portions below the tops thereof adapted to have the bottom of the stacked container seated thereon. Preferably the upward projection having an inward face generally arcuately concave through an arc of at least about 60° has generally the shape of a crescent. The seat portions below the tops of the projections when utilized are preferably closer to the center of the lid than the tops of the projections.

The lid has a generally centrally located upward projection containing a vent hole. The height of the generally centrally located upward projection is preferably less than the height of the centering projections to insure against sealing of the vent hole by the stacked container. When the upward projections have seat portions below the tops thereof for receiving the bottom of the stacked container the height of the central projection is less than the height of the seat portions of the surrounding projections.

Other details, objects and advantages of the invention will become apparent as the following description of a present preferred embodiment thereof proceeds.

In the accompanying drawings I have shown a present preferred embodiment of the invention in which

FIGURE 1 is a top plan view of a container lid embodying my invention;

FIGURE 2 is an isometric view with portions broken away showing a lower container having applied thereto the lid of FIGURE 1 with a similar container stacked atop it;

FIGURE 3 is a fragmentary enlarged vertical axial cross-sectional view through the upper portion of the lower container, the lid thereon and the bottom of the upper or stacked container of FIGURE 2, the cross-sectional showing of the lid in FIGURE 3 being taken on the line III—III of FIGURE 1; and

FIGURE 4 is a fragmentary isometric view to enlarged scale showing a portion of the lid.

Referring now more particularly to the drawings, the lower container shown in FIGURES 2 and 3 is designated 2 and the upper container shown in those figures is designated 3. The containers 2 and 3 are identical and may, for example, be drinking cups made of expandable polystyrene beads heated in a mold under pressure as well known to those skilled in the art. The present invention is not concerned with the form of the containers or the material of which they are made except that they are larger at the top than at the bottom providing for stacking with the bottom of the upper or stacked container disposed within the periphery of the lid applied to the lower container.

The lid is designated generally by reference numeral 4 and in the form shown has a peripheral portion constituting a downwardly open circular channel 5 adapted to fit over and seal to the inside of the rim of the container as shown in FIGURE 3. However, within the broad scope of the present invention the lid may otherwise seal to the container. The present invention is concerned primarily with the transverse body portion of the lid lying within the peripheral portion adapted to seal to the container.

The transverse body portion of the lid is designated by reference numeral 6 and has generally opposed upward projections 7 and 8. The peripheral portion of the

lid including the channel 5 extends to a height higher than the projections 7 and 8.

In the form shown the projections 7 and 8 are formed to provide seat portions below the tops of the projections adapted to have the bottom of the stacked container seated thereon. Each of the projections 7 and 8 has an inner lower or seat portion 9 and an outer upper portion 10 as shown. The stacked cup seats on the portions 9 and is centered by the higher portions 10. This is clearly shown in FIGURE 3. In FIGURE 1 the broken circle C indicates the periphery of the bottom of the stacked container. The bottom of the stacked container has a raised central portion 11 and a downwardly extending peripheral portion 12. It is the portion 12 of the stacked container which seats on the portions 9 of the projections 7 and 8 and is centered by the portions 10 thereof.

The projection 7 is formed as a crescent while the projection 8 is formed to show the trade-mark "AIWF" of my assignee. However, both projections have the inward faces of the upper portion 10 thereof arcuately concave. The inward face of the upper portion 10 of the projection 7 is arcuately concave through an arc of at least about 60° for the purpose above explained. Both of the projections 7 and 8 have lower seat portions and higher centering portions as above described providing for accurate central seating of the stacked cup 3 upon the lid spaced above the body portion 6 thereof as clearly shown in FIGURE 3.

Disposed centrally of the lid is an upward projection 13 which in the form shown is shaped as the numeral "6" indicating the size of the lid, or, more accurately, the size of the cup for which the lid is made. Extending through the projection 13 is a vent hole 14. The height of the projection 13 is less than the height of the seat portions 9 of the projections 7 and 8 obviating sealing of the vent hole by the bottom of a container which might be flat completely across. The structure shown accomplishes effective venting while minimizing sloshing of liquid out through the vent.

While I have shown and described a present preferred embodiment of the invention it is to be distinctly understood that the invention is not limited thereto but may be otherwise variously embodied within the scope of the following claims.

I claim:

1. A generally circular lid for a generally circular container larger at the top than at the bottom and which with the lid applied is adapted to have a similar container stacked atop it, the lid having a peripheral portion adapted to seal to the container and a transverse body portion having a plurality of upward projections disposed inwardly relatively to said peripheral portion, at least one of said upward projections having an inward face generally arcuately concave through an arc of at least about 60°, said upward projections serving to position generally centrally of the lid the bottom of a container stacked atop it, the transverse body portion inwardly of said upward projections having a portion at a level well below said upward projections and a portion immediately adjacent said upward projections at an intermediate level constituting a seat for said container bottom.

2. A lid as claimed in claim 1 in which the inward faces of said upward projections lie substantially on the same circle.

3. A lid as claimed in claim 1 in which the inward faces of said upward projections lie substantially on the same circle having its center at the center of the lid.

4. A lid as claimed in claim 1 in which the peripheral portion extends to a height higher than said upward projections and has a part adapted to seal within the container.

5. A lid as claimed in claim 4 in which the peripheral portion constitutes a downwardly open circular channel adapted to fit over the container rim.

6. A lid as claimed in claim 1 in which said upward projections are formed to provide seat portions below the tops thereof adapted to have the bottom of a stacked container seated thereon.

7. A lid as claimed in claim 1 in which said upward projection having an inward face generally arcuately concave through an arc of at least about 60° has generally the shape of a crescent.

8. A lid as claimed in claim 6 in which said upward projection having an inward face generally arcuately concave through an arc of at least about 60° has generally the shape of a crescent.

9. A lid as claimed in claim 6 in which the seat portions are closer to the center of the lid than the tops of said upward projections.

10. A generally circular lid for a generally circular container larger at the top than at the bottom and which with the lid applied is adapted to have a similar container stacked atop it, the lid having a peripheral portion adapted to seal to the container and a transverse body portion having a plurality of upward projections disposed inwardly relatively to said peripheral portion serving to position generally centrally of the lid the bottom of a container stacked atop it, the lid having a generally centrally located upward projection containing a vent hole, the height of the generally centrally located upward projection being less than the height of the first mentioned upward projections.

11. A lid as claimed in claim 10 in which the first mentioned upward projections are formed to provide seat portions below the tops thereof adapted to have the bottom of a stacked container seated thereon.

12. A lid as claimed in claim 10 in which the first mentioned upward projections are formed to provide seat portions below the tops thereof adapted to have the bottom of a stacked container seated thereon and the height of the generally centrally located upward projection is less than the height of the seat portions of the first mentioned upward projections.

13. A lid as claimed in claim 6 having a generally centrally located upward projection containing a vent hole, the height of the generally centrally located upward projection being less than the height of the seat portions of the first mentioned upward projections.

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