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CONTAINER STACKING AND COVERING DEVICES

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FIG. 1

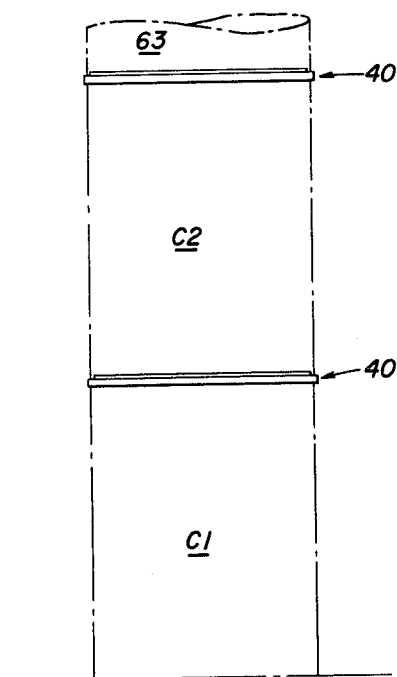


FIG. 3

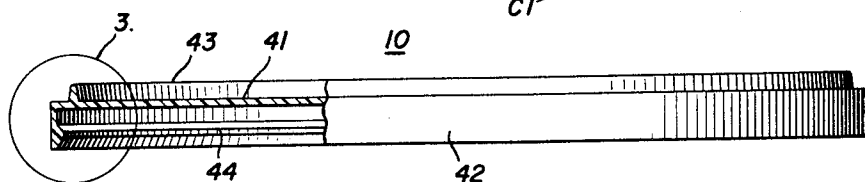
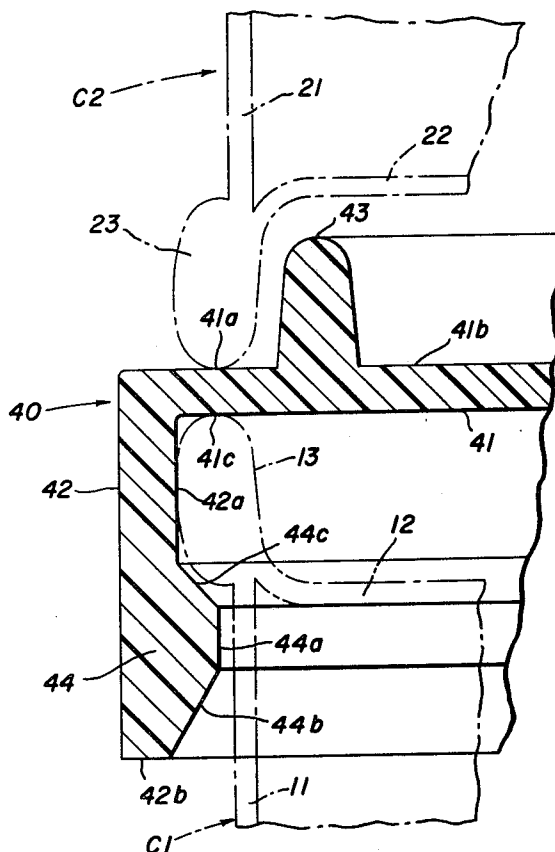


FIG. 2

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CONTAINER STACKING AND COVERING DEVICES

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The present invention relates to container stacking and covering devices, and particularly to such a device comprising a one-piece construction formed entirely of an integrally molded single mass of plastic material that is relatively flexible and stretchable.

It is a general object of the invention to provide a device of the character noted that is particularly adapted for use in stabilizing a vertical stack of two substantially identical containers, wherein the device is arranged in interposed relation with respect to the two containers and carried by the top of the lower such container, and for use in covering either one of the individual containers after opening thereof by the complete removal of the top end wall thereof, wherein the device is carried by the top of the one such container to close the open top thereof.

Another object of the invention is to provide a combination stacking and covering device of the character described, wherein the device is especially designed to cooperate with sheet-metal containers of the can-type, including a tubular side wall, two substantially identical end walls, and two end beads respectively surrounding the opposite ends of the side wall and the perimeters of the adjacent end walls, wherein each end bead projects outwardly beyond the adjacent end wall.

A further object of the invention is to provide a combination stacking and covering device of the character described that comprises a sheet-like cover, and a continuous upstanding rib carried by the top of the cover and positioned inwardly of the perimeter thereof and dividing the exterior surface of the cover into an outer area surrounding the rib and an inner area surrounded by the rib, whereby in a vertical stack of two of the cans and with the device in interposed relation, the bottom bead of the upper can engages the outer exterior surface of the cover and the top bead of the lower can engages the outer interior surface of the cover and the rib projects upwardly from the cover toward the bottom end wall of the upper can so that the rib is surrounded by the bottom bead of the upper can in order to prevent accidental lateral displacement of the upper can from the lower can.

A further object of the invention is to provide a combination stacking and covering device of the character described that comprises a sheet-like cover, a continuous depending skirt-like rim carried by the cover and surrounding the perimeter thereof, and a continuous bead structure carried by the rim and surrounding the interior lower portion thereof and positioned below the junction between the interior perimetrical surface of the cover and the interior upper surface of the rim and projecting inwardly with respect to the interior upper surface of the rim, whereby in the covering position of the device upon the top of a can, the device is carried by the top of the can with the rim stretched over the top bead on the can and with the cover closing the top of the can and with the bead-structure positioned below the top bead on the can.

Further features of the invention pertain to the particular construction and arrangement of the elements of the combination stacking and covering device, whereby the above-outlined and additional operating features thereof are attained.

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The invention, both as to its organization and method of operation, together with further objects are advantages thereof, will best be understood by reference to the following specifications, taken in connection with the accompanying drawing, in which:

FIGURE 1 is a fragmentary side elevational view of a number of containers arranged in vertical-stacked relation with a plurality of devices arranged in interposed relation with respect to the containers, each of the devices embodying the present invention;

FIG. 2 is an enlarged side elevational view, partly broken away, of one of the devices; and

FIG. 3 is a greatly enlarged fragmentary vertical sectional view of the device, as shown within the area 3 in FIG. 2, and also indicating the cooperation of the device with adjacent lower and upper containers arranged in vertical-stacked relation.

Referring now to the drawing, in FIG. 1 there is illustrated a vertical stack of three identical containers C1, C2 and C3, and two identical devices 40 respectively arranged in interposed relation therebetween, each of the devices 40 embodying the features of the present invention. Each of the devices 40 constitutes a combination stacking and covering unit, and each of the devices 40 is of one-piece construction formed entirely of an integrally molded single mass of thermoplastic material that is relatively flexible and stretchable. Preferably, each of the devices 40 is molded of low-density polyethylene.

In the arrangement of FIG. 1, each of the containers C1, C2, C3, etc., is of conventional sheet-metal or can construction; whereby the lower container C1, indicated in FIG. 3, comprises a tubular side wall 11 of cylindrical configuration, a top end wall 12 of disk-like configuration, and an upper annular bead 13 sealing the top of the side wall 11 to the circumference of the top end wall 12, the top bead 13 being of the usual double-seam type; and whereby the upper container C2, indicated in FIG. 3, comprises a tubular side wall 21 of cylindrical configuration, a bottom end wall 22 of disk-like configuration, and a lower annular bead 23 sealing the bottom of the side wall 21 to the circumference of the bottom end wall 22, the bottom bead 23 being of the usual double-seam type. Ordinarily, such containers C1, C2, etc., are formed of steel carrying a galvanizing coating of zinc, or of aluminum, etc.; and such containers or cans are ideally suited to the packaging or carrying of foods, particularly coffee, or the like.

Referring now to FIGS. 2 and 3, the device 40 essentially comprises a sheet-like cover 41 of disk-like form, a continuous depending skirt-like rim 42 of annular form carried by the cover 41 and surrounding the circumference thereof, and a continuous upstanding rib 43 of annular form carried by the top of the cover 41 and positioned radially inwardly of the rim 42 and dividing the exterior surface of the cover 41 into an annular outer area 41a surrounding the rib 43 and a disk-like inner area 41b surrounded by the rib 43. Further, the device 40 comprises a continuous bead-structure 44 of annular form carried by the rim 42 and surrounding the interior lower portion thereof and positioned below the junction between the interior circumferential surface, indicated at 41c, of the cover 41 and the interior upper surface, indicated at 42a, of the rim 42 and projecting radially inwardly with respect to the interior upper surface 42a of the rim 42. Specifically, the annular bead-structure 44 includes a centrally disposed upstanding inner band-like surface 44a, a downwardly and radially outwardly directed lower band-like surface 44b, and an upwardly and radially outwardly directed upper band-like surface 44c. The surface 44b joins the bottom edge 42b of the rim 42 and the lower portion of the surface 44a, while

the surface 44c joins the lower portion of the interior upper surface 42a of the rim 42 and the upper portion of the surface 44a.

As previously noted, the device 40 is adapted to be arranged in interposed relation with respect to the two cans C1 and C2 disposed in vertically stacked relation, as shown in FIG. 3; wherein the device 40 is carried by the top of the lower can C1 with the rim 42 stretched over the top bead 13 provided on the lower can C1 and with the bead-structure 44 positioned below the top bead 13 and with the cover 41 spaced above the top end wall 12 of the lower can C1 and below the bottom end wall 22 of the upper can C2 and with the top annular portion of the top bead 13 engaging the interior circumferential surface 41c of the cover 41 and with the bottom annular portion of the bottom bead 43 provided on the upper can C2 engaging the outer annular area 41a of the exterior surface of the cover 41 immediately above the top annular portion of the top bead 13 and with the rib 43 projecting upwardly toward the bottom end wall 22 of the upper can C2, so that the rib 43 is surrounded by the bottom bead 23 in order to prevent accidental lateral displacement of the upper can C2 from the lower can C1 in the stack.

Also, the device 40 is adapted to be arranged as the top cover upon any one of the cans C1, C2, C3, etc., after opening thereof by the complete removal of the top end wall thereof. For instance, the device 40 may be arranged as the top cover for the can C1 after the same has been opened by the complete removal of the top end wall 12 thereof, employing a suitable can-cutter. In this case, the device 40 is again carried by the top of the can C1 with the rim 42 stretched over the top head 13 of the can C1, as shown in FIG. 3. In the covering position of the device 40, the cover 41 closes the open top of the can C1 and the bead-structure 44 is positioned below the top bead 13. Specifically, the top annular portion of the top bead 13 engages and seals to the interior circumferential surface 41c of the cover 41, and the outer annular portion of the top bead 13 engages and seals to the interior upper surface 42a of the rim 42. Further, the annular surface 44c of the bead-structure 44 is spaced below the annular surface of the top bead 13, and the annular surface 44a of the bead-structure 44 is spaced radially outwardly and in surrounding relation with the adjacent annular section of the top of the side wall 11 of the can C1.

Of course, the device 40 may be readily removed from covering relation with the open can C1 by stretching of the rim 42 over the top bead 13 on the can C1, so as to afford access into the top of the can C1, all in an obvious manner. Upon replacing the device 40 as a cover upon the top of the can C1, the surface 44b of the bead-structure 44 engages the annular outer surface of the top bead 13 and rides thereover and downwardly thereupon, so as to accommodate the previously mentioned stretching of the rim 42; whereby the bead-structure 44 may ride downwardly over the top bead 13 into its normal position, as shown in FIG. 3.

When the devices 40 are employed to stabilize the stack of containers C1, C2, C3, etc., the arrangement is very advantageous to the grocer in presenting an attractive display of the product contained in the sealed cans C1, etc. On the other hand, when the device 40 is employed as a removable cover for a can C1, after opening thereof, the arrangement is very advantageous to the housewife, since the device 40 may be readily placed and removed in an obvious and easy manner. The present arrangement is particularly useful in conjunction with the packaging of coffee, since the same is most convenient to the housewife and renders feasible the purchase of relatively large or economy-size cans (for example, the 3-pound can), of such product, as the cover insures that the product will remain in fresh condition until it is consumed in the ordinary household.

Also, the ribs 43 carried by the tops of the covers 41 respectively cooperate with the skirt-like rims 42 to maintain a plurality of the devices 40 in stacked relation with each other, thereby accommodating ready shipment in a compact package of a plurality of the devices 40 to the cannery or packaging factory where the coffee, or other product, is being loaded into the containers C1, C2, etc.

In a constructional example of the device 40, especially designed for a 3-pound coffee can, the rim 42 had an outside diameter of 6.257" and a vertical projection between the surfaces 41a and 42b of 300 mils. The cover 41 had a thickness of 35 mils; and the rib 43 had a vertical projection of 100 mils above the surface 41a and 41b. The rim 42 had a thickness between the outside surface and the surface 42a of 45 mils; and the bead-structure 44 had a thickness between the outside surface and the surface 44a of 75 mils. The other dimensions of the device 40 were related to those noted substantially in accordance with the scale of the drawing, as shown in FIG. 3.

In view of the foregoing, it is apparent that there has been provided a container stacking and covering device of improved construction and arrangement that is advantageous to a grocer in stabilizing a vertical stack of sealed containers and that is advantageous to a housewife as a removable cover for use on the top of one of the containers after opening of the top thereof.

While there has been described what is at present considered to be the preferred embodiment of the invention, it will be understood that various modifications may be made therein, and it is intended to cover in the appended claims all such modifications as fall within the true spirit and scope of the invention.

What is claimed is:

1. A container stacking and covering device comprising a one-piece construction formed entirely of an integrally molded single mass of plastic material that is relatively flexible and stretchable; said device comprising a sheet-like cover, a continuous depending skirt-like rim carried by said cover and surrounding the perimeter thereof, a continuous upstanding rib carried by the top of said cover and positioned inwardly of said rim and dividing the exterior surface of said cover into an outer area surrounding said rib and an inner area surrounded by said rib, and a continuous bead-structure carried by said rim and surrounding the interior lower portion thereof and positioned below the junction between the interior perimetrical surface of said cover and the interior upper surface of said rim and above the bottom of said rim and projecting inwardly with respect to the interior upper surface of said rim; said device being adapted to be arranged in interposed relation with respect to two substantially identical sealed sheet-metal containers disposed in vertically stacked relation, wherein said device is carried by the top of the lower such container with said rim stretched over the top bead provided on the lower container and with said bead-structure positioned below the top bead on the lower container and with said cover spaced above the top end wall of the lower container and below the bottom end wall of the upper such container and with the top portion of the top bead on the lower container engaging the interior perimetrical surface of said cover and with the bottom portion of the bottom bead provided on the top container engaging the outer area of the exterior surface of said cover immediately above the top portion of the top bead on the lower container and with said rib projecting upwardly toward the bottom end wall of the upper container so that it is surrounded by the bottom bead on the upper container in order to prevent accidental lateral displacement of the upper container from the lower container in the stack; said device also being adapted to be arranged as a top cover upon either one of the individual containers after opening thereof by the complete removal of the top end wall thereof, wherein said device is carried by the top of the one such container with said rim stretched over the top bead on the one container and with

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said cover closing the open top of the one container and with the top portion of the top bead on the one container engaging in sealed relation the perimetrical surface of said cover and with the outer portion of the top bead on the one container engaging in sealed relation the interior upper surface of said rim and with the bottom portion of the top bead on the one container positioned above and in spaced relation with said bead-structure; said rim also including a continuous interior wedging surface surrounding the bottom thereof and sloping upwardly and inwardly therefrom and joining said bead-structure and serving to effect ready stretching of said bead-structure over the cooperating top bead provided on an associated container when said device is pressed toward the cooperating top bead on the associated container.

2. A container stacking and covering device comprising a one-piece construction formed entirely of an integrally molded single mass of plastic material that is relatively flexible and stretchable; said device comprising a sheet-like disk-shaped cover, a continuous depending skirt-like annular rim carried by said cover and surrounding the circumference thereof, a continuous upstanding annular rib carried by the top of said cover and positioned radially inwardly of said rim and dividing the exterior surface of said cover into an outer annular area surrounding said rib and an inner disk-shaped area surrounded by said rib, and a continuous annular bead-structure carried by said rim and surrounding the interior lower portion thereof and positioned below the junction between the interior circumferential surface of said cover and the interior upper annular surface of said rim and above the bottom of said rim and projecting radially inwardly with respect to the interior upper annular surface of said rim; said device being adapted to be arranged in interposed relation with respect to two substantially identical cylindrical sealed sheet-metal containers disposed in vertically stacked relation, wherein said device is carried by the top of the lower such container with said rim stretched over the top annular bead provided on the lower container and with said annular bead-structure positioned below the top annular bead on the lower container and with said cover spaced above the top end wall of the lower container and below the bottom end wall of the upper such container

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and with the top portion of the top annular bead on the lower container engaging the interior circumferential surface of said cover and with the bottom portion of the bottom annular bead provided on the top container engaging the outer annular area of the exterior surface of said cover immediately above the top portion of the top annular bead on the lower container and with said rib projecting upwardly toward the bottom end wall of the upper container so that it is surrounded by the bottom annular bead on the upper container in order to prevent accidental lateral displacement of the upper container from the lower container in the stack; said device also being adapted to be arranged as a top cover upon either one of the individual containers after opening thereof by the complete removal of the top end wall thereof, wherein said device is carried by the top of the one such container with said rim stretched over the top annular bead on the one container and with said cover closing the open top of the one container and with said annular bead-structure positioned below the top annular bead on the one container; said rim also including a continuous annular interior wedging surface surrounding the bottom thereof and sloping upwardly and inwardly therefrom and joining said bead-structure and serving to effect ready stretching of said bead-structure over the cooperating top bead provided on an associated container when said device is pressed toward the cooperating top bead on the associated container.

3. The device set forth in claim 1, wherein the plastic material of which it is molded consists essentially of polyethylene.

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