United States Patent

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[73] Assignee **Illinois Tool Works, Inc.**
Chicago, Ill.

[54] **CONTAINER-PACKAGING DEVICE**
8 Claims, 8 Drawing Figs.

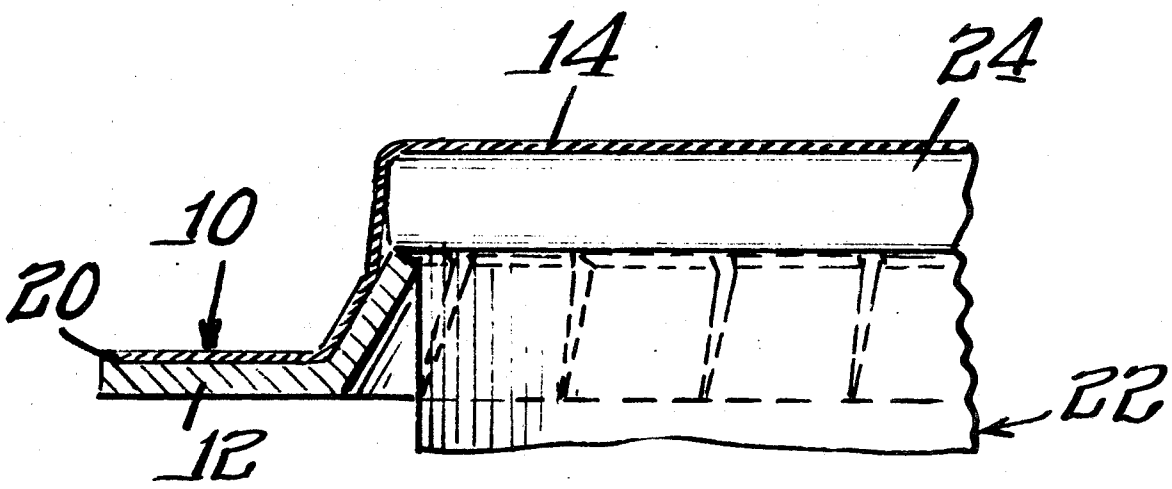
[52] **U.S. Cl.** **294/87.2,**
206/65 C, 220/116
[51] **Int. Cl.** **B65d 71/00,**
B65d 85/62
[50] **Field of Search** ..... 206/65 C,
65 E; 220/114, 116; 229/29 F, 43; 294/87.2;
215/100

[56] **References Cited**
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Primary Examiner—William T. Dixson, Jr.
Attorneys—Olson, Trexler, Wolters & Bushnell, Robert W. Beart, Michael Kovac, Barry L. Clark and Jack R. Halvorsen

ABSTRACT: This invention relates generally to a multipackaging device or carrier for containers and more particularly to devices for accommodating containers having a circumferential bead adjacent one extremity thereof, as for example the conventional bead on a can. The embodiment of the invention disclosed herein includes a paperboard sheet which is apertured to provide a plurality of pockets for receiving the extremity of beaded containers. The circumferential marginal area adjacent each aperture is adapted to be deflected out of the plane of the paperboard sheet upon telescopic association of a beaded container therewith so as to position the edge of said marginal area for engagement with the underside of the container bead. A flexible plastic film is adhered to the upper side of the paperboard sheet in superimposed relation with respect to the circumferential marginal areas. The portion of the film which superimposes the marginal areas serves to maintain the edge of the deflected margin in underlying relation with respect to the bead of a telescopically associated container.



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Fig. 1.

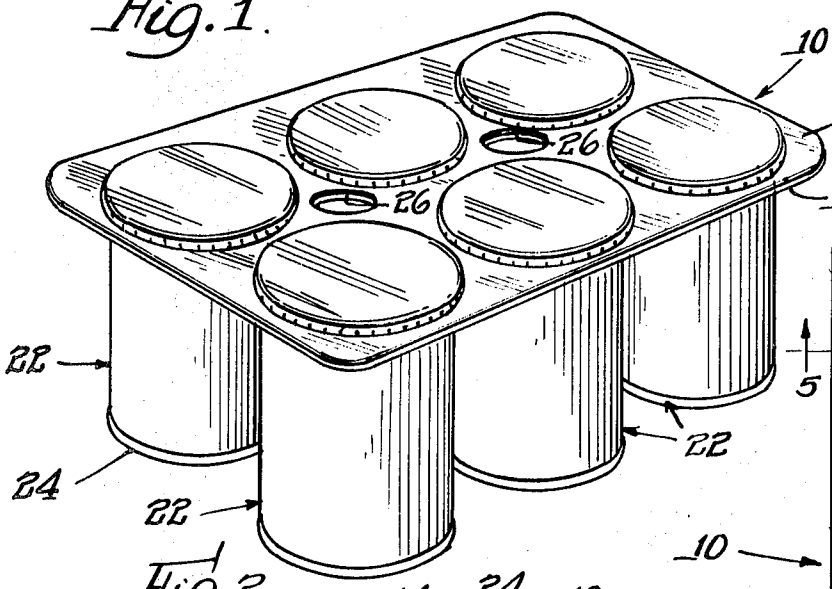


Fig. 3.

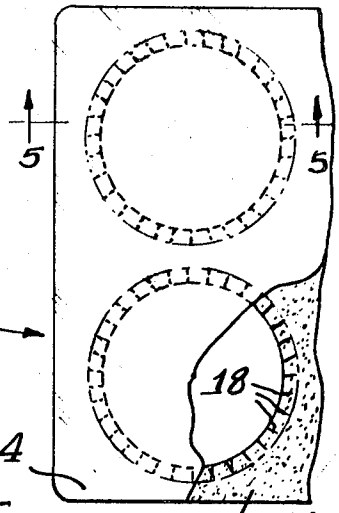


Fig. 2.

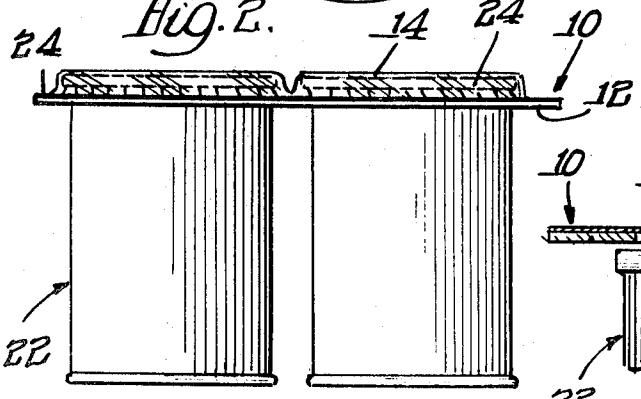


Fig. 5.

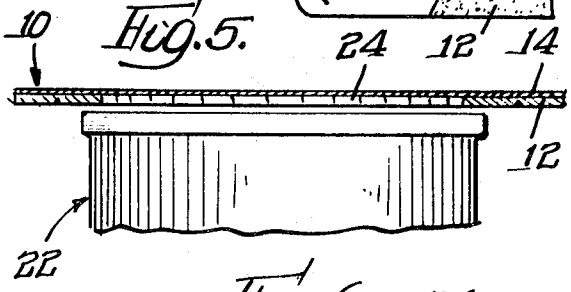


Fig. 4.

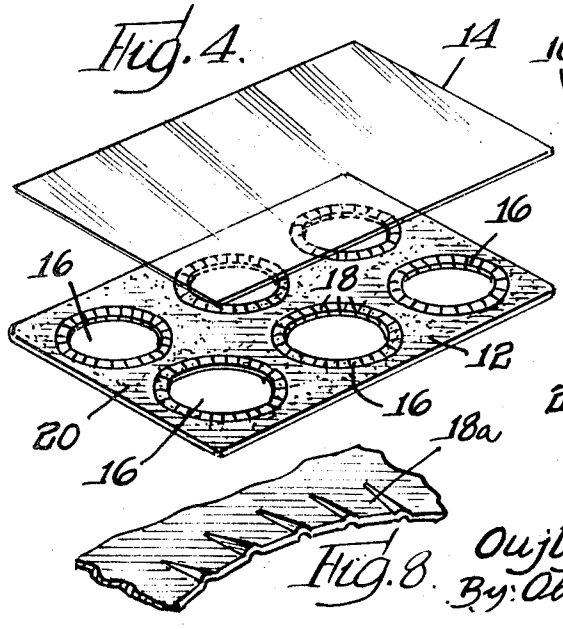


Fig. 6.

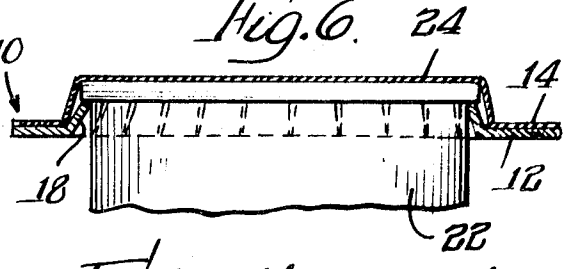


Fig. 7.

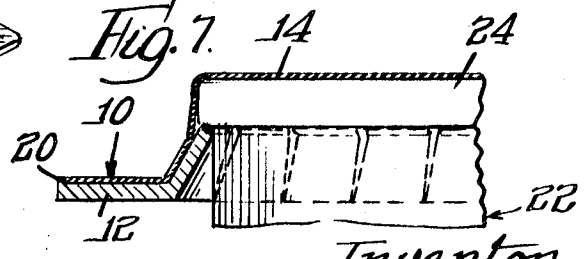


Fig. 8.

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CONTAINER-PACKAGING DEVICE

A sheet of yieldable, resilient, and elastic material has heretofore been employed to accommodate a plurality of containers. Such devices are shown in applicant's earlier U.S. Pat. No. 2,874,835 which issued on Feb. 24, 1959. It is an object of the present invention to provide an improved, multipackaging device for beaded containers having functional characteristics somewhat similar to the container carrier and package disclosed in the above-mentioned patent.

It is a further object of the present invention to provide a multipackaging or container carrier of the type referred to above which is readily disposable, and to this end it is proposed to produce a device which is readily combustible.

The present invention also contemplates a multipackaging device of the type referred to above which is very economical to produce and to this end it is contemplated to fabricate the device with a sheet of readily disposable paperboard and a relatively thin disposable plastic film.

It is also an object of the present invention to provide a combined paperboard and plastic film device which will not only grip the underside of the bead of a container but will also provide a protective coating for the entire upper surface of a plurality of containers.

The foregoing and other objects and advantages will be more apparent from the accompanying drawing wherein:

FIG. **1** is a perspective view of a multipackaging device of the type contemplated by the present invention disclosed in operative association with the upper extremities of a plurality of beaded containers or cans;

FIG. **2** is an end elevational view as seen from the left of FIG. **1**;

FIG. **3** is a fragmentary plan view of one extremity of the assembly shown in FIG. **1**, a portion of the film being broken away to illustrate the slits in the marginal area of the paperboard sheet;

FIG. **4** is a perspective view showing the paperboard sheet and thin film in vertically spaced or separated relation;

FIG. **5** is a fragmentary vertical sectional view taken substantially along the line **5—5** of FIG. **3**, just prior to the telescopic association of the container with the combined paperboard and plastic film;

FIG. **6** discloses the position of the combined paperboard and film after the telescopic association of the container therewith has been completed;

FIG. **7** is an enlarged fragmentary view of the left-hand portion of the device as shown in FIG. **6**; and

FIG. **8** is a fragmentary perspective view disclosing a modified undulated circumferential margin which may be axially deflected upon telescopic assembly therewith of a beaded container.

Referring now to the drawing more in detail wherein like numerals disclose similar parts throughout the various figures, it will be seen that one embodiment of a multipackaging device contemplated by the present invention is in the form of a can carrier designated generally by the numeral **10**. This carrier device **10** consists of a pasteboard sheet or section **12** and a companion, relatively thin plastic film **14** adhered to the upper surface of the sheet **12**. The paperboard sheet **12** is provided with a plurality of apertures **16**, each aperture being defined by a circumferential marginal area comprising a plurality of radially disposed, axially deflectable fingers **18**, separated by slits formed in the paperboard stock.

After the apertures **16** and the fingers **18** have been formed in the paperboard sheet **12**, the relatively thin, flexible plastic film **14** is applied to the upper surface of the sheet **12** as by a suitable adhesive **20** indicated in FIGS. **4** and **7**. These combined sheets **12** and **14** comprise the multipackaging or container device indicated generally by the numeral **10**.

The internal diameter defined by the free extremities or edges of the fingers **18** must be less than the external diameter of the beaded portion of the container to be accommodated

by each of the apertures **16**. The containers disclosed in the drawing consist of cans **22** provided with conventional, circumferential beads **24** at each extremity thereof. As each container or can **22** is telescopically associated with its respective aperture **16**, the fingers **18** are deflected axially as shown in FIGS. **6** and **7**. In this deflected position, the free extremities or edges of the fingers **18** engage the underside of the bead **24**. The film **14** is sufficiently flexible and elastic so that it may be shifted from the flat position shown in FIG. **5** to the stretched position shown in FIG. **7**. In this position the film **14** serves to prevent radially outward deflection of the fingers from the position shown in FIGS. **6** and **7**, thereby providing flexible container-engaging band while also maintaining the interlocked relationship of the free edges of the fingers with the underside of the bead **24**. It will also be noted that the upper surface of the can **22** is completely covered by the film **14**. Thus in addition to maintaining the proper abutting relation of the free edges of the fingers **18** with the underside of the bead **24**, the film **14** also provides a protective covering for the entire upper surface of the container or can **22**.

In FIG. **8** the circumferential margin which defines the container-accommodating aperture is undulated as distinguished from the use of the fingers **18** previously described. By thus undulating the margin, sufficient flexibility is imparted to the paperboard to assure proper upward flexing thereof when a container or can is telescopically associated therewith. In FIG. **8** this undulated margin is indicated by the numeral **18*a***.

From the foregoing, it will be apparent that the novel arrangement of the flexible, elastic plastic film in association with the upper surface of the paperboard presents distinct advantages over container-packaging or carrier devices heretofore available. The paperboard and thin plastic film are readily combustible and hence may be readily disposed of after the containers have been removed therefrom. The portion of the film immediately superimposing the fingers **18** or the undulated marginal area **18*a*** serves to maintain the locking engagement of the marginal edge with the underside of the container bead. It should also be understood that the present invention contemplates a packaging device or carrier in which the film as well as the paperboard stock is apertured. In such instances, the film will not serve as a protective coating for the end surface of the container but will function to maintain the locking effectiveness of the marginal edge. In some instances, it may only be necessary to apply the film to a limited circumferential area in the vicinity of the prongs **18** or the undulated area **18*a***. Also, the invention contemplates adhering the film to the paperboard by means other than adhesives, as for example by stapling. The packaging device or carrier of the present invention may be produced very economically. By providing a pair of finger-accommodating apertures **26**, the ease with which the device may be manually transported is greatly facilitated.

The term paperboard as set forth in the specification and claims is employed generically to define any type of cardboard, fiberboard and the like. The term bead is employed generically to define any circumferential shoulder means in the vicinity of the upper extremity of a container to be accommodated by the pockets.

The invention is claimed as follows:

1. A multipackaging device for accommodating beaded containers, as for example cans having beaded extremities, including a paperboard sheet having pockets for receiving one extremity of a beaded container, each of said pockets comprising an aperture defined by the edge of the paperboard sheet and having a diameter which is less than the diameter of the beaded portion of the container to be accommodated, the circumferential marginal area of the sheet adjacent said aperture adapted to be deflected out of the plane of the sheet upon telescopic association therewith of a beaded container so as to position said edge for engagement with the underside of the container bead, and a flexible plastic film adhered to the upper side of said paperboard sheet in superimposed relation with respect to said circumferential marginal area, said flexible plastic film when adhered to the circumferential marginal

area of the paperboard sheet cooperating to provide a flexible container-engaging band enabling the edge of the deflected marginal area to resiliently grip and engage the container below the beaded portion thereof.

2. A packaging device for beaded containers as set forth in claim 1 wherein the relatively thin plastic film is secured to the upper surface of the paperboard sheet by means of adhesive material.

3. A packaging device for beaded containers as set forth in claim 1 wherein the thin plastic film completely traverses each container accommodating aperture whereby to provide a protective covering for the end surface of a telescopically associated container.

4. A packaging device for beaded containers as set forth in claim 1 wherein the circumferential marginal area of the paperboard sheet which defines each aperture consists of a plurality of axially deflectable fingers.

5. A packaging device for beaded containers as set forth in claim 1 wherein the circumferential marginal area of the paperboard sheet defining each aperture is undulated to facilitate axial deflection thereof.

6. A packaging device for beaded containers as set forth in claim 1 wherein finger-gripping means is provided to facilitate manual transportation of a plurality of supported containers.

7. A packaging device for beaded containers as set forth in claim 1 wherein the circumferential marginal area of the paperboard sheet which defines each aperture is radially slit so as to provide a plurality of axially deflectable prongs.

8. A packaging device for beaded containers as set forth in claim 1 wherein the circumferential marginal area of the paperboard sheet which defines each aperture is circumferentially continuous and axially deflectable.