July 28, 1959 J. ARMEL 2,896,779

PACKAGING DEVICE

Filed June 3, 1955

FIG. 1.

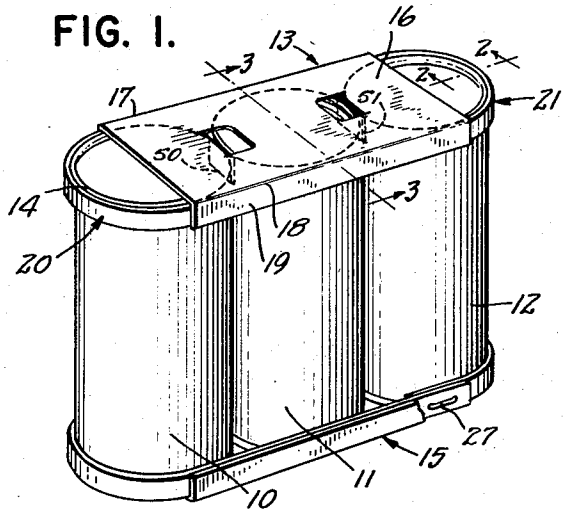


FIG. 2.

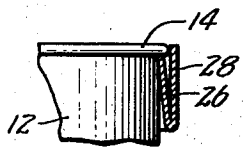


FIG. 7.

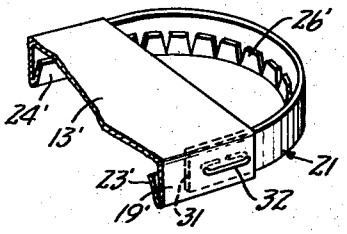


FIG. 6.

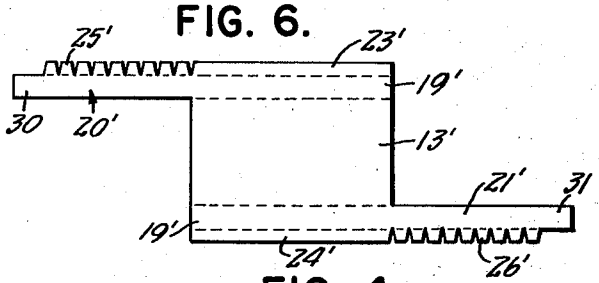


FIG. 3.

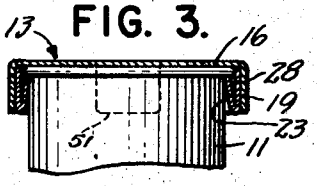


FIG. 4.

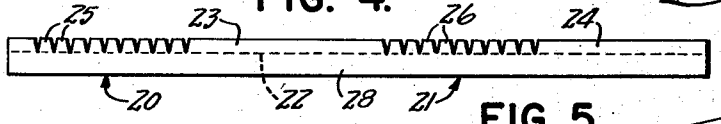


FIG. 5.

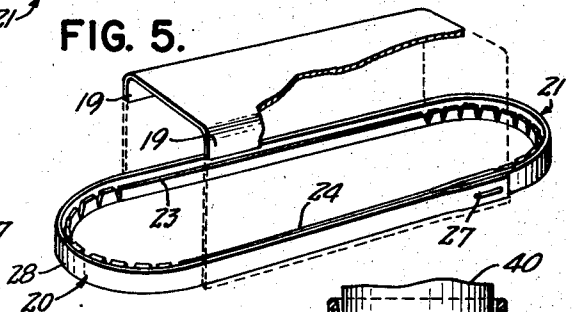


FIG. 8.

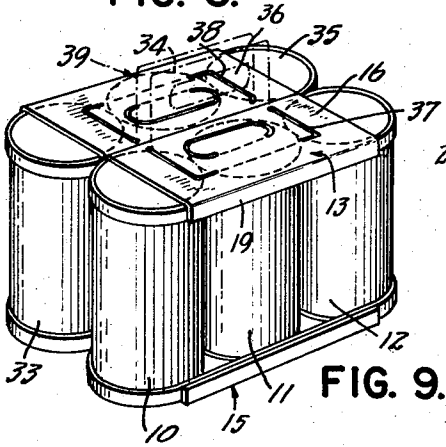


FIG. 9.

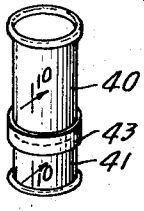
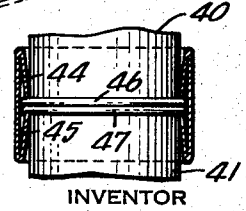


FIG. 10.



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United States Patent Office 2,896,779 Patented July 28, 1959

2,896,779

PACKAGING DEVICE

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Application June 3, 1955, Serial No. 512,918

11 Claims. (Cl. 206—65)

My invention relates to packaging devices and is particularly applicable to the packaging in small quantities of like sealed containers, as, for example, beer cans.

It is an object of the invention to provide improved means of the character indicated, characterized particularly by substantially reduced over-all cost of packaging.

It is also an object to meet the above objects with a packaging arrangement in which the containers themselves form a structural part of the ultimate package, in a manner such that the appearance of the goods is enhanced, that is, such that the goods are substantially exposed.

It is a further object to achieve the above objects with a construction minimizing consumption of packaging material and lending itself to the employment of simplified machinery for application thereof to the goods to be packaged.

It is a general object to meet the above objects with a construction in which material thickness may be optimized for individual stress requirements of the parts and yet in which there is ease of initial opening of the package and access to containers, said construction further lending itself to duplex assembly without requiring additional or complex machinery.

Other objects and various further features of novelty and invention will become apparent or will occur to those skilled in the art from a reading of the following specification in conjunction with the accompanying drawings. In said drawings, which show, for illustrative purposes only, preferred forms of the invention:

Fig. 1 is a view in perspective showing a plurality of like containers held in packaged assembly by means incorporating features of the invention;

Fig. 2 is a fragmentary sectional view in the plane 2—2 of Fig. 1;

Fig. 3 is a fragmentary sectional view in the plane 3—3 of Fig. 1;

Fig. 4 is a flattened development or blank for a part of Fig. 1, prior to folding and assembly;

Fig. 5 is a perspective view of two parts or subassemblies for the unitary package of Fig. 1, shown just prior to final assembly;

Fig. 6 is a flattened development or blank similar to Fig. 4, but illustrating a modification;

Fig. 7 is a fragmentary view in perspective of an assembled packaging device utilizing the blank of Fig. 6;

Fig. 8 is a perspective view of a duplex packaging device of my invention;

Fig. 9 is a perspective view of another packaging device of my invention; and

Fig. 10 is an enlarged sectional view in the plane 10—10 of Fig. 9.

Briefly stated, my invention contemplates a disposable packaging carton for holding a plurality of containers of like proportions, as, for example, a plurality of beer cans stacked or clustered in axially parallel relation with their axes substantially in a common plane. In a preferred general form, the packaging device comprises, for one or for both ends of the stacked assembly, peripherally extending rim-engaging flange means engaging at least the rims or chimes of both end cans in the stack (and preferably also any intermediate cans of the stack), and a body panel overstands parts of corresponding ends of all containers in the stack and is joined at its opposed sides to the peripherally extending flange means.

In one form to be described, the body panel is a separate part, complete with side flanges; and the peripherally extending flange means is a second part, comprising a continuous belt embracing all containers and secured to the side flanges of the body panel. In another form, the entire packaging device is cut integrally from a single piece of stock, so that the peripherally extending flange means comprises end straps integral with the side flanges of the body panel and projecting from opposite ends thereof; such end straps thus in effect join corresponding ends of both flanges and at the same time peripherally embrace the end rims or chimes in the stack. Regardless of the form employed, I prefer that the externally exposed portion of the flange means shall be essentially continuous and that the inner part thereof shall be formed with additional snap-action rim-engaging means, poised to lock onto the chimes when assembled to the containers.

Referring to Figs. 1 to 5 of the drawings, my invention is shown in application to the packaged assembly of a plurality of like containers 10—11—12, such as beer cans or the like. The cans 10—11—12 are shown in axially parallel relationship with their axes substantially in a common plane, and my packaging device comprises a preassembled carton 13 which may be slipped over and locked to the rims or chimes 14 of at least the end cans 10—12, and preferably also to any intermediate can or cans 11. A duplicate packaging device may, if desired, be provided for retaining the other ends of the cans in assembled relation and, when both cartons 13—15 are applied to the cans 10—11—12, there results a unitary structure relying on the bodies of the cans themselves to retain assembly.

Essentially, the packaging carton 13 comprises a body panel 16 having opposed elongated sides 17—18 with upturned or downturned flange means 19 at each said side 17—18. End straps 20—21 effectively connect corresponding ends of both flanges 19 and at the same time lockingly embrace the rims or chimes of the end containers 10—12. In the form shown, the carton 13 is formed of two pieces, namely, the body assembly including panel 16 and flanges 19, and the end-strap assembly comprising a continuous belt of which the end straps 20—21 form integral parts. The side flanges 19 of the body assembly may be secured by interlocking tabs, by stapling, or by suitable adhesive to the opposed straight stretches of this continuous belt.

The continuous belt is best shown in Figs. 4 and 5 and preferably integrally includes inwardly directed lug or flange means, constituting snap-action means to engage the chimes of the cans 10—11—12 at a plurality of locations. Thus, the belt of Fig. 4 may be folded, as on the line suggested at 22, to define first and second opposed chime-engaging flanges 23—24; said flanges preferably extend substantially the length of the side flanges 19 so as to perform a stiffening or reinforcing function, and are bent inwardly and extend generally toward the plane of the body panel 16. Similar continuous flanges may be formed at the end straps 20—21, but since, in the form shown, these end straps 20—21 are semi-circular, I find it more convenient to cut a plurality of wedge-slits,

defining a corresponding plurality of tabs or lugs 25—26 for the end straps 20—21, respectively, said tabs 25—26 being also bent inwardly and toward the plane of the body panel 16, as suggested in Fig. 2. Said flanges 23—24 and lugs 25—26 preferably terminate short of said plane of the body panel in order to receive and snap under adjacent chime edges 14, as shown in Figs. 2 and 3.

To secure the part of Fig. 4 into a form suitable for assembly to the panel 13, the flanges 23—24 and lugs 25—26 should first be creased at 22 and bent to the desired shape; the material may then be rolled and fastened as a continuous loop, shown best in Fig. 5. A staple 27 may secure overlapping ends to define the continuous loop, and preferably the stapling is accomplished at a location where any unsightliness of the staple may be hidden by one of the flanges 19 when assembled to the panel 13.

I prefer that the outer continuous band part 28 of the retaining belt shall be of a size which will permit the folded flanges 23—24 and lugs 25—26 safely to clear the maximum peripheral extent of the cluster of cans 10—11—12, so that upon assembly to the containers 10—11—12, the chimes 14 may pilot on the inner surfaces of flanges 23—24 and lugs 25—26. The normal resiliency of the paper or cardboard from which cartons 13—15 are made will be such as to stress or load the lugs and flanges 23—24—25—26 inwardly (toward the containers 10—11—12), in readiness to snap-lock when fully assembled. The packaged containers will then be ruggedly interlocked and may withstand abuse, and the assembly cannot be taken apart except by breaking one of the end straps. This can ordinarily be done relatively easily by placing the fingers under one of the side flanges 19, in the recesses between adjacent cans 10—11 or 11—12, and by prying upward, as will be understood.

In the modification of Figs. 6 and 7, essentially the same container package is defined from a single piece of material. Thus, body panel 13′ may be integrally joined to side flanges 19′ and to internal rim or chime-engaging flanges 23′—24′; and end straps 20′—21′ may be formed integrally with the flanges 19′ at opposite ends of the panel 13′. End straps 20′—21′ may integrally include means, such as projections 30—31, to overlap corresponding ends of flanges 23′—24′ upon assembly, as by gluing or stapling at 32. Chime-engaging lugs 25′—26′ may be formed by slitting the end straps 20′—21′. The finished assembly will have the general appearance described in connection with Fig. 1. Essentially, the form of Figs. 6 and 7 represents savings in the handling of plural parts, whereas the form of Figs. 1 to 5 represents economies achieved by optimizing the strength-to-cost factor of the subassembly materials for the particular stresses required of the individual subassemblies.

In the arrangement of Fig. 8, I show how my basic container package is adaptable to other arrangements, accommodating larger numbers of containers. The package of Fig. 8 represents a duplex arrangement of the assembly of Fig. 1. Six cans 10—11—12, 33—34—35 are accommodated in two groups of three, each group being packaged as described for Fig. 1, and the two groups being assembled to each other by gluing or otherwise securing along common edges represented by side flanges 19. The gluing or other securing operation may be performed before final assembly to the cans, thus making panels 16—36 in a single carton for assembly to six cans at once; alternatively, multiple-packaged containers as in Fig. 1 may be glued to each other after assembly to the containers. For more ready portability, the body panels 16—36 of the separate containers for each group may be perforated, pierced or otherwise formed, as suggested by outlines 37—38, to define handle portions conveniently accessible to the fingers for ripping out when needed, to the position 39.

In the arrangement of Figs. 9 and 10, I show a modification of the invention for the packaged assembly, in end-to-end relation, of two containers 40—41 of similar cross-section and chime construction. The packaging device comprises merely a single continuous collar 43, with inturned flanges or lugs 44—45 extending for snap-action engagement with the rims or chimes 46—47 of adjacent ends of the cans 40—41. The arrangement of Figs. 9 and 10 will be understood to be particularly attractive in the merchandizing of complementary products as, for example, a container 40 of spaghetti sauce and a container 41 of Parmesan cheese, said containers being of different volumetric proportions, but of like cross-section.

It will be seen that I have described an inherently simple, inexpensive, and highly efficient container-packaging construction, lending itself to extreme economy of disposable materials. The construction further lends itself to ready preliminary assembly as a carton and to ready final assembly to clusters of containers. The machinery required for all stages of assembly and fabrication is very materially simplified from that currently required for other forms of package. At the same time, the containers are exposed to the maximum so that the dress of the container dominates the appearance of the packaged containers. So fully exposed are the containers that, in displaying the same at a store, a salesman can readily grasp all exposed containers and mnipulate the sme (while packaged), for optimum display of the characteristic trade-mark or other dress of the goods. From the consumer's point of view, my packaged assembly has utility beyond the convenience of portability, in that, once the top carton 13 has been ripped off, the remaining assembly (all cans secured by bottom panel 15) may be stored efficiently in a cluster in the refrigerator, and yet the cans may be easily removed one by one, merely by tipping the can with respect to the assembly, thereby effectively "peeling" each can away from the remaining assembly.

The basic carton construction for any particular size is applicable to containers of any length, for a given cross section; thus, in the case of beer cans, the conventional twelve-ounce can and the conventional sixteen-ounce can may be just as readily accommodated by the same carton constructions. Regardless of whether one employs the form of Figs. 1 to 5 or the form of Figs. 6 and 7, there is substantially no wastage of paper or cardboard stock, and the carton may be made direct from bulk sheet or roll stock in a continuously recycling high-speed die-cutting operation immediately adjacent the point of assembly to the container clusters.

While ordinarily not a matter of major consequence, it is a fact that when a row of containers 10—11—12 is consolidated by my cartons 13—15, the chimes 14 of adjacent cans will either directly abut or they will overlap. In either case the same cartons 13—15 are equally effective to hold the assembly, but if the chimes are overlapped, the packaged assembly will not be perfectly flat, so that some objection might be raised as to the security of a large pile of assemblies as for multiple display in a retail store. To offset this difficulty, I show in Fig. 1 the provision of divider lugs 50—51 struck out of the body of panel 16 and extending downwardly between chimes 14 of adjacent cans 10—11 and 11—12, respectively. Packaged cans which have been divided in this manner will always "lie flat," and the chimes 14 will not overlap. It will be understood that lug-piloting means as disclosed in said copending application may facilitate assembly of lugs 50—51 between adjacent cans when the carton 13 or 15 is assembled to the cluster of cans 10—11—12.

While I have described the invention in detail for the preferred forms shown, it will be understood that modi-

fications may be made within the scope of the invention as described in the claims which follow:

I claim:

1. As an article of manufacture, a carton for packaging a plurality of like containers, comprising a body panel having opposed generally parallel edges with upturned flanges, a first semicircular end strap bowed beyond one end of said panel and connecting corresponding ends of said flanges, a second semicircular end strap bowed beyond the other end of said panel and connecting corresponding ends of said flanges, and a succession of adjacent resiliently deflectable chime-engaging means carried by said end straps on the inside of the bowed portion thereof and projecting toward the plane of said panel for snap-action engagement with and essentially continuous end support of the chime of a container packaged by said carton.

2. In combination, two like rows of containers, each row containing a plurality of like containers oriented in axially parallel side-by-side adjacency, the axes of said containers in each row being in a common plane, and a preassembled packaging carton comprising for each said row a panel covering parts of corresponding ends of all the containers in each said row, and end straps joining corresponding ends of both flanges and including snap-action tab means formed out of the material of said straps and folded adjacent the inner surfaces of said end straps and engaging the rims of said containers, said cartons being secured to each other in side-by-side adjacency at adjacent flanges of said adjacent cartons.

3. A device according to claim 2, in which similarly secured similar cartons engage the other ends of said containers.

4. The combination of claim 2, in which said body panels are each formed with perforations defining a handle element, said handle elements being folded from their respective body panels at adjacent locations, whereby the multiple-row package may be carried by grasping the handle elements of both rows.

5. A can package comprising a plurality of chimed cans in a row, a first holder retaining one set of corresponding can ends, and a second holder retaining the opposite set of corresponding can ends, each said holder comprising a closed band of paperboard or the like encircling said row of cans adjacent the chimes at one end thereof, whereby two semicircular ends of said band are defined between two parallel stretches thereof, a plurality of chime-engaging tabs formed out of the material of the semicircular ends of said band and folded adjacent the inner surfaces of said ends, the projecting ends of said tabs being in direct locating engagement with chimes of said cans, whereby substantially continuous chime-engaging support is obtained for said cans at said semicircular ends, and a connecting panel permanently connecting said stretches and overstanding parts of the adjacent chimed ends of all cans in said row.

6. A can package according to claim 5, in which can-divider lugs are struck out of the body of said panel at locations intermediate adjacent chimes of adjacent cans.

7. A carton for retaining a plurality of chimed cans in a row, comprising a closed band of paperboard or the like adapted to encircle a row of cans adjacent the chimes at one end thereof, said band comprising two semicircular ends joined by opposed parallel stretches of equal length, a connecting panel permanently connecting said stretches in substantially the plane of the upper edges thereof, and chime-engaging tabs formed out of the material of said semicircular ends and folded adjacent the inner surfaces of said ends, said tabs being folded in the direction projecting toward said plane whereby said tabs may provide substantially continuous end support for the end cans in the row.

8. A carton according to claim 7, in which said panel and semicircular ends are formed from a single blank from the same stock, one end of each semicircular end being integrally joined with said panel, the other end of each semicircular end being permanently secured to said panel upon assembly of said carton.

9. A carton according to claim 7, in which said semicircular ends are formed from a single strip adapted to encircle all cans in the row, the ends of said strip being permanently secured to each other, and in which said panel is a separate piece having opposed parallel side flanges permanently secured to said strip intermediate the semicircular ends thereof.

10. A carton according to claim 7, in which said panel includes a carrying handle defined by perforations in the body of said panel.

11. In combination, a plurality of like containers, each having peripherally extending chimes at opposite ends and stacked in axially parallel side-by-side adjacency, the axes of said containers being in a common plane, first and second like preassembled packaging cartons each comprising a panel extending at least partially over corresponding ends of all said containers and including elongated side flanges, strap means joining corresponding ends of both flanges and peripherally continuously engaging said containers at said corresponding ends thereof and including chime-engaging tap means formed out of the material of said strap means and folded adjacent the inner surfaces of said strap means and engaging the chimes at said corresponding ends, one carton being assembled to first corresponding can ends and the other carton being assembled to the opposite corresponding can ends, whereby both cartons hold the containers in packaged relationship.

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