

June 18, 1968

J. E. WALSH

3,388,791

PACKAGES

Filed Jan. 14, 1966

2 Sheets-Sheet 1

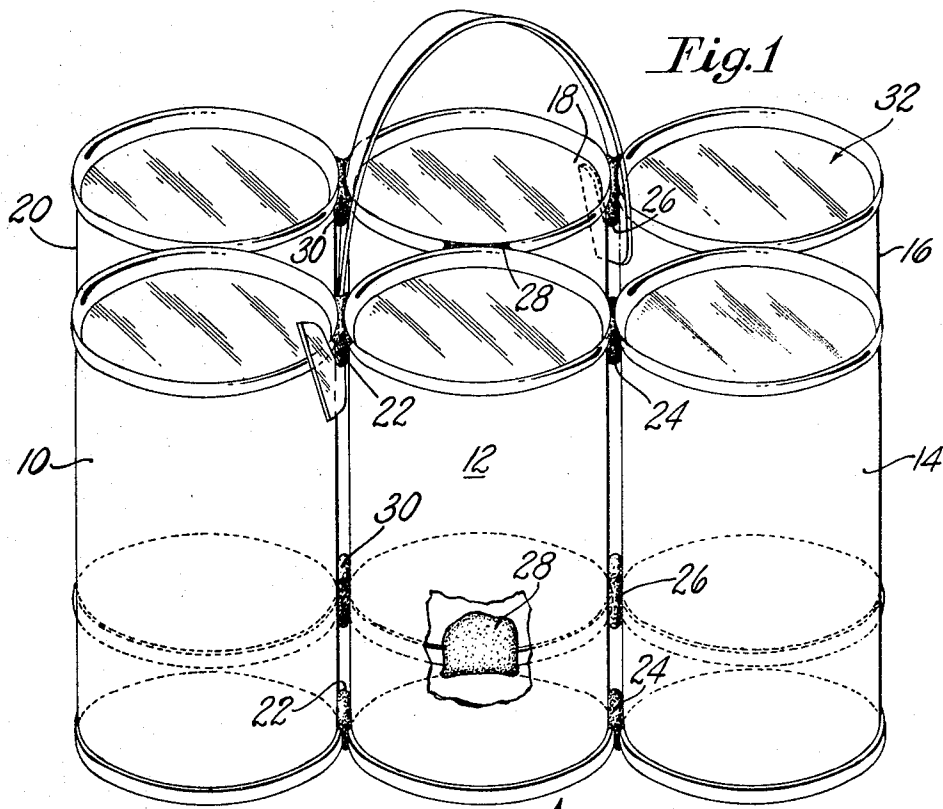


Fig. 1

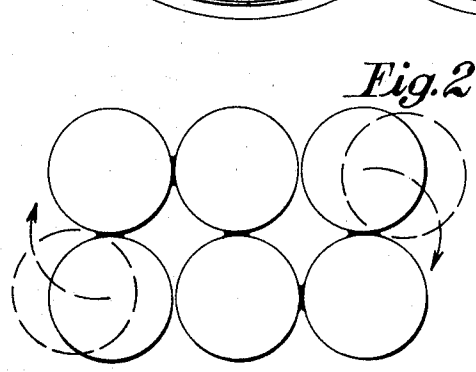


Fig. 2

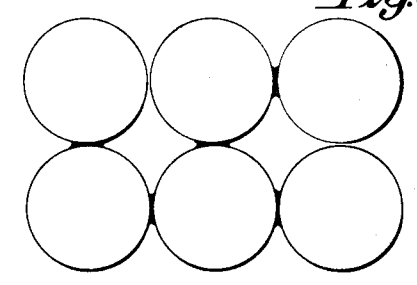


Fig. 3

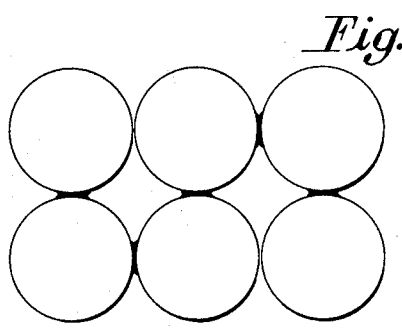


Fig. 4

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Fig. 5

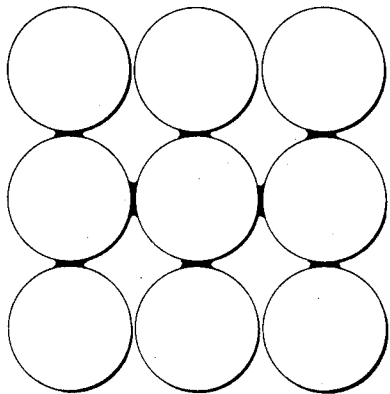


Fig. 6

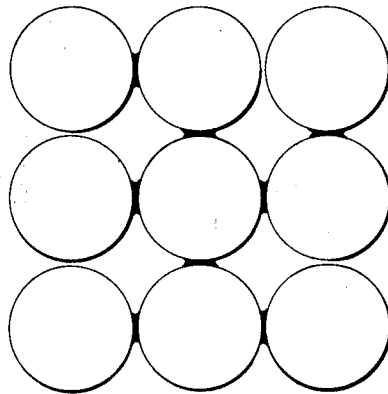


Fig. 7

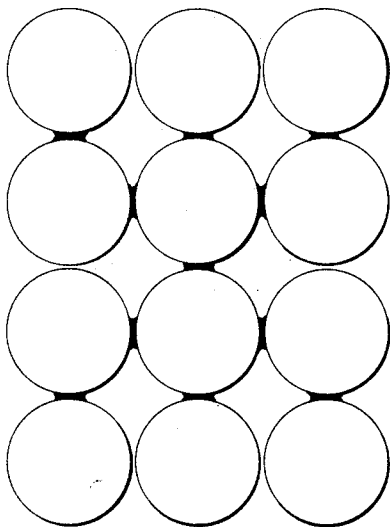
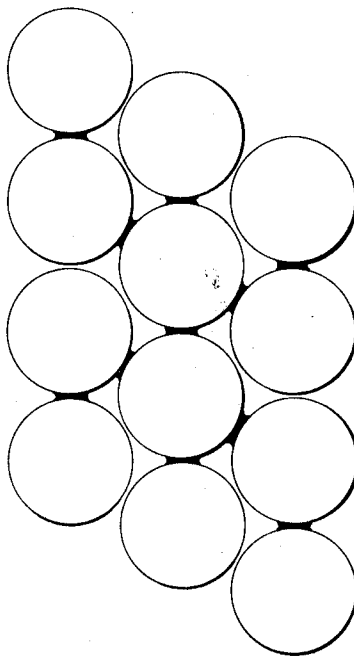


Fig. 8



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2 Claims. (Cl. 206-65)

ABSTRACT OF THE DISCLOSURE

A multiple container or cluster package comprising at least two rows of containers in alined side by side relation. The top and bottom portions of each container in the cluster are adhesively bonded to at least one other container in the cluster and at least one container is secured to a plurality of other containers. The adhesive bonds located at the top and bottom portions of the containers are arranged in complementary patterns.

This invention relates to a multiple container package or cluster package in which the individual containers comprise component parts of the package. The cluster package, as hereafter described, is particularly adapted for the distribution of beverages such as beer in what is commonly referred to as a "six pack." However, the cluster package of this invention is not limited to this specific use. The discussion to follow particularly will be directed to a "six pack" for beer in order facily to delineate the marked advantages of this invention and the various features thereof.

A variety of packages or packaging means recently have been placed in commercial use to permit the sale of canned products, particularly beer, in predetermined bulk quantities. Without exception, these packaging devices have been costly. Further, in all the packaging devices which hold the containers securely enough to prevent accidental removal, deliberate removal is difficult. There have been recent packaging innovations in this field which have solved the problem of access but have done so at the expense of package integrity or durability. These include various clips recently introduced to the market which provide for increased ease of removal. However, the unclipped lower portions of the cans are unrestrained in movement with the result that cans are frequently dislodged at inopportune times, the package is difficult to handle, and stacking at distribution centers is a major problem. When clips are used at both the top and bottom of the package, the removal of individual cans is as difficult as in the prior enveloping paper containers.

The present invention provides a solution to the access problem and a substantial reduction in the packaging cost. A cost analysis indicates the present invention will reduce the cost of packaging a "six pack" of beer between 7 to 9 dollars per thousand "six packs." This is a substantial saving in view of the volume involved.

The solution provided by the present invention, upon first impression, appears to be of the utmost simplicity and begets the question of obviousness. Yet, the teachings of this invention have evaded the multitude of skilled artisans who have so recently provided a myriad of more expensive and/or less effective solutions. Reflective analysis of the invention provides the key to the elusive

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nature of this invention and the reasons why the disclosure rises to the dignity of patentable invention.

Basically, the invention provides a plurality of can bodies secured together to form a rigid cluster package. The locus of the invention resides in the distribution or location of the primary securing means which provide rigidity yet permit ready removal of a can body without destroying the integrity of the remainder of the cluster.

Accordingly, it is a primary object of this invention to provide a multiple container package or cluster package which may be inexpensively produced and from which a container may be readily removed without destroying the integrity of the remaining cluster.

To this end and in accordance with a feature of this invention there is provided a cluster package comprising at least two rows of containers in alined side by side relation. Each container in the cluster is secured to at least one other container in the cluster and at least one container is secured to a plurality of other containers. The means employed to secure the containers are distributed in a pattern between adjacent containers which provides a rigid cluster yet permits progressive removal of the individual containers.

The above and other features of the invention will now be more particularly described with reference to the accompanying drawings and pointed out in the claims. It will be understood that only a limited number of embodiments of the invention are shown by way of illustration and not as a limitation of the invention. The principles and features of the invention may be employed in varied and numerous embodiments and applied to various types of containers without departing from the scope of the invention. It is to be understood that, although the drawings primarily illustrate the invention for the packaging of a quantity of six containers, it is definitely within the purview of the invention to package any desired multiple quantity of containers.

In the drawings:

FIG. 1 is an angular view of a cluster package of containers illustrating the preferred embodiment of the invention;

FIGS. 2-4 are diagrammatic plan views of alternate embodiments of the invention illustrating clusters consisting of two rows of containers; and

FIGS. 5 to 8 are diagrammatic plan views of further alternate embodiments of the invention illustrating clusters of three rows of containers.

The cluster package illustrated in FIG. 1 represents the preferred embodiment for a "six pack" package embodying the present invention. As noted above, the teachings of this invention are equally applicable to cluster packages which comprise a different number of containers. The general parameters defined hereafter with respect to the "six pack" shown in FIG. 1 are to be understood also to apply not only to cluster packages having other than six containers (FIGS. 5 to 8) but also to the alternate "six pack" cluster package illustrated in FIGS. 2 to 4.

A cluster package embodying the present invention generally comprises at least two rows of containers in side by side relationship. The cluster package illustrated in FIG. 1 comprises two rows of three can bodies 10, 12, 14 and 16, 18, 20 in juxtaposed relation. The six can bodies shown in FIG. 1 are adhered together by five pairs of primary bonds 22, 22, 24, 24, 26, 26, 28, 28 and

30, 30. Each can body in a cluster is adhered to at least one adjacent can body by one pair of bonds; one of the bonds in the pair securing the tops of the adjacent can bodies and the other securing the bottoms. At least one of the can bodies in a cluster package embodying this invention is secured to a plurality of other can bodies. The total number of adhesive bonds at the top 32 of the cluster and at the bottom 34 of the cluster, as defined by the tops and bottoms of the can bodies in FIG. 1, is equal in number to one less than the number of containers.

Reference to FIG. 1 illustrates the implementation of the general parameters described in the previous paragraph. The two can bodies 12 and 18 are each adhered to three adjacent can bodies. That is, the can body 12 is adhered to the can bodies 10, 14 and 18 and the can body 18 is adhered to the can bodies 16, 20 and 12. Each of the can bodies are adhered to at least one other can body. The can bodies are adhered together at the top and bottom. Also, as noted above, a total of five adhesive bonds or one less than the number of cans, six, are provided at the top and bottom of the cluster.

A cluster package formed in the manner just described provides a rigid container which can be easily handled without risk of separation. Further, impact forces caused by collision of the cluster with other packages or objects will not normally cause separation. This is due to the pattern of adhesive bond distribution. A force applied to either side of the cluster package illustrated in FIG. 1 will place the bonds 28, 28 in compression or tension, depending on the manner in which the force is applied, in which the adhesive bond has maximum strength. A force applied to either end of the package will place the bonds 22, 22, 24, 24, 26, 26 and 30, 30 in either tension or compression. A direct force applied along a line passing through the centers of can bodies in a given row will apply a shear force to the bonds between the can bodies in the row and an adjacent row. The adhesive bonds have sufficient resistance to normally encountered shear forces to prevent separation.

A cluster package such as illustrated in FIG. 1 can, however, readily be separated by the application of "peel forces" on the individual pairs of adhesive bonds. For example, if the can body 14 is rotated clockwise as viewed in FIG. 1, peel forces will be applied directly to the adhesive bonds 24, 24. The can body 14 essentially is used as a fulcrum arm to apply the peeling forces. An adhesive bond is particularly susceptible to peeling and, thus, the can body 14 may be easily removed by a slight rotary movement. It is to be noted that if primary adhesive bonds linked the can bodies 14 and 16, rotary movement such as described above normally could not be accomplished manually since such an additional linking bond would be immediately placed in tension and resist rotation of the can body 14.

Segregation of the individual can bodies in a cluster must be progressively accomplished in certain specific sequences. That is, the end can bodies must be separated first. For example, referring again to FIG. 1, one sequence of removal would be to rotate the can body 14 to break the bonds 24, 24, then rotate the can body 16 to break the bonds 26, 26, then rotate the can body 10 to break the bonds 22, 22 and then the can body 20 to break the bonds 30, 30. The remaining can bodies 12 and 18 would then be linked only by the bonds 28, 28 which readily could be broken by rotating either of the can bodies 12 or 18.

Thus, this invention provides a rigid cluster package having durability from which individual can bodies readily can be removed. The cost of such a package is relatively low as the amount of adhesive required is small as are manufacturing costs.

The cluster package illustrated in FIG. 1 may be modified by the inclusion of bonds weaker than the primary bonds described above between the can bodies 14 and 16

and 10 and 20. The weaker secondary bonds must be sufficiently weak in tension to permit the removal of the end can bodies by rotation as discussed above.

FIGS. 2 to 4 illustrate alternate patterns of adhesive bond distribution for "six packs." Secondary, weaker bonds may be similarly used. The FIGS. 2 to 4 are not to be considered as limiting the alternative embodiments of the invention as embodied in a "six pack."

FIGS. 5 to 8 illustrate alternate embodiments of the invention wherein a cluster package is provided having more than six containers. Again, these illustrative embodiments are not to be construed as limiting the scope of the invention. Secondary bonds may also be employed in these embodiments.

The invention has been described with reference to the use of adhesive bonds. However, it is considered within the purview of the invention to substitute alternate securing means capable of functioning in a like or similar manner. In other words, any securing means which has relatively weak "peel" strength in comparison with its strength in tension, compression and shear, which latter strength must be sufficient to prevent accidental separation of containers from the cluster. Further, although the adhesives bonds are utilized in pairs at the top and bottom of adjacent containers in preferred practice, it is within the scope of the invention to use a single bond of sufficient strength at a convenient location between adjacent can bodies or a pair of bonds located at other than the tops and bottoms.

A cluster package formed in accordance with the features of this invention, thus, generally comprises a plurality of rows of containers, each container in the cluster being secured to at least one other container. The securing means are so arranged that at least one end container is connected to only one other container whereby it may be removed from the cluster by a rotational peeling action, which condition continues as the cluster is progressively reduced in number by the continued removal of an end container until all containers are separated from one another. The condition discussed will prevail when the securing means are arranged in a pattern which includes one less securing means in a given plane passing through the cluster than the number of containers in the cluster.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States is:

1. A cluster package comprising at least two rows of containers in substantially aligned, juxtapositioned relationship, said containers having tops and bottoms respectively lying in generally common parallel planes, a plurality of adhering means having relatively high strength in tension and shear and relatively low peel strength each for securing a pair of containers one to the other located proximate to each of said planes, said plurality of adhering means proximate to each of the planes being distributed in complementary patterns between adjacent containers to provide a rigid cluster, each of said patterns including one less adhering means than the number of can bodies in the cluster whereby the containers readily and progressively may be removed from the cluster by rotation thereof to part only one adhering means in each plane by the application of peeling forces thereto.

2. A cluster package comprising at least two rows of containers in substantially aligned, juxtapositioned relationship, said package having a top and a bottom respectively defined by the position of the tops and bottoms of the containers therein, adhering means having relatively high strength in tension and shear and relatively low peel strength for respectively securing the top portion and bottom portion of each container to the top portion and bottom portion of at least one adjacent container, the adhering means located generally at the top portion and at the bottom portion of the package being arranged in

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complementary patterns in which at least one container in the cluster is secured to a plurality of other containers and the number of adhering means in each of the patterns is equal in number to one less than the number of containers in the cluster whereby to provide a rigid cluster while permitting progressive, ready removal of the containers by rotation thereof to part only one adhering means in each pattern by the application of peeling forces thereto.

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