June 10, 1958 W. C. WOOTTON 2,837,803

FASTENING DEVICE

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FIG. 1.

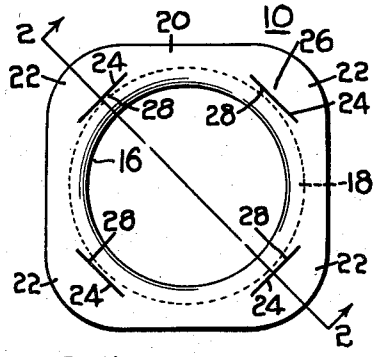


FIG. 2.

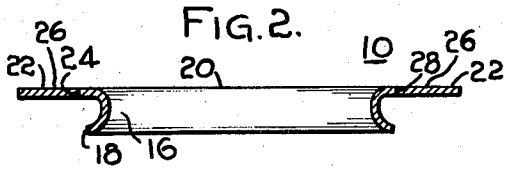


FIG. 3.

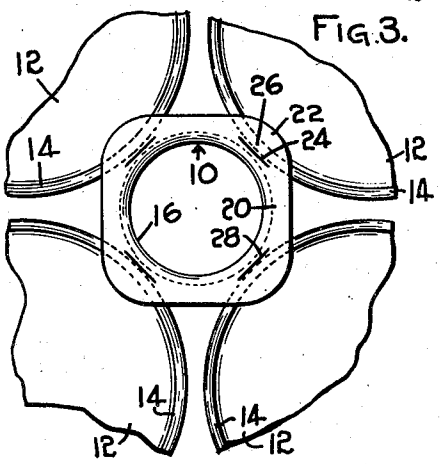


FIG. 4.

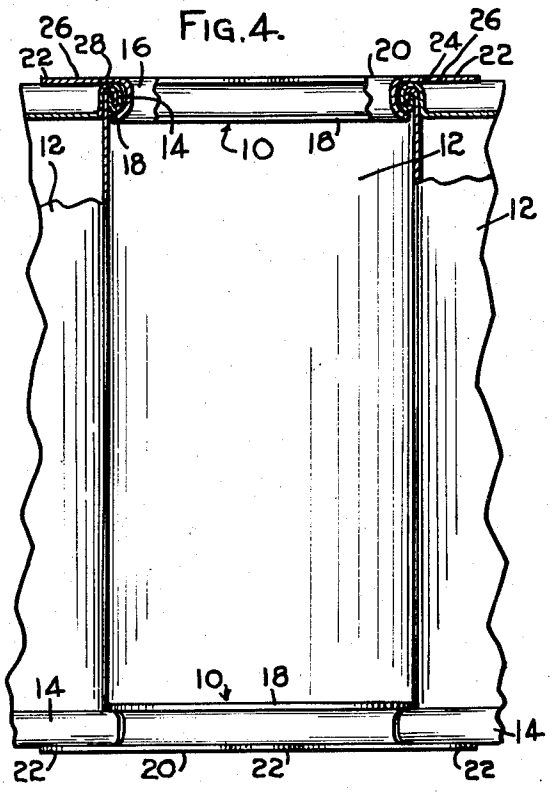
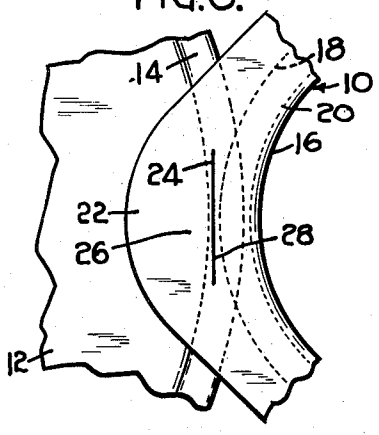


FIG. 5.



INVENTOR:
WILLIAM C. WOOTTON,
BY Robert E Ross
ATTORNEY.

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FIG. 8.

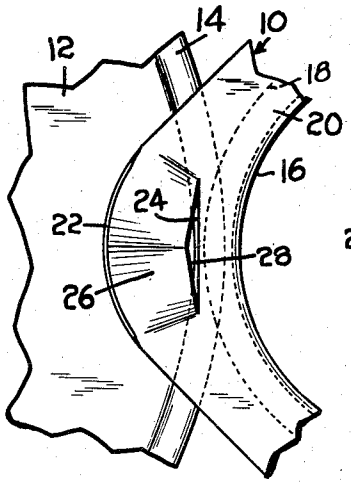


FIG. 7.

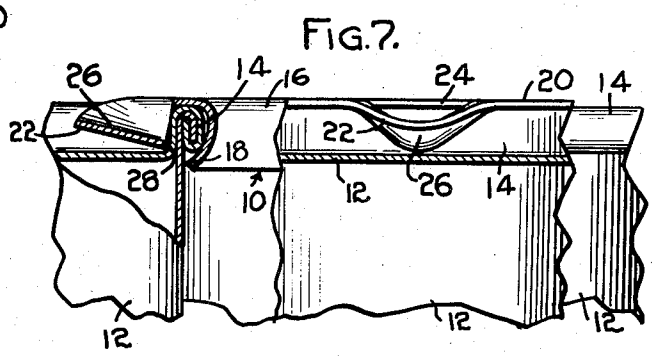
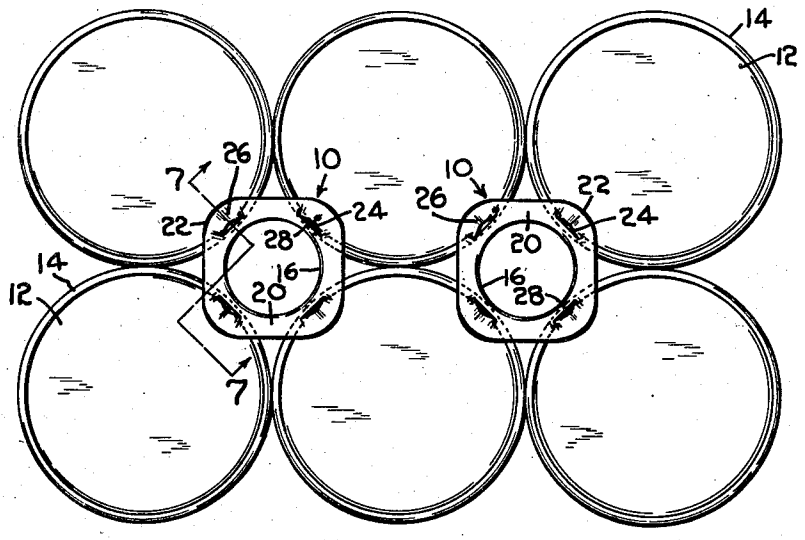


FIG. 6.



INVENTOR:
WILLIAM C. WOOTTON,
BY Robert E. Ross
ATTORNEY.

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2,837,803

FASTENING DEVICE

William C. Wootton, Centerville, Calif., assignor, by mesne assignments, to United-Carr Fastener Corporation, Boston, Mass., a corporation of Delaware

Application November 26, 1954, Serial No. 471,316

1 Claim. (Cl. 24—81)

This invention relates generally to fastening devices, and has particular reference to a fastening device for securing together a group of cylindrical containers of the type having a peripheral bead or rim at each end.

Certain foods and beverages marketed in cans are customarily sold in groups of three, four, or six, and for convenience in handling are frequently assembled into cardboard packages of various types. Such packages have been found to have a number of disadvantages, in that they require complicated and expensive machinery for assembly of the cans therein, they conceal the labels on the containers, and the cardboard is weakened by moisture.

This latter difficulty frequently interferes with the proper operation of the attaching machinery, prohibits the use of wet coolers for chilling the packaged containers, and requires special precautions during transportation and storage to prevent damage by dampness and moisture which would cause rupture of the containers during subsequent handling.

Various types of metal clips have been proposed for this purpose, but such clips have also been found to have disadvantages, such as being too expensive, too difficult to feed and attach by automatic machinery, or too difficult to remove by the purchaser.

The object of this invention is to provide an inexpensive fastening device for securing together a group of containers which is readily adapted to automatic feeding and attachment.

A further object of the invention is to provide a fastening device for the purpose described which is adapted to draw the cans tightly together during assembly.

A further object of the invention is to provide a fastening device for the purpose described which securely retains the cans in assembly yet is readily removable by the purchaser.

Other objects of the invention will, in part, be obvious, and will, in part, appear hereinafter.

In the drawing:

Fig. 1 is a top plan view of a fastening device embodying the features of the invention;

Fig. 2 is a view in section taken on line 2—2 of Fig. 1;

Fig. 3 is a top plan view of a group of cans spaced with the fastening device of Fig. 1 positioned thereon;

Fig. 4 is a view in section of the assembly of Fig. 3 after the cans have been forced together with the foremost can omitted for clarity;

Fig. 5 is an enlarged top plan view of a portion of the assembly of Fig. 4;

Fig. 6 is a top plan view of an assembly of six cans after completion of the attaching operation;

Fig. 7 is a view in section taken on line 7—7 of Fig. 6; and

Fig. 8 is an enlarged top plan view of a portion of the assembly of Fig. 6.

Referring to the drawing, there is illustrated a fastening device **10** which is adapted for attachment onto a group of cans **12** to retain the cans in assembly.

The cans **12** are of the type which have a cylindrical body with a peripheral bead **14** at each end which extends radially and longitudinally from the body.

The fastening device **10** is preferably formed of a single piece of sheet metal and comprises generally a central cylindrical body portion **16**, a peripheral rim **18** disposed at one end of the body, and a peripheral flange **20** disposed at the other end.

The body **16** has a predetermined diameter such that it will fit closely within the multi-cusped space between a desired number of cans disposed uniformly about a point with adjacent cans touching, and the rim **18** is curled outwardly from the lower end thereof to extend under the innermost portion of the beads of the surrounnding cans.

The flange **20** has a group of uniformly spaced portions **22** which extend radially far enough to be disposed over the innermost portion of the can bead, and each portion **22** is provided with a shear **24** extending substantially perpendicular to a radius of the cylindrical portion, providing a deformable portion **26** having an inwardly facing edge **28**. The position of the shear is such that the deformable portion **26** is bendable downwardly to enable the edge **28** to engage the inside of the can bead in a manner to appear hereinafter.

In the illustrated embodiment, the fastener **10** is designed for securing together a group of four cans disposed with centers at the corners of a square, with adjacent containers touching at the beads. One method of assembling the fastener **10** thereon is by first positioning the containers so they are spaced slightly apart, orienting a fastener **10** at each end of the containers so that the portions **22** are disposed over the innermost portions of the can beads, and seating the fastener onto the containers so that the rim **18** and the cylindrical body portion **16** enters the space between the cans and the portions **22** rest on top of the innermost portion of the can beads. The cans **12** are then forced together by suitable means (not shown) so that the rim **18** seats under the can beads **14**, and the shear lines **24** are properly disposed in relation to the upper edge of the beads, that is, with the center of the shear line disposed outside the uppermost portion of the bead.

Assembly of the fastener onto the cans may then be completed by forcing the deformable portions **26** downwardly so that the inwardly facing edges **28** bear against the inside of the beads. Since each shear line **24** is straight and the beads are curved, the edges **28** bear progressively tighter against the beads as they are forced downwardly so that the cans are drawn tightly together.

As illustrated in Fig. 6, it is convenient to assemble a pack of 6 cans by means of four fasteners of the type illustrated and described.

Although the illustrated fastener is designed to be attached to four cans, clips utilizing the principles disclosed herein may be used to attach other numbers of cans by providing a suitable number of sheared deformable portions, and by adapting the size of the cylindrical portion to conform to the size of the opening between the cans.

Since certain other obvious modifications may be made in the device without departing from the scope of the invention, it is intended that all matter contained herein be interpreted in an illustrative and not in a limiting sense.

I claim:

A fastening device for securing together four cylindrical containers having peripheral beads at the ends, said device being adapted for assembly into the quadri-cusped shaped space at the end of a group of containers spaced with their centers disposed on the corners of a square and with adjacent containers touching, said device comprising a cylindrical body portion for bearing against the innermost portions of the group of container beads, a circum-

ferential rim disposed on the lower end of the body and extending outwardly therefrom and a circumferential flange extending radially from the upper end of the cylindrical body, said flange having four sheared portions disposed therein which are uniformly spaced about the flange, each of said sheared portions extending generally perpendicular to a radius of the cylindrical portion and having an inwardly facing edge deformable downwardly into engagement with the inside of a container bead.

References Cited in the file of this patent

UNITED STATES PATENTS

603,455	Pinney	May 3, 1898
668,974	Buedingen	Feb. 26, 1901
2,090,477	Graham	Aug. 17, 1937
2,240,944	Steele	May 6, 1941
2,285,801	Burnet	June 9, 1942
2,646,911	Holmberg	July 28, 1953