

Oct. 22, 1957

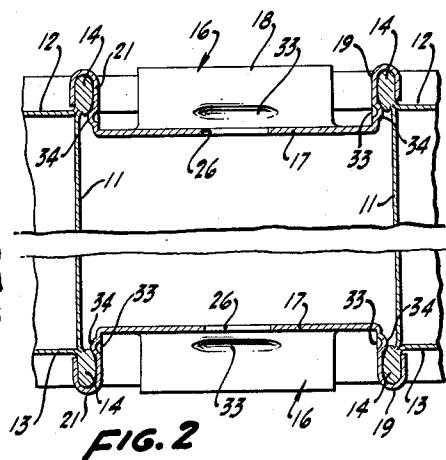
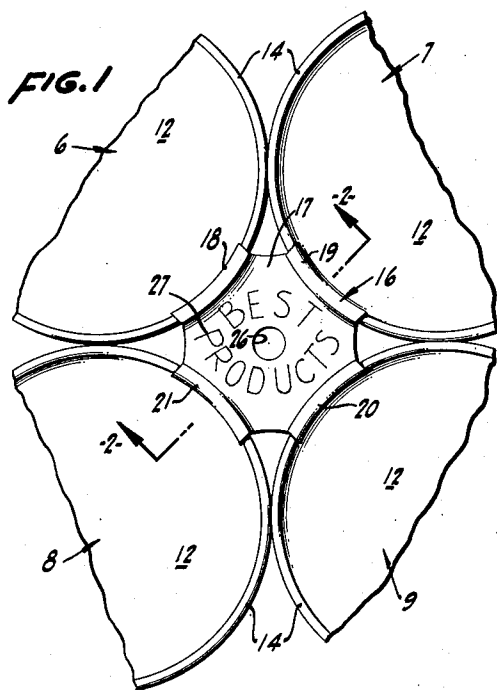
W. H. BROOKS ET AL

2,810,171

CAN HOLDER

Filed March 3, 1953

3 Sheets-Sheet 1



INVENTORS
WILLIAM H. BROOKS
KENNETH H. NORBERG
BY *Wesley Lott*
ATTORNEY

Oct. 22, 1957

W. H. BROOKS ET AL
CAN HOLDER

2,810,171

Filed March 3, 1953

3 Sheets-Sheet 2

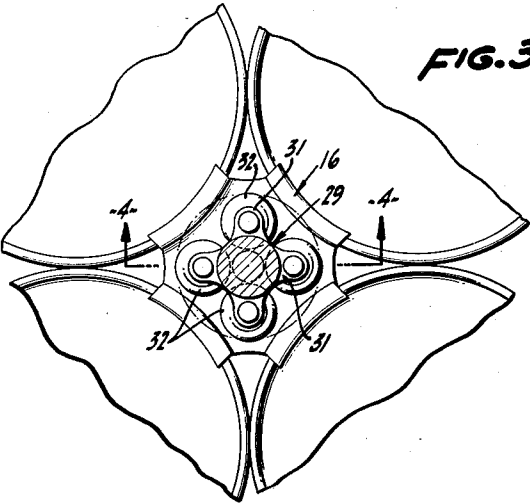


FIG. 3

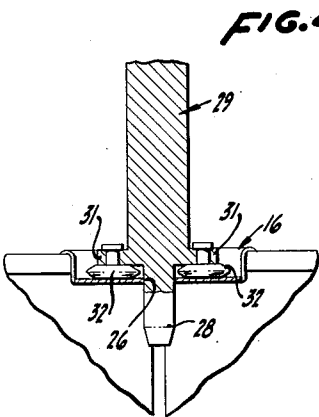


FIG. 4

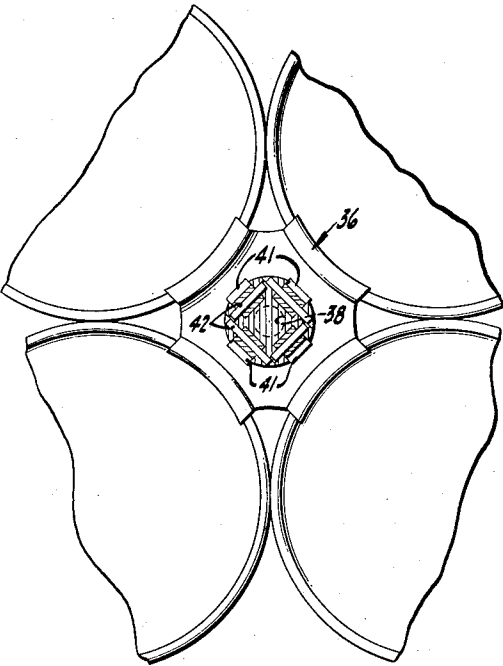


FIG. 6

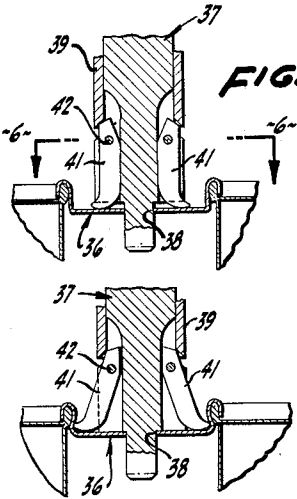


FIG. 5

FIG. 7

INVENTORS
WILLIAM H. BROOKS
KENNETH H. NORBERG
BY *W. H. Brooks*
ATTORNEY

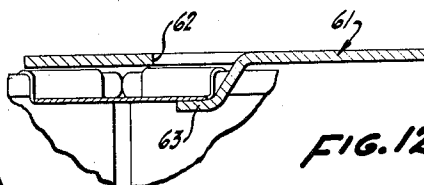
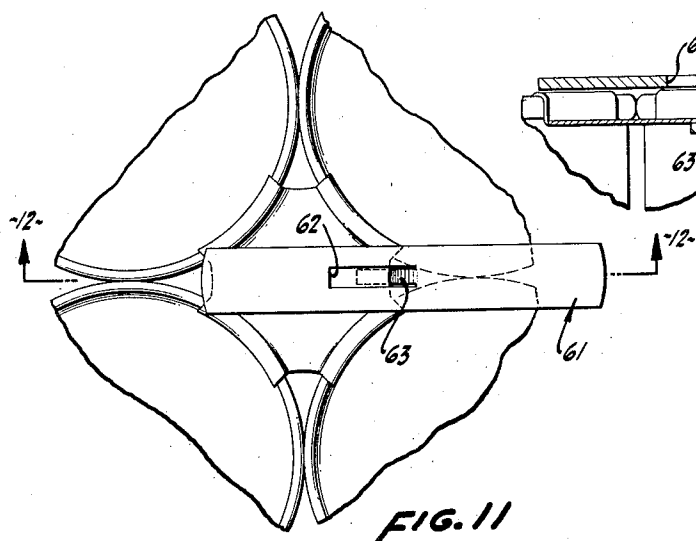
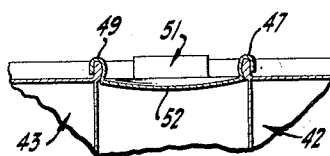
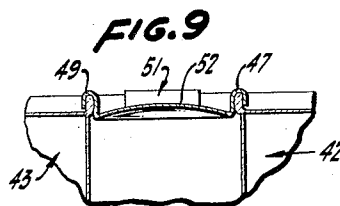
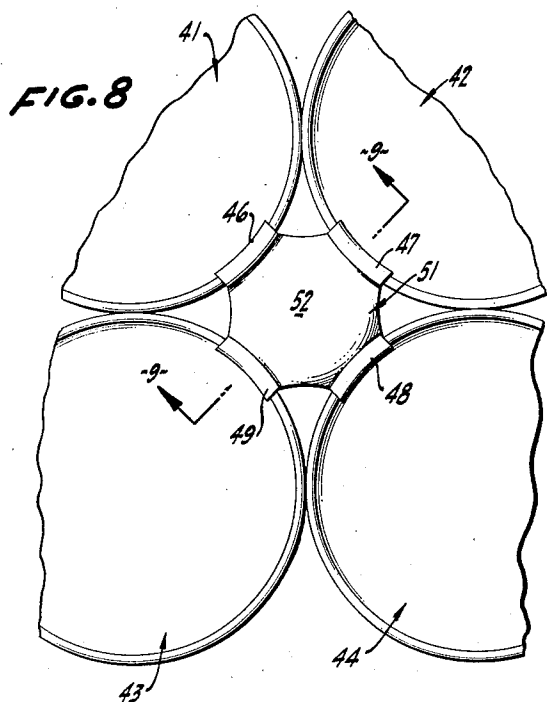
Oct. 22, 1957

W. H. BROOKS ET AL
CAN HOLDER

2,810,171

Filed March 3, 1953

3 Sheets-Sheet 3



INVENTORS
WILLIAM H. BROOKS
KENNETH H. NORBERG
BY *Maxwell Lott*
ATTORNEY

1

2,810,171

CAN HOLDER

William H. Brooks, San Anselmo, and Kenneth H. Norberg, Mill Valley, Calif.; said Brooks assignor to said Norberg

Application March 3, 1953, Serial No. 340,042

2 Claims. (Cl. 24—81)

Our invention relates to can holders of the general sort disclosed in a co-pending application of Kenneth H. Norberg entitled Can Holder, filed January 6, 1953, Serial Number 329,807, and is especially concerned with improved can holders and methods of holding cans.

In general it is desirable to secure together one pair or a multiplicity of pairs of cans usually of the sort commonly utilized for all sorts of domestic items. Such cans are made of metal, most often are circular cylindrical and are sealed at both ends by closures held in place by a folded over edge. The edge or seam constitutes a peripheral, circular bead extending axially upward from the face of the can end and also radially outward from the can body.

It is an object of our invention to provide an improved structure for holding together two or more cans of the indicated sort.

Another object of the invention is to provide a means for holding cans together and a method for doing so.

A further object of the invention is to provide a simplified clip engageable with a plurality of cans for holding them in the desired relationship.

A still further object of the invention is to provide a can holder having clip means for securing the cans firmly together.

A further object of the invention is to provide a can holder effective to hold together a large number of cans.

A still further object of the invention is to provide a method of affixing can holders firmly to appropriately disposed cans.

Other objects, together with the foregoing, are attained in the several embodiments of the invention described in the accompanying description and illustrated in the accompanying drawings, in which:

Figure 1 is a plan, portions being broken away, of two pairs of cans held together by one form of can holder constructed in accordance with our invention.

Figure 2 is a cross section, the plane of which is indicated by the line 2—2 of Figure 1 drawn to an enlarged scale with portions being broken away.

Figure 3 is a plan similar to Figure 1 and showing a tool effective to assist in securing the can holder in position.

Figure 4 is a cross section, the plane of which is indicated by the line 4—4 of Figure 3.

Figure 5 is a cross section similar to Figure 4 and showing a modified form of can holder tool in one operating position.

Figure 6 is a cross section, the plane of which is indicated by the line 6—6 of Figure 5.

Figure 7 is a view similar to Figure 5 showing the tool in a different operating position.

Figure 8 is a plan similar to Figure 1 showing a modified form of can holder in accordance with our invention.

Figure 9 is a detailed cross section, the plane of which is indicated by the line 9—9 of Figure 8.

Figure 10 is a view similar to Figure 9 but showing the can holder in a different position of operation.

2

Figure 11 is a view similar to Figure 1 and showing a can holder remover in position for operation.

Figure 12 is a cross section, the plane of which is indicated by the line 12—12 of Figure 11, with certain parts being broken away and being drawn to a slightly different scale.

In one of its preferred forms, our can holder is arranged, as especially shown in Figure 1, for holding together a plurality of pairs of cans 6, 7, 8 and 9. All of the cans have generally circular cylindrical bodies 11, depressed ends 12 and 13, and peripheral circular beads 14 extending both upwardly away from the ends 12 and 13 and also extending radially outwardly from the body 11 of the can. When the cans are put into substantial contact, as shown in Figure 1, there is provided a holder 16 to engage them and secure them in that relationship.

The holder is preferably fabricated of a relatively thin piece of somewhat deformable or springy material such as sheet metal. For example, sheet steel is satisfactory. It is formed with a generally planar central portion 17 and a plurality of clips 18, 19, 20 and 21 uniformly disposed around the periphery of the planar portion 17. The clips have a contour in plan that is arcuate to correspond generally with the arcuate shape of the beads 14. In side elevation, the planar portion 17 merges smoothly with the upstanding clips. These are each of an inverted U-shape in cross-section and are of a configuration so that the substantially parallel "leg" portions of the U-shape snugly fit over the beads 14 with the inverted U's facing the same direction. The structure as so far described is readily applied to cans in the position shown in Figure 1 but is not effective to retain the cans firmly with respect to each other. For that reason, the holder as initially positioned is designed for a further operation, as shown in Figure 2. Preferably, the planar portion 17 is pierced by a central aperture 26 which occupies only a part of the area available, the remaining portion being conveniently stamped or otherwise provided with an advertising legend 27 or the like.

Adapted to fit in the center aperture 26 is the central stem 28 of a tool 29 designed to be rotated. The tool has extending lugs 31 on it each of which carries a deforming roller 32. Since there are four of the clips 18, 19, 20 and 21, there are four rollers 32 equally spaced around the periphery of the tool 29. The tool is put into position, as shown especially in Figure 3, and then is given a partial rotation; for example, a quarter turn. In so rotating, the rollers 32 first engage against the adjacent portion of the U-shaped cross section of the clips 18, 19, 20 and 21 and as the rollers continue to revolve with the stem 28, they distort the material of the clips to provide a deformation 33 in each of the clips.

The deformation is a recess when viewed from the central portion of the holder but constitutes a ridge 34 when observed from the can side of the holder. The deformation or ridge is generally arcuate in contour and extends inwardly beneath the outstanding portion of the bead 14. The deformations cause a firm frictional engagement between the clips and the can beads. Since there are four of the rollers 32, the deformations are made simultaneously and as the tool advances a quarter turn it is again in a position free of the clips so that it can be lifted away for operation on a subsequent group of cans. In this fashion the holder 17 is positioned with its clips overlying the can beads and then is subsequently shaped or treated to provide deformations or ridges in engagement with the underside of or underlying the beads. A very firm interengagement is afforded.

Instead of utilizing a rotary tool as shown in Figures 3 and 4, it is quite feasible to use a different form of tool as shown in Figures 5, 6 and 7. In this instance, the can holder 36 is put into position on the cans as before and

3

a tool 37 which does not rotate but which moves axially is engaged with the aperture 38 in the middle of the can holder. As the tool jacket 39 descends, it cams against deforming fingers 41 mounted on pivot pins 42 secured to the tool 37. This causes the fingers 41, corresponding in number to the number of clips on the can holder, to move out in a radial direction and to force some of the material of the U-shaped clips to extend in under the overhanging can beads.

The shape of the deformation or ridge made by the tool shown in Figures 5, 6 and 7 is slightly different than that made by the rotary tool of Figures 3 and 4. In either case the effect on the can holder is to provide indentations or dimples, as seen from one face, or with ridges or projections, as seen from the other side. The U-shaped portions of the holder are engaged firmly with the can beads and so are anchored against dislodgment.

The deformation of the material, as previously described, to provide ridges or indentations extending under the can beads is virtually a permanent deformation. While the can holders can be reused a few times the material is not ordinarily susceptible to long repeated reuse. As a modification susceptible of continued or repeated reuse we provide an arrangement as shown in Figures 8, 9 and 10. As before, there are pairs of cans 41, 42, 43 and 44 arranged to be engaged by four clips 46, 47, 48 and 49 upstanding from the periphery of a can holder 51. In cross section, the clips are substantially U-shaped and are arranged to engage the peripheral beads of the cans with only fair firmness. Instead of using a planar central portion for the can holder, in this instance we use a domed or arched central portion 52 made preferably of the same material as the clips and having a fair amount of springiness.

As first constructed, the domed or arched portion 52 is curved outwardly in the same direction that the U-shaped clips extend. In this relationship of the parts the can holder is readily dropped over the adjacent cans. Subsequently, the domed central portion 52 is pressed downwardly, as seen in Figures 8, 9 and 10, and springs into a downwardly arched position, as shown in Figure 10. The characteristics of the material and the fulcrum points are such that while the dome 52 inverts or snaps over center into a depressed condition, it does not continue far enough to withdraw the displaced legs of the U-shaped clips entirely from their extreme positions of radial remoteness. Rather the legs of the U-shaped clips are only partially brought back toward each other. This results in a configuration substantially as shown in Figure 10 in which the arched portion 52 is bowed away from or opposite to the direction that the U-shaped clips extend and with the points of juncture of the clips and the body of the holder slightly underlying the can beads. The can holder is snapped into a firm position in engagement with the can beads and retains that engagement until such time as the central portion 52 is given an upward force and is again arched into its original position thereby drawing the previously spread legs of the U-shaped portion slightly together so that the holder can be withdrawn from the can margins. It is then available for repeated reuse.

As an aid to the dislodgment of any of the forms of the can holder as so far described, there is illustrated in Figures 11 and 12 a special tool 61 including a strap having a generally planar portion provided with an interruption 62 from which a downwardly extending tongue 63 protrudes. In use, one end of the tool 61 is disposed on top of the can holder just above the beads on the sub-

4

jacent cans and the tongue 63 is positioned just below the planar or central portion of the canholder. An upward lift on the tool then dislodges the can holder from the can for discard, as in the case of the holder shown in the first two figures or for reuse in the case of the holder shown in Figures 8, 9 and 10.

What is claimed is:

1. A holder for releasably securing together a plurality of peripherally beaded cans in substantially immediate adjacent relationship comprising a sheet of deformable material, a plurality of legs extending generally perpendicular to and upstanding from spaced marginal portions of said sheet with the number of said legs corresponding to the number of cans to be secured, each of said legs being of arcuate form along the length thereof and having an extension of substantially the same length as the bead disposed in parallel spaced relation to the leg whereby each of said legs and extensions define a generally U-shaped clip adapted to releasably frictionally engage a can bead inserted therebetween, and each of said legs having a deformation positioned within the height of the leg and providing a ridge directed towards its associated extension and adapted to underlie a can bead.

2. A holder for releasably securing together a plurality of peripherally beaded cans with portions of the can beads in contacting relation, comprising a single sheet of deformable material having a substantially planar central portion having a marginal form adapted to lie in the interstice between the cans adjacent the beads thereon, a plurality of clips upstanding from and uniformly disposed about the periphery of said central portion with the number of clips corresponding to the number of cans to be secured, each of said clips having a U-shaped cross-sectional form with the legs thereof disposed substantially perpendicular to the plane of said central portion and being arcuate in plan to conform to the periphery of a can, the innermost leg of each clip constituting an edge of said central portion and the spacing between the legs of each clip being such as to resiliently frictionally engage the opposed sides of a can bead inserted therebetween, the outermost leg of each clip terminating medially of the height of the innermost leg, and means defining a deformation in each of said innermost legs extending towards its associated outermost leg intermediate said central portion and the distal end of the outermost leg and adapted to underlie a can bead when the clip is in engagement with such bead for cooperating with said frictional engagement in resisting accidental separation of the holder and cans.

References Cited in the file of this patent

UNITED STATES PATENTS

603,455	Pinney	May 3, 1898
1,161,237	Mass	Nov. 23, 1915
1,200,849	Katzinger	Oct. 10, 1916
1,302,662	Jackson	May 6, 1919
1,567,387	Rode	Dec. 29, 1925
2,171,350	Anderson	Aug. 29, 1939
2,384,112	Meyer	Sept. 4, 1945
2,440,902	Lutey	May 4, 1948
2,524,922	Moburg	Oct. 10, 1950
2,637,475	Gialanella	May 5, 1953
2,646,911	Holmberg	July 28, 1953
2,702,641	Arthur	Feb. 22, 1955

FOREIGN PATENTS

506,185	Great Britain	May 24, 1939
---------	---------------	--------------