

Oct. 27, 1959

H. M. RUTH
ARTICLE CLIP

2,909,820

Filed May 21, 1953

3 Sheets-Sheet 1

FIG. 1

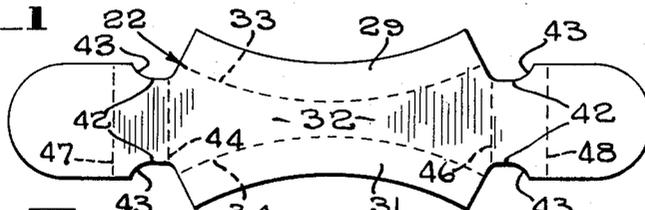


FIG. 2

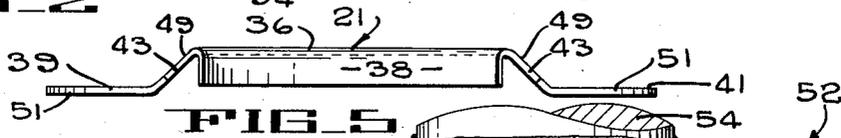


FIG. 5

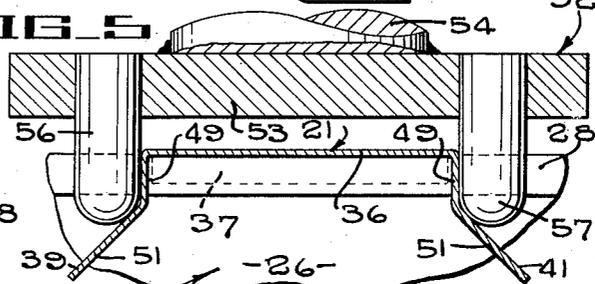


FIG. 3

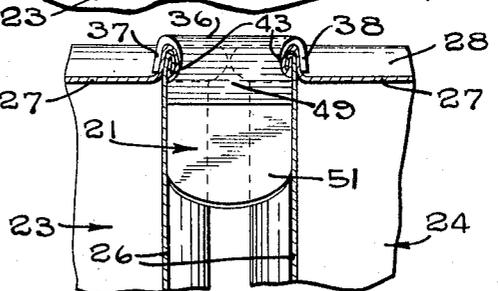
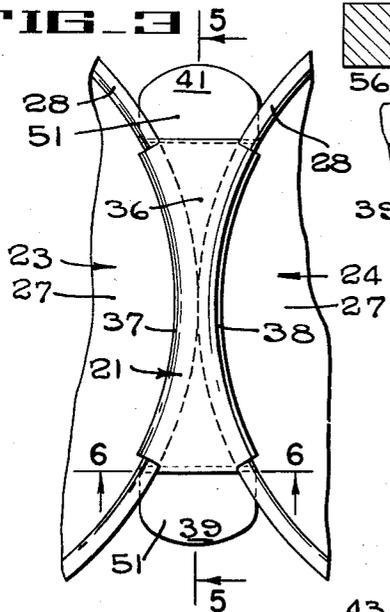


FIG. 6

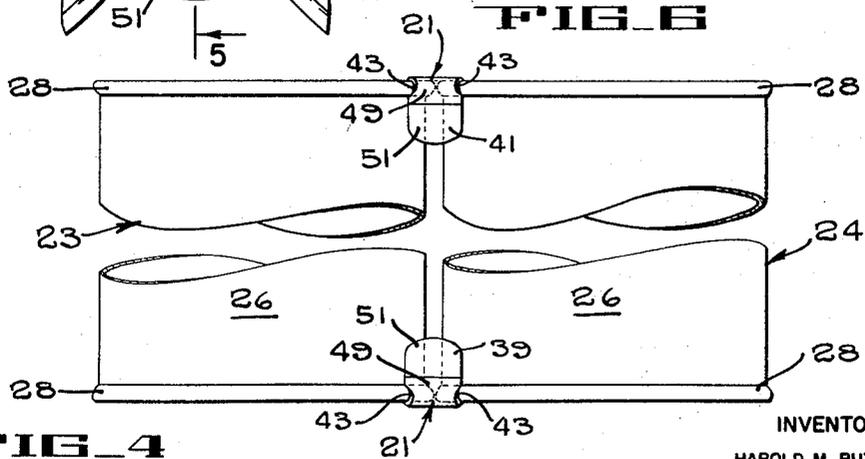


FIG. 4

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FIG. 7

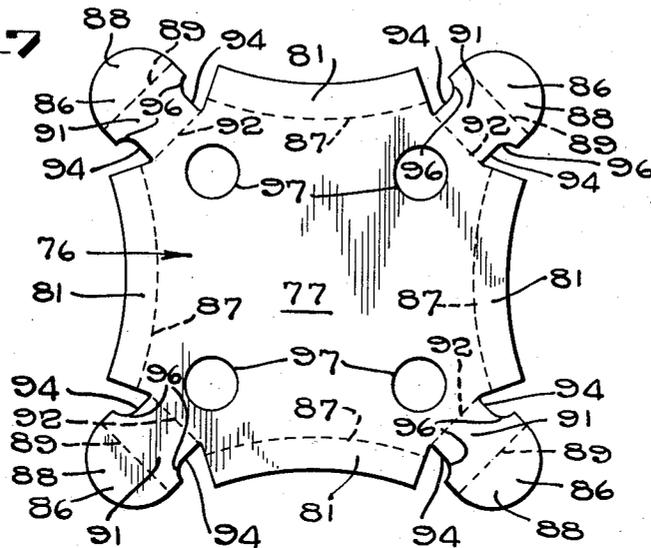
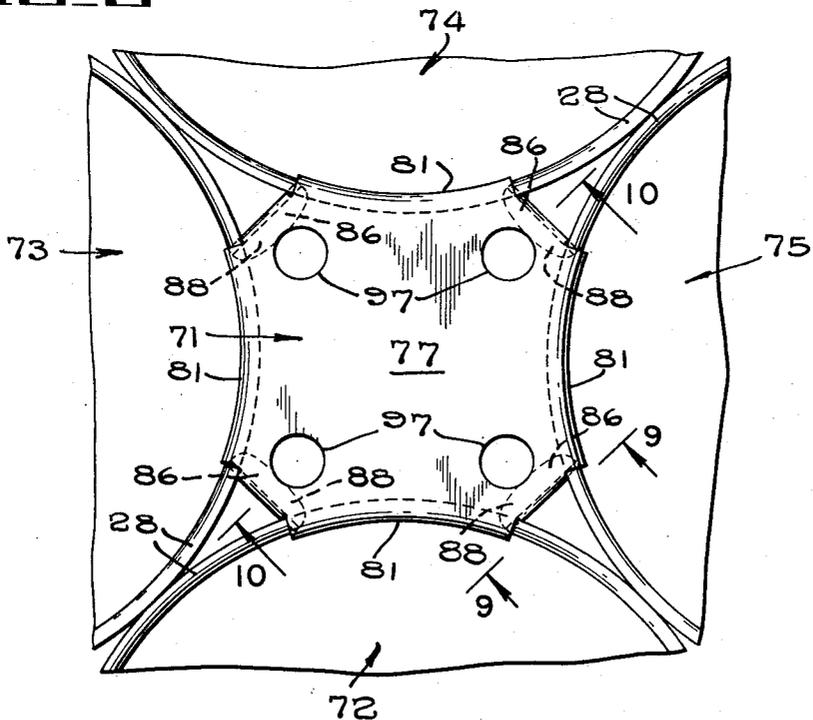


FIG. 8



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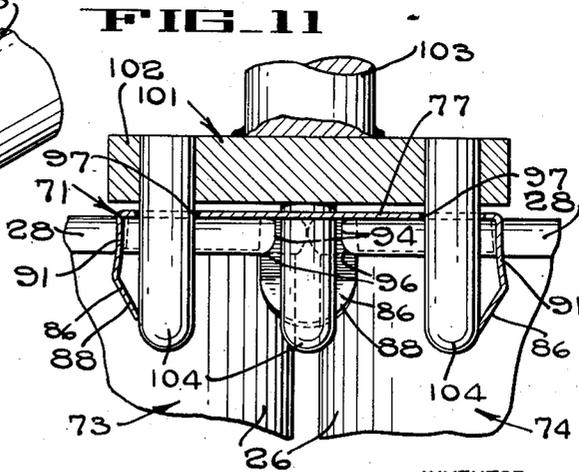
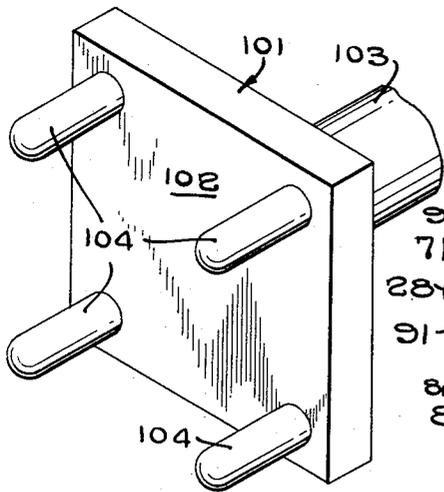
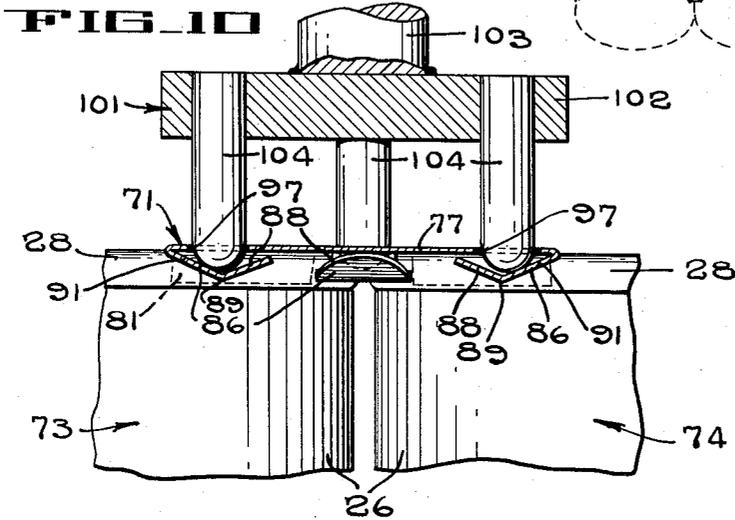
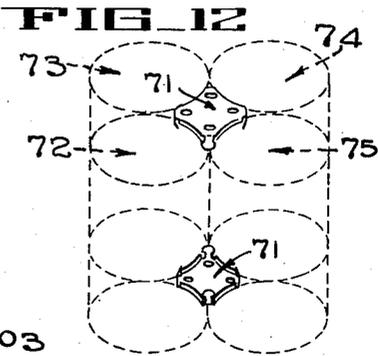
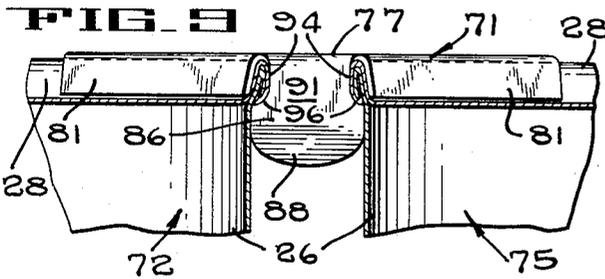


FIG. 13

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Application May 21, 1953, Serial No. 356,522

5 Claims. (Cl. 24—81)

The present invention pertains to a clip for fastening together articles, such as cans, having a bead on their outer periphery.

It is common practice in the marketing of goods in cans, and the like, to bundle groups of cans together in order that they may be more conveniently handled, stored and displayed. Previously, cardboard cartons, plastic holders and metal baskets in a variety of designs have been used to bundle cans into groups for the above-mentioned purpose. All of these devices possess certain limitations, such as relatively high cost, increased space requirements, and lack of ready adaptability to a variety of can groupings, both in quantity of cans and arrangement thereof.

One object of the present invention is to provide an improved clip for fastening together cans and the like, which can be used to bundle groups of cans together and is not possessed of the undesirable characteristics mentioned above.

Another object of the present invention is to provide a clip for easily and quickly fastening together articles having a peripheral bead.

Another object is to provide a clip for fastening together peripherally beaded articles which may be easily and readily removed from its article fastening position.

Another object is to provide a clip which can be used to fasten together peripherally beaded articles in a compact group.

These and other objects and advantages of the present invention will become apparent from the following description and the accompanying drawings in which:

Fig. 1 is a plan view of the blank from which the clip of the present invention is made.

Fig. 2 is an elevation of an article clip formed from the blank shown in Fig. 1.

Fig. 3 is an enlarged fragmentary plan view of a pair of cans held together by the clip shown in Fig. 2.

Fig. 4 is a reduced side view of a pair of cans held together by a pair of clips like that shown in Fig. 2, certain parts being broken away.

Fig. 5 is a reduced fragmentary section of a can and clip taken along the line 5—5 of Fig. 3, and showing in addition a clencher for applying the clip to the cans.

Fig. 6 is an enlarged fragmentary section taken approximately along the line 6—6 of Fig. 3.

Fig. 7 is a plan view of the blank from which a modified clip is made.

Fig. 8 is a fragmentary plan view of a nest of four cans held together by the modified clip formed from the blank shown in Fig. 7.

Fig. 9 is an enlarged fragmentary section taken along the line 9—9 of Fig. 8.

Figs. 10 and 11 are fragmentary sections taken along the line 10—10 of Fig. 8, showing the modified clip in different positions during its application to a nest of four cans by a clencher.

Fig. 12 is a reduced perspective view of a nest of four

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cans held together by a pair of the modified clips, the cans being shown in phantom.

Fig. 13 is an enlarged fragmentary perspective view of the clencher used to apply the modified clip to a nest of cans.

The present article clip 21 (Fig. 2) is preferably formed from a blank 22 (Fig. 1) of thin, stiff, deformable material, such as sheet steel, and is specifically designed for fastening together cylindrical articles, such as cans 23, 24 (Figs. 3 to 6, inclusive) of the type in which comestibles are commercially preserved. Each of the cans 23 and 24 is usually made of metal and comprises a hollow cylindrical body 26 and a pair of end closures 27 (Fig. 3) only one of which is shown. The closures 27 are hermetically sealed to the can body 26 by can seaming machines which fold together the adjacent edge portions of the body and the closures thereby forming an annular, peripheral bead 28 (Fig. 4) around both end margins of the can. Said beads 28 extend axially away from the end of the can and also radially outward from the can body 26, as best seen in Fig. 6, and are usually approximately elliptical in cross-section.

The clip 21 (Fig. 2) is fashioned from the blank 22 (Fig. 1) by bending down the side portions 29 and 31 of the blank body 32 along the curved dotted lines 33 and 34 until the side portions are at approximately right angles with the blank body, thereby forming a somewhat hourglass-shaped web (Fig. 3) from the opposite sides of which said side portions 29, 31 depend as longitudinally and oppositely curved downwardly projecting flanges 37 and 38. From the ends of the blank body 32 (Fig. 1) extend tabs 39 and 41 each lateral edge of which is provided adjacent the body 32 with a curved notch 42 which furnishes an arcuate shoulder 43 spaced from the blank body 32. In forming the clip 21 the tabs 39 and 41 are bent down approximately forty-five degrees along the dotted lines 44 and 46, respectively, and are bent up approximately forty-five degrees along the dotted lines 47 and 48, thereby providing the tabs with a downwardly inclined inner portion 49 (Fig. 2) and a longitudinally extending outer portion 51.

The clip 21 is adapted to be applied to laterally adjacent cans either manually or by machine. In both cases the procedure is the same. Two cans 23 and 24 (Fig. 3) are arranged side by side with the beads 28 on the neighboring ends of said cans tangent to each other. The clip 21 is then placed over the beads 28 at one end of the cans 23 and 24 adjacent their point of tangency, with the curved flanges 37 and 38 contacting and closely overlying the similarly curved inner periphery of the beads 28, and the tabs 39 and 41 extending outwardly from the cans in opposite directions.

The inner portion 49 (Fig. 3) of the tabs 39 and 41 is then bent downwardly and inwardly between the converging body portions 26 of the cans 23 and 24 until it is substantially perpendicular with the web 36. This movement of the tab portions 49 may be accomplished manually by depressing the outer tab portions 51 whereby the tabs will bend almost exclusively along the bend lines 44 and 46 (Fig. 1) due to the reduced cross sectional area of the tab along those lines and due to the fact that the moment of the tab depressing force at these lines is greater than at any other portion of the tab. This bending of the inner portions 49 of the tabs 39 and 41 may also be achieved by means of a clencher 52 (Fig. 5). Said clencher may either be incorporated in a machine adapted to perform automatically the entire clip applying operation or it may be used as a hand tool to aid in the manual application of the clip. The clencher 52 comprises a plate 53 to one side of which an actuating member 54, only part of which is shown, is centrally attached. A pair of pins 56 and 57 extend normally from the op-

posite side of the plate 53 and are so arranged thereon that the clencher may be initially placed above the clip with the pins resting on the inner portion 49 of the tabs 39 and 41. Movement of the clencher 52 from this position toward the cans 23 and 24 will quickly turn down the inner tab portions 49 into a position perpendicular with the web 36, as shown in Fig. 5. The pins 56 and 57 may also be spaced so as to contact the outer tab portions 51 whereby upon movement of the clencher toward the cans the inner tab portions 49 will be bent perpendicular to the web 36 in the manner previously described in connection with the depression of the tabs 39 and 41.

As the inner portion 49 of the tabs 39 and 41 is depressed the oppositely arranged shoulders 43 (Figs. 2 and 6) thereon closely follow the curved outer periphery of the can beads 28 and when the inner tab portion 49 reaches its final position, perpendicular to the web 36, the shoulders 43 closely underlie the adjacent can beads 28. With the inner tab portion 49 in this position the adjacent beads at the selected end of the cans 23 and 24 are clamped between the tab shoulders 43 and the flanges 37 and 38 thereby securing both cans 23 and 24 to the clip 21 and preventing their separation.

While the notches 42 are shown in Fig. 6 exactly fitting the can beads 28, so that the clip 21 will firmly grasp the can beads and hold the cans 23 and 24 rigidly together, in actual practice the beads 28 vary considerably in their cross-sectional dimensions and consequently the fit between the notches and the can beads is not always as close as that shown in Fig. 6. Nevertheless, the clip 21 will still dependably hold the cans 23 and 24 together. In fact a certain amount of looseness between the clip and the beads 28 may be desirable in many instances, since it allows the cans to be similarly oriented for display purposes after they have been fastened together.

It should be pointed out that although in the above description the clip 21 is described as having two tabs 39 and 41 both of which are used to clamp the cans 23 and 24 together, it is within the scope of the present invention to provide a clip with but one clamping tab rather than two. While such a clip will naturally not hold a pair of cans together as rigidly as will the clip 21, wherein the tabs 39 and 41 cooperate to prevent tilting of the cans relative to each other, nevertheless a clip with but one clamping tab will satisfactorily fasten two cans together. In addition, it may also be noted that a clip of the type herein described with either one or two tabs when applied only to the top end of a pair of cans will satisfactorily hold them together so that they may be picked up as a unit by grasping only one can. However, if a one or two tab clip is installed at both the top and the bottom end of a pair of cans, as shown in Fig. 4, an extremely rigid and stable unit is thereby attained, which may be very roughly handled without danger of the cans separating.

It will now be readily appreciated that the present clip may be used to fasten laterally adjacent cans together in almost any conceivable arrangement such as: in a straight line, in a nest of three or more, or in a polygon. Thus a wide variety of consumer carryable can bundles may be made, thereby enabling the exact number of cans required by the customer to be supplied in a neat and conveniently handled bundle. As the clips are easily applied either by machine or by hand, can bundles of various sizes may be made up quickly at the factory or other distribution points with the aid of machinery before displaying them for retail sale, or the cans may be displayed in bulk and the customer supplied with clips and allowed to fasten together the number of cans he desires. The clips 21 may be readily removed from the cans without the aid of a tool by merely grasping the outer tab portions 51 (Figs. 3 and 6) and bending the tabs 39 and 41 outwardly, thereby removing the shoulders 43 from contact with the beads 28. The clips may then be lifted from

the can beads 28, and since said clips are relatively inexpensive they may then be discarded.

The modified clip 71 disclosed in Figs. 7 to 13, inclusive, is adapted to fasten together four beaded cans 72, 73, 74 and 75 (Figs. 8 and 12) in a nested arrangement, and is preferably formed from a blank 76 (Fig. 7) of thin, stiff, deformable material, such as cold rolled steel. The blank 76 is symmetrical, having a roughly square web portion 77 with concavely curved, protruding side flanges 81 and tabs 86 projecting from each of its four corners. The modified clip 71 is fashioned from the blank 76 by bending each of the protruding flanges 81 down along the curved dotted lines 87 until they are at approximately right angles with the web 77, and by bending each of the tabs 86 in two places so that the outer portion 88 of the tabs 86 is bent down approximately 45 degrees along the dotted line 89 and the inner portion 91 of the tabs is bent downwardly and then inwardly along the dotted line 92 until the outer tab portion 88 is almost in contact with the under side of the web 77, as shown in Fig. 10. Each of the clip flanges 81 (Fig. 8) is bowed in toward the center of the web 77 and each lateral edge of the tabs 86 (Fig. 7) is provided adjacent the web 77 with a notch 94 which furnishes an arcuate shoulder 96 spaced from the side flanges 81. The web 77 has a hole 97 (Fig. 8) punched therein near each of its four corners, said holes 97 being arranged to overlie the bend line 89 of the tabs 86 when they are bent beneath the web 77, as is shown in Fig. 10.

As mentioned above, the clip 71 is adapted to fasten together a nest of four cans, i.e., a group of four laterally adjacent cans so arranged that each can is tangent to two other cans and a generally cross-sectionally square space is formed between the cans, see Figs. 8 and 12. To apply the clip 71 to such a nest of cans it is first placed over the approximately square space formed between the cans 72, 73, 74 and 75 (Figs. 8 and 10) with the curved flanges 81 contacting and closely overlying the similarly curved inner periphery of the beads 28 on the cans adjacent to them. The placing of the clip 71 in this position is readily accomplished since at the time of such placement the tabs 86 are bent inwardly beneath the web 77 (Fig. 10) where they do not contact with the can beads 28.

The second and final step in the application of the clip 71 consists in bending the tabs 86 downwardly and outwardly between the converging body portions 26 of the cans 72, 73, 74 and 75 until the inner portion 91 of said tabs is substantially perpendicular with the web 77 (Fig. 11). This operation is conveniently performed either manually or mechanically by the use of a clencher 101 (Fig. 13). The clencher 101 comprises a square plate 102 to one side of which an actuating member 103, only part of which is shown, is centrally attached. Four pins 104 extend normally from the opposite side of the plate 102 and are so arranged thereon that the clencher 101 may be placed above the clip 71 with the pins 104 extending through the holes 97 in said clip and resting on the inwardly bent tabs 86, as shown in Fig. 10. Movement of the clencher 101 from this position toward the nest of cans will quickly turn down the inner tab portion 91 into a position perpendicular with the web 77, as shown in Fig. 11, in much the same manner described in connection with the depression of the tabs 39 and 41 of the clip 21 (Fig. 5).

The manner in which the tabs 86 of the clip 71 clamp the can heads 28 against the flanges 81 (see Fig. 9) is identical with that previously described for the tabs 39 and 41 of the clip 21 (see Fig. 6) and consequently a detailed explanation thereof will not be repeated. However, it is desired to point out that, as in the case of the clip 21, the clip 71 may be formed so that the notches 94 (Fig. 9) are larger than the can beads 28 without affecting the ability of the clip to securely fasten the cans 72, 73, 74 and 75 together.

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Although a clip 71 when applied to only the top end of a nest of four cans will satisfactorily hold the nest together so that they may be picked up as a unit by grasping one or more cans, a more rigid unit is obtained by applying another clip 71 at the bottom end of the nest, as shown in Fig. 12. The clips 71 are easily removed from the cans 72, 73, 74 and 75 by prying them off with any of the common pointed household implements, such as a knife, ice pick, beer can opener, and the like.

Although the embodiments of the present invention shown in the drawings and described herein are all specifically adapted for fastening together cylindrical metal cans, it is apparent that the present invention is equally adaptable to the joining of other articles which are neither cylindrical nor made of metal, such as square cross-sectioned, cardboard containers and the like so long as they are provided with a bead or similar protuberance which may be grasped by the clip. Naturally, the configuration of the web, flanges and tabs of the clips to be applied to differently shaped articles must conform to the contour of the beads of the various articles.

While I have described a preferred embodiment of the present invention, it will be understood that various changes and modifications may be made in the details thereof without departing from the spirit and scope of the appended claims.

Having thus described the invention, what I claim as new and desire to protect by Letters Patent is:

1. A holding clip formed from a single piece of deformable material for removably fastening together a plurality of adjacently disposed cylindrical cans each having an outwardly extending peripheral bead thereon, comprising a substantially flat web for engaging the upper surfaces of said beads, said web having a plurality of spaced curved flanges projecting downwardly at an angle from the side edges thereof for respectively engaging the inner surfaces of the beads on said cans, a plurality of tabs each formed integrally with and in the plane of said web between adjacent ends of adjacent flanges, and said tabs having transversely spaced notches on opposite sides thereof, said notches each merging at one end thereof into the longitudinal end of one of said adjacent flanges, and forming at its other end an outwardly extending shoulder facing said flange end, said tabs respectively being bendable out of the plane of said web into positions substantially normal thereto to engage said notches over the beads on adjacent cans with said shoulders engaged beneath the beads, whereby to hold said clip in locking engagement with said cans.

2. A holding clip formed from a single piece of deformable material for removably fastening together as a unit a plurality of adjacently disposed cylindrical cans each having an outwardly extending peripheral bead thereon, comprising a substantially flat elongated web for engaging the upper surfaces of said beads, said web having spaced oppositely curved flanges projecting downwardly at an angle from the opposite side edges thereof for respectively engaging the inner surfaces of said beads on adjacent cans, tabs formed integrally with and in the plane of said web between adjacent ends of said flanges, and said tabs having transversely spaced notches on opposite sides thereof, said notches respectively merging into the longitudinal outer ends of said oppositely curved flanges and forming outwardly extending shoulders facing said flanges, said tabs being bendable downwardly trans-

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versely of said web to dispose said shoulders out of the plane of the web with the ends of the flanges engaged against the inner surfaces and said shoulders engaged beneath the outer surfaces of the beads on a plurality of said adjacently disposed cans in locking engagement therewith.

3. A clip formed from a single piece of material for fastening together articles each having a peripheral bead, comprising a web having an aperture therethrough, spaced bead-engaging means extending from said web and adapted to contact the inner surfaces of the beads on adjacent articles, and a bendable tab depending from said web between adjacent ones of said bead-engaging means in spaced relation thereto and disposed in retracted reversely bent position underlying said aperture, said tab being projectable from retracted position into engagement with the outer surfaces of the beads on adjacent articles by a clenching tool inserted through the aperture in the web.

4. A clip for fastening together a plurality of articles having peripheral beads arranged in a closed polygonal pattern with a central space between the articles, said clip comprising a web having a plurality of bead-engaging means extending therefrom for contact with the inner surface of the beads on said articles, and a plurality of deformable tabs extending from the margin of the web and adapted to engage the lower surface of the beads on said articles to lock said clip to each article, said web having an aperture adjacent each tab to receive a clenching tool for deforming the tabs into a bead-underlying position during the application of the clip to the articles.

5. A clip for fastening together a plurality of articles having peripheral beads arranged in a closed polygonal pattern with a central space between the articles, said clip comprising a web provided with a plurality of apertures, said web having a plurality of bead-engaging means depending therefrom for contact with the inner surface of the beads on said articles when the web is placed over the beads at said central space, and a plurality of tabs extending from the web and underlying the apertures in the web, said tabs being bendable into engagement with the outer surface of the beads on adjacent articles upon engagement by a clenching tool inserted through the apertures in the web.

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