

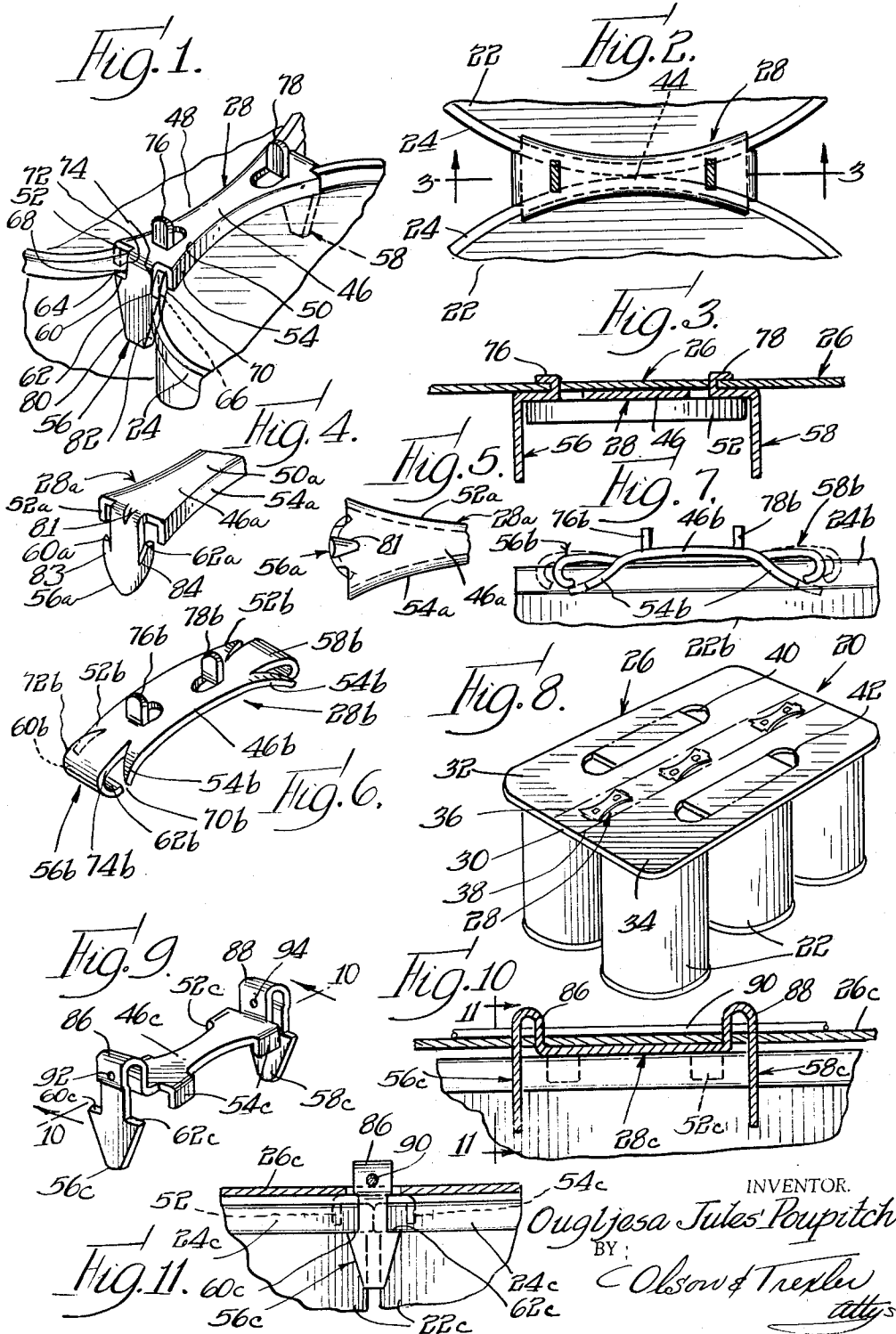
Feb. 2, 1960

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2,923,406

CONTAINER CARRIER

Original Filed Oct. 30, 1950



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2,923,406

CONTAINER CARRIER

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Original application October 30, 1950, Serial No. 192,921. Divided and this application September 19, 1956, Serial No. 610,772

4 Claims. (Cl. 206—65)

The present invention relates to a novel carrier for containers or the like, and more particularly to novel carriers adapted to be applied to end beads or rims of cans such as those commonly used for beverages, foodstuffs and the like for retaining the cans in a compact, rugged package. This application is a division of my co-pending application Serial No. 192,921, filed October 30, 1950, now abandoned.

An important object of the present invention is to provide a novel can or container carrier for retaining a plurality of cans in a rugged package adapted to be easily handled or carried, which carrier includes a novel clip structure adapted to be easily and economically produced from sheet stock, as for example, sheet metal, and adapted to be readily and securely applied to adjacent end rims or beads of a plurality of containers or cans disposed in side-by-side parallel and substantially abutting relationship.

A more specific object of the present invention is to provide a novel one-piece sheet material clip of the type mentioned above which is adapted to be resiliently snapped onto a plurality of rims of adjacent containers in a manner which provides a positive interlock between the clip and the containers so as to prevent subsequent removal of the containers until portions of the clip have been spread apart.

A further object of the present invention is to provide a novel carrier of the above described type wherein a plurality of the novel clips may be connected to a handle member formed from suitable sheet stock, such as paper, cardboard and the like, thereby enabling a single handle structure to support a plurality of groups of adjacently positioned cans or containers.

Other objects and advantages of the present invention will become apparent from the following description and the accompanying drawings wherein:

Fig. 1 is a fragmentary perspective view showing a clip incorporating the features of the present invention assembled with a pair of cans disposed in side-by-side substantially abutting and parallel relationship;

Fig. 2 is a fragmentary plan view of the structure shown in Fig. 1;

Fig. 3 is a fragmentary sectional view taken along line 3—3 in Fig. 2 and further showing the clip connected to a handle member;

Fig. 4 is a fragmentary perspective view showing a modified form of the present invention;

Fig. 5 is a fragmentary plan view of the clip shown in Fig. 4;

Fig. 6 is a perspective view showing another modified form of the present invention;

Fig. 7 discloses the manner in which the clip of Fig. 6 is applied to rims of adjacently disposed containers;

Fig. 8 is a perspective view on a reduced scale showing a package including a plurality of cans or containers disposed in side-by-side substantially abutting and parallel relationship and a carrier having a sheet material handle

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member and a plurality of clips connected to the handle member and to rims of the cans;

Fig. 9 is a perspective view showing a further modified form of the present invention;

Fig. 10 is a sectional view of the clip taken along line 10—10 in Fig. 9 and further shows the clip applied to a handle member and to a container; and

Fig. 11 is a fragmentary sectional view taken along line 11—11 in Fig. 10.

Referring now more specifically to the drawings wherein like parts are designated by the same numerals throughout the various figures, a package 20 incorporating the features of the present invention is shown in Figs. 1, 2, 3 and 8. In the embodiment shown, the package comprises six cans 22 disposed in side-by-side substantially abutting and parallel relationship, which cans may be of known construction and have annular beads or rims 24 at their ends. A handle structure 26 is connected to the upper end rims of the cans by a plurality of clip members 28 constructed in accordance with the present invention. The handle 26 is preferably formed from sheet material such as heavy paper, cardboard and the like and includes a central longitudinally extending body portion 30 and side flaps 32 and 34 integrally joined to the body portion along bend lines 36 and 38. The side flaps are provided with finger openings 40 and 42. The handle member is initially formed in a flat condition as shown in Fig. 8 so that a plurality of the packages may be stacked upon each other to facilitate storing or shipping, and when the handle structure is to be used for carrying the package it is merely necessary to fold the flaps 32 and 34 into upstanding positions so that the finger slots 42 and 44 are aligned.

The clip 28 is shown in detail in Figs. 1, 2 and 3 and it will be appreciated that this clip is of one-piece construction and is formed from sheet material such as resilient sheet metal. The clip adapted to be applied to a pair of the cans 22 disposed in parallel relationship and substantially abutting each other at the area indicated by the numeral 44. The clip includes a substantially flat horizontal body portion 46 which traverses the spaces defined between the cans laterally of the area of substantial abutment. In this embodiment, the body portion 46 is provided with arcuate side margins 48 and 50 which are to be located adjacent the rims of the cans 22 and which have a curvature complementary to the curvature of the annular rims. Depending from the arcuate margins 48 and 50 are arcuate flanges 52 and 54 respectively which are adapted to extend along and engage with broad arcuate surface contact the inner surfaces of the can rims. The flanges 52 and 54 have a height substantially equal to the height of the can rims so that their free margins will substantially abut the tops of the cans.

Locking elements or means 56 and 58 depend from the body portion 46 so that they are adapted to enter the spaces between the adjacent cans and cooperate with the locking means or flanges 52 and 54 for securely and positively interconnecting the clip with the cans. The elements 56 and 58 are identical but oppositely disposed and each is arranged so that it is in a plane substantially perpendicular to the plane of the body portion 46 and also traversing the flanges 52 and 54 so that the elements 56 and 58 traverse the spaces between the cans. Each of the elements 56 and 58 is provided with oppositely disposed and upwardly facing surfaces or shoulders 60 and 62 adapted to extend beneath adjacent can rims. These shoulders or surfaces have sufficient extent so that they will substantially completely traverse the downwardly facing outer surfaces of the can rims and so that their outermost free margins 64 and 66 will substantially abut side surfaces of the cans when the clip is fully applied to the cans. It is to be noted that the outer ends or

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margins 64 and 66 of the shoulders cooperate with the free margins of the depending locking means or flanges 52 and 54 respectively to provide narrow throats 68 and 70 through which the rims of the cans cannot pass until the cooperating margins of the shoulders and flanges have been spread apart. The locking means or elements 56 and 58 also provide oppositely facing upstanding abutment surfaces 72 and 74 adapted to engage the outer upstanding peripheral surfaces of the can rims and to cooperate with the upstanding surfaces of the flanges 52 and 54 for restraining tilting of the cans with respect to each other in a plane disposed transversely to the longitudinal axis of the clip. It is to be noted that twisting of the cans relative to each other in planes generally parallel to the longitudinal axis of the clip is effectively restrained by engagement of the locking shoulders and cooperable portions of the flanges 52 and 54 with arcuately substantially spaced areas of the can rims.

In order to enable the clip 28 to be connected to the handle member 26, a pair of tabs or prongs 76 and 78 is struck upwardly from the clip body portion. As shown best in Fig. 3, these prongs are adapted to extend upwardly through slots in the handle member 26 and to be folded over for securely connecting the clip to the handle member.

When applying a clip 28 to a pair of cans, the cans are first disposed in substantially abutting parallel relationship. Then the clip is arranged over and in alignment with the cans so that upon relative movement of the cans and the clip together, the flanges 52 and 54 will be positioned over and in engagement with the inner rim surfaces. However, before the flanges engage the cans, the depending ends of the elements 56 and 58 will engage the rims of the cans. The depending end portions of these elements below the shoulder surfaces are provided with converging opposite edges or cam surfaces 80 and 82 which are disposed with respect to each other so that the free ends of the elements 56 and 58 may easily enter the spaces between the substantially abutting cans. Upon further relative downward movement of the clip with respect to the cans, the cam surfaces 80 and 82 engage the rims and cause the elements 56 and 58 to be flexed outwardly sufficiently to enable the shoulders 60 and 62 to be snapped into position beneath the rims. It is to be understood that the inherent resiliency of the clip stock material or metal will cause the elements 56 and 58 to spring back to their original positions relative to the clip body after these elements have been resiliently flexed outwardly in the manner just described during application of the clip to the cans. After the clip and the cans have been fully assembled, the cans are positively retained in interlocked association with the clip and cannot be removed until either the flanges 52 and 54 or the elements 56 and 58 have been manually shifted outwardly in order to open the restricted throats 68 and 70 sufficiently to permit the rims to pass therethrough. It will also be appreciated that the structure of the clip 28 is such that a plurality of the clips may be connected to a handle member as shown in Fig. 8 and then simultaneously applied to a plurality of pairs of cans.

Figs. 4 and 5 show a modified form of the present invention which is similar to the above described structure as indicated by the application of identical reference numerals with the suffix "a" added to corresponding elements. In this embodiment, the locking element 56a is formed so that it is provided with an arcuate or channel-shaped transverse cross section whereby its strength and rigidity is materially increased. An indentation 81 at the juncture of the element 56a and the body portion 46a serves to increase the resistance of the element 56a to outward deflection. It is to be noted that the element 56a is slotted to provide a pair of oppositely disposed resilient fingers 83 and 84 which, in turn, provide the rim engaging shoulders 60a and 62a. As the clip 28a is moved into association with the rims of cans during

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an assembly operation, the fingers 83 and 84 are flexed inwardly toward each other to permit the element 56a to be inserted between the cans. Then upon completion of the assembly operation, the fingers 82 and 84 spring outwardly to position the shoulders beneath the rims of the cans. It is to be understood that the clip 28a, which is only partially shown, is to be provided with a second locking element corresponding to the element 58 described above and formed in the same manner as the element 56a.

Figs. 6 and 7 show a clip structure 28b incorporating another modification of the present invention, which clip structure is similar to the devices described above as indicated by the application of identical reference numerals with the suffix "b" added to corresponding elements. In this embodiment, the body portion 46b is normally bowed, and locking means or elements 56b and 58b which are generally hook shaped extend laterally from opposite ends of the bowed body portion. The hook-like elements 56b and 58b have free opposite corner portions which provide the shoulders 60b and 62b and opposite edges 72b and 74b engageable with the peripheral surfaces of the can rims. Cooperatively disposed with respect to the hook shaped elements are fingers or tabs 52b and 54b having inner edges flaring from the edges 72b and 74b and curved so that they are complementary to the curved inner surfaces of the can rims. When the clip 28b is first applied to a pair of adjacent cans, the body portion 46b is flattened by pressure applied by the operator's finger or in any other suitable manner. This causes the hook shaped elements 56b and 58b to be shifted to the dotted line positions shown in Fig. 7, in which positions the hook shaped portions may be inserted between the cans. When the pressure is released the body portion springs back toward its original condition and the corners of the hook-like elements are shifted into engagement with the underside of the can rims and cooperate with the fingers 52b and 54b to establish a firm interlock between the clip and the containers.

In Figs. 9, 10 and 11 another embodiment of the present invention is shown, which embodiment is most similar to the clip 28 described above as indicated by the application of identical reference numerals with the suffix "c" added to corresponding elements. In this embodiment, increased flexibility is provided for the elements 56c and 58c by the use of upwardly projecting inverted U-shaped sections 86 and 88 for integrally connecting the elements 56c and 58c to the body portion 46c. When connecting this clip to a handle member 26c, the U-shaped sections 86 and 88 are inserted through openings in the handle member, and a locking wire 90 is inserted through apertures 92 and 94 in the U-shaped sections. The wire overlies the handle member and thus connects the clip to the handle member. It is to be understood that the wire may be extended for securing a plurality of the clips 28c to the handle member.

While the preferred embodiments of the present invention have been shown and described herein, it is obvious that many structural details may be changed without departing from the spirit and scope of the appended claims.

The invention is claimed as follows:

1. A can package comprising a one-piece resilient sheet material clip, and a plurality of cylindrical cans or the like having annular end rims disposed in side-by-side substantially abutting and parallel relationship securely retained by said clip, said rims having a predetermined thickness, said clip comprising generally planar horizontal body means substantially traversing an area of substantial abutment of the cans and spaces between the cans at opposite sides of said area, a plurality of first locking means integral with and depending from opposite end portions of said body means disposed in said spaces and presenting surfaces engaging beneath the rims of the cans, and a plurality of second locking means integral with

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said body means having portions located toward opposite ends of and depending from said planar body means and engaging inner surfaces of the can rims and respectively cooperating with said first locking means, each cooperable pair of said first and second locking means having margins defining a throat which normally has a dimension transversely of a rim less than said rim thickness for preventing a rim of a can from passing therethrough, one of said means comprising resiliently flexible spring means for relatively spreading said margins and opening said throats during assembly of the can package for receiving rims of cans disposed in substantially abutting parallel relationship sufficiently to enable said first locking means to be snapped beneath the can rims and for subsequently relatively shifting said margins together for closing said throats and locking the cans and the clip in assembled relationship so that the cans cannot be thereafter removed from the clip until said margins have again been relatively shifted and spread apart.

2. A can package, as defined in claim 1, wherein said one means comprising said spring means is one of each of said cooperable pairs of locking means and is provided with rim engageable cam means for effecting relative movement between cooperable first and second locking means for permitting entry of a rim between said

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first and second locking means as an incident to the application of the clip to adjacent substantially abutting cans.

3. A can package, as defined in claim 2, wherein said cam means are integral with said first locking means, said first locking means being disposed to be shifted by said cam means laterally outwardly from said area of substantial abutment of the cans.

4. A can package, as defined in claim 1, wherein said body means is said spring means and is initially bowed and is resiliently deformable for shifting margins of cooperable first and second locking means relative to each other for opening and closing said throats.

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