Aug. 1, 1950 J. HENCHERT 2,517,310

COLLAR CAN COLLAR

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Fig.1

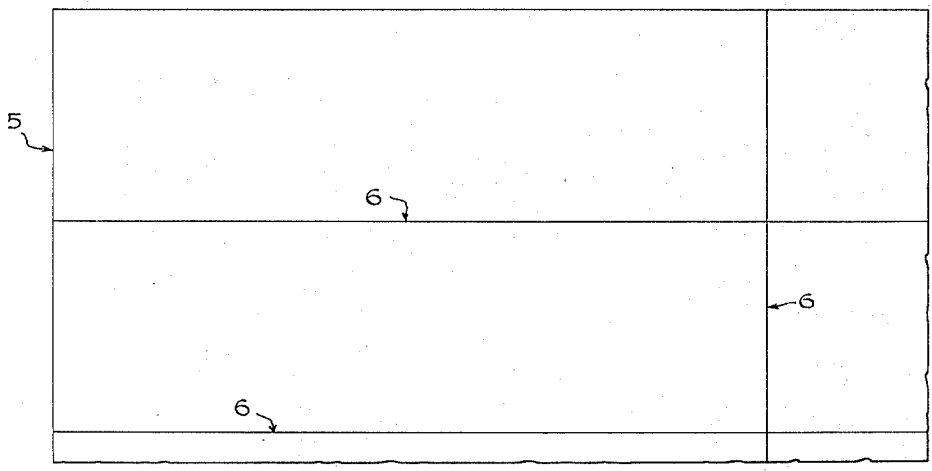


Fig.2

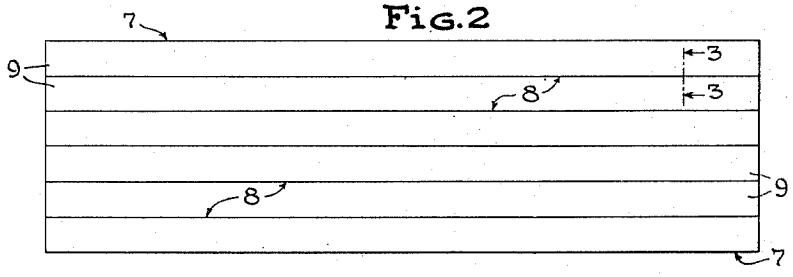
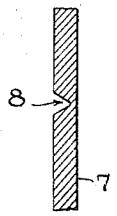


Fig.3



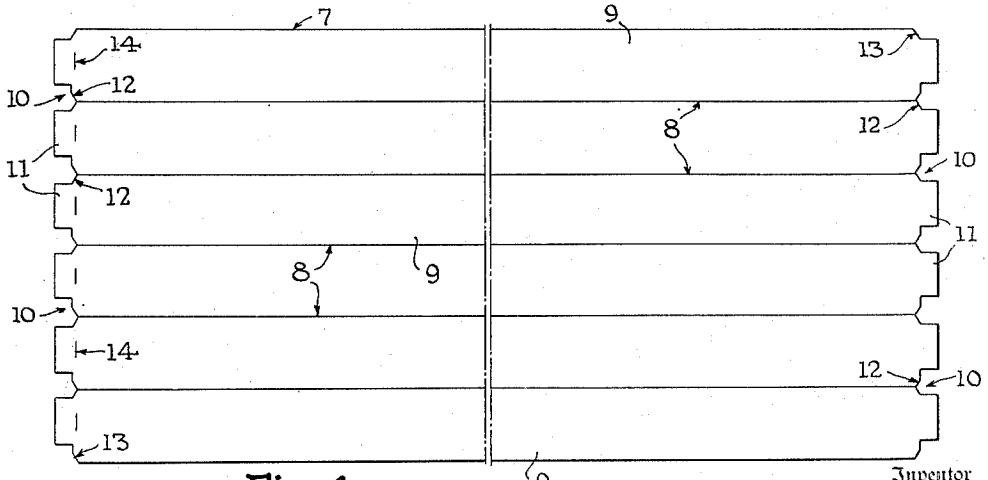


Fig.4

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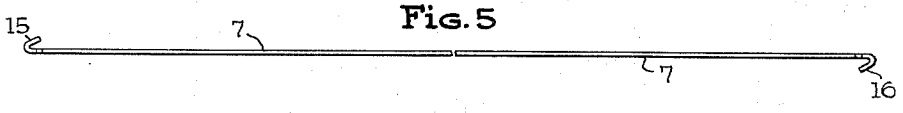
Attorneys

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Fig. 5



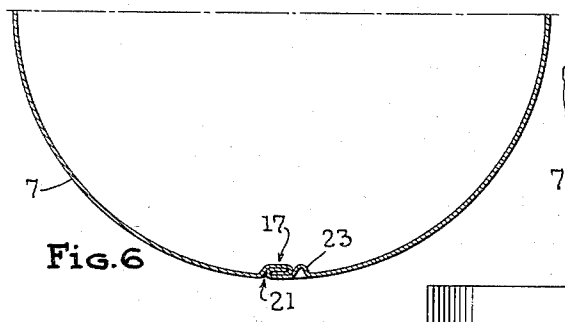


Fig. 6

Fig. 9

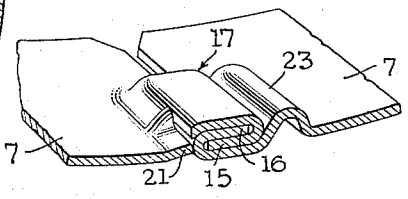


Fig. 7

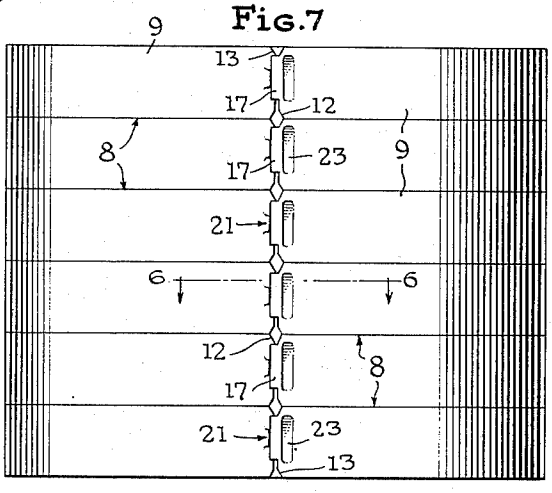


Fig. 8

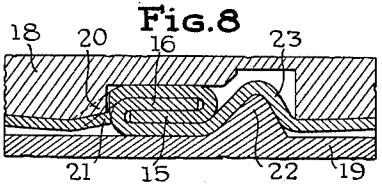


Fig. 10

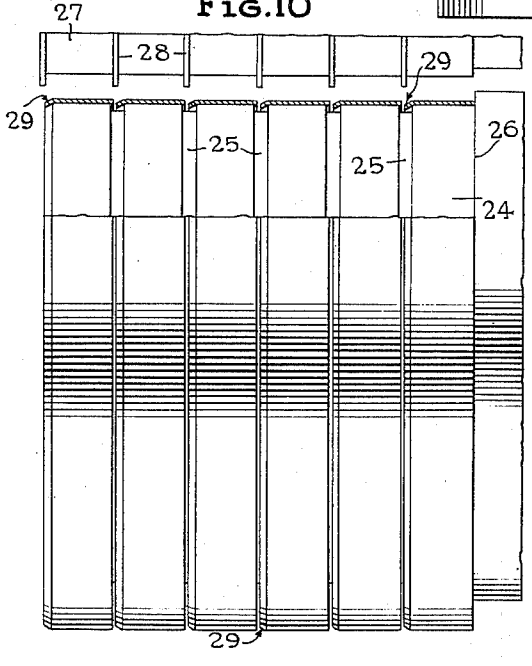
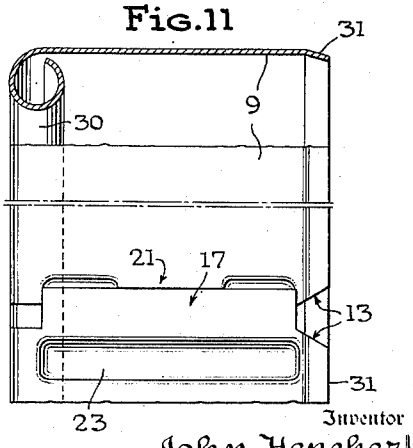


Fig. 11



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COLLAR CAN COLLAR

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Application October 29, 1946, Serial No. 706,395

6 Claims. (Cl. 220—75)

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The invention relates generally to collar can structures and primarily seeks to provide a novel form of collar.

In can structures of the character stated, the can body is provided with a tear strip adjacent the upper end thereof which can be wound about a key and thus torn from the can body to separate the upper extremity of the can body and the attached top end closure from the main body of the can, thereby to effect an opening of the can. It is customary to provide a collar within and extending from the upper extremity of the can body left by the tearing out of the tear strip so as to provide an upward extension over which the skirt depending from the removed top closure of the can can be telescoped in order to effect a reclosure of the can. The present invention relates to certain new and useful improvements in can collars.

Can collars have been provided heretofore which were shaped from strip metal to the desired circular form and the ends of such strips have been connected in seam structures of various forms, as by solder bonding, or by interlocking or interhooking of said ends. It is a purpose of the present invention to provide a collar structure of the character stated in which the collar strip ends are joined by a novel form of interlocked or interhooked seam structure in which provision is made for securing the seam against disengagement or opening of the interlocked or interhooked seam portions.

An object of the invention is to provide a collar having a seam of the character stated in which individual means is provided at each side of the seam for preventing relative, seam separating movement of the hooks.

Another object of the invention is to provide a collar having a seam of the character stated in which the seam securing means includes a tongue struck out from the collar body in position for presenting a raw metal edge against the center of the adjacent hook bend and effective to prevent separation of the seam hooks.

Another object of the invention is to provide a collar having a seam of the character stated in which the seam securing means at one side of the seam comprises an indented bead disposed to prevent separation of the hooks, and the securing means at the other side of said seam comprises a tongue struck out from the collar body in position for presenting a raw metal edge against the center of the adjacent hook bend and effective to prevent separation of said hooks.

Another object of the invention is to provide

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a collar of the character stated in which the interlocked or interhooked seam portion terminates short of at least one edge of the collar, and said one edge is rolled into an inwardly directed curl.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims, and the several views illustrated in the accompanying drawings.

In the drawings:

Figure 1 is a fragmentary plan view illustrating a portion of a metal sheet from which the multiple collar sleeve blanks may be cut.

Figure 2 is a plan view illustrating one of the blanks after it has been scored.

Figure 3 is an enlarged detail cross section taken on the line 3—3 on Figure 2.

Figure 4 is an enlarged plan view illustrating the blank of Figure 2 after it has been notched to form the hook extensions and slit or gashed through adjacent the hook extensions at one end thereof.

Figure 5 is an edge view illustrating the blank of Figure 4 after the bending of the hooks.

Figure 6 is a fragmentary cross sectional view illustrating the blank of Figure 5 after it has been formed into a sleeve by the interlocking and bumping of the hooks, the section being taken on the line 6—6 on Figure 7.

Figure 7 is a side elevation illustrating the multiple collar sleeve blank shown in Figure 6.

Figure 8 is an enlarged fragmentary cross section illustrating the step of bumping the seams by which the ends of the sleeve blank are joined.

Figure 9 is an enlarged sectional perspective view illustrating one of the collar end joining seams.

Figure 10 is a fragmentary side elevation illustrating the step of dividing the multiple collar sleeve blank into individual collars, parts being broken away and in section.

Figure 11 is a side elevation illustrating one of the finished collars, parts being broken away and in section.

In the preferred manner of forming the improved collar, a large metal sheet 5 is cut along lines 6 to form individual blanks 7, one of which is shown in detail in Figure 2. The blanks are provided with deep parallel score lines 8 which extend in parallel spaced relation from end to end of the blank in the manner clearly illustrated in Figure 2. The scoring preferably is so deep that the individual collar widths 9 defined thereby may be divided by mere rupturing at the score

lines, as distinguished from shear cutting. In this particular disclosure, the multiple collar blank is illustrated as of a width for forming six individual collars, but it is to be understood that the invention is not limited to the provision of any particular number of collar widths in any particular blank. In fact, the invention comprehends the formation of individual collars instead of the preferred simultaneous multiple formation of collars, if it be so desired.

Blanks such as are disclosed in Figure 2 are placed in a body maker and are fed widthwise, that is in a direction with the short or end edges of the blank travelling longitudinally. At one station in the body maker, or, if desired, in an operation independent of the body maker and performed as a pre-preparation step as is the scoring of the blanks, the laterally extended end edges of each blank are notched as at 10 to provide hook extensions 11. It will be apparent by reference to Figure 4 of the drawings that the notching is so performed as to provide hook extensions which are of less width than the individual collar widths 9 from which they extend, and each side edge of each of the extensions 11 is spaced inwardly from one of the side edges of the respective collar width. It will also be noted that the notching is so shaped as to provide angle notches 12 between each two adjacent hook extensions 11, and angle portions 13 beside the hooks at each of the four corners of the blank as viewed in Figure 4. It will also be apparent by reference to Figure 4 that the blank is gashed or slit as at 14 adjacent each hook extension at one end thereof, all of said slits being in longitudinal alignment and spaced adjacent to, parallel and centered with respect to the individual hook extensions. It is also to be understood that the gashing or slitting of the blank may be accomplished at the same time the notching 10 is performed, at another station, or prior to the feeding of the blanks into the body maker, as may be desired.

At another station in the body maker, or at different stations, the hook extensions 11 are bent in the manner illustrated in Figure 5 to provide inside and outside hooks respectively designated 15 and 16, the hook 15 being bent upwardly and inwardly and the hook 16 being bent downwardly and inwardly. After the formation of the hooks in the manner illustrated in Figure 5, the multiple collar blank is shaped about the forming horn of the body maker to the cross sectional shape intended in the collars, the hooks 15 and 16 being brought together and bumped in the well known manner to provide individual seams 17 extending along the multiple collar sleeve thus formed in the manner clearly illustrated in Figure 7.

In Figure 8 of the drawings, the step of bumping the seams is illustrated in detail, the forming horn being indicated at 18, and the bumping steel at 19. It will be apparent that the forming horn is provided with shoulder means 20 which is effective to displace the metal in each collar width 9 at the position of the respective gash or slit 14 in the manner clearly illustrated in Figure 8 to provide a locking tongue or lug 21 and to place the raw metal edge of said tongue against and in centered relation with respect to the outside hook 16, thereby to serve as a means for securely locking the hooks against separation in the manner clearly illustrated in Figures 8 and 9. It will also be apparent that the bumping steel 19 is provided with projections 22 which serve to indent individual beads 23, one such bead being provided in each body width 9 beside and against the respective seam 17 in position for securing the hooks 15 and 16 against separation in the manner clearly illustrated in Figures 8 and 9.

From the foregoing, it will be apparent that the interlocked hooks 15 and 16 are firmly secured between the locking tongue or lug 21 and the locking bead 23, and separation of the hooks without completely destroying the same is impossible. After the multiple collar sleeve is completely formed on the body maker in the manner illustrated in Figures 6 to 9, sleeves are placed on arbors 24 forming a part of a suitable sleeve dividing apparatus such as is illustrated in Figure 10. The arbor is provided with a plurality of circumferential grooves 25 which are so spaced as to line up with the score lines 8 in each multiple collar sleeve when one of the sleeves is placed against the abutment shoulder 26 provided on the arbor. It will be apparent by reference to Figures 4 and 7 of the drawings that the individual collar width seams 17 are placed closer to one edge of the collar width than to the other edge of the particular collar width. This leaves end edge portions of the collar width in substantially abutting relation between the respective hook seam 17 and the adjacent angle notch portions 12. This particular placement of the individual seams 17 is for the purpose of facilitating subsequent curling of the particular edge of the collar without interference of the seam structure 17 with said curling. In the placement of the multiple collar sleeve on the arbor 24, the edge of the sleeve nearest one of the endwisely disposed individual seams 17 is placed against the arbor shoulder 26.

The dividing of the sleeve into individual collars may be accomplished by a rupturing roll 27 having rupturing ribs 28 thereon disposed in parallel spaced relation for engaging with the sleeve over the score lines 8 and the underlying arbor grooves 25. When the roll 27 is thus brought against the sleeve and arbor the sleeve will be divided into the predetermined multiple of individual collars at the score lines, and simultaneously with the division of the sleeve, the rib engaged end of each collar width will be turned inwardly slightly as at 29 to provide a curl start which will greatly facilitate the subsequent formation of a curl.

After the individual collars are formed by dividing the sleeve of Figure 7 in the manner illustrated in Figure 10, the collar is completed by the formation of an inwardly directed curl 30 in the end thereof spaced the greater distance from the seam structure 17, and a slight inward bend 31 may also be provided at the other edge of the collar.

It will be apparent by reference to Figure 11 that the curl 30 can be formed without interference or obstruction by the seam structure 17 because of the particular dimensioning of the parts illustrated in Figures 4 and 7. The completed collar is sturdy and can be readily inserted into a collar can body, and the connected ends of the collar strip or band are securely locked against inadvertent separation by the locking tongue 21 and the locking bead 23 without the necessity of resorting to solder bonding.

This particular form of collar provides marked advantages in economy, simplicity and efficiency in manufacture, and in the practical, neat appearance and sturdy construction of the collar itself.

While one specific structure of the collar is de-

scribed in detail herein, it is to be understood that the specific structural features of the collar may be varied without departing from the spirit and scope of the invention as defined in the appended claims.

I claim:

1. A collar can collar comprising a metal strip formed into collar shape with its ends equipped with return bends providing hooks interlocked in the form of a seam, there being included a metal portion displaced from the body of the strip in the form of a raw metal edge beside and against the return bend of one of the hooks for securing the same within the other hook.

2. A collar can collar comprising a metal strip formed into collar shape with its ends equipped with return bends providing hooks interlocked in the form of a seam, there being included a metal portion displaced from the body of the strip in the form of a raw metal edge beside and against the return bend of one of the hooks and another metal portion displaced from said strip body in the form of a bead indentation beside and against the other hook, said raw metal edge and bead indentation serving to secure the hooks against movement of separation.

3. A collar as defined in claim 1 in which the interlocked hooks are spaced inwardly from at least one side edge of the collar, and in which said side edge is formed into an inwardly directed curl.

4. A collar as defined in claim 2 in which the interlocked hooks are spaced inwardly from at least one side edge of the collar, and in which said side edge is formed into an inwardly directed curl.

5. A collar can collar comprising a metal strip formed into collar shape with its ends equipped with return bends providing inner and outer hooks interlocked in the form of a seam, there being included a metal portion displaced from the body of the strip in the form of a raw metal edge beside and against the return bend of the outer hook for securing the same within the inner hook.

6. A collar can collar comprising a metal strip formed into collar shape with its ends equipped with return bends providing inner and outer hooks, interlocked in the form of a seam, there being included a metal portion displaced from the body of the strip in the form of a raw metal edge beside and against the return bend of the outer hook for securing the same within the inner hook, and there being included also another metal portion displaced from said strip body in the form of an inwardly indented bead disposed beside and against the return bend of the inner hook for securing the same within the outer hook.

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