The invention relates generally to metallic receptacles, and more particularly to the type known as collar cans wherein are provided tear strip structures adapted to be wound on keys and by this means torn out of the body walls of the cans in order to effect an opening thereof, and it primarily seeks to provide a novel collar structure for such cans and a novel mounting for such collars.

In cans of the type stated the tear strips usually are defined by parallel score lines which surround the cans adjacent the upper end closures thereof, and a collar is snugly fitted within the upper end of each can in position for extending upwardly from the upper extremity of the can body resulting from the tearing out of the rip strip, thereby to maintain the desired can body wall height and provide a support neck over which the skirt or body wall portion remaining attached to the upper end closure can be telescoped to effect a reclosure of the can. It is the purpose of the present invention to provide a novel form of collar of the character stated and a novel mounting for the same, said collar including an annularly pleated portion, and being inserted into the upper end of a can body having a preformed, outwardly projecting bead one of said pleats being forced outwardly to cause a portion thereof to project into and conform generally to the shape of said bead in order to effect a collar anchoring engagement in the can body.

An object of the invention is to provide a collar can collar mounting of the character stated in which the collar includes an annularly pleated wall portion comprising a pleat having an outwardly directed nose or rib normally disposed within the outer diameter of the collar prior to final attachment in the can and joined to the collar by flange portions which are narrower than the flange portions forming said nose, said nose being forced outwardly beyond the outer diameter of the collar and engaged in and conforming generally to the shape of an outwardly projecting bead in the can body.

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

In the drawings:

Figure 1 is a part side elevation and part vertical cross sectional view of a can body embodying the invention;

Figure 2 is an enlarged fragmentary sectional view illustrating the collar inserted in the can body preparatory to the forcing of the collar pleat into the body bead.

Figure 3 is a view similar to Figure 2 illustrating the step of forcing the collar pleat into and conforming it to the shape of the body bead for securely anchoring the collar in the can body.

Figure 4 is an enlarged fragmentary sectional view illustrating the collar per se.

In this disclosure the invention is illustrated as embodied in a can including a body 5, and a lower end closure 6. It is to be understood that a top end closure (not shown) ultimately will be applied, said closure preferably being seam secured on the can body in the conventional manner.

The can body 5 is provided adjacent its upper end with an outwardly directed bead 7 and an inwardly directed bead 8 just below the bead 7, and between the bead 7 and the upper end closure extremity of the body, said body is scored in the conventional manner to provide a tear strip 9 adapted to be wound about a key and torn from the wall of the can body in the manner well known in the art for effecting an opening of the can.

According to the invention a collar including a main body portion 10 is snugly fitted within the upper end of the can body, and when the collar is properly mounted in the can body, the main body portion thereof extends above and below the tear strip 9 in the manner clearly illustrated in Figure 3. At its upper extremity the collar body is equipped with an inwardly curved bead 11, and at its lower extremity the collar is provided with an annularly pleated wall portion generally designated 12. The collar wall pleating is accordion pleating or approximately so and specifically is formed to comprise two upper and lower inwardly directed flange portions 13, and these flange portions 13 join with two outwardly directed annular flange portions 14 joined at their outer ends to provide a nose or rib 15. It will be observed by reference to Figures 2 and 4 that the flange portions 14 are wider than the upper and lower flange portions 13, and that the outwardly directed nose or rib 15 normally is disposed within the outside diameter of the collar so as to permit insertion of the collar into the can body in the manner illustrated in Figure 2.

In effecting the secure mounting of the collar in the can body, the collar is first inserted in the can body with its central pleat or outwardly di-
rected nose portion 15 centered opposite the outwardly directed can bead 7 and with its lower edge extremity resting upon the inwardly directed can body bead 8 as at 16. While it is preferred that the inwardly directed can body bead 8 be provided for the purpose stated, it will be obvious that this bead can be dispensed with if desired if other means be employed for properly placing the collar pleat or nose 15 with relation to the can body bead 7. With the collar and can body assembled in the manner stated, inner and outer rollers 17 and 18 are placed in opposition at opposite sides of the collar and the can body bead as shown in Figure 2, the outer roller having a peripheral groove 19 therein conforming to the external shape of the body bead 7, and the roller 17 having converging edge face portions 20 merging into a rounded edge portion 21, and the centers of said roller groove and rounded edge portion lying in the same plane in which the center of the can body bead 7 and the collar pleat nose 15 lie.

By now forcing the rollers 17 and 18 together to tightly press the can body and collar portions between them and bringing about relative rotation between the rollers and said can body and collar portions, the collar flanges or pleat portions 14 will be partially collapsed and the nose 15 will be forced outwardly beyond the outside diameter of the collar into anchoring engagement in the can body bead 7. It will be apparent by reference to Figure 3 that the rounded roller edge 21 is so shaped that it will round out the pleat nose 15 and cause it to conform at 22 to the internal curvature of the body bead 7, the final spread of the collar flange portions 14 being determined by the edge face portions 20 of the anchoring and shaping roller 17. By thus reshaping the collar pleat at 22 the collar is securely anchored in the can body against displacement downwardly or upwardly with relation to the can body.

By forming and mounting the collar in the manner hereinbefore described, said collar will not only be securely anchored in the can body, but it will be so mounted as to present no raw metal edge portions in position for being contacted by the hand of a user of the can.

It is to be understood that the collar herein disclosed may comprise an endless band such as would be formed from a drawn ring, or it may be shaped from a strip joined at its ends in an approved manner. An example of the last mentioned type of collar is shown in the copending application for U. S. Letters Patent, Serial Number 542,961, now Patent No. 2,433,031, issued December 23, 1947, filed by John Coyle and William P. Punte, on June 30, 1944. When collars formed from end joined strips are employed, the joint or seam disclosed by said Coyle and Punte will be found desirable because in this form of joint or seam the multiple thicknesses of collar band metal are disposed only at the central cylindrical form body portion of the collar and no overlapping of wall thicknesses is presented at the upper edge curl or the lower edge bent portions of the collar.

While it is preferred that the can body have a preformed, outwardly directed bead 7 therein as illustrated in Figure 2, it is to be understood that by inserting a collar formed as in Figure 2 in a can body not equipped with a preformed annular bead, and by engaging the collar and can body in rolling contact between rollers in the manner illustrated in Figures 2 and 3, an outwardly directed annular bead will be thus formed in the can body and the outwardly directed nose of the pleated portion of the collar will be pressed into the bead and reshaped therein to conform in shape to said bead so as to secure the collar against endwise movement in the can body.

While specific examples of collar and collar mounting have been described for purposes of illustration, it is to be clearly understood that various changes in the details of construction and arrangement of parts may be made without departing from the spirit and scope of the invention as defined in the appended claim.

We claim:

In a sheet-metal container, a container body provided adjacent its upper extremity with a tear strip and having an outwardly extending peripheral annular bead disposed below said tear strip presenting an inwardly facing groove having a surface curved in cross-section, and a collar snugly fitting within the body having a main body portion lying opposite and extending above and below the tear strip, an annular portion having accordion pleats above and below the groove, and an intermediate portion approximately arcuate in cross-section contacting the inner curved surface within the groove.

JOHN COYLE.
WILLIAM P. PUNTE.

REFERENCES CITED

The following references are record in the file of this patent:

UNITED STATES PATENTS

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>536,890</td>
<td>Asche</td>
<td>May 7, 1895</td>
</tr>
<tr>
<td>975,739</td>
<td>Holland et al.</td>
<td>Nov. 22, 1910</td>
</tr>
<tr>
<td>1,647,547</td>
<td>Sinko</td>
<td>Nov. 1, 1927</td>
</tr>
<tr>
<td>1,839,435</td>
<td>Widell</td>
<td>Jan. 5, 1932</td>
</tr>
<tr>
<td>1,862,510</td>
<td>Kronquest</td>
<td>Dec. 3, 1932</td>
</tr>
<tr>
<td>1,934,480</td>
<td>Kronquest</td>
<td>Oct. 3, 1933</td>
</tr>
<tr>
<td>2,080,926</td>
<td>Lathrap</td>
<td>May 16, 1933</td>
</tr>
<tr>
<td>2,107,428</td>
<td>Sexton</td>
<td>Feb. 8, 1938</td>
</tr>
</tbody>
</table>