Aug. 30, 1932. C. H. ROLLASON 1,874,629

HANDLE ATTACHING DEVICE

Filed Dec. 5, 1930

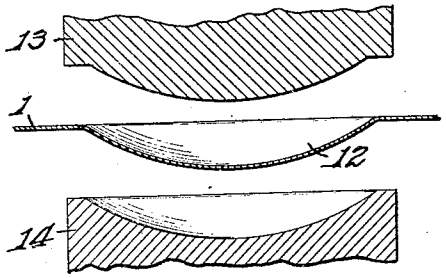


FIG 3

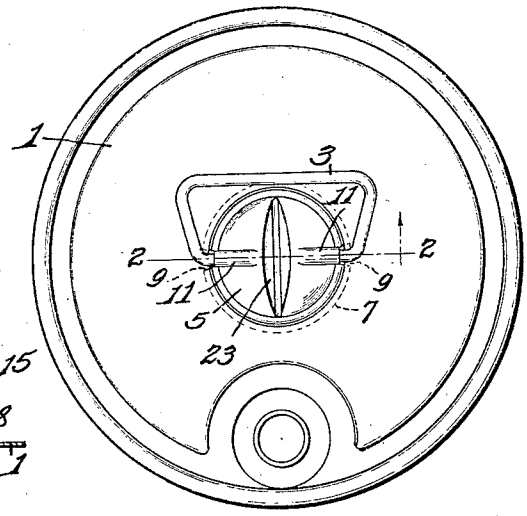


FIG 1

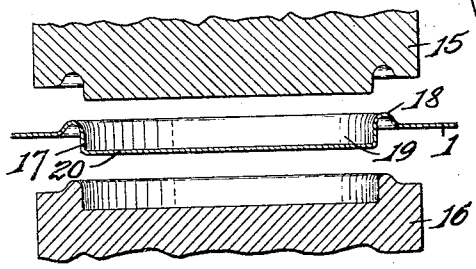


FIG 4

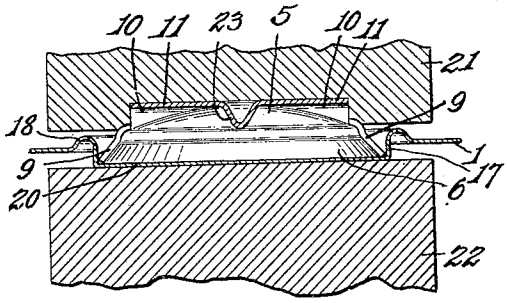


FIG 5

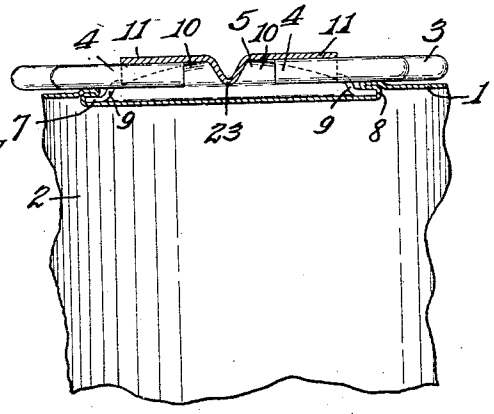


FIG 2

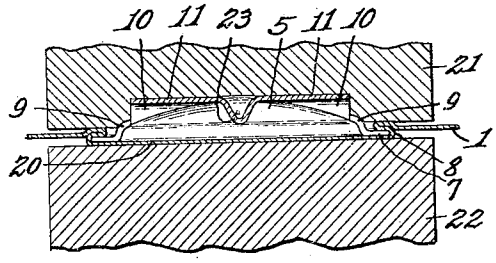


FIG 6

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UNITED STATES PATENT OFFICE

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HANDLE ATTACHING DEVICE

Application filed December 5, 1930. Serial No. 500,236.

This invention relates to devices for attaching handles and the like to sheet metal containers, and it has for its primary object to provide simple and practical means for securing handles in firmly attached relation to sheet metal articles, as the heads of sheet metal containers, drums and the like.

A further object is to provide an attaching device of the character mentioned which is mounted in permanently fixed relation to the head or other part of a sheet metal receptacle, container, or the like, without the use of rivets and without perforation of the metal of such head or other part.

In describing the invention in detail, reference is herein had to the accompanying drawing, in which—

Figure 1 is a top plan view of a sheet metal can or drum illustrating the application thereto of the attaching device to which the present invention relates;

Figure 2 is an enlarged section on line 2—2, Fig. 1;

Figures 3 and 4 are enlarged sectional views of the head of the can or drum and of two sets of dies illustrating two successive steps employed in preparing said head for the application of the invention;

Figure 5 is a similar view illustrating a third set of dies disposed in initial mounting relation to said attaching device; and—

Figure 6 is a similar view showing said third set of dies in final attaching relation to said attaching device.

Referring to said drawing, 1 designates the head end of a sheet metal container or receptacle, as a can or drum 2, and 3 a wire handle of a more or less common loop form having opposite inwardly directed terminals 4 occupying alined relation.

Permanently mounted on said head end 1 is a one-piece circular handle-attaching ear which, as initially formed for mounting on said head end, comprises a shallow concavo-convex, or cup-like, body 5 and a skirt 6, the latter being disposed circumferentially of said body and being flared outwardly, thus rendering such initially formed ear substantially bell-shaped, as shown in Fig. 5. In mounting said ear in place, companion dies are employed in a manner which will hereinafter be described for effecting the flattening of said skirt 6 to form the annular flange 7, shown in Figs. 2 and 6, and simultaneously to effect the formation and the closing upon said flange of an encircling fold 8 of the metal of said head end 1, as shown in the last mentioned figures of the drawing.

The ear is provided with a pair of diametrically opposite recesses or slots 9 which extend wholly through the skirt 6 and at least an appreciable distance into the body 5 thereof, and disposed in registering relation to the inner ends of said slots are the outer ends of channels 10 formed by the provision in said body 5 of a pair of alined radial upwardly pressed ribs 11. Said outwardly open channels have received therein the horizontally alined terminals 4 of the handle 3, as shown in Figs. 1 and 2.

As a preliminary to mounting the ear on the can or drum a shallow socket-like cavity 12 is, by preference, initially formed in the head 1 by means of companion dies 13 and 14, as shown in Fig. 3, following which a second set of companion dies, as 15 and 16, Fig. 3, is employed to effect the further pressing or drawing of the metal of said head to form an inwardly directed cylindrical socket-defining wall 17 encircled by an outwardly directed rib or bead 18, said portion 17 providing an outwardly opening socket 19. The initially formed ear hereinbefore described is then introduced within said socket with the base of its skirt occupying seated position upon the imperforate seat 20 surrounded by said wall and closely adjacent to the latter, as shown in Fig. 5.

As a final operation, companion dies 21 and 22 are employed to permanently attach the ear to the head 1, the die 21 being lowered relative to its companion die 22 for depressing the ear to the extent that the flared skirt 6 thereof is flattened into the annular flange form shown in Figs. 2 and 6 wherein it is disposed at a right angle to the axial line of the ear. As it is thus forced outward, the metal of the flange 7 thrusts in advance thereof the cylindrical socket-defining wall of the head, producing the cir-

cumferential fold 8 which, under the pressure exerted by said dies, is flattened into the flange embracing form shown in the last above-mentioned figures of the drawing and is caused to assume underlying seated relation to the under side of the head. The metal of the bead 18 is utilized in an obvious manner in the formation of the flange-overlying portion of said fold.

The metal of the ear is preferably made of relatively heavier gauge than that of the head, thus to facilitate the formation of the fold 8 in the lighter gauge metal of the latter as the skirt is flattened in the manner described.

A downwardly pressed stiffening rib or bead 23 of suitable depth may be, and by preference is, provided in the body 5 of the ear, the same being disposed transversely between the inner ends of the channels 10 and at right angles to the latter, as shown.

The method of applying the ear to the container constitutes part of the subject matter of my pending application, Serial No. 448,892.

It will be understood that the invention herein described may be employed for various purposes, as for the handles of cans, drums, tubs and wash boilers, drawer pulls in metallic furniture, and the like.

What is claimed is—

1. The combination with a wall of a container or the like, of a sheet metal handle-attaching ear comprising a concavo-convex body having a circular annular flange received within a confining fold of said wall, said fold being disposed in seated parallel relation to the interior surface of said wall, said body having therein a pair of alined radial upwardly pressed ribs whereby are formed alined channels, for the reception of the terminals of a handle, said channels being open at their outer ends, which ends are located inwardly relative to said flange.

2. The combination with a wall of a container or the like, of a sheet metal handle-attaching ear comprising a concavo-convex body having an annular flange received within a confining fold of said wall, said flange being circular and of uniform width throughout, said body being provided with diametrically opposite alined slots extending thereinto through said flange and having disposed in registering relation to the inner ends of said slots the ends of outwardly opening channels, said channels being adapted for the reception of the terminals of a handle.

3. The combination with a wall of a container or the like, of a sheet metal handle-attaching ear comprising a concavo-convex body having an annular flange received within a confining fold of said wall, said flange and said fold being located at right angles to the axis of said body, said body being recessed at diametrically opposite sides and having therein upwardly pressed radial ribs forming alined internal channels which register at their outer ends with the recesses of said body, said channels being adapted for the reception of handle terminals.

4. A sheet metal container having formed in a wall thereof a flat circular inwardly pressed imperforate seat defined annularly by a fold of the metal, an ear mounted upon and projecting outwardly from said seat, said ear comprising a concavo-convex body having an annular base flange resting upon said seat and embraced by the members of said fold, said flange being disposed at a right angle to the axis of said body, and said fold being disposed in parallel seated relation to the interior surface of said wall, said ear body having therein upwardly pressed radial ribs forming alined internal channels having open outer ends, said channels being adapted for the reception of handle terminals.

5. A sheet metal container having formed in a wall thereof a flat circular inwardly pressed imperforate seat defined annularly by a fold of the metal, an ear mounted upon and projecting outwardly from said seat, said ear comprising a concavo-convex body having an annular base flange resting upon said seat and embraced by the members of said fold, said flange being disposed at a right angle to the axis of said body and said fold being seated relative to said wall, said ear body being provided with diametrically opposite radial slots which extend thereinto through said flange and having disposed in registering relation to the inner ends of said slots the outer ends of a pair of alined internal channels formed by the provision in said body of alined radial upwardly pressed ribs, said channels having mounted therein the opposite end terminals of a loop-like handle.

In testimony whereof, I affix my signature.

CHARLES H. ROLLASON.