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L. B. WACKMAN

1,924,893

METHOD OF MAKING CONTAINERS AND CHIMES THEREFOR

Filed Nov. 28, 1932

Fig. 1.

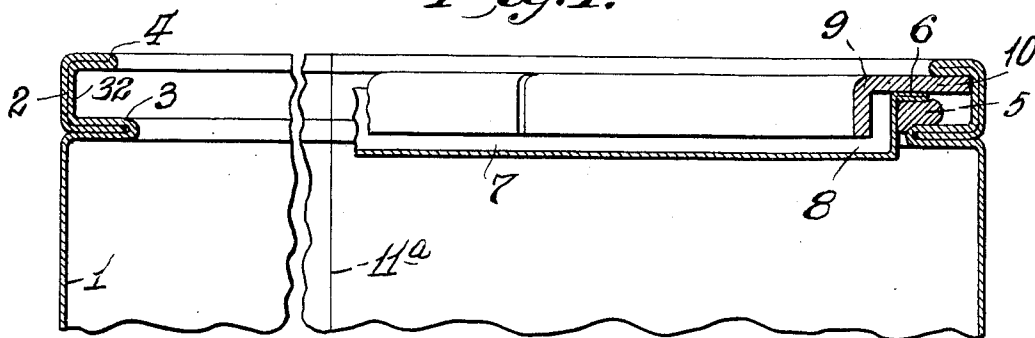


Fig. 2.

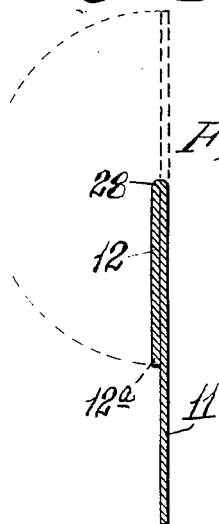


Fig. 3.

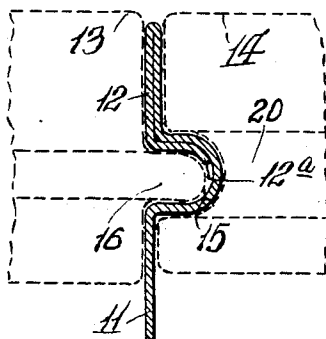


Fig. 4.

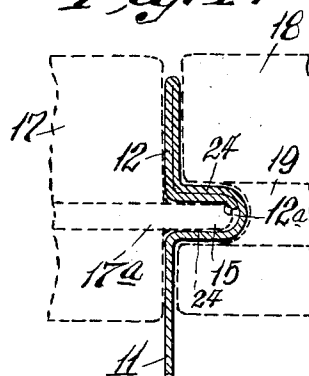


Fig. 5.

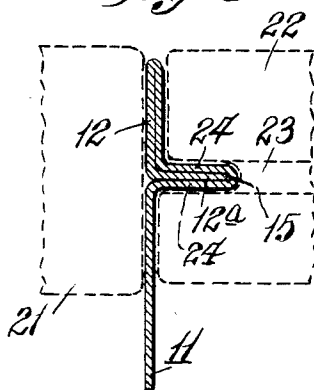


Fig. 6.

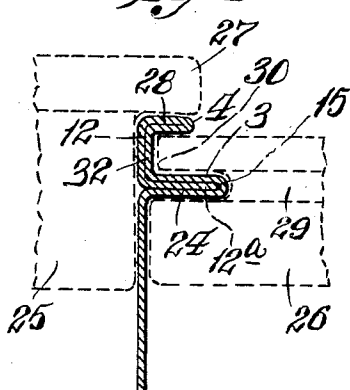
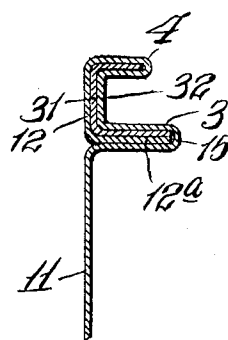


Fig. 7.



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UNITED STATES PATENT OFFICE

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METHOD OF MAKING CONTAINERS AND CHIMES THEREFOR

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Serial No. 644,652

9 Claims. (Cl. 113—120)

This invention relates to certain new and useful improvements in a method of making metallic containers and chimés therefor, this application being a continuation in part of my pending application filed February 2, 1932, Serial No. 590,426, on unitary chime for metallic containers, now Patent No. 1,889,505.

The primary object of the invention is in providing a chime for a metallic container from a single sheet of material.

Another object of the invention is in providing a chime for a container which is made of a single material sheet bended in a manner for forming both a cover seat and a retaining flange for the locking ring of the cover.

A further object of the invention is in forming a chime for a container of a one-piece construction with an improved form of reinforcement thereto.

A still further object of the invention is in providing a specific method of bending and forming the upper or top portion of a container wall into a chime with means on the chime for providing both a cover seat and a retaining flange for the locking ring of the cover.

Other and further objects will appear in the specification and be specifically pointed out in the appended claims, reference being had to the accompanying drawing, exemplifying the invention, and in which:—

Figure 1 is a fragmentary sectional view of the upper portion of a metallic container showing the chime construction formed by this improved method, the chime being shown as forming a part of the container wall, and with a cover secured in the chime.

Figures 2, 3, 4, 5 and 6 are fragmentary sectional views illustrating the different steps used in carrying out this improved method to form the one-piece unitary chime.

Figure 7 is a fragmentary sectional view illustrating the chime with an inlaid reinforcement.

Referring by numerals to the accompanying drawing, and particularly with reference to Fig. 1, the numeral 1 designates a side wall of a metallic container made from a single sheet of material and formed integral with the upper end of the side wall is the chime 2 formed by this improved method.

The chime 2 after being formed by this improved method, is provided with a gasket and cover seat 3 and a retaining flange 4.

The seat 3 of the chime 2 is for the reception of an annular gasket 5 on which the flange 6 of a cover 7 is mounted, said cover having a de-

pressed center portion 8 which is engaged within the confines of the seat 3. In securing the cover to the container in a sealing manner, a split locking ring 9 which is angular shape in cross section, is engaged so that the horizontal leg 10 thereof will be forced between the flange 6 of the cover 7 and the retaining flange 4 of the chime 2, the wedging action of the leg 10 of the ring 9, causing the flange 6 of the cover to compress the gasket 5 on the seat 3.

A container having a chime of this improved character is primarily used for shipping semi-solid liquids, grease or dry materials.

The method of constructing this improved chime 2 is started while the material is in a flattened shape and in the instance of this disclosure, the chime is shown as being formed integral with the side wall 1 of the container, although if desired, the chime may be made separate and secured in some manner to the upper end of the side wall of the container.

The first operation in carrying out this improved method, is to engage one end of the material sheet 11 in a bending or folding device such as a power folder for the purpose of bending a portion 12 rearwardly on the material sheet in a lapped position as shown in Fig. 2.

The next operation is in engaging the folded material sheet in a set of power forming rolls for rolling the folded material sheet in a cylindrical shape with the lapped portion 12 at one end of the cylindrical body. After the cylindrical body is made, the contacting or meeting edges 11a of the material sheet are welded.

The cylindrical body is then engaged with its lapped end in position for being operated on by the cooperating grooving or beading rollers 13 and 14 of a power beading machine for forming an annular groove or channel 15 on the outside of the cylindrical body. In forming the channel 15, the channel forming projection 16 of the roller 13 is positioned in engagement with the depending end 12a of the outwardly folded or lapped part 12 so that the depending end 12a will be forced in the channel 15, as shown in Fig. 3.

The cylindrical body having the groove or channel 15 formed therein on the outside thereof is then engaged between a different set of cooperating rollers 17 and 18, the roller 18 having an annular groove 19 which is narrower in width than the annular groove 20 of the roller 14 and the roller 17 having an annular projection 17a for engaging the lapped part 12 while the groove 19 of the roller 13 over-engages opposing walls of the channel 15. The rolling operation of the

rollers 17 and 18 will cause the channel 15 to be narrowed, as shown in Fig. 4.

The next operation is in engaging the lapped end of the cylindrical body between a pair of cooperating rollers 21 and 22, the roller 22 having an annular groove 23 which is narrower in width than the groove 19 of the roller 18 and the roller 21 having a flat face, the operation of the rollers 21 and 22 causing the opposing walls 24 of the channel 15 to be tightly pressed against the depending or free end 12a of the lapped portion 12, as shown in Fig. 5. The walls 24 of the channel 15 form the gasket or cover seat 3 and the cover seat is reinforced by the engaged free end 12a of the lapped portion 12 therebetween.

A different set of cooperating rollers 25 and 26 is used in completing the final operation of forming the chime and in this operation, the retaining flange 4 is made and for forming the retaining flange 4, the roller 25 is provided with an annular extension 27 for engaging and operating on the upper or outer portion 28 of the folded or lapped portion 12 for rolling the upper portion 28 into right angular position above the seat 3, as shown in Fig. 6. During this operation, the groove 29 of the roller 26 is engaged over the seat 3 and the annular portion 30 of said roller between the seat 3 and the portion 28, cooperates with the annular portion 27 of the roller 25 for forming the retaining flange 4 and the connecting wall 32.

After the several operations above described, it is obvious that an improved unitary chime of a one-piece construction is provided, the peculiar bending of the sheet material providing a strong and durable construction for securing the cover 7 and its gasket 5 in sealed position on the seat 3 of the container by firmly holding the locking ring 9 in cooperation with the retaining portion 4 of the chime and the cover.

The disclosure of Fig. 7 is similar to that shown in Fig. 6 with the exception of a U-shaped reinforcing layer 31 being interposed between the overlapped portion 12 and the material sheet 11, thus forming a heavier and stronger chime, if desired. In the use of the layer 31, said layer is interposed between the lapped portion 12 during the bending thereof at the first operation.

Obviously constructional modifications of this improved method are possible without departing from the spirit of the present invention and therefore it is to be understood that it is not necessary to limit the invention by the terms used in the foregoing description, excepting such as the state of the art may require.

What I claim is:—

1. The method of forming a container chime consisting of outwardly folding a portion of the container wall, of forming an inward annular channel in the container wall and simultaneously engaging a part of the folded portion in the channel, and of pressing opposing sides of the formed channel for providing a cover seat.

2. The method of forming a container chime consisting of outwardly folding a portion of the container wall, of forming a circumferential channel in the container wall and simultaneously engaging the free end of the folded portion in the channel, of pressing opposing sides of the formed channel for providing a cover seat, and of inwardly bending the extending edge of the folded portion for providing a securing flange.

3. The method of forming a chime from a material sheet consisting of outwardly folding a portion of the sheet upon itself, of forming the sheet

in a cylindrical shape with the folded portion at one end, of forming an annular channel in the cylindrically formed sheet and simultaneously pressing the free end of said folded portion in said channel, of pressing together opposing sides of said channel to form a cover seat, and of inwardly bending the outer end of said folded portion to form a securing flange.

4. The method of forming a chime from a material sheet consisting of outwardly folding a portion of the sheet upon itself, of forming the sheet in a cylindrical shape with the folded portion at one end, of forming an annular channel in the cylindrically formed sheet and simultaneously pressing the free end of said folded portion in said channel, of pressing together opposing sides of said channel to form a cover seat and securing the inserted free end of said folded portion therein, and of inwardly bending the outer end of said folded portion to form a securing flange.

5. The herein described method of forming a unitary chime for a container from a material sheet consisting of folding a portion at one end of the sheet, of rolling the sheet and the folded portion into a cylindrical body with the folded portion outwardly disposed, of forming an annular channel in the cylindrical body with the free end of the folded portion therein, and of inwardly bending the outer extending end of the folded part to form a retaining flange.

6. The herein described method of forming a unitary chime for a container from a material sheet consisting of folding a portion at one end of the sheet, of rolling the sheet and the folded portion into a cylindrical body with the folded portion outwardly disposed, of forming an annular channel in the cylindrical body with the free end of the folded portion therein to provide a cover seat, and of inwardly bending the outer extending end of the folded part to form a retaining flange.

7. The herein described method of forming a unitary chime for a container from a material sheet consisting of folding a portion at one end of the sheet, of rolling the sheet and the folded portion into a cylindrical body with the folded portion outwardly disposed, of forming an annular channel in the cylindrical body with the free end of the folded portion therein to provide a cover seat, and of inwardly bending the outer extending end of the folded part to form a retaining flange for the locking ring of the cover.

8. The method of forming a container chime consisting of outwardly folding a portion of the container wall over an interposed reinforcing layer, of forming an inward annular channel in the container wall and simultaneously engaging a part of the folded portion and the reinforcing layer in the channel, and of pressing opposing sides of the formed channel for providing a cover seat.

9. The method of forming a container chime consisting of outwardly folding a portion of the container wall over an interposed reinforcing layer, of forming a circumferential channel in the container wall and simultaneously engaging the free ends of the folded portion and the reinforcing layer in the channel, of pressing opposing sides of the formed channel for providing a cover seat, and of inwardly bending the extending edge of the folded portion for providing a securing flange.