J. M. RUDE.

RECEPTACLE AND THE ART OF ITS RECOVERY.

APPLICATION FILED MAR. 4, 1918.

1,381,435. Patented June 14, 1921.

Fig. 1.

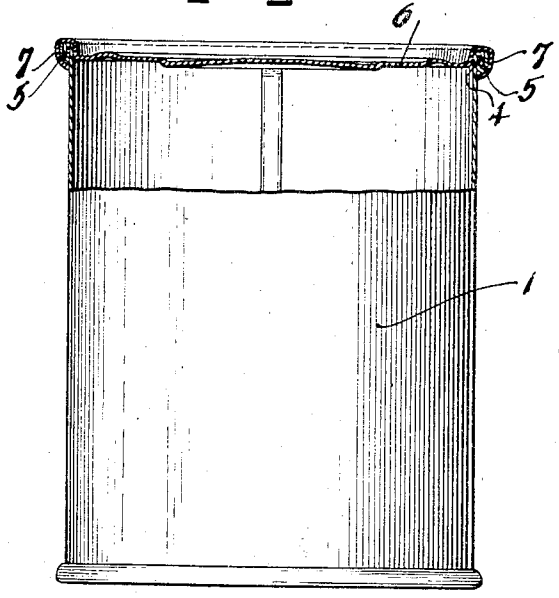


Fig. 4.

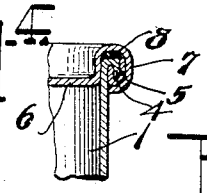
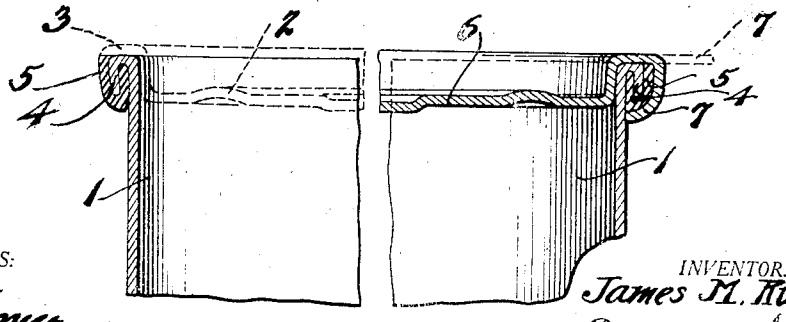


Fig. 2.

Fig. 3.



WITNESS:

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RECEPTACLE AND THE ART OF ITS RECOVERY.

1,381,435. Specification of Letters Patent. **Patented June 14, 1921.**

Application filed March 4, 1918. Serial No. 220,217.

To all whom it may concern:

Be it known that I, JAMES M. RUDE, a citizen of the United States, residing at Covington, in the county of Kenton and State of Kentucky, have invented certain new and useful Improvements in Receptacles and the Art of their Recovery; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in the art of can construction and conservation of materials for cans.

The primary object in view is the saving of cans which have heretofore been discarded after a single use, and a further object is the production of a can structure of greater stability than the original can.

With these and still further objects in view as will in part hereinafter become apparent and in part be stated, the invention comprises certain novel constructions, combinations and arrangements of parts as subsequently specified and claimed.

In the accompanying drawing,—

Figure 1 is a view partly in side elevation and partly in longitudinal vertical central section through a can produced by the present improved process and embodying the resulting novel structure.

Fig. 2 is a fragmentary section through a portion of the can prior to the application of a new cover, the old cover being indicated in dotted lines in the condition in which it exists when the can is customarily discarded after one use.

Fig. 3 is a similar view of the structure with the new cover applied, the position of the flange before it is turned down being indicated in dotted lines.

Fig. 4 is a view similar to Fig. 3 of a slightly modified structure.

Not only has the general movement toward the conservation of resources, in view of the present need to avoid waste, presented in a forceful manner the need for saving of tin plate used in the manufacture of cans, but the saving in transportation and the making possible of preservation of food products by the re-use of cans which would not otherwise be preserved, because of lack of facility for distribution of new cans, have rendered the need for salvaging of used cans pressing and almost imperative.

This invention, therefore, contemplates an improvement in the art of salvaging used cans and a resulting product which is in fact superior in its function and capacity to the original can.

The salvaging of slip-top and friction top cans presents certain problems which need not be considered but which are minor compared with an effort to save the cans of the type whose top is opened by a can opener, such, for example, as the commonly used tomato can. All but the top itself, however, can be saved and re-used by carrying out the steps of the process now to be set forth in detail.

A can rendered useless by having an irregular hole cut in its top is taken and a portion of the top removed. Such a can is indicated at 1 in the drawing, the old top being indicated in dotted lines at 2 in Fig. 2. A portion of this top is removed by cutting away the material of the top along the edge of the can at the point indicated at 3 in Fig. 2 of the drawing. This cutting operation may be accomplished in any of various ways, but I prefer to apply the end of the can to the face of an emery wheel and grind the edge portion 3 away until the upper edge of the can 1 proper is reached. When this point is reached in the cutting away operation, the lid 2 will fall away from the can. The can 1 in the original process of manufacture is formed with a flange 4 with which is interlocked a flange portion 5 of top 2. Portion 5 in some forms of cans is merely overlapped and in others formed into a lock seam, and in either event when the cutting away operation is completed, removing the edge portion 3, there remains the annulus 5 which is soldered or otherwise cemented to the can body 1. This annulus renders the upper end of the can stiffer than was the original can before a lid was applied. This additional stiffness materially strengthens the can and prevents liability of denting from the action of internal vacuum, and also stabilizes the structure against injury during handling and shipment.

A new lid must be provided for can 1 and consists of a lid 6 corresponding in all respects to the structure of lid 2 with the pos-

sible exception that the lid 6 initially may be of slightly larger diameter than was lid 2 initially.

After the lid 2 has been removed both the interior and exterior of can 1 are thoroughly cleansed and may be polished by appropriate apparatus. For the purpose of the present improved process, it should be understood that the interior and exterior of the cans are preferably cleansed by the use of a cleansing fluid and appropriate brushes. These brushes are preferably machine actuated but may be manually operated.

When the can has been thoroughly cleansed, it is placed in a sterilizing liquid, as, for example, in boiling water and kept there for a sufficient length of time to insure the destruction of any germs.

The can is then filled with the food substance or other material to be preserved and the new lid 6 is applied with the flange 7, as seen in dotted lines in Fig. 3, outstanding about the upper end of the can 1. This flange is rolled or stamped down to a position to surround the annulus 5 and is then soldered to the can 1 by a line of solder along the corner or joint of the edge of flange 7 with the body of can 1.

Thus the reclaimed can is of stronger construction than the original can, and all of the cost of original construction has been saved except the cost of the new lid. The amount of saving in the aggregate will be recognized as vast when the number of cans of this type discarded after first use is considered. It should be borne in mind also that exhaustive tests by the highest class chemists in the United States have proven that the tin plate on the discarded can is in perfect condition at the time it is discarded. There sometimes appears a darkening of the inner surface of the can, but this has been conclusively proved to be only superficial and will be removed by the cleansing operation.

As clearly seen in Fig. 4, the present improved can may be utilized with its new lid 6 without requiring solder along the line of contact of the edge of the bent-over flange 7 providing other means are supplied for insuring an air-tight joint between the lid and can. To this end, a gasket 8 is placed on the upper edge of can 1 before the lid 6 is placed on the can. The lid is then applied and the flange bent over to position so that the resulting closed can presents substantially the same appearance as the can without the gasket except that the edge of flange 7 is not soldered to the body 1. The gasket 8 may be formed of paper, cord, cement, rubber, or other appropriate filler, so long as it possesses the capacity of sealing the joint between the lid and can.

It is to be observed that in withdrawing the contents from cans various methods are employed, as, for example, two small apertures are frequently made in milk-containing cans for allowing the air to enter in the upper aperture while the milk discharges from the lower aperture when the can is tilted. With other cans, the cover is cut-away say for one-half of its circumference, and bent back sufficiently to allow the discharge of the contents while with still others the greater portion of the body of the cover is cut by a can opener to the point where it can be entirely removed. The treatment of the remaining injured can cover will be the same since the remaining cover must be removed effectively whether it assumes the form of a substantially complete cover with only a small aperture or two small apertures or, going to the other extreme, it presents merely a ragged edge annulus. It is, therefore, to be borne in mind that in the terms of the appended claims the expression "injured cover" is intended to include any remaining part or parts of a can cover which must be removed for leaving the open end of the can free.

What I claim is:—

1. In the art of recovering cans, cutting away that portion of an injured can cover which extends across the edge of the end of the can body for detaching the main portion of the cover and allowing that portion of the can cover extending outside of the body of the can and beyond the portion cut away to remain in engagement with the can.

2. In the art of recovering cans, grinding off that portion of an injured can cover which extends across the edge of the end of the can body for detaching the main portion of the cover and allowing that portion of the can cover extending outside of the body of the can and beyond the ground off portion to remain in engagement with the can.

3. In the art of recovering cans, cutting away that portion of an injured can cover extending across the edge of the end of the can body and leaving the peripheral portion of the cover in engagement with the body in position for receiving a new cover with a portion engaging the said remaining peripheral portion of the old cover.

4. In the art of recovering cans of the type having tops soldered to the can bodies, grinding the material of an injured cover of the can along the line of the circular marginal bead of the cover at the end of the can and removing the main portion of the injured cover while leaving a soldered-on ring of the old can cover fixed to the can body in position to receive the flange of a new cover.

5. In the art of recovering cans, grinding an injured cover about the edge of the can only and removing that portion of the

cover extending across the can body, while leaving that portion of the cover outside of the can body in engagement therewith.

6. As a new article of manufacture, a can body comprising a hollow cylinder of sheet material having an open end bordered exteriorly at its margin with an annulus soldered to the body of the can and formed of part of the material of an old cover remaining after removal of the old cover from the can body by severing the material of said old cover substantially along and co-incident with the circular line of the marginal bead of the old cover, the said can body being smooth and free of all obstructions interiorly about its open end.

7. In the art of recovering cans, severing a circular part of an injured cover of a can along and co-incident with that line described by the end of the can body and leaving the portion of the cut cover outside of said line in engagement with the can, and removing only that portion of the cover extending across the can, the interior of the can body at its open end being left smooth.

8. As a new article of manufacture, a can body comprising a hollow cylinder of sheet material having an open end surrounded by and interlocked at its margin with an annulus of the material of an old cover remaining after removal of the old cover from the can body by severing the material of said old cover substantially along and co-incident with the circular line of the marginal bead of the old cover, the said can body being smooth and free of all obstructions interiorly about its open end.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES M. RUDE.

Witnesses:
C. H. FESLER,
EDGAR M. KITCHIN.