

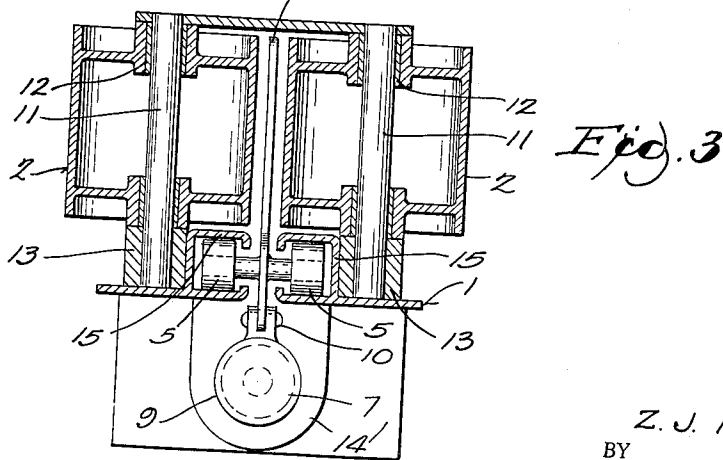
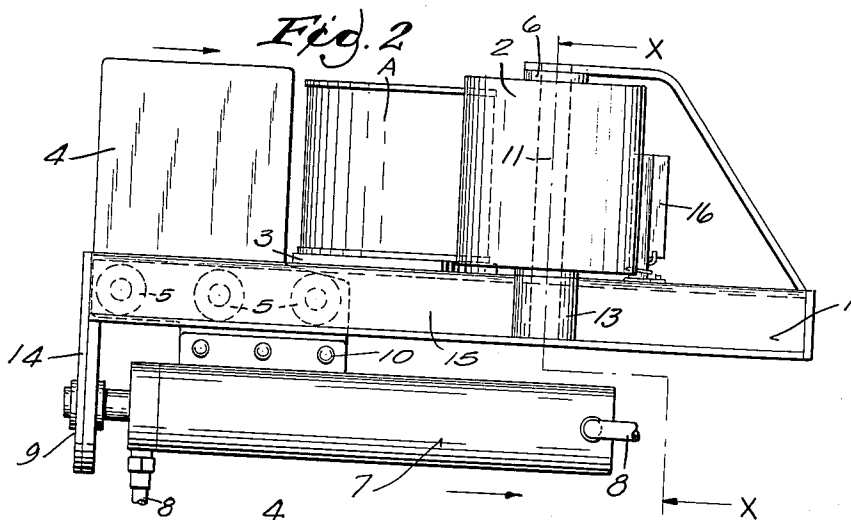
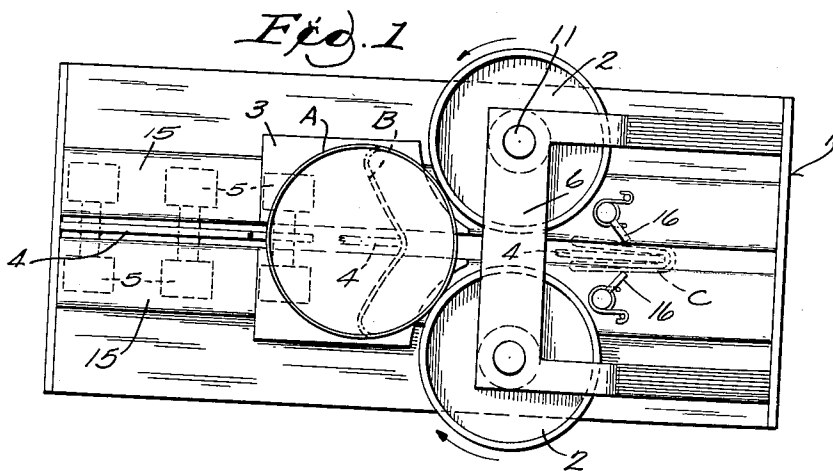
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3,095,806

CAN DESTROYER

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CAN DESTROYER

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The present invention relates to improvements in apparatus for deforming hollow articles for disposal, and relates more particularly to mechanism for deforming or crushing cans.

With our present manner of living we consume great quantities of materials which are packed in sealed containers commonly known as cans. All of these containers shall be referred to herein as cans or hollow articles.

After the contents of the can are removed the empty can is discarded. The storage of these cans while awaiting disposal, as well as their final disposal, has become a problem of serious importance, primarily because of the bulky nature of the cans. Also, in the case of metal cans there is little, if any, value for salvage by remelting.

My invention is a mechanism for destroying the can by deforming, or crushing, to reduce its bulk and thus permit the storage, or disposal, of a large quantity of cans in a comparatively small space. In the case of metal cans the reduced and compacted bulk will render salvage of the metal, by melting, economically possible. Thus discarded metal attains some value.

My mechanism is not intended for use with all cans regardless of size. Also, it is not intended to compete with expensive equipment designed for industrial use. My invention is intended for general public use in the household, gasoline and oil filling stations, drink dispensing places, restaurants, bakeries, hotels, etc. My invention is designed to be manufactured at a low cost and sell in the price range of household appliances.

I attain these results by mechanism illustrated in the accompanying drawing, in which—

FIGURE 1 is a plan view.

FIGURE 2 is a side view, and

FIGURE 3 is a section at line X—X, on side view.

The cabinet in which this mechanism is installed is not a part of the invention and is not shown. The hydraulic pump, hydraulic valves and fittings, electric motor and electrical apparatus are all commercially available material and are not a part of this invention, thus are not shown.

Similar numerals refer to similar parts throughout the several views.

The mechanism essentially consists of a frame 1, two cylindrical rollers 2 or segments having cooperable arcuate surfaces, a vertical ram plate 4, fastened at 10 to a hydraulic cylinder 7, with the cylinder rod anchored to the machine frame at 9.

When fluid is forced into the hydraulic cylinder through connections at 8, the cylinder moves parallel with the frame, moving with it the ram plate 4, which is guided by its freely revolvable rollers 5, carried by stub shafts extending from opposite sides of the ram plate, the rollers being movable in tracks 15. The motions of this unit are indicated by arrows in FIGURE 2. The forward edge of the ram plate strikes can A, which was positioned on platform 3, and distorts can as shown at B. The ram plate continues the forward motion forcing can between rollers 2, and emerging beyond the rollers with the flattened can at C. The rollers 2, revolve freely on the bearing 12, about shafts 11, fastened in bases 13. The freely revolving rollers result in the minimum power requirement for forcing can between the rollers in the flattening operation. The brace 14 serves to reinforce the frame and cross tie brace 6, serves to carry the upper

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bearings and support the rollers against the forward and side thrusts. After the ram plate and cylinder unit has reached the end of its forward motion, the direction of motion is reversed and the unit is returned to its approximate original starting point. The two spring actuated strippers 16, are intended to remove the can from the ram plate in case the can does not fall off by its own weight.

Various modes of carrying out the invention are contemplated as being within the scope of the following claims particularly pointing out and distinctly claiming the subject matter which is regarded as the invention.

I claim:

1. Apparatus for deforming hollow articles for disposal, comprising, a frame having a platform for receiving successive articles to be deformed, a pair of arcuate crushing members rotatably mounted on said frame in peripherally spaced relation and on parallel axes extending perpendicular to said article receiving platform, a rectilinearly movable force applying member supported on said frame and guided for movement from an initial position remote from said rotatable crushing members on one side thereof whereby the article to be crushed may be positioned on said platform between said force applying member and said rotatable crushing members to a position beyond the common plane containing the axes of said arcuate crushing members, and power means for moving said force applying member along said path to thereby collapse the article upon said force applying member as it passes between the peripheries of said arcuate crushing members.

2. Apparatus for deforming hollow articles for disposal, comprising, a frame having a platform for receiving successive articles to be deformed, a pair of crushing rollers mounted on said frame in peripherally spaced relation and on parallel axes extending perpendicular to said article receiving platform, a force applying member supported on said frame above said platform for movement along a rectilinear path extending between the roller peripheries from an initial position remote from said crushing rollers on one side thereof whereby the article to be crushed may be positioned on said platform between said force applying member and said rollers to a position beyond the common plane containing the roller axes, said force applying member being elongated in the direction of its movement and power means also supported on said frame for moving said force applying member along said path to thereby collapse the article upon the forward edge of said force applying member as it passes between the roller peripheries.

3. Apparatus for deforming hollow articles for disposal, comprising, a frame having a platform for receiving successive articles to be deformed, a pair of crushing rollers mounted on said frame in peripherally spaced relation and on parallel axes extending perpendicular to said article receiving platform, a power actuated plate-like member supported in upright condition on said frame in a plane lying parallel to and between the roller axes with a longitudinal edge thereof presented to the space between the roller peripheries, and means for guiding said plate-like member for movement along a rectilinear path extending from an initial position remote from said rollers on one side thereof whereby the article to be crushed may be positioned between said longitudinal edge of said plate-like member and said rollers and pushed to a position beyond the common plane containing the roller axes to thereby collapse the article upon the sides of said plate-like member as it passes between the roller peripheries.

4. Apparatus for deforming hollow articles for disposal, comprising, a frame having a platform for receiving

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ing successive articles to be deformed, a pair of crushing rollers mounted on said frame in peripherally spaced relation and on parallel axes extending perpendicular to said article receiving platform, a force applying member supported on said frame and extending to a position above said platform for movement along a rectilinear path extending between the roller peripheries from an initial position remote from said crushing rollers on one side thereof whereby the article to be crushed may be positioned between said force applying member and said rollers to a position beyond the common plane containing the roller axes, said force applying member being elongated in the direction of its movement, power means for moving said force applying member along said path to thereby collapse the article upon the sides of said force applying member as it passes between the roller peripheries, said power means also being operable to return said force applying member to its initial position, and spring actuated stripping means coacting with the collapsed article to remove the same from said force applying member upon the return movement thereof.

5. Apparatus for deforming hollow articles for disposal, comprising, a frame having a platform for receiving successive articles to be deformed, a pair of crushing rollers mounted on said frame in peripherally spaced relation and on parallel axes extending perpendicular to said article receiving platform, a force applying plate supported

in upright condition on said frame with an elongated article contacting edge thereof lying in a plane parallel to and between the roller axes, means for reciprocating said plate along a rectilinear path extending from an initial position remote from said rollers on one side thereof whereby the article to be crushed may be positioned between the article contacting edge of said plate and said rollers to a position beyond the rollers to thereby collapse the article upon the sides of said plate as it passes between the roller peripheries, and a pair of spring actuated pivotally mounted strippers located beyond said rollers and coacting with opposite sides of the collapsed article to prevent return movement of the article with said plate, the pivot axes of said strippers being parallel to the axes of said rollers.

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