

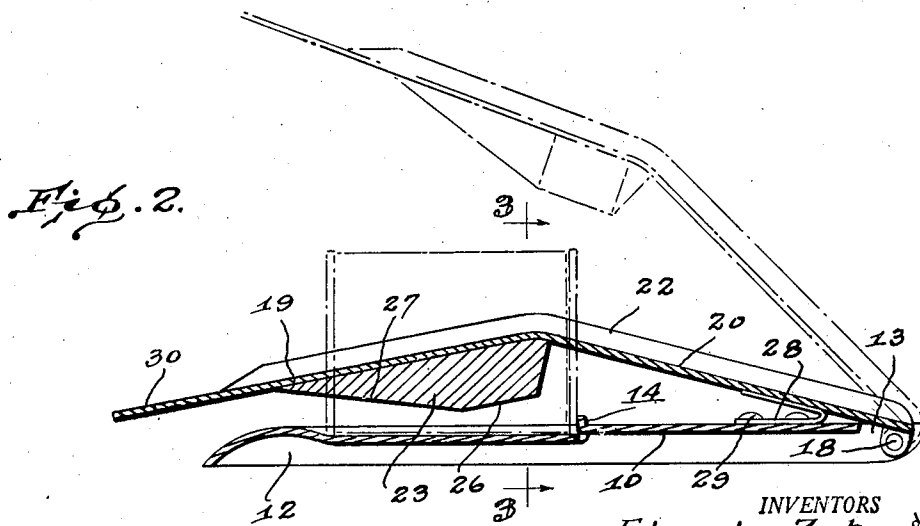
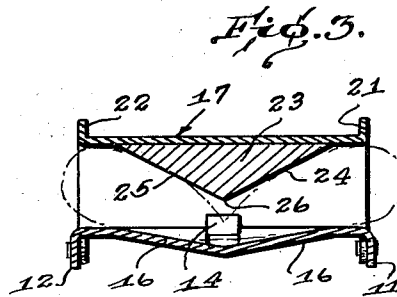
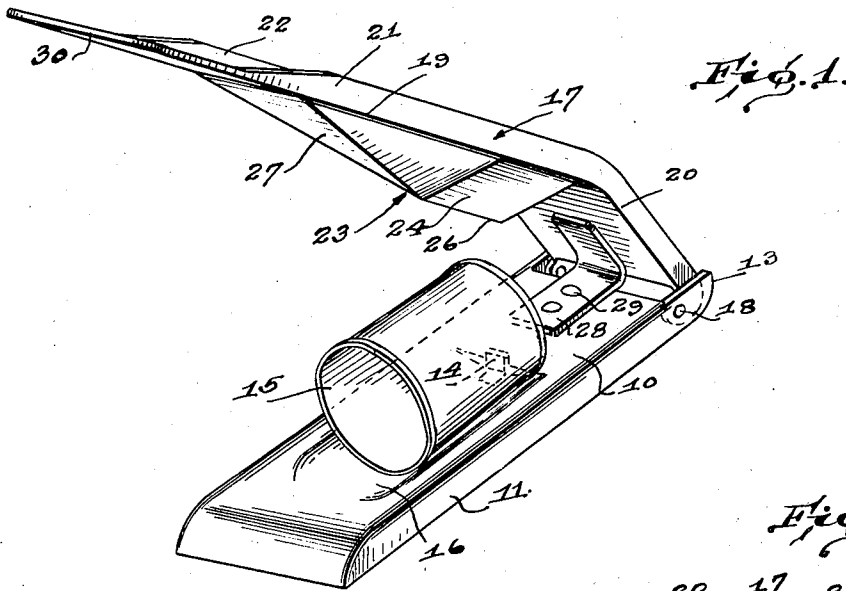
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CAN CRUSHER

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CAN CRUSHER

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This invention relates to a can crusher and particularly to a crusher for reducing emptied metal cans to a size suitable for transportation or disposal.

No great problem is presented in crushing a tin can from which both of the end closures have been removed, but in the ordinary case, where only one of the ends has been substantially disengaged, greater forces are necessary to effect the desired deformation, especially at the reinforced end, and relatively complex and expensive devices have been produced for accomplishing the desired result.

It is an object of this invention to produce a new and improved can crusher which is simple in construction, effective, durable and reliable in operation, and can be manufactured on a mass production basis from relatively few inexpensive parts.

Another object is to produce a can crusher having a movable member that initially engages a small part of the reinforced end portion of the can so as to concentrate the forces applied to effect the initial breakage with a minimum of effort and then progressively engages larger portions of the can for crushing operations.

A further object of this invention is to produce a simple, attractive and compact can crusher which is durable, light in weight and has novel features of construction for positioning variously sized cans for crushing operations and enabling the most inexperienced operator to flatten cans from which the end closures may or may not have been removed.

These and other objects and advantages of this invention will hereinafter appear and for purposes of illustration but not of limitation, a preferred embodiment of the invention is shown in the accompanying drawings, in which

Figure 1 is a perspective elevational view of a can crusher, illustrated with a can in position for crushing operations;

Figure 2 is a longitudinal sectional elevational view of the can crusher shown in Figure 1 with the crushing jaw in the depressed position. The broken lines indicate the normal position of the elements, and

Figure 3 is a transverse sectional elevational view taken along the lines 3—3 of Figure 2 with the crushed can indicated by broken lines.

Referring now to the drawings, 10 indicates a horizontally disposed base plate or anvil against which the cans are pressed during the crushing operation. The base plate, which may be formed by the process of stamping a sheet metal part, is

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substantially rectangular in cross section and is provided with a pair of depending flanges 11 and 12 which operate to reinforce as well as to support the base plate off the ground. The flanges extend beyond one end of the base plate in the form of a yoke 13.

A stop 14 struck upwardly from the base plate 10 prevents the cans from moving beyond the desired position for crushing operations, and forwardly of the stop, a substantial length of the base plate is formed with downwardly sloping side walls 16 that converge toward the longitudinal center of the plate. Because of the slope, the can 15 normally seeks the same relative position on the base plate no matter what the size or the length of the can may be.

Pivotally mounted to the yoke 13, as by pins 18, is a crushing jaw 17 which is adapted for vertical swinging movement between two positions of adjustment in the direction toward and away from the base plate. The crushing jaw 17 is formed of a metal plate which may be dimensionally similar to the transverse and longitudinal dimensions of the base plate 10, but preferably is of greater length to provide for increased leverage. In side elevation, the jaw member appears as an inverted V having forward and rearward legs 19 and 20 respectively. Rigidity and strength are imparted to the plate by a pair of vertical flanges 21 and 22 extending forwardly from the pivotal mounting through a greater portion of its length.

Mounted on the underside of the leg 19 and in close proximity with the apex of the V is a metal block 23 in the shape of a peen having walls 24 and 25 sloping inwardly from the lateral edges of the movable jaw 17 and meeting to form a sharp ridge 26 extending a short distance longitudinally along the center of the jaw. The ridge then tapers down to the plate 17. The taper may appear as a blunt rounded nose or as a relatively flat widening surface 27, as illustrated in the drawings.

The crushing jaw is constantly urged to the upright position of adjustment by spring means, which may be an L-shaped leaf spring 28, having one arm thereof fastened to the base plate 10, as by rivets 29, while the other arm engages the underside of the pivotally mounted jaw. The free end portion of the outer leg 19 extends beyond the base plate and operates as a pedal 30 for receiving the forces that actuate the jaw in the direction of the base plate for effecting can crushing operations.

The operation of the device is readily apparent

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from its construction. Normally the can crusher is adapted to be used while positioned on the floor for actuation by foot power, but it may equally be positioned on a table for actuation by hand means. To effect the desired crushing operation, the can 15 which may have only one end removed, is positioned on the base plate 10 with the uncut end of the can against the stop 14. As previously pointed out, the depressed portion of the base plate also causes the can automatically to seek a position centrally of the device. As the jaw member is actuated in the direction of the base plate, the ridge 26 of the peen first engages the rim of the closed or reinforced edge of the can so that all of the applied and resulting forces are necessarily concentrated at that point with the result that the initial deformation of the reinforced edge, generally requiring the greatest force that is to be applied, is effected with a minimum of effort. On continued movement of the jaw member, successively larger portions of the crushing jaw engage the can to effect the desired crushing action throughout the length of the can. During the crushing operation, the base plate provides the backing for the underside of the can, although the can is able to shift rearwardly with the engaged peen during the crushing operations. When the crushing jaw is moved to the lower position of adjustment, the can is substantially flattened and may be readily removed when the applied forces are released and the movable jaw is returned to its original position of adjustment by the spring means. In the case that both of the ends of the can are first removed, very little effort is required to effect crushing operations, in fact, the can is pressed flat even though the initial engaging portion is the peen portion.

By the construction described, a very simple and effective device is provided for the purpose. The device can be readily transported, if desired, from place to place and readily stored about the home in view of its compactness. By the arrangement described, the crushing operation is accomplished by a single movement which first concentrates all of the crushing force where the highest concentration is necessary and then spreads the crushing action to substantially all parts of the can. Thus, the crushing operations are effected with a minimum of effort to enable the greatest economy in manufacture and simplicity in construction and operation.

It is to be understood that numerous changes in the details of the arrangement, construction, and operation of the various parts may be effected without departing from the spirit of the invention especially as defined in the following claims.

What we claim is:

1. A device for crushing tin cans comprising a base plate having means struck therefrom for positioning the can thereon for crushing operations, reinforcing and supporting flanges depending from said base plate and extending forwardly therefrom in the form of a yoke, a rigid jaw member, means pivotally mounting one end of said jaw member on said yoke for swinging movement in

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the direction toward and away from said base plate, breaker means mounted on the wall of said jaw member adjacent said base plate for initially breaking a small edge portion of the can and then progressively larger portions thereof as the jaw is moved in the direction of said base plate for crushing operations, means for constantly urging said jaw member in the direction away from said base plate, and means on the free end of the jaw for receiving the forces to effect the movement of the jaw in the direction toward said base plate.

2. A can crusher as claimed in claim 1 in which the jaw member is substantially V shaped with the apex of the V extending in the direction away from the base plate when in the mounted position, and the breaker means is positioned on the outer leg of the V in close proximity to the apex.

3. A can crusher as claimed in claim 1 in which the jaw member is reinforced by upstanding flanges through a greater portion of its length, and the breaking means comprises a substantially sharp longitudinally extending ridge in an intermediate portion of said jaw member, and a tapering off portion forwardly from said ridge.

4. A can crusher as claimed in claim 1 in which the jaw member is of greater length than the base plate and a pedal portion forms the means on the free end thereof for receiving the forces for effecting crushing operations.

5. A can crusher as claimed in claim 1 in which the means for constantly urging the jaw member away from the base plate comprises a V-shaped leaf spring having one end thereof fixed to the base plate in the region of the yoke, while the free end bears against the adjacent end portion of the pivotally mounted jaw member.

6. A can crusher comprising a stationary plate, a jaw pivotally connected to one end of said plate for swinging movement toward and away from said plate, peening means on said jaw for initially engaging an end wall portion of the can and then progressively greater wall portions as the jaw is moved toward the stationary plate, the peening means comprising a metallic member secured to the under side of the jaw and having side walls that converge from the lateral edge portions of the jaw to a relatively sharp ridge which extends a short distance longitudinally of the jaw, and portions contiguous thereto tapering gradually from the ridge to said jaw, and means for constantly urging said jaw away from the stationary plate.

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REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
1,402,433	Monroe	Jan. 3, 1922
2,246,394	Steele	June 17, 1941
2,373,057	Shinn	Apr. 3, 1945