

[54] CAN CRUSHER

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[22] Filed: May 7, 1971

[21] Appl. No.: 141,232

[52] U.S. Cl. 100/233, 100/DIG. 2

[51] Int. Cl. B30b 7/00

[58] Field of Search.....100/DIG. 2, 233, 295, 293

[56] References Cited

UNITED STATES PATENTS

2,466,907 4/1949 Nadolny et al.....100/DIG. 2
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2,800,160 7/1957 Wilson et al.....100/233
2,958,273 11/1960 Morrow.....100/DIG. 2
3,299,802 1/1967 Black.....100/DIG. 2

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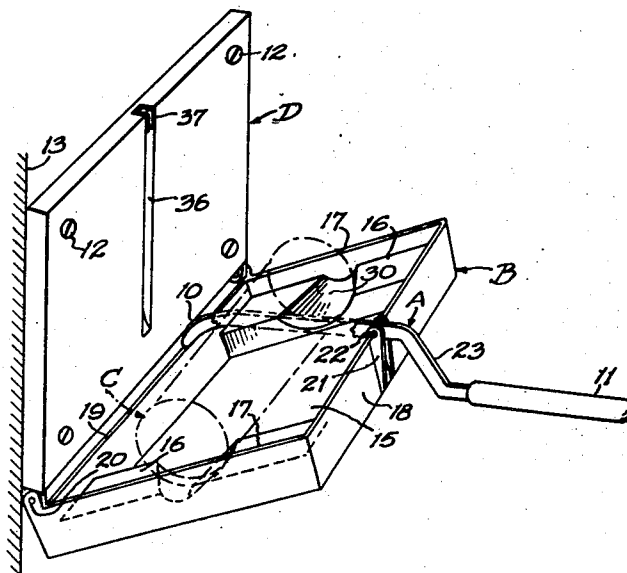
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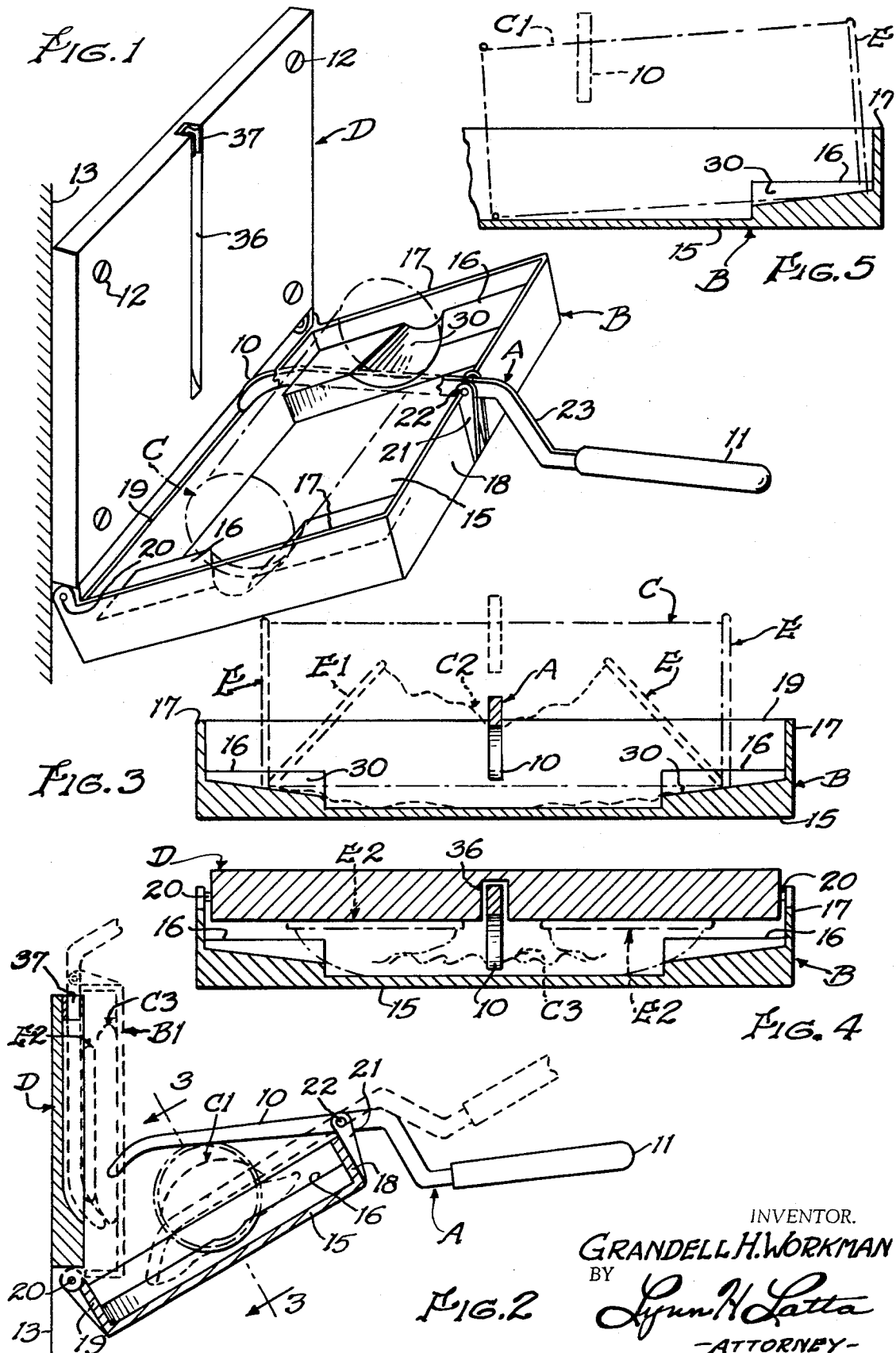
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ABSTRACT

An apparatus for two-stage crushing of a can, the center of the can being first collapsed by a lever finger while the ends of the can are supported on shoulders at the sides of a swinging jaw on which the lever is fulcrumed, the ends of the can being tilted inwardly by such central collapse, and the tilted ends then being pushed against a fixed anvil to which the swinging jaw is hinged, resulting in the can being crushed flat between the jaw and the anvil.

8 Claims, 5 Drawing Figures





CAN CRUSHER

BACKGROUND OF THE INVENTION

Can crushers having hinged jaws for engaging and crushing a can between them are disclosed in the patents to Wilson U.S. Pat. No. 2,800,160, Nadolny U.S. Pat. No. 2,466,907 and Graham U.S. Pat. No. 2,602,483.

In Wilson the can-engaging faces of the jaws are flat. Nadolny utilizes a jaw having an edge arranged to indent the can along a line parallel to its axis. Graham utilizes a jaw having pointed teeth for indenting the can.

SUMMARY OF THE INVENTION

The invention is particularly characterized in that it provides an arrangement of three elements such as to first position and engage a can between two elements (finger and swinging jaw) and indent the middle portion of the can along a line transverse to its axis so as to tilt the ends of the can towards the middle of the can and then engage the tilted ends of the can against the third element (fixed anvil) so as to push the tilted ends inward against the middle portion of the can, thus flattening the can.

OBJECT OF THE INVENTION

A general object of the invention is to provide a relatively simple can crushing device which is operable manually in a two-stage operation to first indent the can transversely of its middle to tilt its ends inwardly, and then to flatten the tilted ends against the middle.

Specific objects are to provide such a device:

a. in which both stages of operation can be performed in a single continuous motion of a handle;

b. in which the handle is one end of a lever having at its other end a finger for performing the first stage indenting operation;

c. in which the lever is fulcrumed on the swinging side of a second (swinging) jaw in a manner to transmit movement thereto when the finger reaches a limit of its indenting movement; such movement bringing the second jaw toward a third jaw or anvil so as to effect the second stage of operation in which the ends of the can are flattened against the middle.

DESCRIPTION

These and other objects will become apparent in the following specifications and appended drawings, wherein:

FIG. 1 is a perspective view of a can crusher embodying the invention;

FIG. 2 is a cross-sectional view of the same;

FIG. 3 is a sectional view taken on line 3-3 of FIG. 2;

FIG. 4 is a sectional view of the same parts as FIG. 3, in a final stage of crushing movement; and

FIG. 5 is a fragmentary sectional view showing the initial positioning of a shorter can than the one shown in the other figures, with one end of the can removed.

Referring now to the drawing in detail, I have shown therein, as an example of one form in which the invention may be embodied, a can crusher embodying, in general, a lever A having at one end a finger 10 functioning as a first jaw for indenting a can C and at its other end a handle 11 for manually operating the device; a second (swinging) jaw B for holding and positioning the can; and a third jaw or anvil D which is attachable at 12 to a vertical support 13, one side of jaw B being hinged to the lower side of anvil D and engageable against the support 13 to limit the downward swinging of jaw B at a position (slightly) below that shown in FIG. 1, in which it extends horizontally, ready to receive a can. Thus the jaw B, carrying the can C can be swung upwardly to crush the can against the anvil D after the middle of the can has been indented by finger 10.

Jaw B comprises a body 15 comprising a bottom in the form of a flat plate having thickened ends providing can-supporting shoulders 16, a pair of end flanges 17 rising above the shoul-

ders 16 to confine the ends of the can, a lever fulcrum 18 at its movable side, on which the intermediate portion of lever A is fulcrumed, and a hinging member 19 at its opposite side, providing suitable hinging connection to the lower side of anvil D, as by means of hinges 20. For the purpose of reinforcing the jaw B as a strong, rigid crushing jaw, the end flanges 17 and the members 18 and 19 are preferably in the form of walls extending continuously along the ends and sides of the body 15 and integrally joined thereto in a box-like structure, although other equivalent structure could be utilized. The fulcrum 18 includes suitable means, such as ears 21 and pivot 22, for pivotally connecting the intermediate portion of lever A to jaw B. Such intermediate portion preferably includes an offset 23 which provides ample finger space between handle 11 and support 13 when lever A is moved to a substantially vertical upper limit position.

Can support shoulders 16 are provided with locating seats 30 in the form of conic section recesses in their upper faces. The conical taper of the recesses is such that they increase in width and depth toward the inner margins of shoulders 16. Thus cans of various lengths can be supported at their very ends and be allowed to bend towards the middle without any interference from the inner edges of block 16. For example, a longer can such as the can shown in phantom at C, FIG. 3, can be supported at a suitable height above the bottom of jaw B by engaging both ends in contact with outer end areas of seats 30 whereas a shorter can C 1 may be supported at one end on one seat 30, in a tilted position as in FIG. 5, with its other end resting on the bottom of jaw body 15.

Anvil D is provided with suitable apertures for fasteners 12 to pass through it into a support 13, and with a medial vertical groove 36 to receive indenting finger 10 in the final stage of jaw closing.

OPERATION

To use the device, with the jaw B in a normal horizontal position, and with finger 10 in a vertical position, a can is inserted beneath finger 10 and handle 11 is grasped in the other hand and then raised to press the finger 10 down against the middle of the can. Pressure is exerted to force the finger into the can so as to collapse its middle, as at C2 in FIG. 3, on the transverse line defined by the finger. During this initial collapsing stage the operator may continue to hold the jaw B away from anvil D until the ends E of the can are tilted inwardly to converging positions as indicated at E 1 in FIG. 3, in response to the collapsing of the middle of the can.

The handle 11 is then pushed further in an upward direction to advance the jaw B to an upstanding position as shown in phantom at B 1 in FIG. 2, the ends of the can then being engaged against anvil D and flattened at E2 against the crushed middle C3 of the can in substantially a common plane as shown in FIGS. 2 and 4. In this final stage of operation the jaw B will be in close face-to-face relation to jaw D in a substantially vertical position (FIG. 2) and the finger 10 will be received in groove 36. A spring clip 37 is fixed in the upper end of groove 36 to grasp the finger 10 so as to hold the jaw B in the raised position.

I claim:

1. In a can crusher

an anvil adapted to be fixed to a support;
a swinging jaw having one side hinged to said anvil and an opposite side free to swing toward said anvil;
said jaw having spaced seats for supporting at least one end of a can with the longitudinal axis thereof extending parallel to said jaw sides;
and a lever pivoted to said free side of the jaw on an axis parallel thereto, said lever having at one end a finger extendible over said jaw and engageable with the can between its ends;
and said lever having at its other end a handle operable to move said finger against the can to indent an intermediate portion of the can toward said jaw so as to collapse the

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can in a manner to tilt the ends of the can inwardly over said intermediate portion, and then to force said jaw toward said anvil so as to flatten the can ends against said intermediate portion.

2. A can crusher as defined in claim 1:
said jaw having shoulders adjacent its respective ends, in which said seats are each formed as a depression adapted to receive and position a can end.
3. A can crusher as defined in claim 2:
said seats being of conic section form, increasing in width and depth toward the inner margins of said shoulders.
4. A can crusher as defined in claim 2:
said jaw comprising a flat bottom having thickened ends providing said can support shoulders;
said seats being arranged to position the can with its said intermediate portion supported above said bottom to allow the same to be bent downwardly under the indenting pressure of said finger.
5. A can crusher as defined in claim 4:

said jaw having along its said sides, respective flanges one of which has its margin hinged to said anvil, and the other of which has, at its margin, means pivotally supporting said lever.

6. A can crusher as defined in claim 1:
said anvil having means to attach it to a vertical support; and said jaw having its lower side hinged to the lower side of said anvil for swinging movement from a substantially horizontal position in which said seats face upwardly to receive a can, upwardly to an upstanding position in face-to-face adjacency to said anvil.
7. A can crusher as defined in claim 6:
said jaw having means to abut said support so as to hold it in said substantially horizontal, can-receiving position.
8. A can crusher as defined in claim 1:
said anvil having a medial vertical slot to receive said finger in a limit position of approach of the jaw toward said anvil.

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