Dec. 23, 1952 J. H. BORLAND 2,622,316

CAN END CUTTING DEVICE

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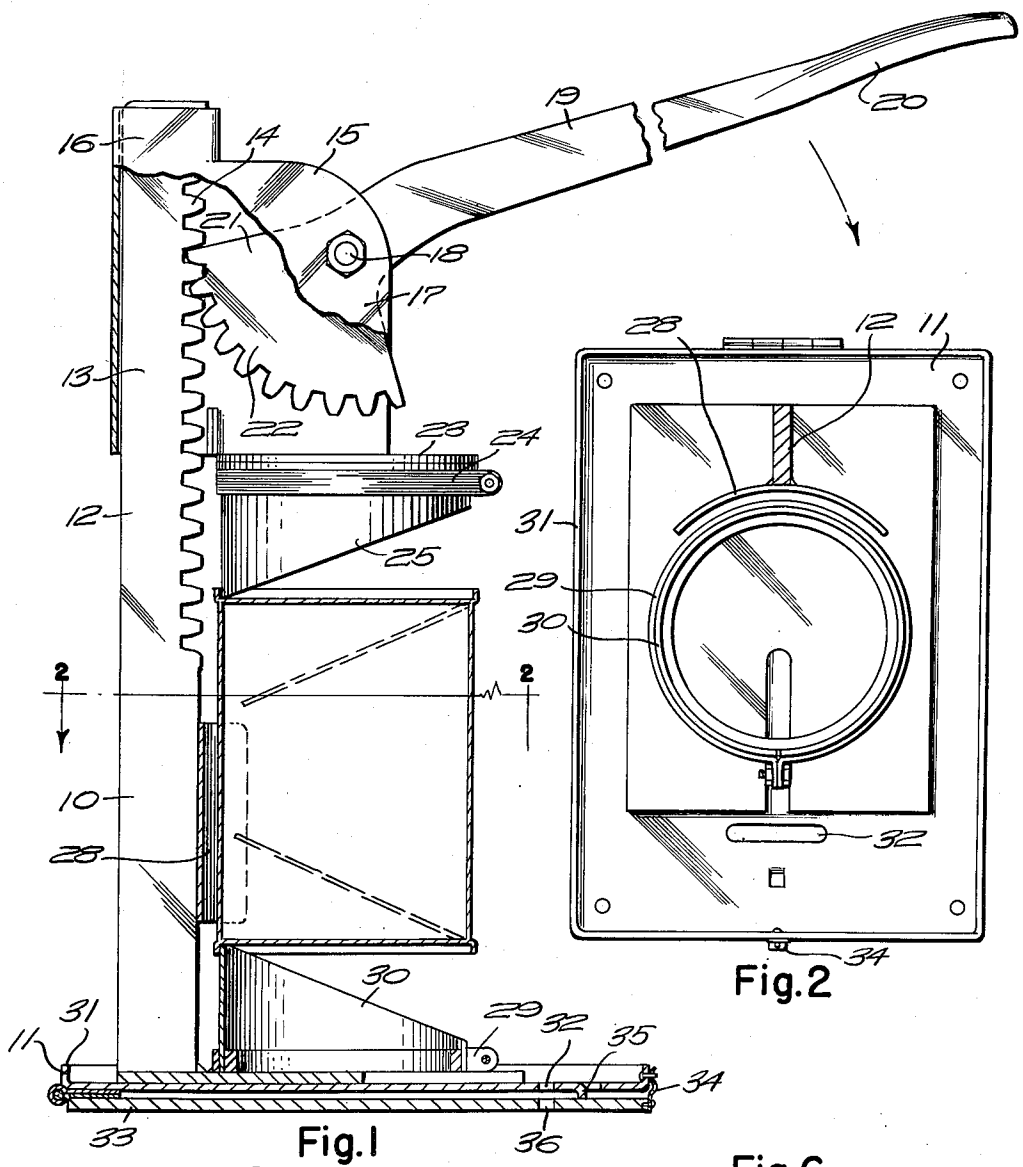


Fig. 1

Fig. 2

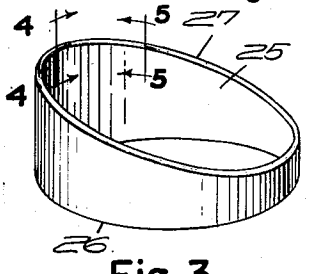


Fig. 3

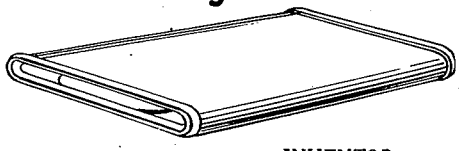


Fig. 4



Fig. 5

Fig. 6



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CAN END CUTTING DEVICE

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5 Claims. (Cl. 30—5.5)

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The present invention relates to the collapsing of empty cans, such as oil cans, and has particular reference to the construction of a novel tool for this purpose.

The principal object of the invention is to provide a simple, inexpensive and effective tool for collapsing empty tin cans.

Another object of the invention is to provide a can end cutter which cuts the ends of an empty can and simultaneously molds the cut ends into the can.

A further object of the invention is to combine a can end cutter with a can flattening arrangement.

With the above and other objects and advantageous features in view, the invention consists of a novel arrangement of parts more fully disclosed in the detailed description following, in conjunction with the accompanying drawings, and more specifically defined in the claims appended thereto.

In the drawings,

Fig. 1 is a side elevation of the novel tool, parts being shown in section, the cut folded ends of the can being shown in dotted lines;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a perspective view of one cutter;

Fig. 4 is a section on the line 4—4 of Fig. 3;

Fig. 5 is a section on the line 5—5 of Fig. 3; and

Fig. 6 is a perspective view of a collapsed can.

It has been found desirable to provide a simple and effective can collapsing tool, for collapsing empty cans such as oil cans, soup cans, and the like, in preparation for shipment to a tin reclaiming plant or the like. To this end, I have devised a simple tool which may be readily mounted on a table or other suitable support, and which receives an empty can, the tool then being operated to substantially cut the can ends and to fold the cut can ends into the body of the can, whereby collapsing may be completed by manually squeezing the can body. If desired, the tool may have two hingedly connected plates or similar parts which may be brought together to accomplish the collapsing.

Referring to the drawings, the novel collapsing tool 10 includes a base 11, which may be bolted or otherwise secured to a table or support, a vertical metal standard 12 which has the upper portion 13 formed as a rack 14, and a slide head 15 made of tubular metal stock and having a slide portion 16 slidably mounted on the vertical standard and a body portion 17 having a pivot pin 18 therethrough on which a lever 19 is rotatably mounted, the outer end of the lever constituting a manually movable handle 20, and the inner end 21 being formed as a segmental gear 22 meshing with the rack 14.

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The lower portion of the slide head is formed as a support plate 23 on which a clamp ring 24 is mounted for replaceably receiving a can end cutter 25 shaped as illustrated in Fig. 3, with a circular base 26 and an inclined elliptical cutting edge 27 which as shown in Fig. 4 is of the shear type. The high or starting point of the cutting edge is beveled as shown at 27a in Fig. 4 to facilitate initial break through, and the remainder of the cutting edge is flat as indicated at 27b in Fig. 5 to press against the can end. The vertical standard preferably has an arcuate seat plate 28 against which the body of an empty can may be pressed, and the base 11 is provided with a clamp ring 29 to hold a complementary can end cutter 30, as illustrated in Fig. 1.

The base 11 is preferably provided with an upstanding edge lip 31 to catch oil and the like, and has a drainage opening 32. The base 11 preferably has a plate 33 hingedly secured thereto at one end, with a standard snap spring tab 34 at the other end, the plate 33 being spaced from the base 11 by providing a downwardly positioned punched or cut out detent 35 on the base 11. The plate 33 is preferably provided with a drainage opening 36 in alignment with the base opening 32.

The operation of the novel tool may now be explained. With the two cutters fully separated as shown in Fig. 1, an empty can is manually inserted to seat against the arcuate seat plate 28. The handle 20 is now pulled down, whereupon the cutting edges 27 cut into the can. The amount of cutting is preferably gauged to leave a very small portion uncut at the upper and lower outer edge, and the cut is preferably a shearing cut, whereby the cutting edges not only cut the ends but also fold the ends in as shown in dotted lines in Fig. 1.

The can may now be readily collapsed by manually pressing the sides in, as shown in Fig. 6, or this can be accomplished by moving the snap spring tab 34, whereby the handle 20 may be lifted to separate the base and the plate 33. The can being placed between the base and the plate 33, a full downward movement of the lever will collapse the can.

The preferred movement of the upper cutter is obtained by the rack and gear mechanism described, but this movement can be alternatively accomplished by equivalent mechanisms, not shown, such as an eccentric cam, toggle joints, or

the like. Further, one cutter, preferably the lower cutter, may be omitted for low-cost tools designed for household use.

Although I have disclosed a specific constructional embodiment of the invention, it is obvious that changes in the size, shape and arrangement of the parts may be made to suit different can collapsing requirements, without departing from the spirit and the scope of the invention as defined in the appended claims.

I claim:

1. In a can end cutting device, a support, a head slidably mounted on said support, a clamping ring attached to said slide head, a base on said support in spaced relation to said head, a clamping ring mounted on said base, and aligned can end cutters detachably mounted in said clamping rings with their cutting edges extending towards each other.

2. In a can end cutting device, a support, a head slidably mounted on said support, a clamping ring attached to said slide head, a base on said support in spaced relation to said head, a clamping ring mounted on said base, and aligned can end cutters detachably mounted in said clamping rings with their cutting edges extending towards each other, said cutters each having an inclined elliptical cutting edge.

3. In a can end cutting device, a support, a head slidably mounted on said support, a clamping ring attached to said slide head, a base on said support in spaced relation to said head, a clamping ring mounted on said base, and aligned can end cutters detachably mounted in said clamping rings with their cutting edges extending towards each other, said cutters each having an inclined elliptical cutting edge, including a piercing portion and a shearing portion, the piercing portions of the cutters being in vertical alignment.

4. In a can end cutting device, a support, a head slidably mounted on said support, a clamping element attached to said slide head, a base on said support in spaced relation to said head, a clamping element mounted on said base and a cutter detachably mounted in the clamping element carried by said head, and a cutter mounted in said clamping element carried by said base, said cutters having elliptical edges extending towards each other.

5. In a can end cutting device, a support, a head slidably mounted on said support, a clamping ring attached to said slide head, a base on said support in spaced relation to said head, a clamping ring mounted on said base, a cutter detachably mounted in the clamping ring carried by said head, and a cutter mounted in said clamping ring carried by said base, said cutters having elliptical edges extending towards each other.

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