May 29, 1956 J. L. SMITH ET AL 2,747,272

CAN OPENER

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Fig-1

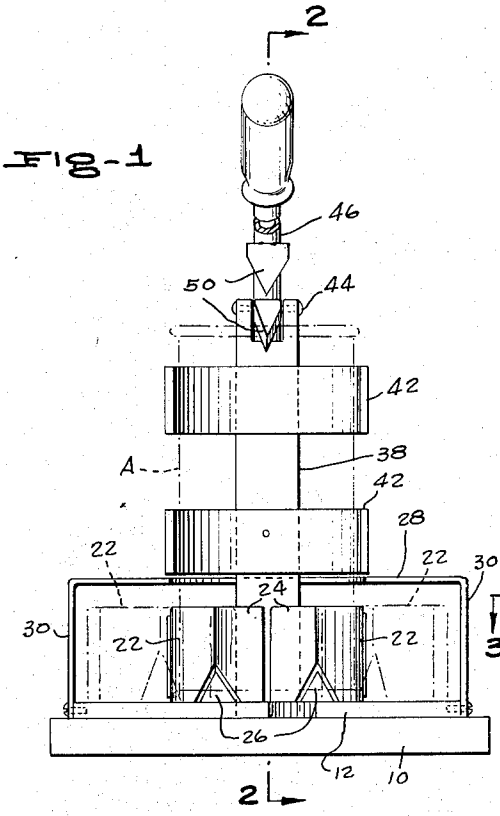


Fig-2

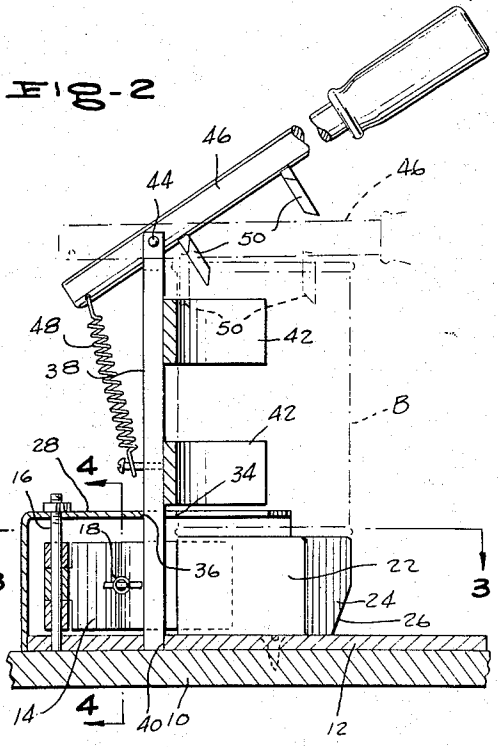
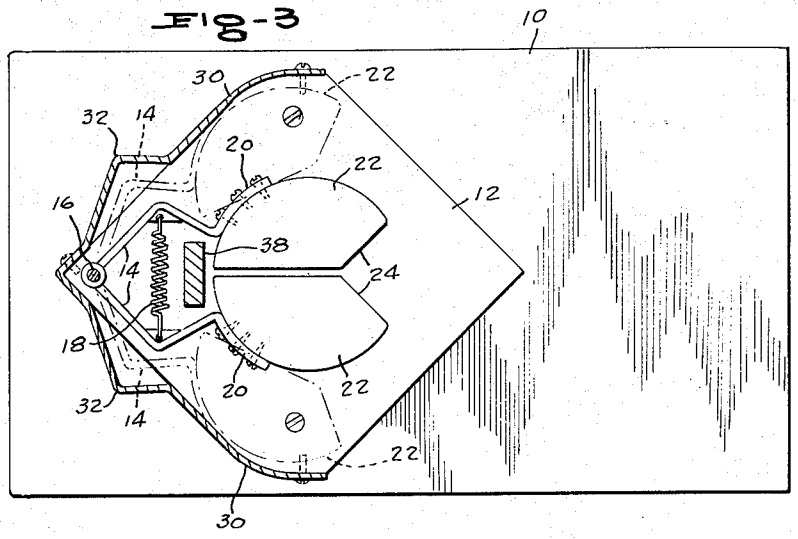


Fig-3



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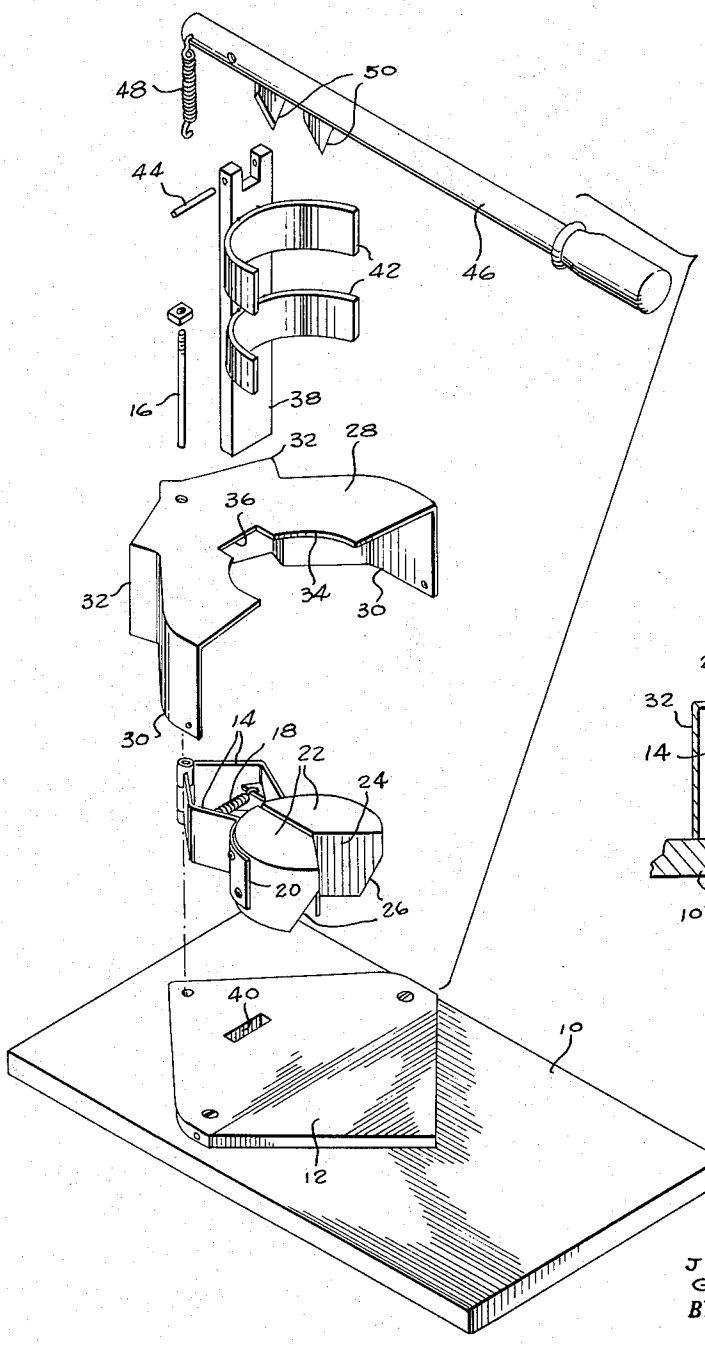
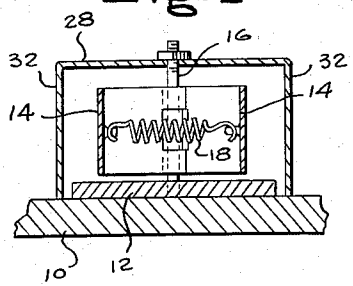


FIG-5

FIG-4



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CAN OPENER

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Application September 23, 1955, Serial No. 536,205

6 Claims. (Cl. 30—6.1)

Summarized briefly, the present invention is a device for opening cans of different sizes, such as small standard beer cans and large quart cans. The device includes a stationary base, on which a pair of support blocks for a small can are hingedly mounted to swing in a horizontal plane toward and away from one another. The blocks are beveled so that when a larger can is to be opened, said can may be positioned against the base and shifted against the blocks to spread the same. The blocks are under spring bias tending to maintain the same in closed position, so as to permit the blocks to close automatically when the larger can has been opened and is removed. Overlying the blocks is a cover, and projecting through the cover from the base is a standard having arcuate, can-receiving arms disposed for engaging both large and smaller cans. Vertically swingable upon the upper end of the standard is a lever handle having longitudinally spaced, depending prongs, one for forming a vent opening and the other for forming a dispensing opening in the upper end of the can responsive to downward swinging movement of the handle, the lever handle being under spring bias tending to normally retain the same in an upwardly swung condition.

Among important objects of the invention are the following:

To provide quickly operable means for opening cans of different heights or sizes, so as to permit a large number of cans to be opened in a minimum amount of time, this being desirable particularly in the case of commercial establishments in which large quantities of cans must be opened, with a minimum loss of time;

To so form the apparatus as to cause the same to adjust itself automatically to a position for receiving small cans after each can has been opened, while at the same time permitting both small and large cans to be positioned for opening responsive merely to a lateral movement of the cans into engagement with the can-receiving arms of the device;

To effect the opening of cans with maximum rapidity and ease, and with the vent and dispensing apertures properly located and formed in every instance; and

To provide a rugged and yet inexpensive assemblage of components, capable of manufacture at relatively low cost and designed to assure trouble-free operation to a maximum extent.

Other objects will appear from the following description, the claims appended thereto, and from the annexed drawing, in which like reference characters designate like parts throughout the several views, and wherein:

Figure 1 is a front elevational view of the device in which a large can to be opened has been shown in dotted lines;

Figure 2 is a vertical sectional view on line 2—2 of Figure 1, a small can to be opened being shown in dotted lines;

Figure 3 is a horizontal section on line 3—3 of Figure 2, the dotted lines showing the support blocks in spread position;

Figure 4 is a transverse, vertical sectional view on line 4—4 of Figure 2; and

Figure 5 is an exploded perspective view.

A flat, rectangular base **10** is shown, and said base may be fixedly secured to an associated support surface, weighted or otherwise adapted to assure stability of the device and smoothness of operation.

Secured fixedly to and overlying one end portion of base **10** is a flat base plate **12**, of substantially diamond-shaped or rhomboidal outer configuration. A pair of arms **14** are disposed medially of and above plate **12**, each of said arms being of obtusely-angular formation with the arms being bowed outwardly from one another (Figure 5). At one end, arms **14** have vertically, coaxially aligned hinge sleeves receiving a vertical hinge pin **16** secured to and projecting upwardly from base plate **12**, and connected between the arms **14** is a contractile spring **18** normally swinging the arms toward one another.

At their front ends, arms **14** having arcuately, outwardly curving extensions **20** secured to the outer surfaces of substantially semicircular can support blocks **22** having coplanar, flat top surfaces. At the front of the blocks, the blocks are angularly cut away as at **24** to provide vertical cam surfaces converging in the direction of the hinge pin **16**, and the undersides of the blocks are angularly cut away as at **26** to provide clearance spaces for the bottom bead of a large can A. The purpose of the cam surfaces **24** is to permit the large can A, the lower end of which is supported directly upon the base plate **12**, to be shifted horizontally in the direction of hinge pin **16**. The side wall of the can engages the cam surfaces rather than the bottom head of the can, since the surfaces **26** form recesses receiving the bead when the side wall of the can engages the cam surfaces **24**. Continued inward movement of the large can A effects spreading of the blocks **22** shown in dotted lines in Figures 1 and 3 and after the can has been opened and removed, the blocks **22** will automatically return to their normal positions in which they define a support for a small can B (see Figure 2). A flat, horizontally disposed cover **28** for the blocks has depending side walls **30** angularly related correspondingly to the rear edges of base plate **12**. Walls **30** engage against the edges of the base plate and are secured thereto. At their convergent rear ends, walls **30** are formed with obtusely-angular, outwardly offset side wall extensions **32** defining spaces for the correspondingly formed arms **14** when the blocks are spread (see Figure 3). The pin **16** extends through the rear portion of the cover, and aids in holding the cover in proper position on base plate **12**. Cover **28** has a semicircular recess receiving the lower portions of the cans A or B, and communicating with said recess is a space **36** for an upstanding standard **38**, the lower end of which is fixedly engaged in a transverse slot **40** of base plate **12**. Welded to and spaced vertically of standard **38** are arcuate, forwardly projecting arms **42** providing stops for the cans A, B, and at the upper end of the standard, the standard is bifurcated, a pivot pin **44** extending through the fork arms of the standard to pivotally connect thereto an elongated lever handle **46** mounted for vertical swinging movement between a normal, raised position shown in full lines in Figure 2 and a can-opening, lower position shown in dotted lines in this figure.

The lever handle is fulcrumed upon pin **44** adjacent the rear end of the handle, and connected between said rear ends and the standard **38** is a contractile spring **48** normally swinging the handle upwardly to its inoperative position.

Fixedly secured to and spaced longitudinally of handle 46, forwardly of the pivot axis thereof, are depending, pointed prongs 50. When the handle is swung downwardly, that prong nearer the axis of the handle enters the top of the can to form a dispensing opening, while the other prong, on continued downward movement of the handle fully to its horizontal, lower position, forms a vent opening. When prong 50 begins to enter the can top, the prong is inclined from the vertical as shown in full lines in Figure 2, said prong then assuming a vertical position at the conclusion of the handle movement. During movement of the prong nearer the pin 44 from the inclined to the vertical positions of the prong, it will cut away the can top fully to the margin of the can, folding the can top material, bounded by the cut made by the prong, inwardly aaginst the side wall of the can so that the contents may if desired be drunk directly from the can.

The construction, as will be apparent, permits small cans to follow large cans, or vice versa, during the opening of a number of cans, without requirement of manual adjustment of the parts of the device. When a small can is to be opened, it is positioned directly upon the blocks 22, and the handle 46 is swung downwardly. Should the next can be a large can, it is shifted horizontally into engagement with the cam surfaces, and will spread the blocks. Following the opening of the large can, the blocks 22 will return automatically to their closed, full line position of Figure 3, again ready to receive a small can. This permits a large number of cans of different sizes to be opened in following order, with each can being disposed in position for opening the same responsive to a horizontal movement of the same into engagement with the arms 42.

It is believed apparent that the invention is not necessarily confined to the specific use or uses thereof described above, since it may be utilized for any purpose to which it may be suited. Nor is the invention to be necessarily limited to the specific construction illustrated and described, since such construction is only intended to be illustrative of the principles, it being considered that the invention comprehends any minor change in construction that may be permitted within the scope of the appended claims.

What is claimed is:

1. A device for opening cans of different sizes comprising a base; a standard projecting upwardly therefrom; means on the standard providing a stop for a can to be opened; a lever handle swingably mounted upon said standard, said handle including means depending from the handle adapted to penetrate the top of a can disposed adjacent said standard in position to be opened; and a pair of blocks adapted to support a smaller can, pivotally mounted upon the base and adapted to be spread by a larger can on movement of the larger can into position to be opened.

2. A device for opening cans of different sizes comprising a base; a standard projecting upwardly from said base; a lever handle pivotally mounted upon the standard for up and down swinging movement, said lever handle when swung downwardly being shiftable against the upper end of a can, the lever handle depending prong means adapted to penetrate said upper end of the can on downward swinging movement of the lever handle; and a pair of can support blocks mounted upon the base for swinging movement toward and away from one another in a horizontal plane, said blocks being adapted to support smaller cans in elevated position above the base, and being spreadable by a larger can responsive to movement of the larger can into position to be penetrated by the prong means, for support of the larger can directly upon the base.

3. A device for opening cans of different sizes comprising a base; a standard projecting upwardly from said base; a lever handle mounted upon the standard for vertical swinging movement between an upper, inoperative position and a lower, can-opening position, said lever handle including depending prongs spaced longitudinally thereof, one adapted for forming a vent opening in the upper end of a can and the other adapted for forming a dispensing opening in said can; a pair of arms mounted upon the base for swinging movement in a horizontal plane about a common axis; resilient, yielding means connected between the arms arranged to normally swing the arms toward one another; and a pair of can support blocks connected to said arms for swinging of the blocks toward one another, said blocks being adapted to support a smaller can above the base in position for penetration of the upper end thereof by said prongs, the blocks being spreadable by a larger can against the restraint of said resilient, yielding means.

4. A device for opening cans of different sizes comprising a base; a standard projecting upwardly from said base; a lever handle mounted upon the standard for vertical swinging movement between an upper, inoperative position and a lower, can-opening position, said lever handle including depending prongs spaced longitudinally thereof, one adapted for forming a vent opening in the upper end of a can and the other adapted for forming a dispensing opening in said can; a pair of arms mounted upon the base for swinging movement in a horizontal plane about a common axis; resilient, yielding means connected between the arms arranged to normally swing the arms toward one another; and a pair of can support blocks connected to said arms for swinging of the blocks toward one another, said blocks being adapted to support a smaller can above the base in position for penetration of the upper end thereof by said prongs, the blocks being spreadable by a larger can against the restraint of said resilient, yielding means, the blocks being approximately semicircular in outer configuration, so as to form a substantially circular support for a smaller can, and being angularly cut away at the ends thereof remote from the arms to provide cam surfaces converging in the direction of the common axis of the arms, said cam surfaces being engageable by the side wall of the larger can during movement of the larger can into position to be opened, for spreading of the blocks.

5. A device for opening cans of different sizes comprising a base; a standard projecting upwardly from said base; a lever handle mounted upon the standard for vertical swinging movement between an upper, inoperative position and a lower, can-opening position, said lever handle including depending prongs spaced longitudinally thereof, one adapted for forming a vent opening in the upper end of a can and the other adapted for forming a dispensing opening in said can; a pair of arms mounted upon the base for swinging movement in a horizontal plane about a common axis; resilient, yielding means connected between the arms arranged to normally swing the arms toward one another; a pair of can support blocks connected to said arms for swinging of the blocks toward one another, said blocks being adapted to support a smaller can above the base in position for penetration of the upper end thereof by said prongs, the blocks being spreadable by a larger can against the restraint of said resilient, yielding means, the blocks being approximately semicircular in outer configuration, so as to form a substantially circular support for a smaller can, and being angularly cut away at the ends thereof remote from the arms to provide cam surfaces converging in the direction of the common axis of the arms, said cam surfaces being engageable by the side wall of the larger can during movement of the larger can into position to be opened, for spreading of the blocks; and a cover for the arms and blocks fixedly secured to the base, said cover having a substantially semicircular recess for receiving a can to be opened.

6. A device for opening cans of different sizes comprising a base; a standard projecting upwardly from said base; a lever handle mounted upon the standard for vertical swinging movement between an upper, in opera-

tive position and a lower, can-opening position, said lever handle including depending prongs spaced longitudinally thereof, one adapted for forming a vent opening in the upper end of a can and the other adapted for forming a dispensing opening in said can; a pair of arms mounted upon the base for swinging movement in a horizontal plane about a common axis; resilient, yielding means connected between the arms arranged to normally swing the arms toward one another; and a pair of can support blocks connected to said arms for swinging of the blocks toward one another another, said blocks being adapted to support a smaller can above the base in position for penetration of the upper end thereof, by said prongs, the blocks being spreadable by a larger can against the restraint of said resilient, yielding means, the blocks being

approximately semicircular in outer configuration, so as to form a substantially circular support for a smaller can, and being angularly cut away at the ends thereof remote from the arms to provide cam surfaces converging in the direction of the common axis of the arms, said cam surfaces being engageable by the side wall of the larger can during movement of the larger can into position to be opened, for spreading of the blocks, the blocks being formed, at the bottoms thereof, with recesses adapted to receive a bead formed on the lower end of a larger can to be opened, so as to permit movement of the side wall of said larger can directly into engagement with the cam surfaces.

No references cited.