April 30, 1935. P. H. FARRELL 1,999,689

CAN OPENER

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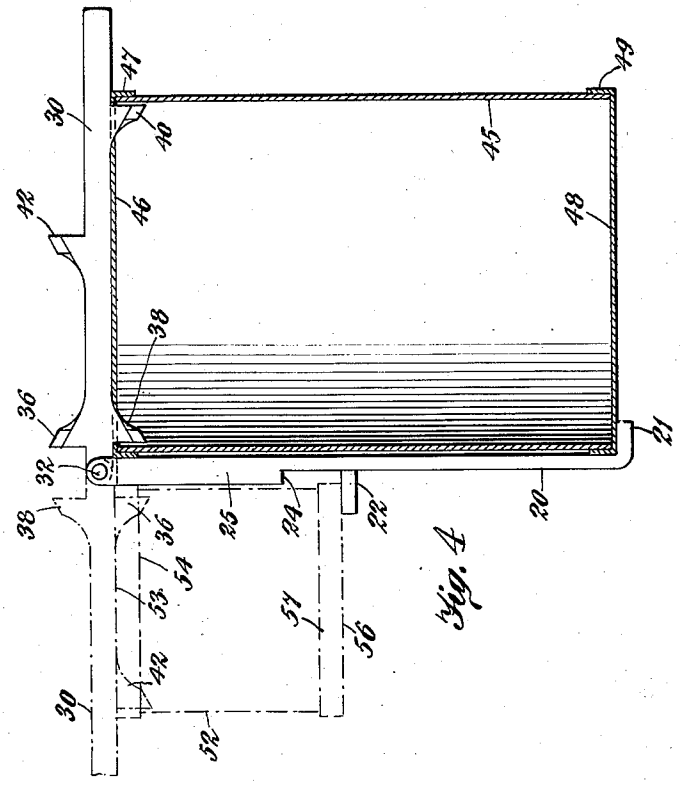


Fig. 4

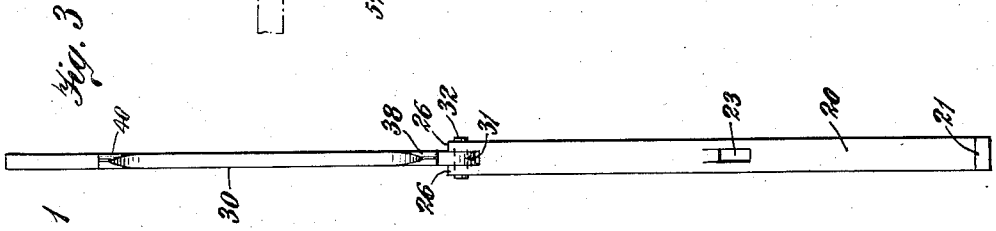


Fig. 3

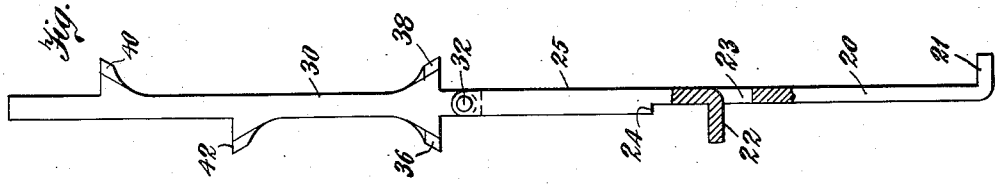


Fig. 1

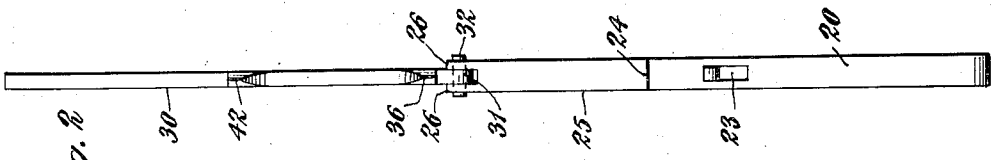


Fig. 2

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Fig. 5

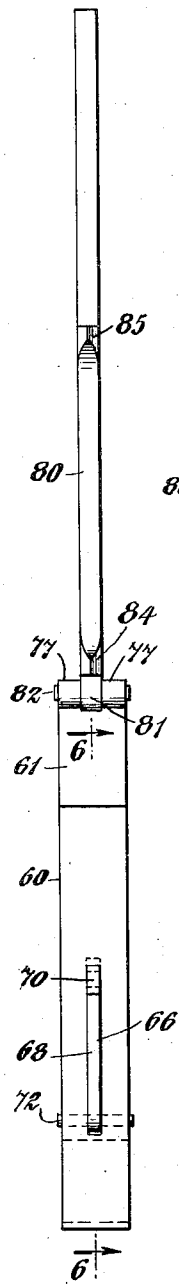


Fig. 6

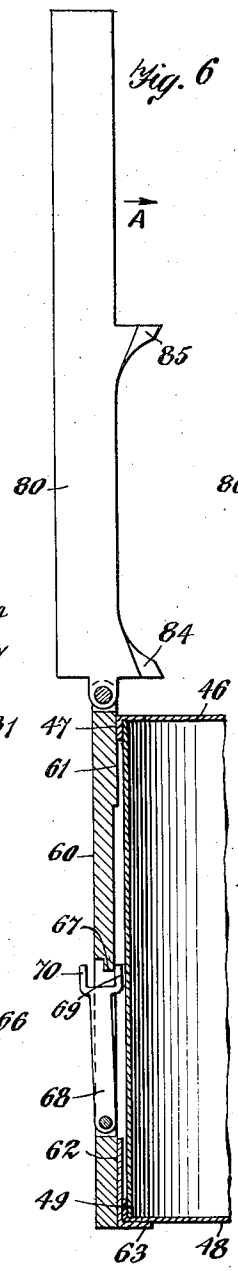


Fig. 7

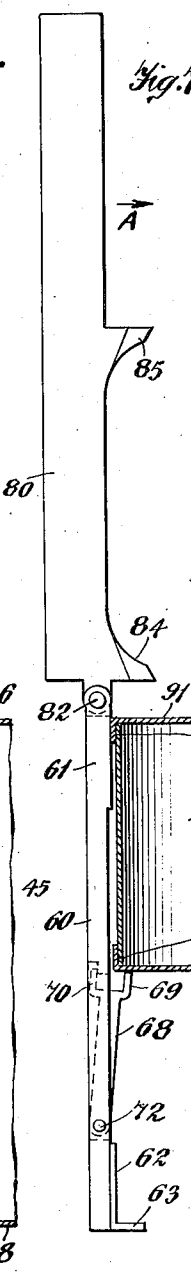


Fig. 8

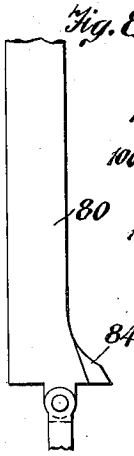


Fig. 11

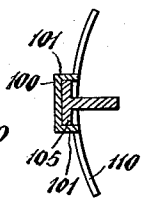


Fig. 10

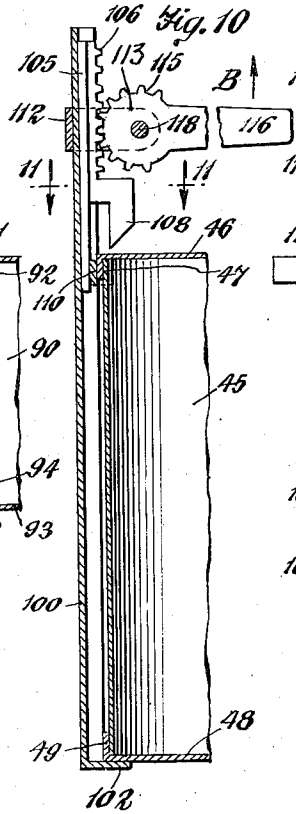
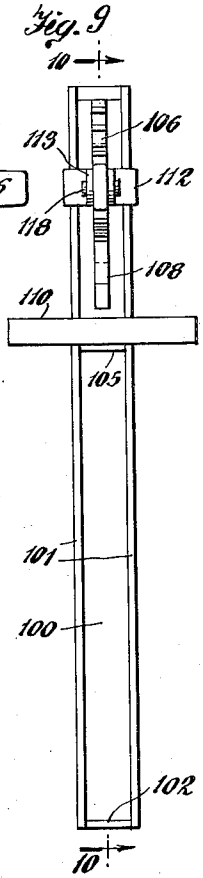


Fig. 9



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UNITED STATES PATENT OFFICE

1,999,689

CAN OPENER

Philip H. Farrell, Flushing, N. Y.

Application November 15, 1933, Serial No. 698,072

4 Claims. (Cl. 164—120)

This invention relates to a can opener.

The object of the invention is the production of a can opener with which cans of different diameters and depths can have one or a pair of openings simultaneously pierced through their covers.

This application is in part a division of my application for Can opener filed May 11, 1933, Serial Number 670,394.

In the accompanying drawings Fig. 1 represents a side view, partly in vertical section of one form of the improved can opener; Fig. 2 shows a left hand side view of Fig. 1; Fig. 3 is a right hand side view of Fig. 1; Fig. 4 shows a side view of the can opener indicated in Figs. 1, 2 and 3 in operative position with a large can shown in vertical section and a small can shown in dotted lines; Fig. 5 represents a rear view of another form of the can opener; Fig. 6 is a left hand side view and section of Fig. 5 on the line 6, 6, with a fragmentary portion of a large can in vertical section; Fig. 7 indicates a left hand side view of Fig. 5 with a fragmentary portion of a small can in vertical section; Fig. 8 is a fragmentary portion of Fig. 7 with a modification; Fig. 9 represents a front view of another form of the can opener; Fig. 10 indicates a partial left hand side view and partial section of Fig. 9 on the line 10, 10 and Fig. 11 shows a section of Fig. 10 on the line 11, 11.

Referring to Figs. 1 to 4 inclusive the can opener in this instance is indicated to comprise the lower supporting arm 20, with the supporting heel 21 at the lower end thereof and the intermediate supporting heel 22 spaced from the heel 21. The latter heel in this instance is pressed from the arm 20, leaving the opening 23. A shoulder 24 is indicated above and adjacent to the supporting heel 22. The upper portion of the supporting arm is shown at 25 and is wider than the lower portion of said arm. A pair of ears 26 are formed at the upper end of the portion 25.

An operating lever 30 has integral therewith at its lower end the ear 31, which is hinged to the ears 26 by the hinge pin 32. At the lower portion of the lever 30 are indicated integral therewith the oppositely positioned perforating cutters 36 and 38. Adjacent to the other end of the lever 30 is indicated the perforating cutter 40, which latter is on the same side of the lever 30 as the cutter 38. An intermediate perforating cutter 42 extends from the lever 30 on the same side thereof as the cutter 36. It will be noted that the cutters 38 and 40 on one side of the lever 30 are spaced from each other a greater distance apart, than the cutters 36 and 42 on the opposite side of the lever 30.

To perforate openings in the large can, the supporting arm 20 is positioned to bear against the flanges 47 and 49 of the cylindrical wall 45, with the heel 21 bearing up against the bottom cover 48 of the can. The operating lever 30 is swung to a horizontal position as shown in Fig. 4, and the perforating cutters 38 and 40 perforate the top cover 46 with a pair of openings adjacent to the inner face of the cylindrical wall 45 of the can. The operator then raises the operating lever 30 and clears the cutters 38 and 40 from the openings made therewith and moves the can opener to another position to repeat the perforating operation if desired.

A small can is shown in Fig. 4 in dotted lines and is indicated with the cylindrical wall 52, the top cover 53 with the flange 54, and the bottom cover 56 with the flange 57. To perforate the small can it is brought to bear against the upper portion 25 of the supporting arm 20, with the bottom cover 56 supported on the heel 22. The operating lever is swung to drive the perforating cutters 36 and 42 through the top cover 53 to perforate the same. The operating lever 30 is then swung up and the can opener is moved to another position to repeat the perforating operation if desired.

Referring to Figs. 5 to 7 inclusive the can opener is indicated with the supporting arm 60, having the thickened upper portion 61, and the supporting heel having the vertical member 62 and horizontal supporting flange 63 fastened to its lower end. An elongated opening 66 is indicated in the supporting arm 60. A shoulder or rabbet 67 is formed with the arm 60 at the upper end of its opening 66. In the opening 66 is indicated the supplemental supporting arm 68 having a forked end with the members 69 and 70. The said supplemental supporting arm 68 is pivoted to the arm 60 by means of the pivot pin 72. At the upper end of the thickened portion 61 are indicated the ears 77. The operating lever is shown at 80 which at its lower end has integral therewith the ear 81. The ear 81 is pivoted to the ears 77 by means of the pivot pin 82. A perforating cutter 84 extends from the lower end of the lever 80, and a second similar cutter 85 spaced from the cutter 84 and oppositely positioned extends from the lever 80.

Referring particularly to Fig. 6 the large can is indicated with the cylindrical wall 45, the top cover 46 with the flange 47 and the bottom cover 48 with the flange 49.

The large can is positioned with its flange 47 bearing against the thickened portion 61 of the supporting arm 60, and the bottom cover 48 is positioned to bear on the flange 63 of the supporting heel. The supplemental supporting arm 68 is swung to clear the member 69 of its forked end from the cylindrical wall 45 of the can. The member 69 of the forked end of the arm 68 is positioned against the outer face of the rabbet 67. To perforate openings in cover 46 of the can, the operator swings the operating lever 80 in the direction of the arrow A, Fig. 6 and the perforating cutters 84 and 85 simultaneously perforate a pair of openings in the top cover 46. If desired the can opener is located in different positions and the operations are repeated to perforate additional pairs of openings in the top cover 46.

Referring particularly to Fig. 7 a small can is indicated with the cylindrical wall 90, the top cover 91 having the flange 92 and the bottom cover 93 having the flange 94. The supplemental supporting arm 68 is swung to position the outer end of the member 69 of its forked end under the bottom cover 93 to support the same, the member 70 of the forked end bearing against the rabbet 67. At the same time the thickened portion 61 of the arm 60 is brought to bear against the flange 92 of the top cover of the can. To perforate the top cover 91 the operating lever 80 is swung in the direction of the arrow A, Fig. 7 as described for Fig. 6, and the operations already described for said Fig. 6 are repeated.

Referring particularly to Fig. 8 the operating lever 80 is indicated with only the perforating cutter 84, the cutter 85 being omitted. With this modification the can opener only perforates one opening at a time in the top cover of the can operated upon.

Referring to Figs. 9, 10 and 11 the can opener is indicated with the supporting arm 100, which is channel shaped in cross section having the vertical flanges 101.

The supporting heel 102 extends from the lower end of the arm 100. In the upper end of the said arm 100 is slidably supported the plate 105. The latter has fastened thereto the rack having the teeth 106 and the perforating cutter 108. A curved bearing plate 110 is fastened to the flanges 101 and clears the plate 105 so that the latter can slide vertically. A bracket 112 with the journal lugs 113 is fastened to the upper portion of the supporting arm 100. A segmental gear 115 has integral therewith the operating lever 116. The said segmental gear has extending therethrough the pivot pin 118 with the ends thereof supported in openings in the journal lugs 113. The teeth of the segmental gear 115 are in mesh with the teeth 106 of the rack.

A large can is again shown with the cylindrical wall 45, the top cover 46 with its flange 47, and the bottom cover 48 with its flange 49.

To operate the can opener shown in Figs. 9, 10, and 11, the bearing plate 110 is brought to bear against the flange 47 and the heel 102 is brought to bear against the bottom cover 48. The operating lever 116 is swung up in the direction of the arrow B and the perforating cutter 108 descends to perforate the top cover 46 of the can. The lever 116 is then swung down and the can opener is moved to another position, where the operations are repeated to perforate additional openings in the top cover 46.

Various modifications may be made in the invention and the present exemplification is to be taken as illustrative and not limitative thereof.

Having described my invention I claim:

1. In a can opener the combination of a supporting arm, a supporting heel at the lower end of the arm, an intermediate supporting heel extending from said arm and spaced from the lower end thereof, an operating lever having its lower end pivoted to the upper end of the supporting arm, a pair of perforating cutters spaced from each other extending from one side of the operating lever and a pair of perforating cutters extending from the other side of said operating lever, one of said pair of cutters spaced from each other a greater distance than the other pair.

2. In a can opener the combination of an operating lever of a supporting arm having an elongated opening therethrough, a supplemental supporting arm positioned in said opening and its lower end pivoted to said supporting arm, a forked end comprising a pair of members integral with said supplemental supporting arm and a cutter extending from said operating lever, said supplemental supporting arm adapted to be positioned with one of the members of its forked end bearing against the bottom cover of a can operated upon.

3. In a can opener the combination of a supporting arm having an elongated opening extending therethrough, a rabbet formed with said supporting arm at the upper end of said elongated opening, a supplemental supporting arm positioned in said elongated opening and its lower end pivoted to said arm, a forked end at the upper end of said supplemental supporting arm, said forked end comprising a pair of members, an operating lever pivoted to the upper end of said supporting arm, and a pair of perforating cutters spaced from each other extending from said lever, said supplemental supporting arm adapted to be positioned with one of the members of its forked end bearing against said rabbet and its other member adapted to support a can.

4. In a can opener the combination of a supporting arm having an elongated opening, a rabbet formed with said supporting arm at the upper end of its elongated opening, a supporting heel fastened to the supporting arm, a horizontal supporting flange integral with said heel, a supplemental supporting arm positioned in the elongated opening of said supporting arm and its lower end pivoted to said arm, an upper forked end comprising a pair of members integral with said supplemental supporting arm, an operating lever pivoted to the upper end of said supporting arm, and a pair of perforating cutters extending from said operating lever, said supplemental supporting arm adapted to be positioned with one of the members of its forked end bearing against one face of said rabbet to position the other member to bear up against the bottom of a can, and said supplemental supporting arm adapted to be positioned with the other member of its forked end to bear against the other face of said rabbet to clear the wall of a larger can supported on the horizontal flange of said supporting heel.

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