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A. ZIDOVEC

1,852,389

CAN OPENER

Filed Sept. 11, 1929

Fig. 1.

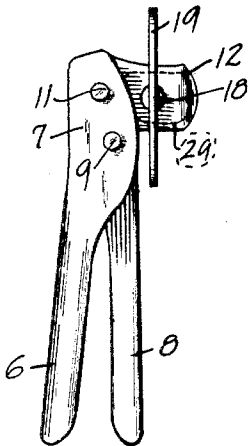


Fig. 2.

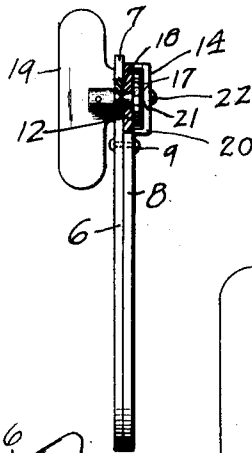


Fig. 3.

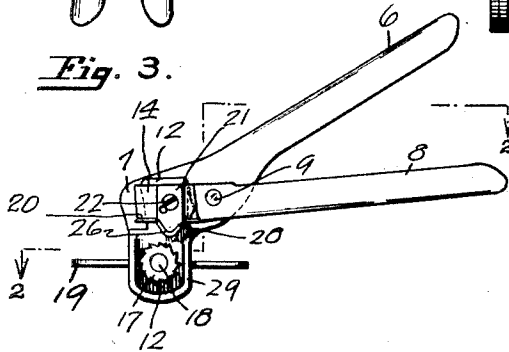


Fig. 5.

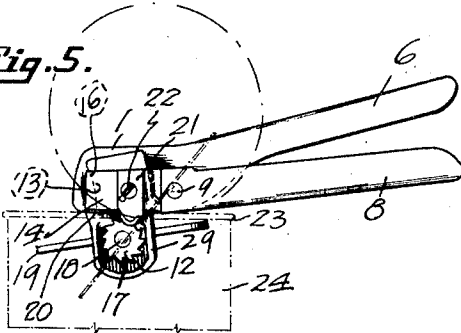


Fig. 7.

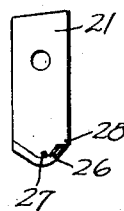
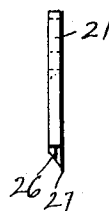


Fig. 6.



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CAN OPENER

Application filed September 11, 1929. Serial No. 391,784.

This invention relates to can openers.

The primary object of the invention is to provide a can opener in which a traction wheel and a fixed blade are moved on a substantially arcuate path toward each other to cause the puncturing of the top of the can by the blade and to grip the rim of the can between the wheel and the blade; means being provided to allow the rotation of the wheel thereby to move the blade around the inner periphery of the rim of the can, shearing off the top of the can thereat; the initial rotation of the wheel causing the said puncture of the can, the strain exerted by the handles being very slight.

Another object of the invention is the provision of a fixed blade for a can opener, the cutting edge of which tilts the top of the can upwardly at an angle, before the top is completely severed from the can, thus facilitating the removal of the top from the can; an edge of the blade being so formed as to limit the angle to which the top is tilted by the opener.

Another object of the invention is the construction of a can opener of the above mentioned type, with a guide member for the traction wheel, which is pivoted on one of said handles, and guided by the other handle of the can opener; the said member being bent to cause the can to be held by said can opener at a proper angle, out of engagement with the face of the traction wheel and against the underside of the rim of the can.

Other objects and advantages are to provide a can opener that will be superior in point of simplicity, inexpensiveness of construction, positiveness of operation, and facility and convenience in use and general efficiency.

In this specification and the annexed drawings, the invention is illustrated in the form considered to be the best, but it is to be understood that the invention is not limited to such form, because it may be embodied in other forms; and it is also to be understood that in and by the claims following the description, it is desired to cover the invention in whatsoever form it may be embodied.

The invention is clearly illustrated in the accompanying drawings wherein

Fig. 1 is a side view of the can opener;

Fig. 2 is a sectional view of the line 2—2 of Fig. 3;

Fig. 3 is a side view of the can opener, showing the relative disengaged position of the blade and the traction wheel;

Fig. 4 is an end view of the can opener in cutting position relatively to the can;

Fig. 5 is a side view of the can opener, and the can in position when the cut is nearly completed, showing the tilting of the top of the can;

Fig. 6 is a side view of the cutting blade of the can opener; and

Fig. 7 is a face view of the cutting blade.

In my can opener a handle 6 has an enlarged end 7 thereon, to which is pivotally secured another handle 8 by a suitable pivot pin 9. On the enlarged end 7 and spaced from the pivot 9 is provided another pivot 11 by means of which a guide member 12 is swingably attached to said enlarged end. An edge 13 of the guide member portion on the end 7 is curved. The adjacent end 14 of the other handle 8 is bent and rebent to form a U shaped recess 16 fitting over the curved end of the guide member 12, to slidably guide the same.

On one side of the depending portion of the guide member 12 is rotatably held a traction wheel 17. The pin 18 of the wheel 17 extends to the other side of the guide member 12, and has a wing handle 19 mounted thereon, thru which the wheel 17 may be rotated at will. The outer edges of the bent end 14 of the handle 8, on the side nearer the traction wheel 17 are flared outwardly to form flanges 20. These flanges 20 provide a larger bearing surface thereat, for the rim of the can to be opened.

In the outer face of the handle end 14 is fixedly held a cutting blade 21, by means of a screw 22. The cutting edge of said blade 21 extends in the direction of the wheel 17 so that when the handles are moved into gripping position, the cutting edge of the blade 21 overlaps the wheel 17. It is to be noted that the blade 21 is disposed at an

angle slightly transverse to the axis of the handle 8.

When the longer grip portions of the handles 6 and 8 are gripped and moved toward each other, around the pivot 9, then the enlarged end 7 and the end 14 are moved away from each other, whereby the recess 16 is moved over the member 12 causing the arcuate movement of the depending portion of the guide 12 and the wheel 17 thereon, toward the cutting blade 17.

In operation, before the grip portions of the handles 6 and 8 are brought toward each other, the periphery of the traction wheel 17 is held against the underside of the rim 23 of the can 24. The traction wheel 17 is preferably toothed, to permit the firm engagement thereof with the rim 23. The grip portions of the handles 6 and 8 are then moved toward each other, but it is not necessary to accomplish the piercing of the can by the force exerted upon the grip portions of the handles 6 and 8. By giving a slight strain to the handles 6 and 8 when in the right position to pierce the top of the can, the opener is held in position. Then the traction wheel 17 is turned slightly. Inasmuch as the teeth of the wheel 17 are pressed into the rim of the can, the turning of the wheel draws the guide member 12 into the recess 16, thus causing the blade to pierce the top of the can. After the can is pierced the guide member 12 remains firmly locked within said recess 16 thruout the entire cutting operation. This piercing requires a minimum effort due to the shearing action of the angularly disposed blade 21 and the leverage exerted thereon by the handles 6 and 8. The wheel 17 is then rotated in a counterclockwise direction, viewing Fig. 5, whereby the can is turned also in a counterclockwise direction, viewing the top of the can. As the can is turned, it is held by the opener, as a unitary handle, and the edge of the top is advanced against the cutting edge of the blade 21, and is sheared thereby. During this operation the flanges 20 hold the opener in balanced position, preventing the tilting thereof. This guiding action is especially important when the can opener must follow a sharp curve of the can contour, such as the corners of a square can. Thus the top is cut out of the can with great facility. The guide member 12 is at all times, during the cutting, firmly interlocked with the handles and the can, absorbing all the strain from the handles due to cutting.

Usually when the top is completely severed from the rim of a can, it drops on the top of the content of the can, and its removal from the can is difficult and unsanitary. In order to prevent the dropping of the top into the can, and to facilitate the removal thereof, the cutting edge of the blade 21 is so formed as to cause the tilting of the top, thus bring-

ing a portion of the top out of the can, permitting the grasping and the ready removal thereof. For this purpose the cutting edge of the blade 21 is formed in a substantially V-shaped chamfered edge 26, having a rounded intermediate point 27. The corner 28 of the edge 26 is squared, the chamfer of the edge ending abruptly thereat. The bottom of the blade at the edges is slightly convex.

It is to be noted that the can is rotated by the wheel 17, so that the top thereof moves against the cutting edge 26 below the squared corner 28 thereof. When the top is cut nearly all around, the blade 21 is adjacent to the point of first puncture, and there is a very small strip of material left uncut on the top periphery. The particular chamfer, and formation of the blade edge 26 causes the top to tilt around the small uncut portion thereof, in the manner indicated in dotted lines in Fig. 5. The half of the top of the side of the squared corner 28 tilts upwardly, out of the can 24. This action, in some instances, may cause the top to entirely fly off the can. However, on my can opener the squared corner 28 limits the amount of tilting of the top. The can opener is removed from the can by moving the outer ends of the handles 6 and 8 apart from each other, whereby the wheel 17 is moved away from the rim 23, and the grip on the rim 23 is released.

In order to hold the can 24 on an incline, free from the face of the wheel 17, the free end and partly the outer side edges of the depending portion of the guide member 12 are bent beyond the plane of the wheel 17, forming guides 29. The guides 29 rest against the side of the can, directly below the wheel 17, causing the can to assume the angular position, shown in Fig. 4, and insuring the contact of the toothed periphery of the wheel 17 with the underside of the rim 23, without permitting any frictional contact between the side of the can 24, and the face of the wheel 17.

It is to be noted that the can is not held by the operator of the opener, but by the firmly interlocked members of the can opener. The handles are sufficiently elevated above the plane of the rim of the can to prevent the contact or bruising of the hand of the person holding the can opener.

It is also to be noted that the guide member 12 automatically adjusts itself to varied widths of the rims. The rim is firmly gripped and the can remains firmly locked in the opener, so that it cannot slip during the operation of the opener. The can opener heretofore described may be used on either round or square or any other shape cans.

In connection with the tilting of the cut off can top by the blade, it is to be noted that, the cut top or cover is tilted not only around the respective diameter of the top but also

upwardly around an axis tangential to the top at said small uncut edge portion of the rim, thus holding the rim thereat, to a position approximately parallel with the plane of the handles. When the can opener blade tilts, bends, or folds the cut cover vertically, that is from the edge of the rim upward, the operator can at will, while holding the can with the can opener, push forward a forefinger of his left hand, thereby to hold the can and also to press the cut cover against the face of the blade. Thus, the cut cover or top of the can is removed together with the detachment of the can opener. For holding the cut and tilted cover against the face of the blade, a receptacle or holding finger may be provided on the opener itself, so as to receive the cut cover therein.

Having thus described this invention, what I claim and desire to secure by Letters Patent is:

1. In a can opener, two handles pivotally secured to each other intermediate their ends; a guide member pivoted on one end of one handle, the respective end of the other handle being formed with a recess to guide said guide member therein; a traction wheel rotatable on a depending portion of the guide member; a cutting blade fixed on the recessed end of the second handle in overlapping relation to said traction wheel when the opener is in operative position, said wheel and said blade, when moved in said overlapping relation, being adapted to grip the rim of a can therebetween; and means to permit rotation of the wheel thereby to rotate the can to rotate the periphery of the top thereof against the said blade to be cut thereat.

2. In a can opener, two handles pivotally secured to each other intermediate their ends; a guide member pivoted on one end of one handle, the respective end of the other handle being formed with a recess to guide said guide member therein; a traction wheel rotatable on a depending portion of the guide member; a cutting blade fixed on the recessed end of the second handle in overlapping relation to said traction wheel when the opener is in operative position, said wheel and said blade, when moved in said overlapping relation, being adapted to grip the rim of a can therebetween; means to permit rotation of the wheel thereby to rotate the can to rotate the periphery of the top thereof against the said blade to be cut thereat; and projections on said guide arranged to hold the can in inclined position, away from the face of the wheel.

3. In a can opener, two handles pivotally secured to each other intermediate their ends; a guide member pivoted on one end of one handle, the respective end of the other handle being formed with a recess to guide said guide member therein; a traction wheel rotatable on a depending portion of the

guide member; a cutting blade fixed on the recessed end of the second handle in overlapping relation to said traction wheel when the opener is in operative position, said wheel and said blade, when moved in said overlapping relation, being adapted to grip the rim of a can therebetween; and means to permit rotation of the wheel, thereby to rotate the can to rotate the periphery of the top thereof, against the said blade, to be cut thereat, said blade being adapted to tilt the top of the can when the blade is nearing the starting point of the cut.

4. In a can opener, two handles pivotally secured to each other intermediate their ends; a guide member pivoted on one end of one handle, the respective end of the other handle being formed with a recess to guide said guide member therein; a traction wheel rotatable on a depending portion of the guide member; a cutting blade fixed on the recessed end of the second handle in overlapping relation to said traction wheel when the opener is in operative position, said wheel and said blade, when moved in said overlapping relation, being adapted to grip the rim of a can therebetween; means to permit rotation of the wheel thereby to rotate the can to rotate the periphery of the top thereof against the said blade to be cut thereat; and projections on said guide arranged to hold the can in inclined position, away from the face of the wheel, said blade being adapted to tilt the top of the can, when the blade is nearing the starting point of the cut.

5. In a can opener, two handles pivotally secured to each other intermediate their ends; a guide member pivoted on one end of one handle, the respective end of the other handle being formed with a recess to guide said guide member therein; a traction wheel rotatable on a depending portion of the guide member; a cutting blade fixed on the recessed end of the second handle in overlapping relation to said traction wheel when the opener is in operative position, said wheel and said blade, when moved in said overlapping relation, being adapted to grip the rim of a can therebetween; and means to permit rotation of the wheel, thereby to rotate the can to rotate the periphery of the top thereof against the said blade, to be cut thereat, said guide member having arcuate edges at the end thereof riding in said recess of the other handle, coacting with said recess for holding the opener against accidental disengagement from the rim.

6. In a can opener, two pivoted handles, a pivoted wheel carrying member on one handle; a traction wheel rotatably secured on said member; an arcuate guide formed at the corresponding end of the other handle to receive and guide said member on an arcuate path; a fixed blade on the guide end of

the second handle, arranged to grip the rim of a can between the blade and the wheel, when moved toward each other by the pivotal movement of the handles, and to pierce the top of a can thereat; and means to permit rotation of the traction wheel at will, to rotate the can, thereby to cause the cutting of the top by said blade.

7. In a can opener, two pivoted handles, a pivoted wheel carrying member on one handle; a traction wheel rotatably secured on said member; an arcuate guide formed at the corresponding end of the other handle to receive and guide said member on an arcuate path; a fixed blade on the guide end of the second handle, arranged to grip the rim of a can between the blade and the wheel, when moved toward each other by the pivotal movement of the handles, and to pierce the top of a can thereat; and means to permit rotation of the traction wheel at will, to rotate the can, thereby to cause the cutting of the top by said blade, said guide member being adapted to be firmly interlocked with the handles during the operation of the opener.

8. In a can opener, two handles pivotally secured to each other intermediate their ends; a guide member pivoted on one end of one handle, the respective end of the other handle being formed with a recess to guide said guide member therein; a traction wheel rotatable on a depending portion of the guide member; a cutting blade fixed on the recessed end of the second handle, in overlapping relation to said traction wheel, when the opener is in operative position, said wheel and said blade, when moved in said overlapping relation being adapted to grip the rim of a can therebetween; a guide flange formed on the edge of said recessed end, on the side nearer to said traction wheel, for guiding engagement with the rim of the can; and means to permit rotation of the wheel thereby to rotate the can to rotate the periphery of the top thereof against the said blade to be cut thereat.

In testimony whereof, I have hereunto set my hand at San Francisco, California, this 6th day of September, 1929.

AUGUST ZIDOVEC.