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# IMPROVEMENTS IN AND RELATING TO CAN OPENERS

This invention relates to can openers.

Although many different designs of can openers  
5 are known, very few work really satisfactorily. In many  
instances, the cutting edge is liable to become jammed and  
a ragged cut given which can be dangerous to the user.  
Also small filings of metal may be generated which  
contaminate the contents of the can.

10 It is therefore an object of this invention to  
provide an improved can opener which functions well and  
simply.

According to the invention there is provided a  
can opener intended to provide a circular cut around the  
15 cylindrical wall of the can below the lid and rim which are  
severed by the cut from the rest of the can, the can opener  
comprising a pair of body members pivotally joined to one  
another and capable of pivoting within limits, a spindle to  
which is attached a driving wheel to be brought into  
20 contact with the lip of the lid of a can, the spindle being  
rotatable to cause the driving wheel to orbit the can  
opener relatively around the top of the can, the axis of  
the spindle coinciding with the axis of pivoting of the  
pair of body members, a cutting wheel which, in an  
25 operating cutting position, forms a nip with the driving

wheel so that the cutting edge of the cutting wheel is forced to penetrate through the cylindrical wall of the can and provide a circular cut around the can as the opener orbits relatively around the can, a rectangular mounting plate slidably mounted in one of the body members and on which the cutting wheel is rotatably mounted, the sliding plate being restrained to move along an axis relative the said one body member in which it is supported between a position where the cutter wheel is in the operating cutting position where the cutting edge of the cutter wheel penetrates the can wall and an inoperative position where the cutting wheel is moved away from the driving wheel, and cam means for moving the plate and the supported cutting wheel to the cutting position as the body members are pivoted towards one limit of pivoting and moving it away to its inoperative position when the body members are pivoted away from that said limit of pivoting.

Such a can opener has been found to give a good clean cut without ragged edges and substantially without the formation of dangerous metal filings. In addition, the can opener can usually operate successfully even if the can is quite seriously damaged and dented.

Preferably each body member has an integrally formed handle portion extending generally away from the point of pivoting, the pivoting of the body portions to bring the handles together so that they are closely spaced and parallel, moving the cutting wheel to the cutting position.

The cam means can be used to bring the cutting wheel to its operative cutting position upon quite a small angular pivoting movement of the body portions, e.g. a maximum opening of 30°. This has advantages over, for example, the can opener described in Application No. 8303320, Serial No. 2 118 134 A, where it is necessary to pivot the handles over about 180° in order to open up the cutting nip between the driving wheel and the cutting wheel.

10 The cam means can comprise a substantially straight slot inclined at an angle to the axis of sliding of the mounting plate and formed in the other body member, i.e. the one which does not slidably support the mounting plate, and a pin projecting from the mounting plate into  
15 the slot.

The driving wheel and the spindle to which it is connected can be manually driven, e.g. by means of a two-armed crank attached to the free end of the spindle. Alternatively, that spindle could be motor driven and one  
20 of the body members constitute a housing for the electric motor.

A can opener according to the invention will now be described, by way of example, with reference to the accompanying drawings, in which:

25 Figure 1 is a front view of a can opener according to the invention shown in its closed operative position;

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Figure 2 is a side view of the can opener shown in Figure 1;

Figure 3 is a view similar to Figure 1 but with the can opener in its open non-operative position;

Figure 4 is a section taken on the line 4-4 of Figure 1;

Figure 5 is an elevation of one of the body members shown separately from the rest of the can opener; and

Figure 6 is a view showing the can opener in use in opening a can.

The can opener 10 shown in the drawings includes two body portions 12 and 14. The two portions are pivoted to one another about a circular rib 15 on the portion 12 extending into a circular recess 15a on the portion 14. Extending axially through the rib 15 and recess 15a is a spindle 16 (Figure 4). The body portions are therefore pivotable between a closed working position shown in Figure 1 and an open position shown in Figure 3. The body portions 12 and 14 each include an integral handle 12a and 14a, respectively, extending generally away from the axis of the spindle 16 such that they lay closely alongside and parallel to one another in the closed position shown in Figure 1. Conveniently the two body portions are moulded from synthetic plastics material, e.g. polypropylene.

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Integrally formed at one end of the spindle is a two-armed crank 20 for rotating it. Axially embedded in the spindle is a metal reinforcing shaft 22, one end of which latter extends slightly beyond the end of the spindle 16 and is attached to a driving wheel 24. The latter has an outer toothed edge 26 capable of frictionally engaging the lip 28 of the lid 27 of a can 29 (Figure 6) and driving the can opener around the can during opening.

Slidably mounted in the body portion 12 is a rectangular metal plate 30 restrained to move along an axis 30a (see Figure 5). Extending outwardly from one face of the plate is a pin 32 on which is rotatably mounted a sleeve 34. Fixed to the sleeve is a metal cutting wheel 36 having a pointed circular cutting edge 38. Integrally formed with the body portion 12 is an open-topped pouch 39 housing the cutting wheel part of whose edge 38 extends out through the open top of the pouch.

Projecting from the opposite face of the plate 30 is a cam pin 40. This engages in a slot 44 formed in the body portion 14. The slot is substantially straight and inclined to the axis 30a so that, as the handles 12a and 14a are moved between the open position shown in Figure 3 and the closed position shown in Figure 1, the plate 30 is cammed from a lower position to an upper operating position shown in Figure 4. As a result the cutting wheel 36 also moves from its non-operating position shown in Figure 3 where its cutting edge 38 is spaced sufficiently from the

driving wheel 24 for it to fit over the lip 28 of a can 29 to its operating and cutting position shown in Figure 1 where the cutting edge 38 slightly overlaps the driving wheel 26.

5                    This cutting position is also shown in Figure 6 and the cutting edge 38 is there shown as penetrating the top edge of the cylindrical wall of the can just beneath the lid 27. Therefore, upon rotation of the crank 20, the can opener 10 is driven in a circular orbit around the top 10 of the can and a circular cut is made in the cylindrical wall of the can near its top. Once a circular cut is complete, the top of the can can be lifted cleanly off and is held trapped between the cutting wheel 36 and driving wheel 24 until the handles are brought into the open 15 position shown in Figure 3. To assist in maintaining the position of the can opener during its cutting, a small lug 46 is integrally formed with the portion 12 and extends generally parallel to the axis of the spindle 16. Its end bears on the top of the lid 27 and keeps the can opener 20 relatively level.

                  The can opener 10 is simple to make and operate and can also be kept clean and hygenic.

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CLAIMS

1. A can opener intended to provide a circular cut around the cylindrical wall of the can below the lid and rim which are severed by the cut from the rest of the can,  
5 the can opener comprising a pair of body members pivotally joined to one another and capable of pivoting within limits, a spindle to which is attached a driving wheel to be brought into contact with the lip of the lid of a can, the spindle being rotatable to cause the driving wheel to  
10 orbit the can opener relatively around the top of the can, the axis of the spindle coinciding with the axis of pivoting of the pair of body members, a cutting wheel which, in an operating cutting position, forms a nip with the driving wheel so that the cutting edge of the cutting  
15 wheel is forced to penetrate through the cylindrical wall of the can and provide a circular cut around the can as the opener orbits relatively around the can, a rectangular mounting plate slidably mounted in one of the body members and on which the cutting wheel is rotatably mounted, the  
20 sliding plate being restrained to move along an axis relative the said one body member in which it is supported between a position where the cutter wheel is in the operating cutting position where the cutting edge of the cutter wheel penetrates the can wall and an inoperative  
25 position where the cutting wheel is moved away from the driving wheel, and cam means for moving the plate and the supported cutting wheel to the cutting position as the body members are pivoted towards one limit of pivoting and

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moving it away to its inoperative position when the body members are pivoted away from that said limit of pivoting.

2. A can opener as claimed in Claim 1 in which each body member has an integrally formed handle portion  
5 extending generally away from the point of pivoting, the pivoting of the body portions moving the cutting wheel to the cutting position.

3. A can opener as claimed in any preceding claim in which the driving wheel and the spindle to which it is  
10 connected are manually driven.

4. A can opener as claimed in Claim 1 or Claim 2 in which the spindle is motor driven and one of the body members constitutes a housing for the motor.

5. A can opener substantially as herein described  
15 with reference to the accompanying drawings.

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