

Description

This invention relates to can openers.

Although many different designs of can openers 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.

Our European Patent No. 137 592 describes a hand-held can opener intended to provide a cut around the 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, each body member having an integrally-formed handle extending generally away from the point of pivoting and movable between a more open position and a more closed position, the handles being intended to be grasped by one hand of the user in the more closed position, 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 manually rotatable to cause the driving wheel to orbit the can opener relatively around the top of the can, a cutting wheel which, in an 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 wall of the can and provide a cut around the can as the opener orbits relatively around the can, a mounting plate slidably supported by one of the body members and on which the cutting wheel is rotatably mounted, the sliding plate being movable between the operating cutting position where the driving wheel forces the cutting edge to penetrate the can wall and an inoperative position where the cutting wheel is moved, e.g. substantially radically relative the axis of rotation of the cutting wheel, away from the cutting wheel, and cam means for moving the plate and the supported cutting wheel to the cutting position as the handles are pivoted towards the more closed position and moving it away to its inoperative position when the handles are pivoted away from that said limit of pivoting towards the more open position.

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. Further the can opener will work both on conventional cylindrical shaped tins and on tins of other shapes, e.g. oval or square.

We have however encountered a problem with such a can opener in that when opening cans which are particularly tough the two handles may twist relative one another and cause the body members to open up sufficiently for the cam means and the sliding plate to become disengaged. It is therefore an object of the present invention to eliminate this possibility.

According to the present invention United

Kingdom Patent Specification No. 1 430 996 shows a can opener intended to provide a cut around the 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, each body member having an integrally formed handle extending generally away from the point of pivoting and moveable between a more open position and a more closed position, the handles being intended to be grasped by one hand of the user in the more closed position, a driving wheel capable of rotation to engage the rim of the can and to orbit the can opener relatively around the top of the can, a cutting wheel which, in a cutting position, forms a nip with the driving wheel so that the cutting edge of the cutting wheel is forced to penetrate through the wall of the can and provide a cut around the can, and means for advancing and retracting the cutting wheel and driving wheel relative one another to provide the said nip in the advanced position as the body members pivot relative one another whereby the wheels advance relatively as the handles move towards the more closed position and retract relatively as the handles move towards the more open position, the body members having body portions which lay pivotably alongside one another and house the means for advancing and retracting the cutting wheel and driving wheel relative one another, such a can opener is characterised in that the edge of each handle where it abuts the body portion of the other body member has a flange extending into engagement with a corresponding recess in the other body member the engagement of the flanges in the recesses reinforcing the can opener and substantially preventing twisting of the body portions and the integral handles relative one another when under a can opening load.

An advantage of the use of the cooperating flanges and recesses seems to be that, because any twisting of the handles and operating parts is prevented, the desired tolerances between the cutting wheel and driving wheel are maintained even under high loads.

The edge of each handle where it abuts the other body member is provided with a recess into which a corresponding arc-shaped flange fits. In this way the recesses trap the flanges in the twisting sense and so strengthen and reinforce the overall can opener but at the same time do not in any way restrict the opening and closing of the handles.

Preferably the axis of the manually rotatable spindle on which the driving wheel is mounted coincides with the axis of pivoting of the two body members.

The cam means 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°. Thus the pivoting of the body members can be limited in extent. This has advantages over, for example, the can opener described in our United Kingdom Application No. 8 303 320, publication No. 2 118 134, 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.

The cam means can comprise a slot, e.g. 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 that slot, although the positioning of the slot and pin could be reversed. The slot is preferably angled at around 15° to the direction of the sliding of the plate in the more closed position of the handles but this angle could, for example, vary from 80 to 60°. In fact by forming the slot on the said other body member, the relative angle of the slot to the direction of sliding of the plate will vary as the handles move between their more closed position and their more open position. Thus the angle will become larger as the handles move from the more closed position to the more open position and the mechanical advantage will also vary. This has the advantage that as the handles are closed from their more open position, the plate will advance the cutter wheel relatively rapidly initially but as the cutter wheel approaches the can, it will advance more slowly and a relatively larger force exerted to penetrate the can wall.

Preferably an upstanding guard is integrally formed on the said other body member, the guard protecting the user from accidentally touching the cutting wheel.

Preferably there is an abutment upstanding from the said other body member which acts to eject or release a severed can lid from the nip between the cutting wheel and the driving wheel as the cutting wheel moves to its inoperative position. This could be an edge inclined to the direction of movement of the cutting wheel between its operative and inoperative positions, that edge being, for example, constituted by the ends of the upstanding guard. Alternatively the knife could retract into a pouch whose open edge constitutes that said edge.

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, the can opener could be a hand-held electric can opener and the spindle could be motor driven with one of the handles including additionally 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:

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

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;

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

Figure 7 is an enlarged sectional detail taken along the line 7-7 of Figure 1.

The can opener 10 shown in the drawings includes two body members 12 and 14. The two members comprise body portions 12a and 14a which lay alongside one another and are pivoted to one another about a circular upstanding hollow spigot 15 on the portion 12a which extends into a circular hole 15a on the portion 14a. Extending axially through the spigot 15 and hole 15a is a spindle 16 (Figure 4). The body members are therefore pivotable between a closed working position shown in Figure 1 and an open position shown in Figure 3.

The body members 12 and 14 each include an integral handle 12b and 14b, 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 members are moulded from synthetic plastics material, e.g. polypropylene.

Integrally formed at one end of the spindle is a two-armed crank 20 for use in manually 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 is dish-shaped and 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 12a is a rectangular metal plate 30 constrained 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 of synthetic plastics material. Rotatably connected to the sleeve and positioned outwardly of it is a metal cutting wheel 36 having a pointed circular cutting edge 37. The sleeve 34 is intended to bear against the lip of the can and be rotated as the can opener advances around the can, the cutting wheel 36 being rotated at the same time because of its rotatable connection with the sleeve. A washer 38a is positioned outside the cutting wheels, and the sleeve 34, wheel 36 and washer 38 are held in place by the riveting over of the end of the pin 32.

Integrally formed with the body portion 12a is an upstanding U-shaped guard 39. This shields the cutting wheel to prevent the user from accidentally cutting himself. The guard 39 has at its ends edges 39a which are inclined to the axis 30a. At the end of a can opening operation the severed lid is trapped and held between the cutting wheel 36 and driving wheel 24. Therefore, as the cutting wheel is withdrawn after a can has been opened, the lid of the can will abut these edges 39a and be forced from beneath the edge of the cutting wheel 36 and so automatically released for disposal.

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 14a. The slot is substantially straight and inclined at about 75° to the axis 30a in the closed position of the handles so that, as the handles 12b and 14b 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 37 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 37 slightly overlaps the driving wheel 26. If desired the edge 44a of the slot which drives the cam pin 40 can be locally reinforced by an embedded metal strip.

Because the slot 44 is formed on the body member 14, the relative angle of the slot to the direction of sliding of the plate 30 will vary as the handles move between their more closed position and their more open position. Thus the angle will become larger as the handles move from the more closed position to the more open position and the mechanical advantage will also vary. This has the advantage that as the handles are closed from their more open position, the plate will advance the cutter wheel relatively rapidly initially but as the cutter wheel approaches the can, it will advance more slowly and a relatively larger force exerted to penetrate the can wall.

At the inner end of each handle 12b or 14b is provided an arcuate recess 50. A corresponding arcuate shaped flange 52 is integrally formed on each body portion 14a or 12a respectively. The flanges 52 slidably engage in their respective recesses 50 and their arcuate shape allows the handles to open and close without hindrance. The engagement of the flanges 52 in their respective recesses 50 does however prevent twisting of the handles 12b and 14b when under excessive loads which might cause the body portions 12a and 14a to open sufficiently for the cam pin 40 to become disengaged from the slot 44. When the handles are in open position only a relatively short portion of each flange 52 is engaged in its respective recess 50 but at such times the twisting forces are unlikely to be large. However as the handles progressively close and once they are completely closed, the recesses engage a progressively longer length of the flange and so are capable of resisting the resulting larger forces which may be encountered during the opening of a can.

This cutting position is also shown in Figure 6 and the cutting edge 37 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 of the can in the case of a cylindrical 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 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 position shown in Figure 3 when the top is ejected by contact with the edges 39a.

A metal plate 45 is embedded in the face of the body portion 12a to provide protection for the plastic material of that body when it comes into contact with a rim of a can during opening. The surface of the metal plate 45 is slightly proud relative the body portion 12a.

To assist in maintaining the position of the can opener during its cutting, a small lug 46 is integrally formed with the portion 12a 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 relatively level.

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

Claims

1. A can opener intended to provide a cut around the wall of the can below the lid and rim which are severed by the cut from the rest of the can, the can opener (10) comprising a pair of body members (12, 14) pivotably joined to one another, each body member (12, 14) having an integrally formed handle (12b, 14b) extending generally away from the point of pivoting and moveable between a more open position and a more closed position, the handles (12b, 14b) being intended to be grasped by one hand of the user in the more closed position, a driving wheel (24) capable of rotation to engage the rim of the can (29) and to orbit the can opener (10) relatively around the top of the can, a cutting wheel (36) which, in a cutting position, forms a nip with the driving wheel (24) so that the cutting edge (37) of the cutting wheel (36) is forced to penetrate through the wall of the can and provide a cut around the can, and means (30, 40, 44) for advancing and retracting the cutting wheel (36) and driving wheel (24) relative one another to provide the said nip in the advanced position as the body members (12, 14) pivot relative one another whereby the wheels (24, 36) advance relatively as the handles (12b, 14b) move towards the more closed position and retract relatively as the handles (12b, 14b) move towards the more open position, the body members (12, 14) having body portions (12a, 14a) which lay pivotably alongside one another and house the means (30, 40, 44) for advancing and retracting the cutting wheel (36) and driving wheel (24) relative one another, characterised in that the edge of each handle (12b, 14b) where it abuts the body portion (12a, 14a) of the other body member (12, 14) has a flange (52) extending into engagement with a corresponding recess (50) in the other body member (12, 14), the engagement of the flanges (52) in the recesses (50) reinforcing the can opener and substantially preventing twisting of the body portions (12a, 14a) and the integral handles (12b, 14b) relative one another when under a can opening load.

2. A can opener as claimed in Claim 1 characterised in that the edge of each handle is pro-

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2. A can opener as claimed in Claim 1 characterised in that the edge of each handle is pro-



vided with a frusto-sector shaped recess (50) into which a corresponding frusto-sector shaped flange (52) projecting from the other body portion (12a, 14a) engages.

3. A can opener as claimed in any preceding claim characterised in that the axis of rotation of the driving wheel (24) coincides with the axis of pivoting of the two body portions (12a, 14a).

4. A can opener as claimed in any preceding claim characterised in that the means (30, 40, 44) for advancing and retracting the cutting wheel (36) and driving wheel (24) include a mounting plate (30) slidably supported by one body portion (12a) and on which the cutting wheel (36) is rotatably mounted, and cam means (40, 44) for advancing and retracting the plate (30) and supported cutting wheel (36) as the body members (12, 14) pivot.

5. A can opener as claimed in Claim 4, characterised in that the cam means (40, 44) include a slot (44) inclined at an angle to the axis of sliding of the mounting plate (30), and a pin (40) projecting into that slot (44), the pin (40) and slot (44) being positioned between the mounting plate (30) and the other body portion (14a), i.e. the one which does not slidably support the mounting plate (30).

6. A can opener as claimed in Claim 5, characterised in that the slot (44) is substantially straight and inclined at an angle of 80 to 60° to the direction of sliding of the plate (30) when the handles (12b, 14b) are in their more closed position.

7. A can opener as claimed in Claim 5, or Claim 6, characterised in that the slot (44) is formed in the said other body member and the pin (40) projects from the mounting plate (30) into the slot (44).

8. A can opener as claimed in any preceding claim characterised in that an upstanding guard (39) is integrally formed on a body portion (12a) to protect the user from accidentally touching the cutting wheel (36).

9. A can opener as claimed in Claim 8, characterised in that the end or ends of the guard include and edge (39a) inclined to the direction of retraction of the cutting wheel (36) relative the driving wheel (24), that inclined edge (39a) being positioned to eject a severed can lid from the nip between the cutting wheel (36) and the driving wheel (24) as the cutting wheel (36) retracts relative the driving wheel (24).

10. A can opener as claimed in any of claims 1 to 7, characterised in that an abutment (39) is upstanding from a body member (12a), the abutment (39) being positioned to eject a severed can lid from the nip between the cutting wheel (36) and the driving wheel (24) as the cutting wheel (36) is retracted relative the drive wheel (24).

Patentansprüche

1. Dosenöffner zum Anfertigen eines Schnitts um die Wand einer Dose unter dem Deckel und Rand, wodurch der Deckel vom Rest der Dose abgetrennt wird, bestehend aus zwei schwenkbar

mit einander verbundenen Körpergliedern (12, 14), von denen jedes einen in einem Stück geformten Griff (12b, 14b) besitzt, der sich allgemein vom Schwenkpunkt fort erstreckt und zwischen einer mehr geöffneten und einer mehr geschlossenen Stellung bewegbar ist, und diese Griffe (12b, 14b) von einer Hand des Benutzers in der mehr geschlossenen Stellung ergriffen werden sollen, einem antreibenden Rad (24), das drehbar ist, um mit dem Rand der Dose (29) in Eingriff zu kommen und den Dosenöffner (10) relativ um das Oberteil der Dose herumlaufen zu lassen, einem schneidenden Rad (36), das in der Schneidstellung mit dem antreibenden Rad (24) einen Klemmpunkt bildet, so dass die schneidende Kante (37) des schneidenden Rades (36) gezwungen wird, durch die Wand der Dose hindurchzudringen und einen Schnitt um die Dose herum anzufertigen, und aus einer Einrichtung (30, 40, 44) zum gegenseitigen Vorseiben und Rückführen des schneidenden und des antreibenden Rades (36 bzw. 24), um den Klemmpunkt in der vorgeschobenen Stellung zu ergeben, während die Körperglieder (12, 14) gegenseitig ausschwenken, wodurch die Räder (24, 36) sich relativ vorseiben, während die Griffe (12b, 14b) sich in die mehr geschlossene Stellung bewegen, und relativ zurückgeführt werden, während sich die Griffe (12b, 14b) zur mehr geöffneten Stellung bewegen, wobei die Körperglieder (12, 14) Körperabschnitte (12a, 14a) besitzen, die schwenkbar nebeneinander liegen und die Einrichtung (30, 40, 44) zum gegenseitigen Vorseiben und Rückführen des schneidenden und des antreibenden Rades (36, bzw. 24) aufnehmen, dadurch gekennzeichnet, dass die Kante jedes Griffes (12b, 14b) dort, wo er auf den Körperabschnitt (12a, 14a) der Körperglieder (12, 14) stößt, einen Flansch (52) aufweist, der sich im Eingriff mit der entsprechenden Ausnehmung (50) im anderen Körperglied (12, 14) erstreckt, wobei das Eingreifen der Flansche (52) in die Ausnehmungen (50) den Dosenöffner verstärkt und im wesentlichen ein gegenseitiges Verdrehen der Körperabschnitte (12a, 14a) verhindert, wenn diese unter einer während des Öffnens bestehenden Belastung stehen.

2. Dosenöffner nach Anspruch 1, dadurch gekennzeichnet, dass die Kante jedes Griffes mit einer als abgestumpfter Sektor ausgestalteten Ausnehmung (50) versehen ist, die von einem entsprechend als abgestumpfter Sektor ausgestalteten, vom anderen Körperabschnitt (12a, 14a) vorstehenden Flansch (52) in Eingriff genommen wird.

3. Dosenöffner nach einem der vorhergehenden Ansprüche 1 oder 2, dadurch gekennzeichnet, dass die Drehachse des antreibenden Rades (24) mit der Schwenkachse der beiden Körperabschnitte (12a, 14a) zusammenfällt.

4. Dosenöffner nach einem der vorhergehenden Ansprüche 1 bis 3, dadurch gekennzeichnet, dass die Einrichtung (30, 40, 44) zum Vorseiben und Rückführen des schneidenden und des antreibenden Rades (36 bzw. 24) eine Grundplatte (30), die gleitend von einem Körperab-



schnitt (12a) getragen wird und auf der das schneidende Rad (36) drehbar eingesetzt ist, und eine Nockeneinheit (40, 44) zum Vorschieben und Zurückführen der Grundplatte (30) und des getragenen Schneidrades (36) während der Schwenkbewegung der Körperglieder (12, 14) aufweist.

5. Dosenöffner nach Anspruch 4, dadurch gekennzeichnet, dass die Nockeneinheit (40, 44) einen in einem Winkel zur Gleitachse der Grundplatte (30) geneigten Schlitz (44) und einen in diesen Schlitz (44) hineinreichenden Stift (40) aufweist, wobei der Stift (40) und der Schlitz (44) zwischen der Grundplatte (30) und dem anderen, d.h. dem Körperabschnitt (14a) angeordnet ist, von dem die Grundplatte (30) nicht gleitend getragen wird.

6. Dosenöffner nach Anspruch 5, dadurch gekennzeichnet, dass der Schlitz (44) im allgemeinen geradlinig und in einem Neigungswinkel von 80 bis 60° zur Gleitrichtung der Grundplatte (30) verläuft, wenn sich die Griffe (12b, 14b) in ihrer mehr geschlossenen Stellung befinden.

7. Dosenöffner nach einem der vorhergehenden Ansprüche 5 oder 6, dadurch gekennzeichnet, dass der Schlitz (44) im anderen Körperglied ausgebildet ist und dass der Stift (40) von der Grundplatte (30) in den Schlitz (44) hineinragt.

8. Dosenöffner nach einem der vorhergehenden Ansprüche 1 bis 7, dadurch gekennzeichnet, dass auf einem Körperabschnitt (12a) in einem Stück eine aufrechte Schutzeinrichtung (39) ausgebildet ist, durch die der Benutzer vor einer unbeabsichtigten Berührung des schneidenden Rades (36) geschützt wird.

9. Dosenöffner nach Anspruch 8, dadurch gekennzeichnet, dass das Ende oder die Enden der Schutzeinrichtung eine Kante (39a) hat bzw. haben; die zur Rückführungsrichtung des schneidenden Rades (36) gegenüber dem antreibenden Rad (24) angeneigt und so angeordnet ist, dass von der Klemmstelle zwischen dem schneidenden Rad (36) und dem antreibenden Rad (24) beim Zurückführen des schneidenden Rades (36) gegenüber dem antreibenden Rad (24) der abgetrennte Dosendeckel ausgeworfen wird.

10. Dosenöffner nach einem der vorhergehenden Ansprüche 1 bis 7, dadurch gekennzeichnet, dass sich aufrecht von einem Körperteil (12a) eine Stossfläche (39) in einer Stellung angeordnet befindet, dass ein abgetrennter Dosendeckel bei der Zurückführung des schneidenden Rades (36) gegenüber dem antreibenden Rad (24) von der Klemmstelle zwischen dem schneidenden Rad (36) und dem antreibenden Rad (24) herausgeworfen wird.

Revendications

1. Ouvre-boîte destiné à produire une découpe sur la pourtour de la paroi de la boîte au-dessous du couvercle et du rebord qui sont séparés par la découpe du reste de la boîte, l'ouvre-boîte (10) comprenant deux éléments de corps (12, 14) réunis entre eux de façon à pouvoir pivoter, chaque élément de corps (12, 14) comportant

une poignée (12b, 14b) formée d'un seul tenant s'étendant dans une direction générale d'éloignement du centre de pivotement et pouvant se déplacer entre une position plus ouverte et une position plus fermée, les poignées (12b, 14b) devant être saisies par une main de l'utilisateur dans la position la plus fermée, une roue d'entraînement (24) susceptible de tourner devant contacter le rebord de la boîte (29) et faire effectuer à l'ouvre-boîte (10) un mouvement orbital relatif autour du haut de la boîte, une roue de découpage (36) qui, dans une position de coupe, forme une pince avec la roue d'entraînement (24), de sorte que le bord tranchant (37) de la roue de découpage (36) est obligé de pénétrer à travers la paroi de la boîte et de former une découpe sur le pourtour de la boîte, et des moyens (30, 40, 44) pour avancer et rétracter la roue de découpage (36) et la roue d'entraînement (24) l'une par rapport à l'autre et former ladite pince dans la position avancée alors que les éléments de corps (12, 14) pivotent mutuellement, de sorte que les roues (24, 36) effectuent un avancement relatif lorsque les poignées (12b, 14b) se dirigent vers la position fermée et une rétraction relative lorsque les poignées (12b, 14b) se dirigent vers la position la plus ouverte, les éléments de corps (12, 14) comportant des portions de corps (12a, 14a) qui se placent de façon à pouvoir pivoter l'une le long de l'autre et logent les moyens (30, 40, 44) pour avancer et rétracter la roue de découpage (36) et la roue d'entraînement (24) l'une par rapport à l'autre, caractérisé en ce que le bord de chaque poignée (12b, 14b) à son point de contact avec la portion de corps (12a, 14a) de l'autre élément de corps (12, 14) comporte un rebord (52) venant s'engager dans un creux (50) correspondant de l'autre élément de corps (12, 14) l'engagement des rebords (52) dans les creux (50) renforçant l'ouvre-boîte et empêchant dans une large mesure la torsion mutuelle des portions de corps (12a, 14a) et des poignées d'un seul tenant (12b, 14b) lorsqu'elles sont soumises à un effort d'ouverture de boîte.

2. Ouvre-boîte selon la revendication 1, caractérisé en ce que le bord de chaque poignée comporte un évidement (50) en forme de secteur tronqué dans lequel s'engage un rebord (52) en forme de secteur tronqué correspondant faisant saillie de l'autre portion de corps (12a, 14a).

3. Ouvre-boîte selon l'une quelconque des revendications précédentes, caractérisé en ce que l'axe de rotation de la roue d'entraînement (24) coïncide avec l'axe de pivotement des deux portions de corps (12a, 14a).

4. Ouvre-boîte selon l'une quelconque des revendications précédentes, caractérisé en ce que les moyens (30, 40, 44) pour avancer et rétracter la roue de découpage (36) et la roue d'entraînement (24) comprennent une plaque de montage (30) supportée de façon à pouvoir coulisser par une portion de corps (12a) et sur laquelle la roue de découpage (36) est montée de façon à pouvoir tourner, et un mécanisme de came (40, 44) pour avancer et rétracter la plaque (30) et la roue de



découpage supportée (36), lorsque les éléments de corps (12, 14) pivotent.

5. Ouvre-boîte selon la revendication 4, caractérisé en ce que le mécanisme de came (40, 44) comprend une rainure (44) inclinée d'un certain angle par rapport à l'axe de glissement de la plaque de montage (30), et une clavette (40) s'engageant dans la rainure (44), la clavette (40) et la rainure (44) étant positionnées entre la plaque de montage (30) et l'autre portion de corps (14a), c'est-à-dire celle qui ne supporte pas de façon qu'elle puisse coulisser la plaque de montage (30).

6. Ouvre-boîte selon la revendication 5, caractérisé en ce que la rainure (44) est sensiblement rectiligne et inclinée d'un angle de 80 à 60° par rapport à la direction de coulissement de la plaque (30) lorsque les poignées (12b, 14b) sont dans leur position la plus fermée.

7. Ouvre-boîte selon la revendication 5 ou 6, caractérisé en ce que la rainure (44) est formée dans ledit autre élément de corps, tandis que la clavette (40) s'engage dans la rainure (44) en faisant saillie à partir de la plaque de montage (30).

8. Ouvre-boîte selon l'une quelconque des re-

vendications précédentes, caractérisé en ce qu'une garde en saillie (39) est formée d'un seul tenant sur une portion de corps (12a) pour protéger l'utilisateur contre un contact accidentel avec la roue de découpage (36).

9. Ouvre-boîte selon la revendication 8, caractérisé en ce que l'extrémité ou les extrémités de la garde comprennent un bord (39a) incliné par rapport à la direction de rétraction de la roue de découpage (36) par rapport à la roue d'entraînement (24), ce bord incliné (39a) étant positionné pour éjecter un couvercle de boîte sectionné de l'intervalle de pincement compris entre la roue de découpage (36) et la roue d'entraînement (24), lorsque la roue de découpage (36) se rétracte par rapport à la roue d'entraînement (24).

10. Ouvre-boîte selon l'une quelconque des revendications 1 à 7, caractérisé en ce qu'une butée (39) fait saillie à partir d'un élément de corps (12a), la butée (39) étant positionnée pour éjecter un couvercle de boîte sectionné de l'intervalle de pincement compris entre la roue de découpage (36) et la roue d'entraînement (24) lorsque la roue de découpage (36) est rétractée par rapport à la roue d'entraînement (24).

