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(54) **SLICER**

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(56) References cited:
US-A- 2 008 822 US-A1- 2007 137 447

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Description

Technical field

[0001] The object of the present invention is a slicer, particularly for cutting food products such as meats, sausages and the like.

[0002] As is known, slicers are made up of a circular blade that can be rotated manually or by means of a suitable motor and that is supported by a respective supporting frame. The frame further supports a carriage for housing the product to be sliced, alongside the blade and that is manually movable in back-and-forth motion. In this manner, with each passage of the carriage towards the blade, the food product is pressed against the cutting edge of the blade, causing progressive cutting in slices.

[0003] Moreover, the blade is housed inside a C-shaped protective element suitably spaced from the edge of the blade and developing around an arcuate zone of the cutting edge that is not used for cutting the product. The protective element thus defines a safety panel for preventing possible contact of the user with a portion of the blade opposite the portion that cuts the product. Document US2007/137447 shows an example of a slicer with removable guard cover. Furthermore, a slicer is generally provided with an adjustment system, suitable for adjusting the relative position of the blade along the respective axis of rotation. This system regulates the distance between the cutting edge of the blade and the surface of the product facing the same blade, thereby defining the thickness of each individual slice. The slicers defined above are frequently cleaned so as to maintain all parts in contact with foodstuffs under optimal hygienic conditions. It should also be considered that with each cut, waste material is formed and that by effect of the rotation speed of the blade, it tends to accumulate in the gap defined between the cutting edge of the blade and the safety panel.

[0004] As a result, especially with food products that are less dense and thus capable of being broken up more easily, an amount of waste material builds up that must necessarily be removed by hand, by cleaning the entire arcuate surface of the panel facing the edge of the blade.

[0005] This procedure proves to be particularly complicated. In fact, in order to avoid contact with the cutting edge of the blade, the user must intervene only on the outermost zones of the arcuate surface of the panel, which are generally easier and safer to reach.

[0006] As a result, long and laborious cleaning procedures are needed to clean the zone of the panel arranged exactly opposite the cutting edge of the blade. Moreover, it should be considered that any removal of the blade or the panel markedly increases the risk of injury of the user, who could accidentally come into contact with the cutting areas of the blade. Therefore, the aim of the present invention is to realize a slicer that overcomes the drawback found in the prior art.

[0007] More specifically, the aim of the present inven-

tion is to propose a slicer that can be cleaned in all of its parts, without necessarily resorting to disassembly of the blade or of the respective members for protection from the cutting edge.

[0008] The defined technical task and the specified aims are substantially achieved by a slicer comprising the technical characteristics stated in one or more of the claims herein below.

[0009] Further characteristics and advantages of the present invention will become more apparent from the illustrative, and thus non-limiting, description of preferred, but not exclusive, embodiments of a slicer, as illustrated in the accompanying drawings, in which:

- Figure 1 is a frontal perspective view of a slicer according to the present invention, in a respective state for operation, with some parts being omitted to illustrate others more clearly;
- Figure 2 shows the slicer appearing in Figure 1 in a respective state for cleaning;
- Figure 3 is side view of the slicer in the state for operation shown in Figure 1;
- Figure 4 is a side view of the slicer in the state for cleaning shown in Figure 2;
- Figure 5 is a rear perspective view of the slicer in the state for operation shown in Figure 1; and
- Figure 6 is a rear perspective view of the slicer in the state for cleaning shown in Figure 2.

[0010] A slicer, illustrated only in the parts thereof that are essential for the purposes of the present invention, is generally indicated by the reference numeral 1. In fact, in the attached drawings, some mechanical parts, which are known and not part of the present invention, are omitted, so as to illustrate others more clearly.

[0011] The slicer 1 comprises a circular blade 2, which is rotatable about a respective axis of rotation "X". Specifically, the blade 2 is supported in a rotatable manner, preferably in a vertical or inclined position, by a supporting frame (unillustrated). The blade 2 is suitably connected to rotation members that can be manual or motorized, and are not illustrated either, as they are of a known type.

[0012] The blade 2 is defined by a circular cutting edge 3, suitable for slicing a food product during rotation of the same blade 2 about the axis "X".

[0013] The blade 2 further exhibits two opposite, lateral surfaces 4, 5, each of which lying in a respective plane of extension of the blade 2.

[0014] The slicer 1 further comprises a protective body 6 for protection of the blade 2 and that surrounds at least one zone "A" of the cutting edge 3 of the blade 2 and is substantially arcuate in shape.

[0015] In particular, note that the cutting edge 3 extends along the cited safety zone "A", in which the body 6 prevents possible contact with the blade 2, and along a free zone "B", in which the food product is pressed against the blade 2 so as to be sliced.

[0016] As specified above, the protective body 6 is

bow-shaped and defines an internal surface 7 that is concave, "C"-shaped, and faces the cutting edge 3 of the blade 2.

[0017] As illustrated more clearly in Figures 1 and 5, in which the slicer 1 is in a respective state for operation, the cutting edge 3 of the blade 2 is positioned opposite a substantially central zone of the internal surface 7.

[0018] In other words, in this situation, with respect to the protective body 6, the blade 2 is arranged in a substantially middle position equidistant from respective peripheral edges 8 of the portion 6 and that define the above-mentioned internal surface 7.

[0019] The slicer 1 further comprises a movement member 9 for moving the protective body 6, so as to shift the same protective body 6 between a first position (figures 1, 3 and 5), in which the cutting edge 3 is located opposite the substantially central zone of the internal surface 7, and a second position (figures 2, 4 and 6), in which the cutting edge 3 is located opposite a substantially peripheral zone of the internal surface 7.

[0020] In other words, in the second position illustrated in Figures 2, 4 and 6, the protective body 6 translates in a direction parallel to the axis of rotation "X" so as to bring an edge 8 close to the cutting edge 3 of the blade 2. Note that, with reference to Figure 6, in this situation, the entire internal surface 7 can be easily reached and cleaned, working from the side of the lateral surface 5 of the blade 2.

[0021] In further detail, the movement member 9 comprises a plate 10, extending along a plane of arrangement parallel to the plane of arrangement of the blade 2, and alongside the protective body 6 and the lateral surface 4 of the blade 2.

[0022] The plate 9 is preferably rotatable about a respective axis of rotation "Y" that is parallel to the axis of rotation "X" of the blade 2. Advantageously, the plate 10 is rotated manually using two knobs 11 projecting from the plate 10.

[0023] The plate 9 is also engaged on the protective body 6 so as to convert its own rotation into translatory movement of the body 6 from the first to the second position.

[0024] In further detail, the plate 10 comprises an active surface 12 facing the blade 2 and the protective body 6. This active surface 12 defines an inclined plane surface 13 that slides on the protective body 6 during rotation of the plate 10, so as to move the body 6 along the axis "X".

[0025] More specifically, the inclined plane surface 13 lies in a plane transverse to the arrangement plane of the plate 10 (Figures 3 and 4) and it has a first end 13b proximal to the protective body 6 and a second end 13a distal to said protective body 6.

[0026] The inclined plane surface 13 is advantageously abutted to a sliding element 14 projecting from the protective body 6 and interposed between the body 6 and the active surface 12 of the plate 10 (Figures 3 and 4).

[0027] As a result, the inclined plane surface 13 slides on the element 14 during rotation of the plate 10.

[0028] Preferably, the sliding element 14 is constituted by a roller 15 that is rotatable about an axis perpendicular to the axis of rotation "X" of the blade 2 so as to roll over the inclined plane surface 13 during rotation of the plate 10.

[0029] In this manner, starting from the position for normal use of the slicer 1 (Figures 1, 3 and 5), the plate 10 is rotated about the "Y" axis so as to slide the inclined plane surface 13 over the roller 15. More specifically, in this movement, the roller 15 rolls from the second to the first end 13a, 13b of the inclined plane surface 13 so as to push the protective body 6 away from the plate 10. The state for cleaning is thus defined, in which the blade 6 is arranged at a peripheral zone of the internal surface 7. Advantageously, the user can work on the entire internal surface 7, carrying out cleaning procedures even in the central zone of the same surface 7 normally located opposite the blade 2.

[0030] Once again, it should be noted that cleaning procedures are carried out by working from the side of the surface 5 of the blade 2, keeping the blade 2 in the safety state at all times. In fact, in this position (Figures 2, 4 and 6), the cutting edge 3 of the blade 2 remains in any case within the volume defined by the protective body 6, given that it faces a peripheral zone of the surface 7 adjacent to one edge 8 thereof.

[0031] To bring the body 6 back to the initial state for operation, the plate 10 is rotated again so as to roll the roller 5 from the first to the second end 13b, 13a of the inclined surface 13. In this manner, through the possible action of a further pushing member (unillustrated), the body 6 is brought closer to the plate 10 and returned to the starting position.

[0032] Advantageously, cleaning procedures prove to be simple, quick and easily carried out merely by manual intervention on the plate 10.

[0033] Moreover, movement of the body 6 makes it possible to work on the entire surface 7 in the most desirable manner, eliminating the presence of waste material even in zones that are difficult to reach as they are between the blade 2 and the body 6.

[0034] Furthermore, as specified hereinabove, the cleaning procedures are always carried out with the cutting edge 3 of the blade 2 in the safety state at all times, that is to say, always shielded by the surface 7.

Claims

1. A slicer comprising:

- a circular blade (2), which is rotatable about a respective axis of rotation (X);
- a protective body (6) for protection of the blade (2) and that encircles at least one zone (A) of the cutting edge (3) of the blade (2) and is substantially arcuate in shape;
- said protective body (6) having an internal sur-

face (7) facing the cutting edge (3) of the blade (2);

characterized in that it further comprises a movement member (9) for moving the protective body (6), so as to shift the same protective body (6) between a first position, wherein the cutting edge (3) is located opposite a substantially central zone of the internal surface (7), and a second position, wherein the cutting edge (3) is located opposite a substantially peripheral zone of the internal surface (7).

2. The slicer according to the preceding claim, **characterized in that** said movement member comprises a plate (10), which is rotatable about a respective axis of rotation (Y) that is parallel to the axis of rotation (X) of the blade (2), said plate (10) being engaged on said protective body (6) so as to move the body (6) in translatable movement and along a direction parallel to said axes of rotation (X, Y).
3. The slicer according to the preceding claim, **characterized in that** said plate (10) comprises an active surface (12) facing said blade (2) and said protective body (6); said active surface (12) having an inclined plane surface (13) that slides on said protective body (6).
4. The slicer according to the preceding claim, **characterized in that** it further comprises a sliding element (14) projecting from the protective body (6) and interposed between the body (6) and the active surface (12) of the plate (10); said inclined plane surface (13) sliding on said element (14) during rotation of the plate (10).
5. The slicer according to the preceding claim, **characterized in that** said sliding element (14) comprises at least one roller (15) that is rotatable about an axis perpendicular to the axis of rotation (X) of the blade (2) so as to roll over the inclined plane surface (13) during rotation of the plate (10).
6. The slicer according to claim 4 or 5, **characterized in that** said inclined plane surface (13) has a first end (13b) proximal to said protective body (6) and a second end (13a) distal to said protective body (6); said sliding element (14) being movable from the second (13a) to the first end (13b), so as to define said second position of the protective body (6), and being movable from the first (13b) to the second end (13a) so as to define said first position of the protective body (6).

Patentansprüche

1. Aufschnittmaschine, umfassend:

ein Rundmesser (2), das um eine jeweilige Drehachse (X) drehbar ist;

einen Schutzkörper (6) für den Schutz des Messers (2) und der mindestens eine Zone (A) der Schneidkante (3) des Messers (2) umschließt und eine im Wesentlichen bogenförmige Form aufweist;

wobei der Schutzkörper (6) eine innere Oberfläche (7) aufweist, die der Schneidkante (3) des Messers (2) gegenüberliegt;

dadurch gekennzeichnet, dass sie ferner ein Bewegungsmittel (9) für die Bewegung des Schutzkörpers (6) umfasst, um denselben Schutzkörper (6) zwischen einer ersten Position, in der die Schneidkante (3) einer im Wesentlichen mittleren Zone der inneren Oberfläche (7) gegenüberliegend angeordnet ist, und einer zweiten Position, in der die Schneidkante (3) einer im Wesentlichen umlaufenden Zone der inneren Oberfläche (7) gegenüberliegend angeordnet ist, zu verschieben.

2. Aufschnittmaschine nach dem vorhergehenden Anspruch, **dadurch gekennzeichnet, dass** das Bewegungsmittel eine Platte (10) umfasst, die um eine jeweilige Drehachse (Y) drehbar ist, die parallel zur Drehachse (X) des Messers (2) ist, wobei die Platte (10) auf dem Schutzkörper (6) im Eingriff ist, um den Körper (6) in eine translatorische Bewegung und entlang einer Richtung parallel zu den Drehachsen (X, Y) zu bewegen.
3. Aufschnittmaschine nach dem vorhergehenden Anspruch, **dadurch gekennzeichnet, dass** die Platte (10) eine aktive Oberfläche (12) umfasst, die dem Messer (2) und dem Schutzkörper (6) gegenüberliegt, wobei die aktive Oberfläche (12) eine geneigte ebene Oberfläche (13) aufweist, die auf den Schutzkörper (6) gleitet.
4. Aufschnittmaschine nach dem vorhergehenden Anspruch, **dadurch gekennzeichnet, dass** sie ferner ein Gleitelement (14) umfasst, das den Schutzkörper (6) überragt und zwischen dem Körper (6) und der aktiven Oberfläche (12) der Platte (10) liegt, wobei die geneigte ebene Oberfläche (13) auf das Element (14) während der Drehung der Platte (10) gleitet.
5. Aufschnittmaschine nach dem vorhergehenden Anspruch, **dadurch gekennzeichnet, dass** das Gleitelement (14) mindestens eine Rolle (15) umfasst, die um eine Achse senkrecht zur Drehachse (X) des Messers (2) drehbar ist, um auf die geneigte ebene Oberfläche (13) während der Drehung der Platte (10) zu rollen.
6. Aufschnittmaschine nach Anspruch 4 oder 5, **dadurch gekennzeichnet, dass** die geneigte ebene

Oberfläche (13) ein erstes Ende (13b) proximal zum Schutzkörper (6) und ein zweites Ende (13a) distal zum Schutzkörper (6) aufweist, wobei das Gleitelement (14) vom zweiten (13a) zum ersten Ende (13b) beweglich ist, um die zweite Position des Schutzkörpers (6) zu bestimmen, und wobei es vom ersten (13b) zum zweiten Ende (13a) beweglich ist, um die erste Position des Schutzkörpers (6) zu bestimmen.

Revendications

1. Trancheuse, comprenant :

une lame circulaire (2), pouvant tourner autour d'un axe de rotation (X) respectif ;
 un corps de protection (6) servant à la protection de la lame (2) et qui encercle au moins une zone (A) du bord de coupe (3) de la lame (2) et ayant substantiellement une forme arquée ;
 ledit corps de protection (6) comportant une surface interne (7) faisant face au bord de coupe (3) de la lame (2) ;
caractérisée en ce qu'elle comprend de plus un organe de déplacement (9) servant à déplacer le corps de protection (6) de sorte à décaler le même corps de protection (6) entre une première position, dans laquelle le bord de coupe (3) est situé à l'opposé d'une zone substantiellement centrale de la surface interne (7), et une seconde position, dans laquelle le bord de coupe (3) est situé à l'opposé d'une zone substantiellement périphérique de la surface interne (7).

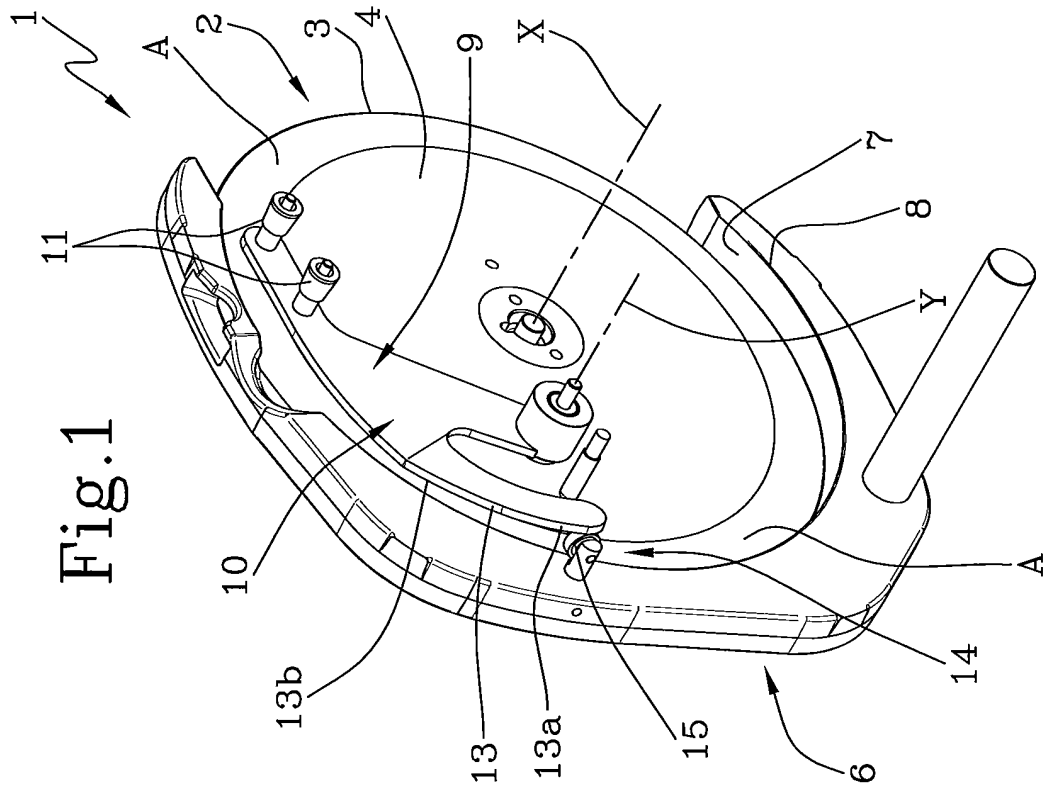
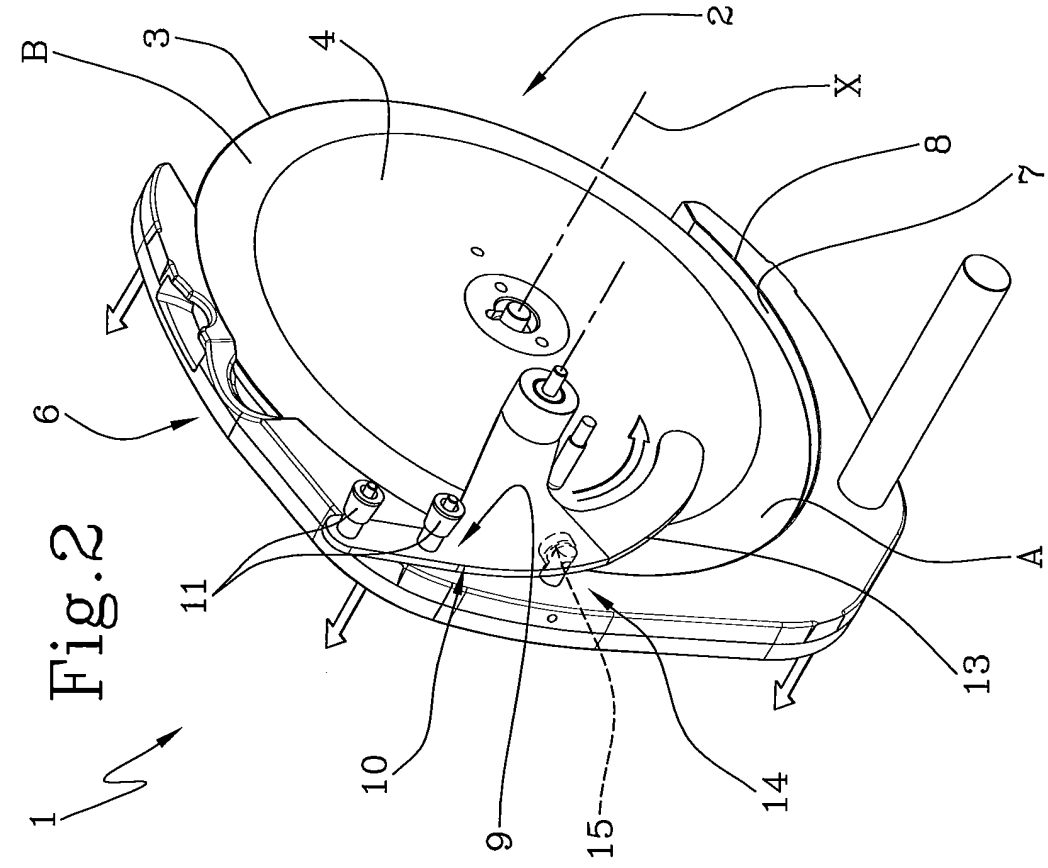
2. Trancheuse selon la revendication précédente, **caractérisée en ce que** ledit organe de déplacement comprend une plaque (10), pouvant tourner autour d'un axe de rotation (Y) respectif étant parallèle à l'axe de rotation (X) de la lame (2), ladite plaque (10) se mettant en prise avec ledit corps de protection (6) de sorte à déplacer le corps (6) dans un mouvement de translation et le long d'une direction parallèle auxdits axes de rotation (X, Y).

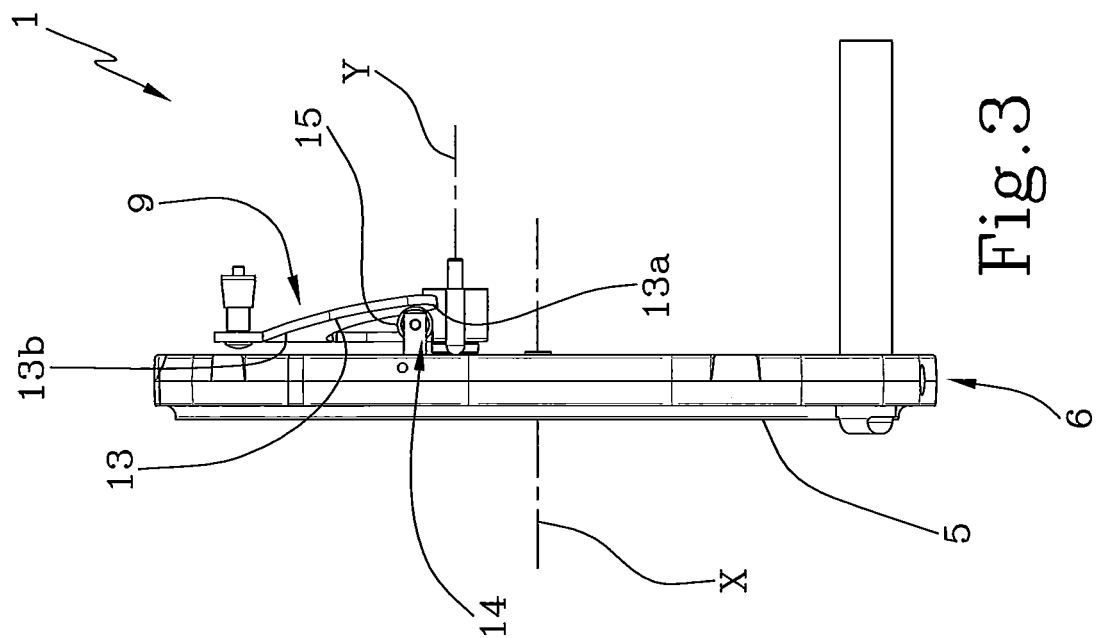
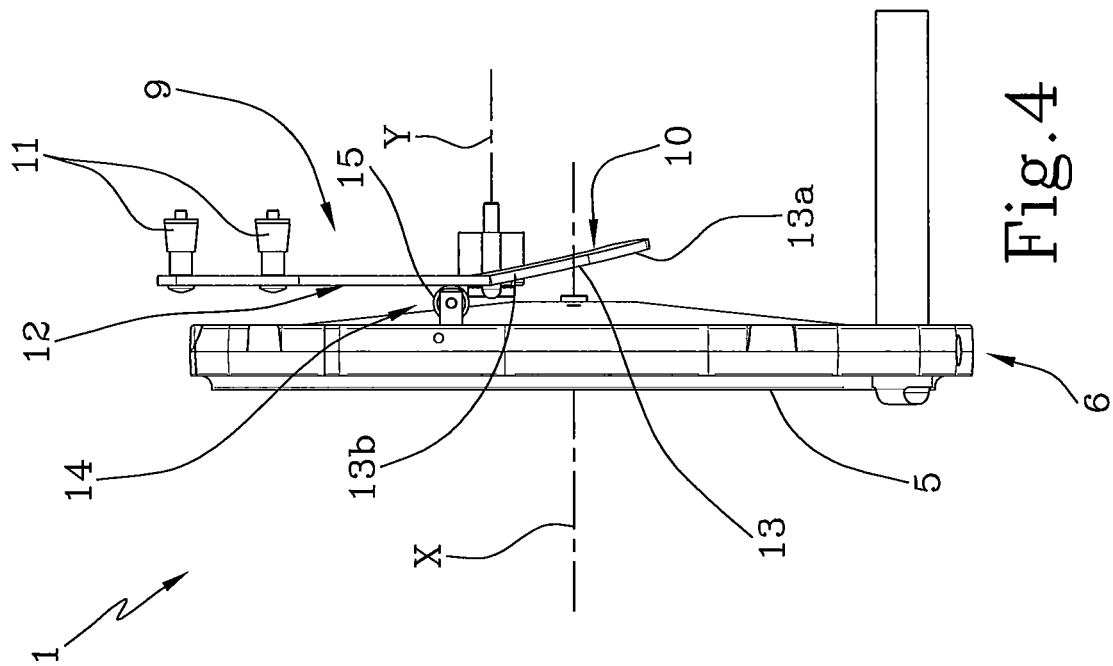
3. Trancheuse selon la revendication précédente, **caractérisée en ce que** ladite plaque (10) comprend une surface active (12) faisant face à ladite lame (2) et au dit corps de protection (6) ; ladite surface active (12) comportant une surface plane inclinée (13) qui coulisse sur ledit corps de protection (6).

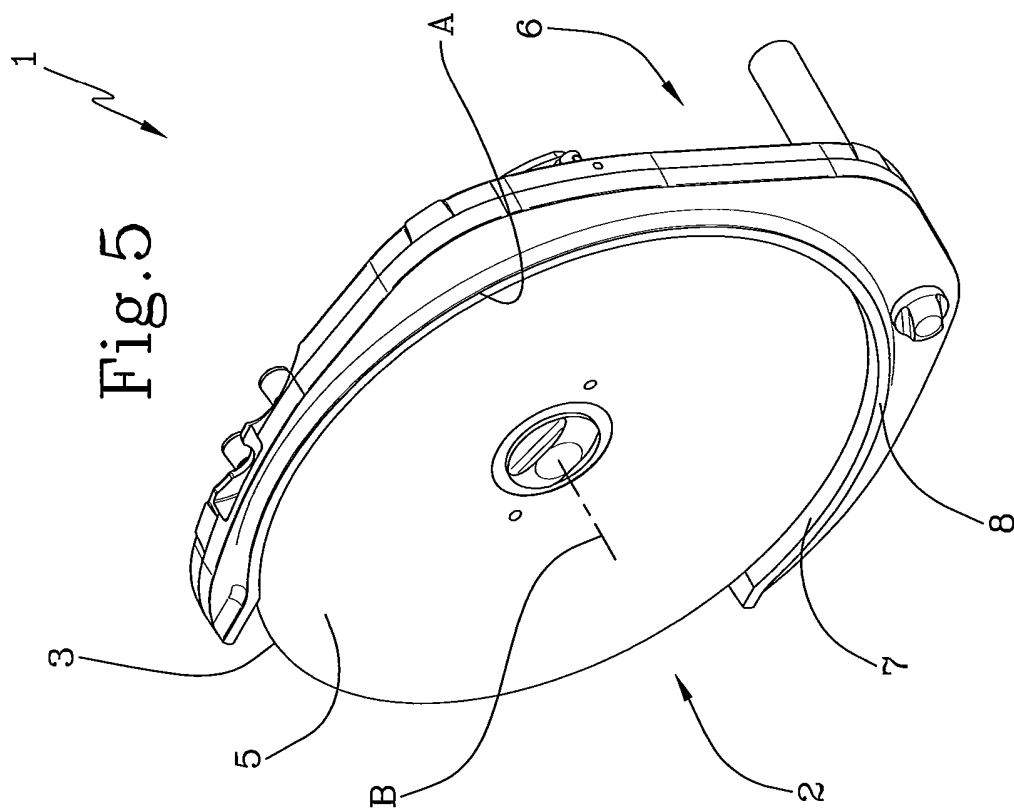
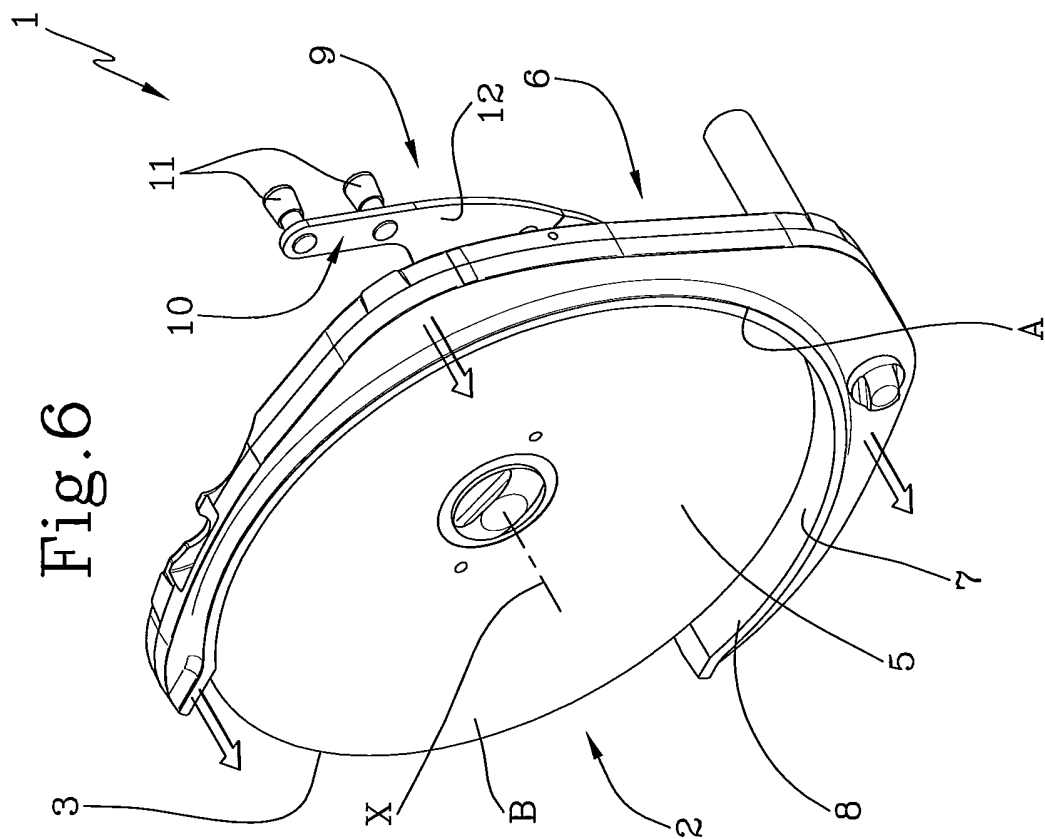
4. Trancheuse selon la revendication précédente, **caractérisée en ce qu'elle** comprend de plus un élément coulissant (14) dépassant du corps de protection (6) et interposé entre le corps (6) et la surface active (12) de la plaque (10) ; ladite surface plane inclinée (13) coulissant sur ledit élément (14) lors de la rotation de la plaque (10).

5. Trancheuse selon la revendication précédente, **caractérisée en ce que** ledit élément coulissant (14) comprend au moins un rouleau (15) pouvant tourner autour d'un axe perpendiculaire à l'axe de rotation (X) de la lame (2) de sorte à rouler sur la surface plane inclinée (13) lors de la rotation de la plaque (10).

6. Trancheuse selon la revendication 4 ou 5, **caractérisée en ce que** ladite surface plane inclinée (13) comporte une première extrémité (13b) proximale dudit corps de protection (6) et une seconde extrémité (13a) distale dudit corps de protection (6) ; ledit élément coulissant (14) étant mobile de la seconde (13a) à la première extrémité (13b), de sorte à définir ladite seconde position du corps de protection (6), et étant mobile de la première (13b) à la seconde extrémité (13a) de sorte à définir ladite première position du corps de protection (6).







REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 2007137447 A [0003]