



(11)

EP 3 113 898 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
21.10.2020 Bulletin 2020/43

(21) Application number: **14885027.4**

(22) Date of filing: **04.03.2014**

(51) Int Cl.:
B23D 59/00 (2006.01) B27G 19/00 (2006.01)

(86) International application number:
PCT/CN2014/072870

(87) International publication number:
WO 2015/131337 (11.09.2015 Gazette 2015/36)

(54) **A CHAINSAW WITH DUST DEFLECTOR**

KETTENSÄGE MIT STAUBABSCHEIDER

SCIE À CHAÎNE COMPRENANT UN DÉFLECTEUR DE POUSSIÈRE

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

(43) Date of publication of application:
11.01.2017 Bulletin 2017/02

(73) Proprietor: **Techtronic Outdoor Products
Technology Limited
Hamilton HM12 (BM)**

(72) Inventors:
• **TIAN, Zu Kun
Dongguan
Guangdong 523962 (CN)**
• **NESOM, Jeff
Dongguan
Guangdong 523129 (CN)**

• **LAM, Chin Hung
Shatin
Hong Kong (CN)**

(74) Representative: **Grünecker Patent- und
Rechtsanwälte
PartG mbB
Leopoldstraße 4
80802 München (DE)**

(56) References cited:
**CN-U- 202 070 822 CN-U- 202 377 613
CN-U- 203 254 229 CN-Y- 2 608 245
DE-C1- 3 841 300 TW-A- 200 706 324
TW-B- 554 813 US-A- 3 380 493
US-A- 4 875 398 US-A1- 2003 233 924
US-A1- 2009 249 929**

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 3 113 898 B1

Description

Field of Invention

[0001] The present invention relates to a chainsaw as per the preamble of claim 1.

Background of the Invention

[0002] Conventional chainsaws have been commonly used for cutting a work piece or trees. When the blade engages the subject to be cut during the cutting action, debris such as saw dusts or wood chips will propel upwardly and outwardly from the cutting site. This is particularly undesirable for chainsaws of which the operator would be handling the tool at a closer distance from the cutting site during the operation, and therefore a significant amount of the propelling saw dusts or chips is likely to reach the operator. US3380493 discloses a chainsaw as per the preamble of claim 1.

Summary of the Invention

[0003] In accordance with the present invention there is provided a chainsaw comprising the combination of features of claim 1.

[0004] Preferred embodiments of the invention are defined by the dependent claims.

[0005] In one preferred embodiment, the body comprises an actuating means operable to move the debris deflector between the deflecting position and the non-deflecting position.

[0006] In one preferred embodiment, the body comprises a first locking means adapted to lock the debris deflector at the deflecting position and the non-deflecting position.

[0007] In one preferred embodiment, the actuating means comprises a rotatable knob operable for extending and retracting the debris deflector.

[0008] In one preferred embodiment, the rotatable knob connects with a gear member adapted to engage a plurality of notches at the debris deflector.

[0009] In one preferred embodiment, the actuating means comprises a press button operable for extending the debris deflector.

[0010] In one preferred embodiment, the debris deflector is retractable manually by applying a pressure on the debris deflector towards the body.

[0011] In one preferred embodiment, the first locking means comprises a resilient member.

[0012] In one preferred embodiment, the debris deflector is elongated with a planar deflecting surface.

[0013] In one preferred embodiment, a further debris deflector is arranged to direct an air flow generated by the motor to deflect the debris.

[0014] In one preferred embodiment, the further debris deflector is pivotally connected with the body.

[0015] In one preferred embodiment, the further debris

deflector comprises a door movable between an air directing position in which the air flow is deflected, and an air non-directing position in which the air flow is not deflected.

[0016] In one preferred embodiment, the door is pivotally movable between the air directing position and the air non-directing position.

[0017] In one preferred embodiment, the door comprises a sliding plate slidably movable between the air directing position and the air non-directing position.

[0018] In one preferred embodiment, the further debris deflector comprises a second locking means adapted to lock the door at the air directing position and the air non-directing position.

[0019] In one preferred embodiment, the second locking means comprises a resilient member.

[0020] In one preferred embodiment, the second locking means comprises a latch mechanism.

[0021] In preferred embodiment, the door is movable from the air non-directing position to the air directing position by means of gravitation force.

[0022] In one preferred embodiment, the door is movable from the air non-directing position to the air directing position by the air flow generated by the motor.

[0023] In one preferred embodiment, the air flow is an exhaust gas discharged from the motor.

[0024] In one preferred embodiment, the debris deflector is adapted to deflect the air flow in a direction substantially away from an operator of the power tool.

[0025] In one preferred embodiment, the debris deflector is adapted to deflect the air flow in a direction substantially transverse to a direction of movement of the operation member.

[0026] In one preferred embodiment, the motor is powered by electricity or gasoline.

[0027] In one preferred embodiment, the motor is an AC motor or a DC motor.

Brief Description of the Drawings

[0028] Embodiments of the present invention will now be described, by way of example, with reference to the accompanying drawings in which:

Figure 1 is a photographic image showing the discharge of saw dust during the operation of a chainsaw in the prior art;

Figure 2A is a perspective view of a debris deflecting device for a chainsaw in accordance with a first embodiment of the present invention;

Figure 2B is another perspective view of the debris deflecting device of the first embodiment as shown in Figure 2A;

Figure 3A is a perspective view of a debris deflecting device for a power tool in accordance with a second embodiment of the present invention;

Figure 3B is another perspective view of the debris deflecting device of the second embodiment as

shown in Figure 3A;

Figure 4A is a perspective view of a further, additional debris deflecting device for a chainsaw in accordance with a third embodiment of the present invention;

Figure 4B is another perspective view of the debris deflecting device as shown in Figure 4A;

Figure 5A is a perspective view of a further, additional debris deflecting device for a chainsaw in accordance with a fourth embodiment of the present invention;

Figure 5B is another perspective view of the debris deflecting device as shown in Figure 5A;

Figure 6A is a perspective view of a further, additional debris deflecting device for a chainsaw in accordance with a fifth embodiment of the present invention; and

Figure 6B is another perspective view of the debris deflecting device as shown in Figure 6A.

Figure 7A is a photographic image showing the deflection path of debris during the operation of a chainsaw of the present invention when viewed from the front of the chainsaw

Figure 7B is a photographic image showing the deflection path of debris during the operation of the chainsaw of Figure 7A when viewed from the top of the chainsaw

Detailed Description of the Preferred Embodiments

[0029] The discharge of debris such as saw dust during the operation of a traditional chainsaw is shown in Figure 1. When the moving blade of a chainsaw engages an object to be cut, such as a piece of wood log or a tree trunk, the generated debris such as saw dusts or wood chips will propel in generally all directions, and particularly, upwardly and outwardly from the cutting site. A significant amount of the propelling saw dusts or chips will be discharged towards the operator or anything near the cutting site which will be messy and inconvenient. In some circumstances, the debris may come with sharp edges or in the form of tiny splinters which may cause irritation or even injury to the operator.

[0030] The present invention relates to a chainsaw. The chainsaw comprises a debris deflecting device for deflecting the generated debris from the operator during the operation of the chainsaw. The chainsaw includes a body having a motor, such as an electric motor or a gasoline motor. The motor is capable of actuating an operation member, which may include a drive shaft for driving the movement of a saw blade to perform the operation of the chainsaw. The body further comprises a debris deflector arranged to deflect debris generated during the operation of the chainsaw.

[0031] Figures 2A and 2B show a first embodiment of the present invention. As shown in the figures, the chainsaw 100 includes a debris deflector 104 movable between a deflecting position 120 in which the debris de-

flector 104 is extended from the body 102, and a non-deflecting position 122 in which the debris deflector 104 is retracted into the body 102.

[0032] Preferably, the debris deflector 104 comprises an elongated body 110 with a planar deflecting surface 118 as shown in the figures. Alternatively, the debris deflector can be of other possible configurations such as a bending body with a curved deflecting surface, as long as a person skilled in the art would consider suitable in performing the debris deflecting function.

[0033] Preferably, the elongated body 110 includes a portion 124 that is in a length that extends out from the body 102 which is long enough to deflect the debris generated during operation of the chainsaw 100. Preferably, the length of the portion 124 of the debris deflector 104 that extends out is 25 mm, alternatively, the length of the portion 124 that extends out may be longer than 25 mm for a better debris deflecting performance, or shorter than 25 mm in some other designs such as a simpler debris deflector structure.

[0034] In this embodiment, during the operation of the chainsaw 100, the debris deflector 104 is arranged to deflect the saw dust generated in a controlled manner by blocking some of the paths that the saw dust may propel. The debris will then be forced to propel in certain direction, for example, the debris deflector may force the debris to propel only along the cutting direction but not towards the operator. Examples of operation will be described below in more details in the later part of this disclosure.

[0035] Preferably, the body 102 comprises an actuating means 112 operable to move the debris deflector 104 between the deflecting position 120 and the non-deflecting position 122. In this embodiment, the actuating means comprises a rotatable knob 112 operable for extending or retracting the elongated body 110 of the debris deflector 104, the rotatable knob 112 connects with a gear member 114 adapted to engage a plurality of notches 116 at the debris deflector 120.

[0036] When a user operates the chainsaw 100 with the debris deflecting function, the user may rotate the knob 112 in a direction, such that the gear 114 rotates accordingly and move the elongated body 110 of the debris deflector 120 to the deflecting position 120, which is extending out from the body 102 as shown in Figure 2A and Figure 2B. When the user decides to store the chainsaw 100 or to operate the chainsaw 100 without the debris deflecting function, the user may rotate the knob 112 in a reversed direction, such that the gear 114 rotates accordingly in a reversed direction and move the elongated body 110 of the debris deflector 104 to the non-deflecting position 122.

[0037] Advantageously, accidental damage to the debris deflector 104 may be avoided by retracting and protecting the debris deflector 104 in the body 102 when the chainsaw 100 is stored or moved.

[0038] Referring to Figure 3A and 3B, preferably, the body 202 comprises an actuating means operable to

move the debris deflector 204 between the deflecting position 220 and the non-deflecting position 222. In this embodiment, the actuating means comprises a press button 212 operable for extending the debris deflector 204, the debris deflector 204 is retractable manually by applying a pressure on the debris deflector 204 towards the body 202.

[0039] Similar to the debris deflector 104, the debris deflector 204 comprises an elongated body 210. The elongated body 210 includes a portion 224 that is in a length that extends out from the body 202 which is long enough to deflect the debris generated during operation of the chainsaw 200.

[0040] When a user operates the chainsaw 200 with the debris deflecting function, the user may press the button 212 on the body 202, such that the elongated body 210 of the debris deflector 204 move to the deflecting position 220, which is extending out from the body 202 as shown in Figure 3A and Figure 3B. When the user decides to store the chainsaw 200 or to operate the chainsaw 200 without the debris deflecting function, the user may apply a pressure on the elongated body 210 of the debris deflector 204 towards the body 202 and move the debris deflector 204 to the non-deflecting position 222. Optionally, the body 202 may include a first locking means 214 adapted to lock the debris deflector 204 at the deflecting position 220 and the non-deflecting position 222. Preferably, the first locking means 214 comprises a resilient member 216, which is arranged to assist the release and locking of the debris deflector 204. For example, the resilient member 216 may be compressed when the debris deflector 204 is locked in the non-deflecting position 222, whereupon a user press the button 212 on the body 202, the locking means 214 is released and the resilient member 216 is arranged to push the debris deflector 214 out of the body 202.

[0041] Similar to the debris deflector 104, accidental damage to the debris deflector 204 may be avoided by retracting and protecting the debris deflector 204 in the body 202 when the chainsaw 200 is stored or moved.

[0042] Preferably, the debris deflector 104 or 204 is elongated with a planar deflecting surface, as shown in Figures 2A, 2B, 3A and 3B. Alternatively the debris deflector is in any other shapes or surfaces such as ruffle surface or bending surface which is operable to perform the debris deflection function.

[0043] In some other embodiments, the debris deflector is arranged to direct an air flow generated by the motor to deflect the debris and thus in these embodiments the debris deflector may not necessarily need to make physical contact with the debris, but can, for example, direct air flow to blow away the debris. Preferably, the air flow is an exhaust gas discharged from the motor. Alternatively, the air flow is generated by a fan or discharged from a pipe connected to the source of air flow generated by the motor. In some embodiments, the air flow may be used for cooling the components of the chain saw, especially the motor and the control circuits in the body, the

exhaust gas may then be used for blowing the saw dust in certain direction.

[0044] Preferably, the debris deflector is adapted to deflect the air flow in a direction substantially away from an operator of the power tool. Alternatively, the debris deflector is adapted to deflect the air flow in a direction substantially transverse to a direction of movement of the operation member. Alternatively, the direction of the air flow can be adjusted to any desirable direction which favors the operation of the power tool. Optionally, the debris deflector is movable between the deflecting position and the non-deflecting position such that the debris deflector is not deflecting the debris generated during operation.

[0045] Referring to Figure 4A and 4B, preferably, a further, additional debris deflector 304 is pivotally connected with the body 302, and the debris deflector 304 comprises a door 312 movable between an air directing position 320 in which the air flow is deflected, and an air non-directing position 322 in which the air flow is not deflected, and the door 312 is pivotally movable between the air directing position 320 and the air non-directing position 322.

[0046] When a user operates the chainsaw power 300 with the debris deflecting function, the user may position the door 312 in an air directing position 320 shown in Figure 4A, such that the debris deflector 304 is arranged to redirect the air generated from the motor, and the redirected air is arranged to direct the debris to a desired direction, which is usually away from the operator of the chainsaw 300 or transverse to a direction of movement of the operation member of the chainsaw 300. When the user decides to operate the chainsaw 300 without the debris deflecting function, the user may position the door 312 in an air non-directing position 322 shown in Figure 4B, and the air flow generated will be discharged without being redirected, and the debris will not be deflected by the debris deflector 304.

[0047] Advantageously, the operator of the chainsaw may decide to operate the chainsaw with or without the debris deflecting function. For example, in some occasion, when another worker is working adjacent to the operator of the chainsaw, debris deflected to the worker may be dangerous. In that case, the operator of the chainsaw may choose to disable the debris deflecting function.

[0048] Referring to Figure 5A and 5B, preferably, the further, additional debris deflector comprises a door 412 movable between an air directing position 420 in which the air flow is deflected, and an air non-directing position 422 in which the air flow is not deflected, and the door 412 comprises a sliding plate 414 slidably movable between the air directing position 420 and the air non-directing position 422.

[0049] When a user operates the chainsaw 400 with the debris deflecting function, the user may position the sliding plate 414 in an air directing position, such that the door 412 open and the air vents 416 close respectively and the debris deflector 404 is arranged to redirect the

air generated from the motor, and the redirected air is arranged to direct the debris to a desired direction, which is usually away from the operator of the chainsaw 400 or transverse to a direction of movement of the operation member of the chainsaw 400. When the user decides to operate the chainsaw 400 without the debris deflecting function, the user may position the sliding plate 414 in an air non-directing position 420 shown in Figure 5B, such that the door 412 closes and the air vents 416 open respectively, and the exhaust air is only discharged from the open air vents 416 and is not redirected by the debris deflector 404, thus the debris are not deflected by the debris deflector 404.

[0050] Optionally, the debris deflector 404 may comprise a second locking means 430 adapted to lock the door at the air directing position 420 and the air non-directing position 422. Preferably, the second locking means 430 may comprise a resilient member 432. Alternatively or additionally, the second locking means 430 comprises a latch mechanism 434.

[0051] In yet another embodiment, with reference to Figure 6A and 6B, the further, additional debris deflector 504 comprises a door 512, which is movable between an air directing position 520 in which the air flow is deflected, and an air non-directing position 522 in which the air flow is not deflected, and the door 512 is movable from the air non-directing position 522 to the air directing position 520 by means of gravitation force as shown in Figure 6B.

[0052] Alternatively, the door 512 is movable from the air non-directing position to the air directing position by the air flow generated by the motor. The door 512 will extend from the body 502 by means of motor discharge wind force, and deflect the wind towards the predetermined direction to blow debris away. The door 512 may be retracted automatically while the chainsaw 500 is placed on the ground. Optionally, the door 512 may be removed from chainsaw 500 if the air deflecting function is not needed.

[0053] When a user operates the chainsaw 500 with the air vents 514 on the body 502 which discharge the air flow generated by the motor, the door 512 positioned in an air directing position 520 by gravitation force or the force of the air flow generated by the motor, such that the debris deflector 504 is arranged to redirect the air generated from the motor and discharged from air vents 514 on the body 502, and the redirected air is arranged to direct the debris to a desired direction, which is usually away from the operator of the chainsaw 500 or transverse to a direction of movement of the operation member of the chainsaw 500.

[0054] In some embodiments, the debris deflector is removable from the body of the chainsaw, or may be installed on the chain saw on demand.

[0055] Preferably, the motor of the chainsaw is powered by electricity, alternatively, the motor is powered by gasoline. Preferably, the motor is an AC motor, alternatively, the motor is a DC motor.

[0056] The chainsaw may include one or more debris deflectors in accordance with the embodiments of the present invention. The debris deflector in accordance with the first two embodiments enables the operator of a chainsaw to perform cutting operation without discharging the saw dust towards the operator when the operator is holding the chainsaw at a position in front of the operator. The further, additional debris deflectors in accordance with the last three embodiments further discharge the saw dust away from the operator in a direction transverse to the cutting direction. The debris deflector effectively protects the operator of a chain saw from injury by the debris discharged during operation.

[0057] With reference to Figure 7A, there is shown the deflection path of debris 702 during the operation of a chainsaw 700 of the present invention when viewed from the front of the chainsaw 700. In this example, the operator 704 of the chain saw 700 cut a piece of wood 706 in a downward direction 708. The debris 702 is deflected towards the left and hence the operator 704 standing on the right is free from debris 702 generated during the cutting operation. As shown in Figure 7B, the deflected debris 702 are mostly discharged to an area 710 from the top to the top left portion of the image, and the operator 704 of the chainsaw 700 is positioned at the bottom right corner which shows that the operator 704 is free from the debris 702 generated.

[0058] In some embodiments, the debris deflector can be arranged for deflecting debris other than chips or saw dust. In some other embodiments, a chainsaw may comprise more than one debris deflector, or a combination of debris deflectors:

[0059] It will be appreciated by persons skilled in the art that numerous variations and/or modifications may be made to the invention as shown in the specific embodiments without departing from the scope of the claims. The present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive.

Claims

1. A chainsaw, comprising:

a saw blade;
a body (102; 202; 302; 402; 502; 602) having a motor arranged to drive the saw blade, the saw blade being arranged to generate debris during operation of the chainsaw; and

a debris deflecting device comprising a debris deflector (104; 204) arranged to deflect debris generated by the saw blade,
characterised in that the debris deflector (104; 204) is movable between a deflecting position (120; 220), in which the debris deflector (104; 204) is extended from the body

- (102; 202; 302; 402; 502; 602) to deflect debris generated during operation of the chainsaw, and a non-deflecting position (122; 222), in which the debris deflector (104; 204) is retracted into the body.
2. The chainsaw according to claim 1, further comprising:
an actuating means operable to move the debris deflector (104; 204) between the deflecting position (120; 220) and the non-deflecting position (122; 222).
 3. The chainsaw according to claim 2, wherein the actuating means comprises a rotatable knob (112) operable for extending and retracting the debris deflector (104).
 4. The chainsaw according to claim 3, further comprising a gear member (114) connected with the rotatable knob (112), wherein the debris deflector includes a plurality of notches (116), and wherein the gear member (114) is adapted to engage the plurality of notches (116).
 5. The chainsaw according to claim 2, wherein the actuating means comprises a press button (212) operable for extending the debris deflector (204).
 6. The chainsaw according to claim 5, wherein the debris deflector (204) is retractable manually by a user applying a pressure on the debris deflector (204) towards the body (202).
 7. The chainsaw according to claim 5 or 6, further comprising:
a locking means (214) adapted to lock the debris deflector (204) at the deflecting position (220) and the non-deflecting position (222).
 8. The chainsaw according to claim 7, wherein the locking means (214) adapted to lock the debris deflector comprises a resilient member (216).
 9. The chainsaw according to claim 8, wherein the resilient member (216) is arranged to be compressed when the debris deflector is locked in the non-deflecting position (222), and the resilient member (216) is arranged to move the debris deflector (204) into the deflecting position when the press button (212) is actuated.
 10. The chainsaw according to any one of claims 1 to 9, wherein the debris deflector (104; 204) is elongated with a planar deflecting surface.
 11. The chainsaw according to any one of claims 1 to 10, further comprising a further debris deflector (304;

404; 504) arranged to direct an air flow generated by the motor so as to deflect debris generated by the chainsaw.

12. The chainsaw according to claim 11, wherein the further debris deflector (304; 404; 504) comprises a door (312; 412; 512) movable between an air directing position (320; 420; 520) in which the air flow is deflected, and an air non-directing position (322; 422; 522) in which the air flow is not deflected.
13. The chainsaw according to claim 12, wherein the door (312) is pivotably movable between the air directing position (320) and the air non-directing position (322).
14. The chainsaw according to claim 12, wherein the door (412) comprises a sliding plate (414) slidably movable between the air directing position (420) and the air non-directing position (422), and optionally, wherein the debris deflector (404) comprises a locking means (430) adapted to lock the door (412) at the air directing position (420) and the air non-directing position (422), the locking means adapted to lock the door (412) comprising a resilient member (432) and/or a latch mechanism (434).
15. The chainsaw according to claim 12, wherein the door (512) is movable from the air non-directing position (522) to the air directing position (520) by means of gravitation force or by the air flow generated by the motor.

Patentansprüche

1. Eine Kettensäge, umfassend:

ein Sägeblatt;
einen Körper (102; 202; 302; 402; 502; 602) mit einem Motor, der so angeordnet ist, um das Sägeblatt anzutreiben, wobei das Sägeblatt so angeordnet ist, um beim Betrieb der Kettensäge Sägeabfall zu erzeugen; und

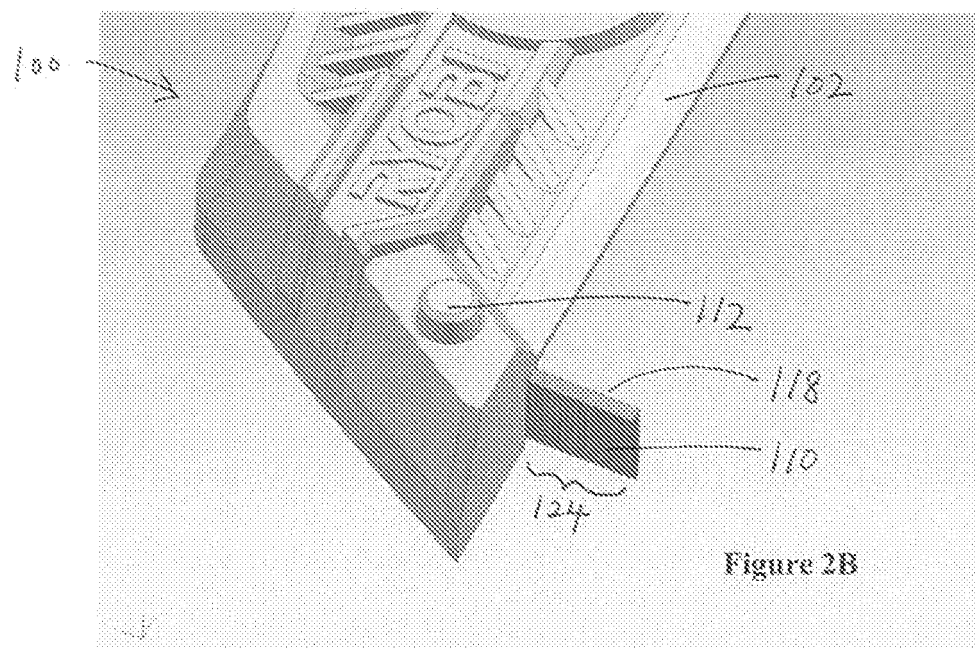
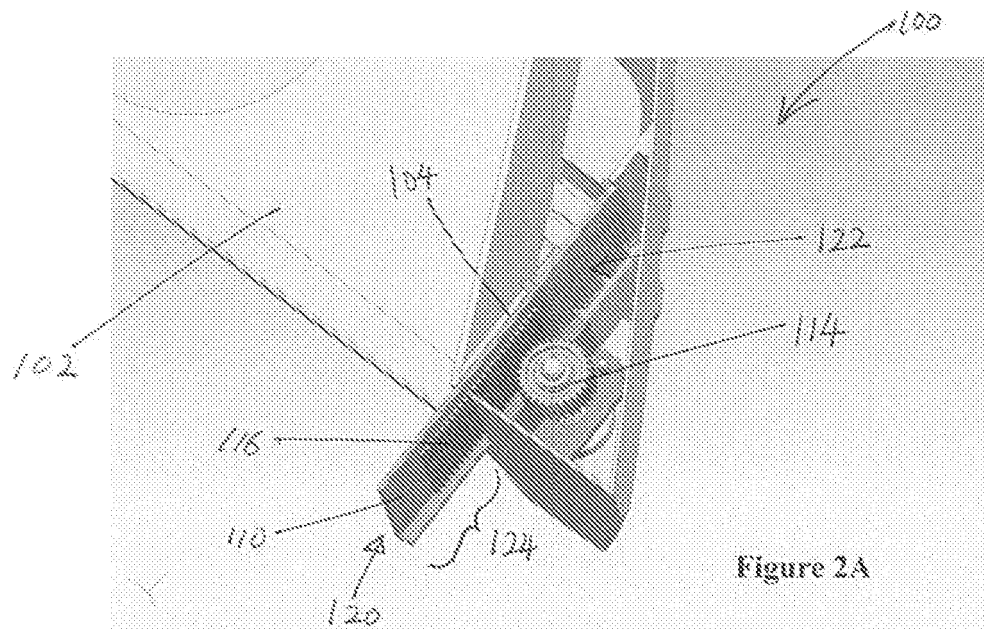
eine Sägeabfall-Ablenkvorrichtung mit einem Sägeabfall-Abweiser (104; 204), der so angeordnet ist, um den vom Sägeblatt erzeugten Sägeabfall abzulenken,
dadurch gekennzeichnet, dass der Sägeabfall-Abweiser (104; 204) zwischen einer Ablenkposition (120; 220), in der der Sägeabfall-Abweiser (104; 204) aus dem Körper (102; 202; 302; 402; 502; 602) ausgefahren ist, um den beim Betrieb der Kettensäge erzeugten Sägeabfall abzulenken, und einer Nicht-Ablenkposition (122; 222), in der der

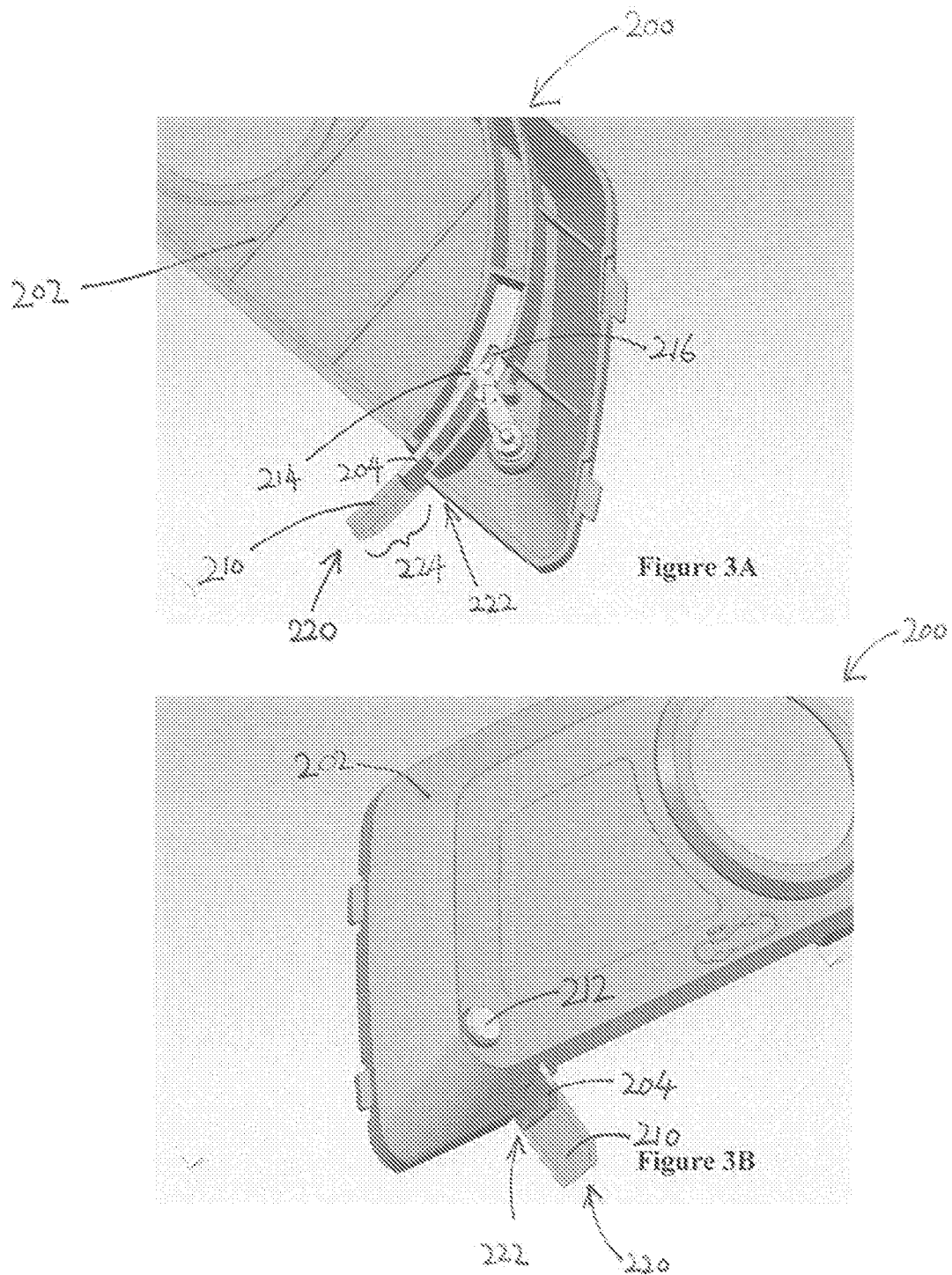
- Sägeabfall-Abweiser (104; 204) in dem Körper zurückgezogen ist, bewegbar ist.
2. Die Kettensäge nach Anspruch 1, weiter umfassend: eine Betätigungseinrichtung, die betätigt werden kann, um den Sägeabfall-Abweiser (104; 204) zwischen der Ablenkposition (120; 220) und der Nicht-Ablenkposition (122; 222) zu bewegen. 5
 3. Die Kettensäge nach Anspruch 2, wobei die Betätigungseinrichtung einen Drehknopf (112) aufweist, der zum Ausfahren und Zurückziehen des Sägeabfall-Abweisers (104) betätigbar ist. 10
 4. Die Kettensäge nach Anspruch 3, weiter umfassend ein Zahnradelement (114), das mit dem Drehknopf (112) verbunden ist, wobei der Sägeabfall-Abweiser eine Vielzahl von Kerben (116) aufweist, und wobei das Zahnradelement (114) so ausgelegt ist, um in die Vielzahl von Kerben (116) einzugreifen. 15
 5. Die Kettensäge nach Anspruch 2, wobei die Betätigungseinrichtung einen Druckknopf (212) umfasst, der zum Ausfahren des Sägeabfall-Abweisers (204) betätigbar ist. 20
 6. Die Kettensäge nach Anspruch 5, wobei der Sägeabfall-Abweiser (204) von einem Nutzer durch das Aufbringen eines Drucks auf den Sägeabfall-Abweiser (204) in Richtung des Körpers (202) manuell zurückziehbar ist. 25
 7. Die Kettensäge nach Anspruch 5 oder 6, weiter umfassend: eine Verriegelungseinrichtung (214), die geeignet ist, um den Sägeabfall-Abweiser (204) in der Ablenkposition (220) und in der Nicht-Ablenkposition (222) zu verriegeln. 30
 8. Die Kettensäge nach Anspruch 7, wobei die Verriegelungseinrichtung (214) zum Verriegeln des Sägeabfall-Abweisers ein elastisches Element (216) umfasst. 35
 9. Die Kettensäge nach Anspruch 8, wobei das elastische Element (216) so angeordnet ist, um zusammengedrückt zu sein, wenn der Sägeabfall-Abweiser in der Nicht-Ablenkposition (222) verriegelt ist, und wobei das elastische Element (216) so angeordnet ist, um den Sägeabfall-Abweiser (204) in die Ablenkposition zu bewegen, wenn der Druckknopf (212) betätigt wird. 40
 10. Die Kettensäge nach einem der Ansprüche 1 bis 9, wobei der Sägeabfall-Abweiser (104; 204) länglich mit einer ebenen Ablenkoberfläche ausgebildet ist. 45
 11. Die Kettensäge nach einem der Ansprüche 1 bis 10, 50
- weiter umfassend einen weiteren Sägeabfall-Abweiser (304; 404; 504), der so angeordnet ist, um einen vom Motor erzeugten Luftstrom so zu lenken, dass der von der Kettensäge erzeugte Sägeabfall abgelenkt wird.
12. Die Kettensäge nach Anspruch 11, wobei der weitere Sägeabfall-Abweiser (304; 404; 504) eine Klappe (312; 412; 512) aufweist, die zwischen einer Luftlenkposition (320; 420; 520), in der der Luftstrom abgelenkt wird, und in einer Nicht-Luftlenkposition (322; 422; 522), in der der Luftstrom nicht abgelenkt wird, bewegbar ist.
 13. Die Kettensäge nach Anspruch 12, wobei die Klappe (312) zwischen der Luftlenkposition (320) und der Nicht-Luftlenkposition (322) schwenkbar bewegbar ist.
 14. Die Kettensäge nach Anspruch 12, wobei die Klappe (412) eine Gleitplatte umfasst, die gleitend zwischen der Luftlenkposition (420) und der Nicht-Luftlenkposition (422) bewegbar ist, und wobei optional der Sägeabfall-Abweiser (404) eine Verriegelungseinrichtung (430) umfasst, die so ausgebildet ist, um die Klappe (412) in der Luftlenkposition (420) und der Nicht-Luftlenkposition (422) zu verriegeln, wobei die Verriegelungseinrichtung so ausgebildet ist, um die Klappe (412), die ein elastisches Element (432) und/oder ein Verriegelungsmechanismus (434) umfasst, zu verriegeln.
 15. Die Kettensäge nach Anspruch 12, wobei die Klappe (512) mittels der Schwerkraft oder durch den vom Motor erzeugten Luftstrom aus der Nicht-Luftlenkposition (522) in die Luftlenkposition (520) bewegbar ist.
- ## Revendications
1. Tronçonneuse, comprenant :
 - une lame de scie ;
 - un corps (102 ; 202 ; 302 ; 402 ; 502 ; 602) dans lequel un moteur est agencé pour entraîner la lame de scie, la lame de scie étant agencée pour générer des débris durant le fonctionnement de la tronçonneuse ; et
 - un dispositif de déflexion des débris comprenant un déflecteur de débris (104 ; 204) agencé pour défléchir les débris générés par la lame de scie, **caractérisée en ce que** le déflecteur de débris (104 ; 204) est mobile entre une position défléchissante (120 ; 220), dans laquelle le déflecteur de débris (104 ; 204) s'étend depuis le corps (102 ; 202 ; 302 ; 402 ; 502 ; 602) pour défléchir les débris générés durant le fonctionnement de

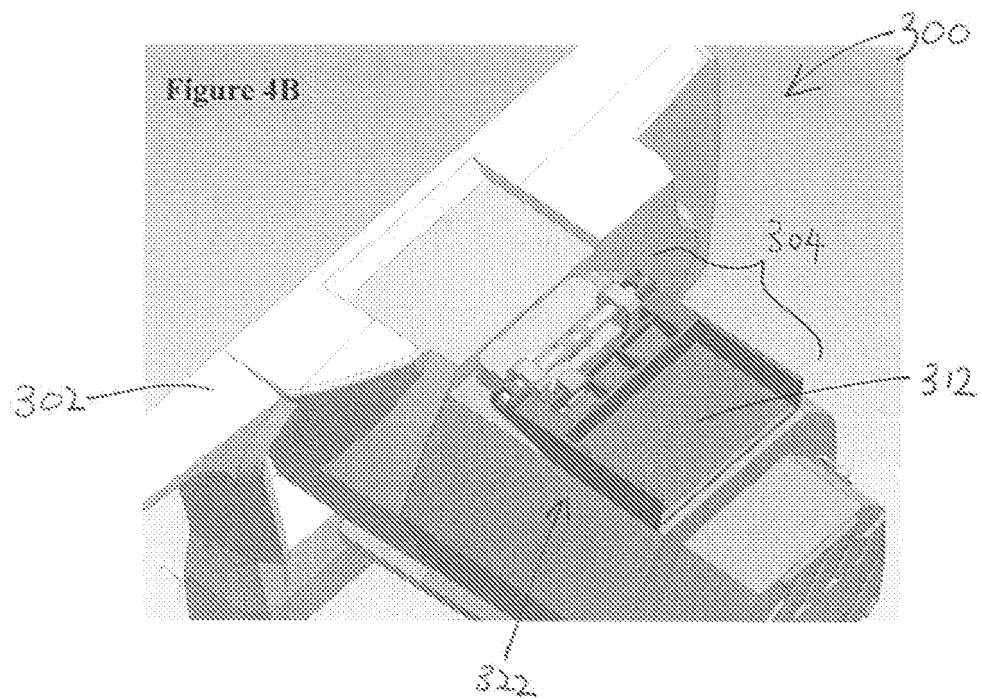
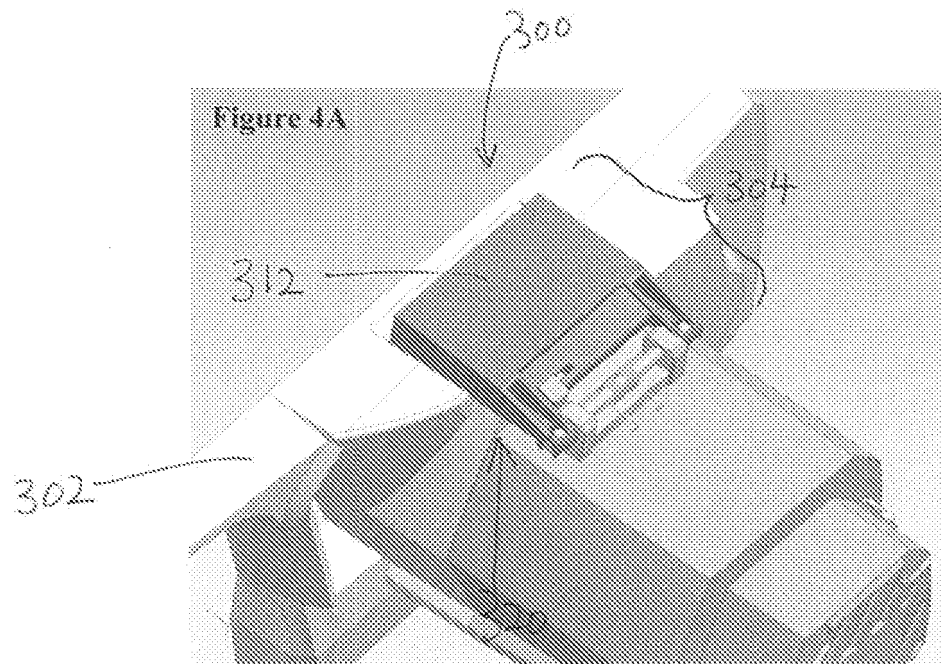
- la tronçonneuse, et une position non défléchissante (122 ; 222), dans laquelle le déflecteur de débris (104 ; 204) est rétracté dans le corps.
2. Tronçonneuse selon la revendication 1, comprenant en outre :
un moyen d'actionnement utilisable pour déplacer le déflecteur de débris (104 ; 204) entre la position défléchissante (120 ; 220) et la position non défléchissante (122 ; 222). 5
 3. Tronçonneuse selon la revendication 2, dans laquelle le moyen d'actionnement comprend un bouton rotatif (112) utilisable pour déployer et rétracter le déflecteur de débris (104). 10
 4. Tronçonneuse selon la revendication 3, comprenant en outre un élément d'engrenage (114) connecté au bouton rotatif (112), dans laquelle le déflecteur de débris comprend une pluralité d'encoches (116), et dans laquelle l'élément d'engrenage (114) est adapté pour s'engager avec la pluralité d'encoches (116). 15
 5. Tronçonneuse selon la revendication 2, dans laquelle le moyen d'actionnement comprend un bouton-poussoir (212) utilisable pour déployer le déflecteur de débris (204). 20
 6. Tronçonneuse selon la revendication 5, dans laquelle le déflecteur de débris (204) peut être rétracté manuellement par un utilisateur en appliquant une pression sur le déflecteur de débris (204) vers le corps (202). 25
 7. Tronçonneuse selon la revendication 5 ou 6, comprenant en outre :
un moyen de verrouillage (214) adapté pour verrouiller le déflecteur de débris (204) dans la position défléchissante (220) et dans la position non défléchissante (222) . 30
 8. Tronçonneuse selon la revendication 7, dans laquelle le moyen de verrouillage (214) adapté pour verrouiller le déflecteur de débris comprend un élément élastique (216). 35
 9. Tronçonneuse selon la revendication 8, dans laquelle l'élément élastique (216) est agencé pour être comprimé quand le déflecteur de débris est verrouillé dans la position non défléchissante (222), et l'élément élastique (216) est agencé pour déplacer le déflecteur de débris (204) dans la position défléchissante quand le bouton-poussoir (212) est actionné. 40
 10. Tronçonneuse selon l'une quelconque des revendications 1 à 9, dans laquelle le déflecteur de débris (104 ; 204) est allongé avec une surface défléchissante plane. 45
 11. Tronçonneuse selon l'une quelconque des revendications 1 à 10, comprenant en outre un déflecteur de débris additionnel (304 ; 404 ; 504) agencé pour envoyer un flux d'air généré par le moteur de manière à défléchir les débris générés par la tronçonneuse. 50
 12. Tronçonneuse selon la revendication 11, dans laquelle le déflecteur de débris additionnel (304 ; 404 ; 504) comprend une porte (312 ; 412 ; 512) mobile entre une position de conduction d'air (320 ; 420 ; 520) dans laquelle le flux d'air est défléchi et une position de non-conduction d'air (322 ; 422 ; 522) dans laquelle le flux d'air n'est pas défléchi. 55
 13. Tronçonneuse selon la revendication 12, dans laquelle la porte (312) est mobile par pivotement entre la position de conduction d'air (320) et la position de non-conduction d'air (322). 60
 14. Tronçonneuse selon la revendication 12, dans laquelle la porte (412) comprend une plaque coulissante (414) qui est mobile par coulissement entre la position de conduction d'air (420) et la position de non-conduction d'air (422), et dans laquelle le déflecteur de débris (404) comprend éventuellement un moyen de verrouillage (430) adapté pour verrouiller la porte (412) dans la position de conduction d'air (420) et dans la position de non-conduction d'air (422), le moyen de verrouillage adapté pour verrouiller la porte (412) comprenant un élément élastique (432) et/ou un mécanisme de loquet (434). 65
 15. Tronçonneuse selon la revendication 12, dans laquelle la porte (512) est mobile de la position de non-conduction d'air (522) à la position de conduction d'air (520) par la force gravitationnelle ou par le flux d'air généré par le moteur. 70

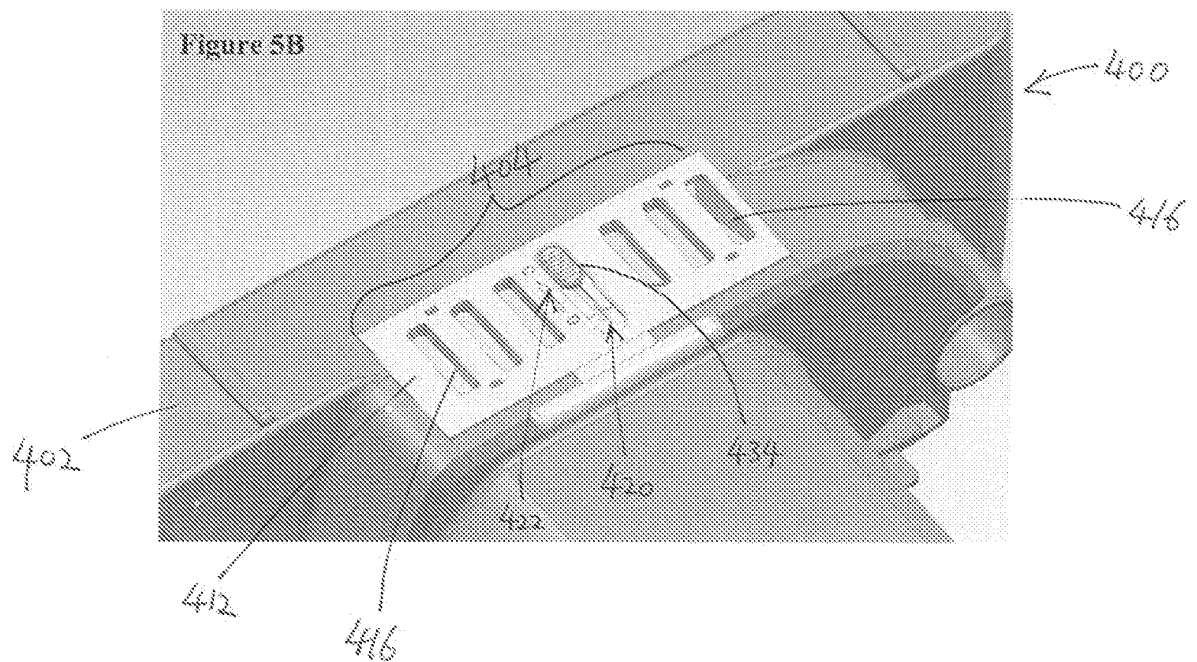
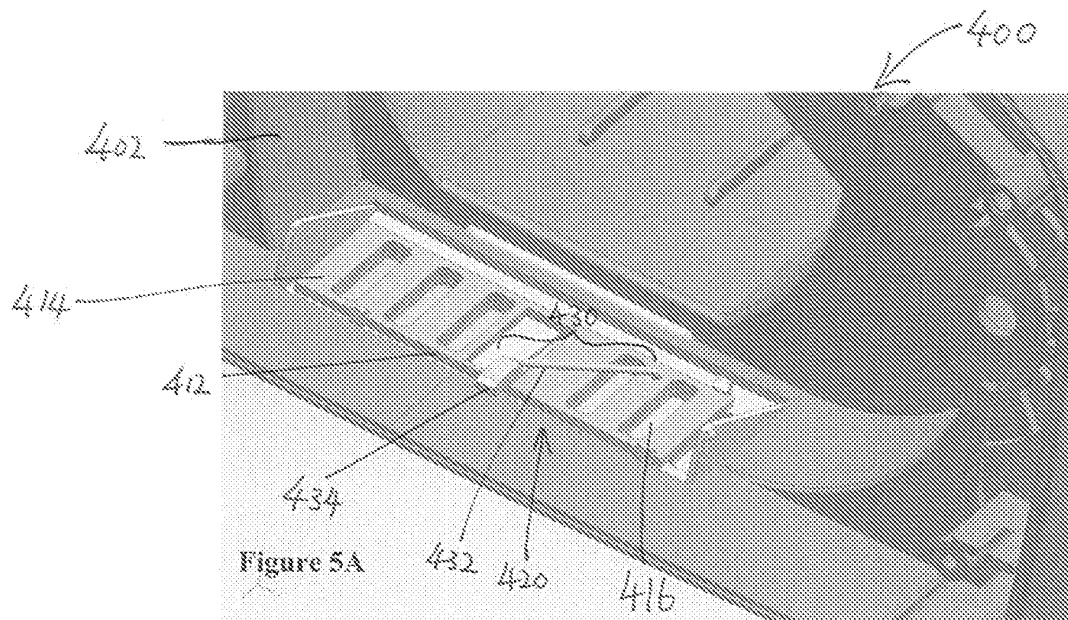
Figure 1

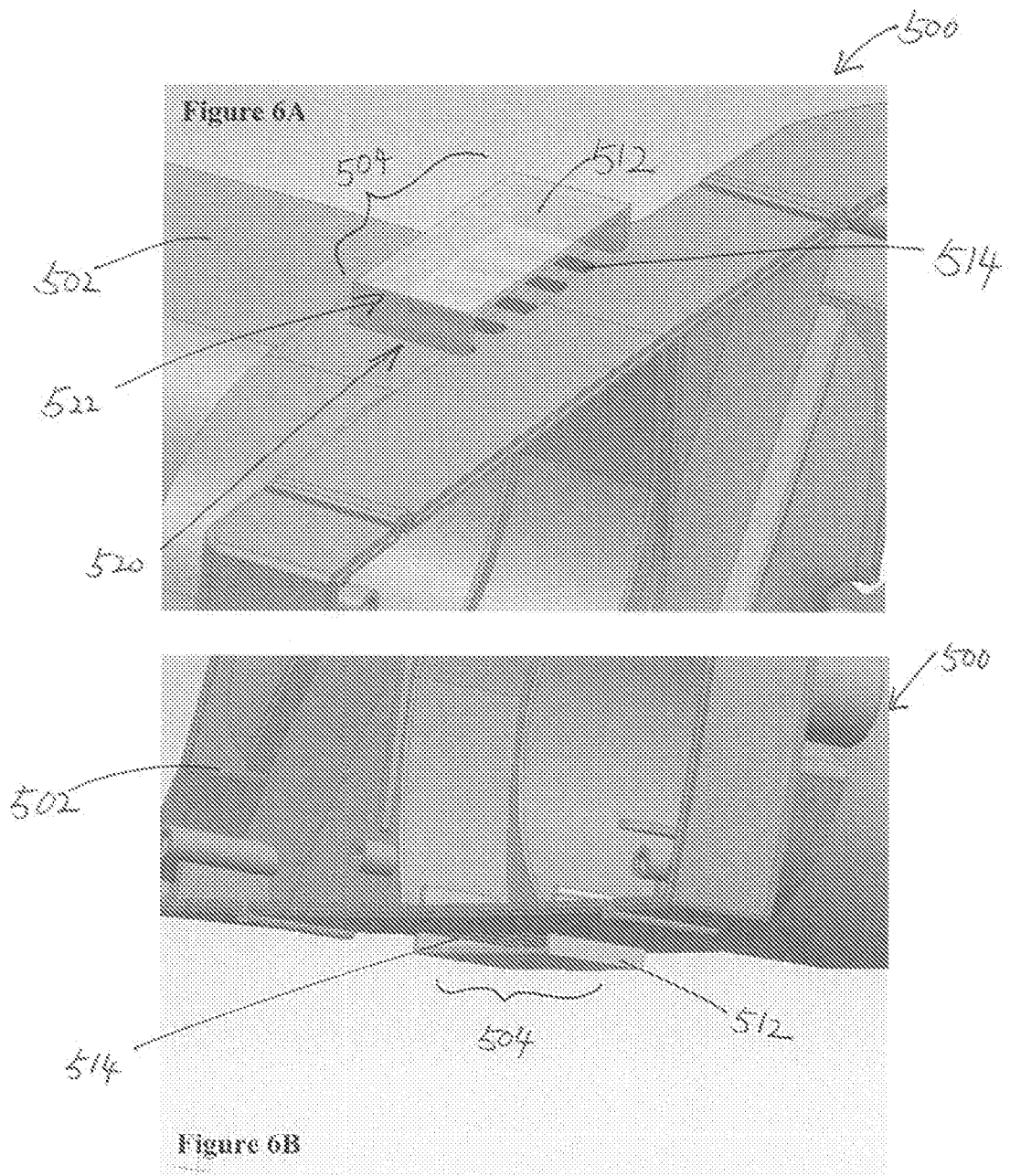


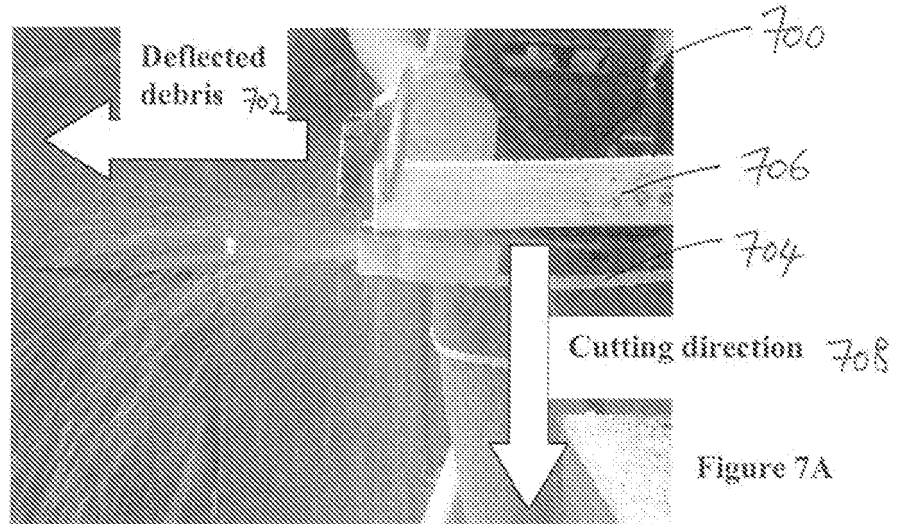




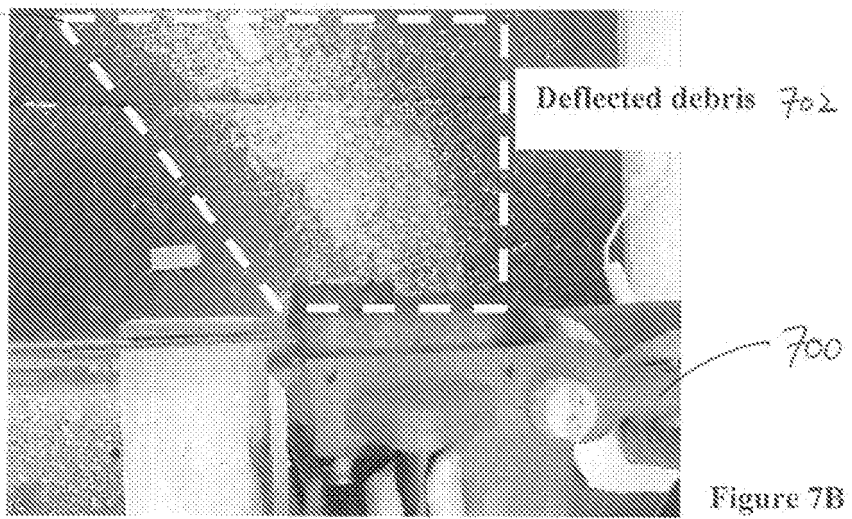








Area 710



REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 3380493 A [0002]