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(54) **Chainsaw arrangement**

Kettensägenanordnung

Agencement de scie à chaîne

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Description

TECHNICAL FIELD

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

[0002] The terms 'front' and 'rear' are used to designate relative locations along a longitudinal axis of the chainsaw. The guide bar, for example, is located at the front end of the chainsaw, while the opposite end will be referred to as the rear end of the chainsaw. 'left' and 'right' are used to designate relative locations in relation to the longitudinal axis as if a user holds the chainsaw.

BACKGROUND ART

[0003] Top handle chainsaws are sometimes held and guided by the one hand holding the control portion while the operator only secures his hold with the other hand. Acting forces on the chainsaw produces tilt movements which must be compensated for by an appropriate effort of the hand holding the control portion in order to keep the chainsaw in a neutral position. This causes a considerable load on the wrist of the operator. US5018492 teaches a chainsaw provided with a housing portion arranged as a support for the heel of the hand which decreases the effort for holding the chainsaw in a neutral position despite tilt movements in a forward direction of the chainsaw. However, fig. 1 of US5018492 shows that the part of the housing portion that functions as said support for the heel of the hand is a sharp edge, which is not very comfortable to the heel of the hand.

[0004] Furthermore, many users experience that the control portion of a top handle chainsaw does not provide for an ergonomic grip. Also, a problem has been that the control portion of the chainsaw rotates in the hand of the operator such that the operator has difficulty to hold the chainsaw in a desired inclined position. Also, many users experience that the wrist of the hand holding the control portion is often extensively bent while operating the chainsaw, which has proved to be unfavourable. Also, control portions of conventional top handle chainsaws do not fit various sizes of hands, and a bad fit may cause a worse control of the chainsaw and ergonomic disadvantages.

[0005] A top handle chainsaw as per the preamble of claim 1 is known from US 2002/0129502 A1.

SUMMARY OF THE INVENTION

[0006] The object of the invention is to provide a handle section of a chainsaw that provides possibilities to fit a larger group of users or to fit different types of conditions.

[0007] A further object of the invention is to provide a handle section of the aforementioned chainsaw that provides possibilities to adjust the characteristics of the control portion to fit e.g. differently sized hands of a large group of users.

[0008] These objects are reached by a top handle chainsaw comprising the combination of features of claim 1.

[0009] Preferred embodiments of the invention are defined by the dependent claims.

[0010] The at least one first exchangeable part may differ in its characteristics from an at least one second exchangeable part, such that the surface structure of at least a part of the control portion may be adjusted by exchanging the at least one first to the at least one second exchangeable part. Thereby, a surface structure providing for a grip fulfilling the different needs of a larger group of users can be provided. Examples of such different structures may be ribs, grooves or recesses or other structures that provides increased friction or other desired properties to the control portion. Also, one exchangeable part may be exchanged to another part made of a different polymeric or preferably elastomeric material in order to provide for better grip conditions. Probably, different types of surface materials or structures are better adapted to various conditions such as cold, hot, wet or dry environments. Important when designing the surface of the control portion is that the control portion should not start rotating in the hand when the operator changes working position or working angle of the chainsaw. It is therefore beneficial having the possibility to exchange at least a part of the control portion to provide for a better grip for a certain user under certain conditions.

[0011] Preferably, at least a portion of the at least one exchangeable part is in contact with the hand of the user during operation of the chainsaw and at least a part of said portion of the at least one exchangeable part has a generally convex shape, as seen in an above view. Thereby, a better grip is provided when operating the chainsaw. The exchangeable parts may be more or less convex to fit to the hands of a large group of users. Alternatively or additionally, a part of said portion has a generally concave shape, which also provides for a better grip, especially when said portion is arranged for receiving a part of the fore finger of the hand holding the control portion.

[0012] Preferably, the left side of the control portion is an integrated part with the handle section such that the left side of the control portion is not detachable. Thereby, it is sufficient to attach the right side of the control portion only to the left side of the control portion, which right side may be attached to the left side with a number of screws, such as two or three screws, or alternatively four, five or six. This way, the right side of the control portion is easily detached and exchanged by a dealer or by the user him/herself.

[0013] Preferably, the left side of the control portion holds the throttle lever and/or a safety button. Thereby, the exchangeable part of the right side of the control portion which preferably is the whole right side of the control portion, can be detached or exchanged without interfering with components such as the throttle lever and/or the safety button. This makes the detaching/exchanging

much less complicated compared to having these components secured to both sides of the control portion. When having the throttle lever and/or the safety button secured to both sides, there is also a risk that the positions of the components will be disturbed when securing the right side to the left side, which might cause the components not to function very well.

[0014] Preferably, at least a portion of the exchangeable part/s is made of a polymeric material or more preferably an elastomeric material or even more preferably a TPE material. Thereby, such materials provide increased friction and therefore a better grip and control of the chainsaw. Such materials are also comfortable to the hand.

[0015] Other features of the invention are specified in the appended dependent claims, and what is achieved by these features will be disclosed below with support of the appended drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016]

Fig. 1 is a perspective view of a top handle chainsaw.

Fig. 2 is an above view of the top handle chainsaw.

Fig. 3 is a right side view of the top handle chainsaw.

Fig. 4 is a right side view of an exchangeable part/a right side of a control portion.

Fig. 5 is a perspective view of the exchangeable part/the right side of a control portion.

Fig. 6 is an above view of a first exchangeable part/the right side of a control portion.

Fig. 7 is an above view of a second exchangeable part /the right side of a control portion.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0017] Fig. 1 shows a perspective view of a top handle chainsaw 1 according to a preferred embodiment of the present invention. The chainsaw 1 includes a driving unit 25, which may include an internal combustion engine or an electric motor, for driving a cutting chain 11 around a guide bar 10. The chainsaw 1 is held and controlled, preferably with the right hand, by means of the control portion 3, which control portion 3 includes a left- 4 and a right side 5, a throttle lever 8 on the under side for controlling the speed of the driving unit 25, preferably with the fore finger, and a safety button 9 on the upper side for preventing unintentional movement of the cutting chain 11. The control portion 3 is in turn a part of a handle section 2, which also includes a bail type hold portion 21, which extends on the left side of the chainsaw 1. The hold portion 21 is preferably held by the left hand and is mainly used for securing the hold of the control portion 3. The hold portion 21 may be held at various positions e.g. depending on how the chainsaw 1 is oriented when operating said chainsaw 1 and the position of the hold of the

hold portion 21 may easily be changed by a sliding movement of the hand along the hold portion 21. The handle section 2 further includes a housing portion 12 which in the case of the driving unit 25 including an internal combustion engine preferably accommodates a carburettor and a fuel tank. In the case of an electric motor the housing portion 12 may accommodate a battery. The handle section 2 is devibrated in relation to a body part 24 of the chainsaw 1, which body part 24 includes the driving unit and to which body part 24 the guide bar 10 is connected. Devibration elements, such as e.g. coil springs are used on at least three positions between the handle section 2 and the body part 24 and the amount of vibrations experienced by the user holding the handle section 2 is far less compared to having no devibration. A hand guard 14 projects in front of the handle section 2, which hand guard 14 is arranged to actuate a brake to brake the movement of the cutting chain 11 when the hand guard 14 is pivoted e.g. from a kick-back. The hand guard 14 is made of a polymeric material and includes a see-through protective structure 15. The protective structure 15 is see-through as it is provided with holes. In the preferred embodiment the holes have a so called honey comb shape, which means they are provided with six edges.

[0018] Fig. 2 shows the chainsaw 1 according to the preferred embodiment from an above view. The left side of the control portion 3 is forming one unit with the housing portion 12 and the right side 4 of the control portion 3 is connected to said left side 5 of the control portion 3. The left side 4 is preferably provided with a front recess 19 intended for gripping with the thumb of the hand holding the control portion 3. There is also a recess 23 which will be referred to as the thumb support surface part 23 in front of said front recess 19 at a position where the left side 4 of the control portion 3 protrudes to the left and meets a first end 22 of the hold portion 21. The thumb support surface part 23 could be disposed on an upper side of either the control portion 3 or the hold portion 2 and serves as an alternative support for the thumb of the hand holding the control portion 3. The thumb support surface part 23 has proved beneficial when applying pressure between the cutting chain 11 and the object being cut, other than that pressure caused by the weight of the chainsaw 1. This is especially advantageous when the orientation of the chainsaw 1 differs from an up right position, which implies that there is not much or no help from the weight of the chainsaw 1 when applying pressure. Using the thumb support surface part 23 as a support for the thumb is e.g. less exhausting and probably it may also increase the accuracy of the cut. The left side of the control portion 3 is also provided with an elongated recess 20, substantially elongated along a longitudinal axis of the control portion 3. The elongated recess 20 is intended for receiving the finger tips of the little finger, the ring finger and the middle finger of the hand holding the control portion 3, but this may vary depending on the size of the hand of the user. The elongated recess 20

has proved beneficial for providing a good grip of the control portion 3 and preventing the control portion 3 to start rotating in the hand of the user. Also, the elongated recess 20 provides for a good grip for various sizes of hands.

[0019] Fig. 3 is a side view of the preferred embodiment of the invention and shows a first-16 and a second longitudinal axis 17. The first longitudinal axis 16 is defined as extending substantially along a centre of the guide bar 10 and the second longitudinal axis 17 substantially extends along an upper side of the control portion 3. The size of the angle, A, between the second- 17 and the first longitudinal axis 16 has impact on how much the hand holding the control portion 3 will be bent during operation of the chainsaw 1. The angle, A, according to the preferred embodiment of the invention is about 15°, but may be up to about 45° and still be advantageous. For A greater than 45° the chainsaw 1 becomes high, and probably less versatile when operating in limited spaces.

[0020] An outer surface part 13 of the housing portion 12, which hereinafter will be referred to as the support surface 13, is connected to a rear part of the control portion 3 and is a support for the heel of the hand when operating the chainsaw 1. The support surface 13 essentially defines a plane 18 that forms an angle, B, with the second longitudinal axis 17, which axis substantially extends along an upper side of the control portion 3, as seen in the side view. The angle B is about 121°, which has proved to provide for a good support for the heel of the hand holding the control portion 3. However, the advantages are present for B being in the range 105°-140°. The support surface extends about 30mm in a rightward direction from a rightmost rear end of the right side 5 of the control portion 3. In fact, the support surface may extend at least 24mm, e.g. 35mm, and still provide for a good support for the heel of the hand. The rightmost portion of the support surface 13 may also deviate from the plane 18 because of a bevelling of the housing portion 12.

[0021] Fig. 4 is a side view of the exchangeable right side 5 of the control portion 3 and the same right side 5 is shown in fig. 5 in a perspective view. The right side will also be referred to as the exchangeable part 6, 6' and may be exchanged to another exchangeable part 6, 6' with other characteristics. Of course the exchangeable part 6, 6' may be smaller and may just form a part of the right side 5 of the control portion 3. In an alternative embodiment of the invention at least a part of the left side 4 of the control portion 3 may be composed of at least one exchangeable part 106, 106'. In the preferred embodiment the right side 5 of the control portion 3 is secured to the left side 4 of the control portion 3 with four screws. The number of screws may of course vary, e.g. between one and six, such as three or five. Of course other attaching members would be possible for quick attachment/detachment of the exchangeable part 6, 6'. The throttle lever 8 and the safety button 9 are both only secured to the left side 4 of the control portion 3, and not to the right side 5, which provides for easy detaching or

attaching of the exchangeable part 6, 6' without interfering with said throttle lever 8 or safety button 9. Also, this prevents the throttle lever 8 and the safety button 8 to become affected in a way to disturb their functions. Alternatively, only the throttle lever 8 is only secured to the left side 4. Preferably an exchangeable part 106, 106' on the left side 4 is of such a small size that it allows the throttle lever 8 and safety button 9 to be secured to a main portion of the left side 4.

[0022] Fig. 6 and 7 are above views of two different exchangeable parts 6, 6' with different widths. We may call them a first- 6 and a second exchangeable part 6'. The first exchangeable part 6 can easily be exchanged to the second 6' and vice versa to make the control portion 3 fit to a hand with different proportions. A range of differently sized exchangeable parts 6, 6' specified with sizes, such as small, medium, large and X-large, may be possible to choose from. Of course the exchangeable part/s 6, 6', 106, 106' can be provided with different surface structure to fit to the users needs. Examples of such surface structures may be grooves, ribs or recesses. The material of the part of the control portion 3 that is in contact with the hand is made of a TPE-material, but of course the choice of material may vary with different conditions, and another polymeric material may be preferable, such as another elastomeric material. The part of the exchangeable part 6, 6' that is in contact with the hand during operation has a substantially convex shape in order to fit better to the hand of the user, although the right recess 7 of the control portion 3 also provides for a smaller concave shape. This recess 7 is intended for receiving parts of the fore finger of the hand holding the control portion 3. The right recess 7 together with the left recess 19 on the left side 4 of the control portion 3 forms a part of the control portion 3 with less width. This provides for a better grip and a better control of the throttle lever 8.

Claims

1. A top handle chainsaw, comprising:

- a guide bar (10);
- a cutting chain (11); and
- a driving unit (25) arranged to drive the cutting chain (11) around the guide bar (10); wherein the guide bar (10) defines a first longitudinal axis (16) extending along a centre of the guide bar (10), as seen in a side view ;
- a handle section (2) for carrying and operating the chainsaw (1), wherein the handle section (2) includes a control portion (3) disposed on the upper side of the chainsaw (1), which control portion (3) includes a throttle lever (8) for controlling the speed of the driving unit (25) and the control portion (3) has a left (4) and a right (5) side,
- the right side (5) of the control portion (3) com-

prising a first exchangeable part (6), detachably connected to the left side (4) of the control portion (3);

characterized in that

the chainsaw furthermore comprises at least one second exchangeable part (6'), to which the first exchangeable part (6) may be exchanged, the first exchangeable part (6) differing from the at least one second exchangeable part (6'), such that any one of surface structure, width and material of at least a part of the control portion (3) may be adjusted by exchanging the first (6) to the at least one second exchangeable part (6').

2. A chainsaw (1) according to claim 1, wherein at least a portion of the at least one exchangeable part (6, 6') is in contact with the hand of the user during operation of the chainsaw (1) and at least a part of said portion of the at least one exchangeable part (6, 6') has a generally convex or concave shape.
3. A chainsaw (1) according to any of the claims 1-2, wherein the at least one exchangeable part (6, 6') is one exchangeable part (6, 6') and forms the right side (5) of the control portion (3), and the right side (5) of the control portion (3) is detachably connected to the left side (4) of the control portion (6).
4. A chainsaw (1) according to claim 3, wherein the left side (4) of the control portion (3) is an integrated part with the handle section (2) such that the left side (4) of the control portion (3) is not detachable.
5. A chainsaw (1) according to claim 4, wherein the left side (4) of the control portion (3) holds the throttle lever (8) and/or a safety button (9), such that the right side (5) of the control portion (3) can easily be exchanged or detached from the left side (4) of the control portion (3) without interfering with said throttle lever (8) and/or safety button (9).
6. A chainsaw (1) according to any of the preceding claims, wherein at least a portion of the exchangeable part/s (6, 6') is made of a polymeric material, and preferably of an elastomeric material and even more preferably of a TPE material.
7. A chainsaw (1) according to any of the preceding claims, wherein the control portion (3) defines a second longitudinal axis (17) substantially extending along an upper side of at least a part of the control portion (3), as seen in a side view, and an angle A between the first (16) and the second longitudinal axes (17) is between 14° and 45° and preferably between 14° and 30° and more preferably between 14° and 25°, all as seen in a side view.
8. A chainsaw (1) according to claim 7, wherein A is

between 14° and 20° and preferably between 14° and 18° and more preferably between 14° and 16°.

9. A chainsaw (1) according to any of the preceding claims, wherein a rear end of the control portion (3) is connected to a housing portion (12) at an outer surface part thereof, which defines a support surface (13) for receiving the heel of the hand of the user, and which housing portion (12) accommodates a carburettor or a battery therein.
10. A chainsaw (1) according to any of the preceding claims, wherein the control portion (3) defines a second longitudinal axis (17) substantially extending along an upper side of at least a part of the control portion (3), as seen in a side view, and the support surface (13) defines a plane (18), and the plane (18) forms an angle, B, with the second longitudinal axis (17), and B is between 105° and 145° and preferably between 110° and 140° and more preferably between 113° and 135°, all as seen in a side view.
11. A chainsaw (1) according to claim 10, wherein B is between 115° and 130° and preferably between 117° and 127° and more preferably between 119° and 123°.
12. A chainsaw (1) according to any of the claims 9-11, wherein the support surface (13) extends in a rightward direction at least 10 mm and preferably at least 16 mm and more preferably at least 20 mm in relation to a rightmost part of a rear end of the right side (5) of the control portion (3).
13. A chainsaw (1) according to any of the preceding claims, wherein the handle section (2) is devibrated relative to a chainsaw body part (24), which body part (24) includes the driving unit (25) and wherein the driving unit (25) includes an internal combustion engine.

Patentansprüche

1. Obergriff-Kettensäge, umfassend:

eine Führungsschiene (10);
eine Schneidkette (11); und
eine Antriebseinheit (25), die angeordnet ist, um die Schneidkette (11) um die Führungsschiene (10) herum anzutreiben; wobei die Führungsschiene (10) eine erste Längsachse (16) definiert, die sich, in einer Seitenansicht gesehen, entlang einer Mitte der Führungsschiene (10) erstreckt;
einen Handgriffabschnitt (2) zum Tragen und Bedienen der Kettensäge (1), wobei der Handgriffabschnitt (2) einen Steuerungsteil (3) um-

- fasst, der an der Oberseite der Kettensäge (1) angeordnet ist, wobei der Steuerungsteil (3) einen Drosselhebel (8) zur Steuerung der Drehzahl der Antriebseinheit (25) umfasst, und der Steuerungsteil (3) eine linke (4) und eine rechte (5) Seite aufweist, wobei die rechte Seite (5) des Steuerungsteils einen ersten austauschbaren Teil (6) umfasst, der abnehmbar mit der linken Seite (4) des Steuerungsteils (3) verbunden ist; **dadurch gekennzeichnet, dass** die Kettensäge des Weiteren zumindest einen zweiten austauschbaren Teil (6') umfasst, gegen den der erste austauschbare Teil (6) ausgetauscht werden kann, wobei sich der erste austauschbare Teil (6) von dem zumindest zweiten austauschbaren Teil (6') darin unterscheidet, dass die Oberflächenstruktur und/oder die Breite und/oder das Material zumindest eines Teils des Steuerungsteils (3) eingestellt werden kann, indem der erste (6) gegen den zumindest einen zweiten austauschbaren Teil (6') ausgetauscht wird.
2. Kettensäge (1) nach Anspruch 1, wobei zumindest ein Abschnitt des zumindest einen austauschbaren Teils (6, 6') während des Betriebs der Kettensäge (1) in Kontakt mit der Hand des Benutzers ist, und zumindest ein Teil des Abschnitts des zumindest einen austauschbaren Teils (6, 6') eine im Allgemeinen konvexe oder konkave Gestalt aufweist.
 3. Kettensäge (1) nach einem der Ansprüche 1-2, wobei der zumindest eine austauschbare Teil (6, 6') ein austauschbarer Teil (6, 6') ist und die rechte Seite (5) des Steuerungsteils (3) bildet, und die rechte Seite (5) des Steuerungsteils (3) abnehmbar mit der linken Seite (4) des Steuerungsteils (6) verbunden ist.
 4. Kettensäge (1) nach Anspruch 3, wobei die linke Seite (4) des Steuerungsteils (3) einteilig mit dem Handgriffabschnitt (2) ist, so dass die linke Seite (4) des Steuerungsteils (3) nicht abnehmbar ist.
 5. Kettensäge (1) nach Anspruch 4, wobei die linke Seite (4) des Steuerungsteils (3) den Drosselhebel (8) und/oder einen Sicherheitsknopf (9) hält, so dass die rechte Seite (5) des Steuerungsteils (3) einfach ausgetauscht oder von der linken Seite (4) des Steuerungsteils (3) abgenommen werden kann, ohne mit dem Drosselhebel (8) und/oder dem Sicherheitsknopf (9) zu interferieren.
 6. Kettensäge (1) nach einem der vorhergehenden Ansprüche, wobei zumindest ein Abschnitt des/der austauschbaren Teil(e) (6, 6') aus einem Polymermaterial hergestellt ist, vorzugsweise einem Elastomermaterial, und noch bevorzugter aus einem TPE-Material.
 7. Kettensäge (1) nach einem der vorhergehenden Ansprüche, wobei der Steuerungsteil (3) eine zweite Längsachse (17) definiert, die sich, in einer Seitenansicht gesehen, im Wesentlichen entlang einer Oberseite zumindest eines Teils des Steuerungsteils (3) erstreckt, und wobei ein Winkel A zwischen der ersten (16) und der zweiten Längsachse (17) zwischen 14° und 45°, vorzugsweise zwischen 14° und 30°, und noch bevorzugter zwischen 14° und 25° beträgt, jeweils in einer Seitenansicht gesehen.
 8. Kettensäge (1) nach Anspruch 7, wobei A zwischen 14° und 20°, vorzugsweise zwischen 14° und 18°, und noch bevorzugter zwischen 14° und 16° beträgt.
 9. Kettensäge (1) nach einem der vorhergehenden Ansprüche, wobei ein hinteres Ende des Steuerungsteils (3) mit einem Gehäuseteil (12) an einem äußeren Oberflächenteil davon verbunden ist, der eine Stützfläche (13) zur Aufnahme des Handballens definiert, und wobei der Gehäuseteil (12) einen Vergaser oder eine Batterie darin aufnimmt.
 10. Kettensäge (1) nach einem der vorhergehenden Ansprüche, wobei der Steuerungsteil (3) eine zweite Längsachse (17) definiert, die sich, in einer Seitenansicht gesehen, im Wesentlichen entlang einer Oberseite zumindest eines Teils des Steuerungsteils (3) erstreckt, und wobei die Stützfläche (13) eine Ebene (18) definiert, und die Ebene (18) einen Winkel B mit der zweiten Längsachse (17) bildet, und wobei B zwischen 105° und 145°, vorzugsweise zwischen 110° und 140°, und noch bevorzugter zwischen 113° und 135° beträgt, jeweils in einer Seitenansicht gesehen.
 11. Kettensäge (1) nach Anspruch 10, wobei B zwischen 115° und 130°, vorzugsweise zwischen 117° und 127°, und noch bevorzugter zwischen 119° und 123° beträgt.
 12. Kettensäge (1) nach einem der Ansprüche 9-11, wobei die Stützfläche (13) sich zumindest 10 mm, vorzugsweise zumindest 16 mm, und noch bevorzugter zumindest 20 mm in einer Richtung nach rechts in Bezug auf einen am weitesten rechts liegenden Teil des hinteren Endes der rechten Seite (5) des Steuerungsteils (3) erstreckt.
 13. Kettensäge (1) nach einem der vorhergehenden Ansprüche, wobei der Handgriffabschnitt (2) relativ zu einem Kettensägenkörper (24) vibrationsgedämpft ist, wobei der Körper (24) die Antriebseinheit (25) umfasst, und wobei die Antriebseinheit (25) einen Verbrennungsmotor umfasst.

Revendications

1. Scie à chaîne à poignée supérieure, comprenant :

une barre de guidage (10) ;
 une chaîne de coupe (11) ; et
 une unité d'entraînement (25) agencée pour entraîner la chaîne de coupe (11) autour de la barre de guidage (10) ; où la barre de guidage (10) définit un premier axe longitudinal (16) s'étendant le long d'un centre de la barre de guidage (10), en regardant dans une vue de côté ;
 une section de poignée (2) pour porter et faire fonctionner la scie à chaîne (1), où la section de poignée (2) comporte une portion de commande (3) disposée sur le côté supérieur de la scie à chaîne (1), laquelle portion de commande (3) comporte un levier d'accélération (8) pour commander la vitesse de l'unité d'entraînement (25) et la portion de commande (3) a un côté gauche (4) et un côté droit (5),
 le côté droit (5) de la portion de commande (3) comprenant une première partie échangeable (6), reliée de manière détachable au côté gauche (4) de la portion de commande (3) ;

caractérisée en ce que

la scie à chaîne comprend en outre au moins une deuxième partie échangeable (6'), par laquelle peut être remplacée la première partie échangeable (6), la première partie échangeable (6) étant différente de l'au moins une deuxième partie échangeable (6'), de sorte que l'un(e) quelconque de la structure de surface, de la largeur et du matériau d'au moins une partie de la portion de commande (3) puisse être ajusté(e) en remplaçant la première partie échangeable (6) par l'au moins une deuxième partie échangeable (6').

2. Scie à chaîne (1) selon la revendication 1, dans laquelle au moins une portion de l'au moins une partie échangeable (6, 6') est en contact avec la main de l'utilisateur pendant le fonctionnement de la scie à chaîne (1) et au moins une partie de ladite portion de l'au moins une partie échangeable (6, 6') a une forme globalement convexe ou concave.

3. Scie à chaîne (1) selon l'une des revendications 1 et 2, dans laquelle l'au moins une partie échangeable (6, 6') est une partie échangeable (6, 6') et forme le côté droit (5) de la portion de commande (3), et le côté droit (5) de la portion de commande (3) est relié de manière détachable au côté gauche (4) de la portion de commande (6).

4. Scie à chaîne (1) selon la revendication 3, dans laquelle le côté gauche (4) de la portion de commande (3) est une partie intégrée avec la section de poignée

(2) de sorte que le côté gauche (4) de la partie commande (3) ne soit pas détachable.

5. Scie à chaîne (1) selon la revendication 4, dans laquelle le côté gauche (4) de la portion de commande (3) maintient le levier d'accélération (8) et/ou un bouton de sécurité (9), de sorte que le côté droit (5) de la portion de commande (3) puisse être facilement remplacé ou détaché du côté gauche (4) de la portion de commande (3) sans interférer avec ledit levier d'accélération (8) et/ou ledit bouton de sécurité (9).

6. Scie à chaîne (1) selon l'une des revendications précédentes, dans laquelle au moins une portion de la ou des partie(s) échangeable(s) (6, 6') est réalisée en un matériau polymère, et de préférence en un matériau élastomère et encore plus préférablement en un matériau TPE.

7. Scie à chaîne (1) selon l'une des revendications précédentes, dans laquelle la portion de commande (3) définit un deuxième axe longitudinal (17) s'étendant essentiellement le long d'un côté supérieur d'au moins une partie de la portion de commande (3), en regardant dans une vue de côté, et un angle A entre les premier (16) et deuxième (17) axes longitudinaux est compris entre 14° et 45° et de préférence entre 14° et 30° et plus préférablement entre 14° et 25°, en les regardant tous dans une vue de côté.

8. Scie à chaîne (1) selon la revendication 7, dans laquelle A est compris entre 14° et 20° et de préférence entre 14° et 18° et plus préférablement entre 14° et 16°.

9. Scie à chaîne (1) selon l'une des revendications précédentes, dans laquelle une extrémité arrière de la portion de commande (3) est reliée à une partie de logement (12) au niveau d'une partie de surface externe de celle-ci, qui définit une surface de support (13) pour recevoir le talon de la main de l'utilisateur, et laquelle partie de logement (12) reçoit un carburateur ou une batterie dedans.

10. Scie à chaîne (1) selon l'une des revendications précédentes, dans laquelle la portion de commande (3) définit un deuxième axe longitudinal (17) s'étendant essentiellement le long d'un côté supérieur d'au moins une partie de la portion de commande (3), en regardant dans une vue de côté, et la surface de support (13) définit un plan (18), et le plan (18) forme un angle, B, avec le deuxième axe longitudinal (17), et B est compris entre 105° et 145° et de préférence entre 110° et 140° et plus préférablement entre 113° et 135°, en les regardant tous dans une vue de côté.

11. Scie à chaîne (1) selon la revendication 10, dans laquelle B est compris entre 115° et 130° et de pré-

férence entre 117° et 127° et plus préférablement entre 119° et 123°.

- 12.** Scie à chaîne (1) selon l'une des revendications 9 à 11, dans laquelle la surface de support (13) s'étend dans une direction vers la droite sur au moins 10 mm et de préférence sur au moins 16 mm et plus préférablement sur au moins 20 mm par rapport à la partie la plus à droite d'une extrémité arrière du côté droit (5) de la portion de commande (3). 5 10
- 13.** Scie à chaîne (1) selon l'une des revendications précédentes, dans laquelle la section de poignée (2) est une section de poignée antivibrations par rapport à une partie de corps (24) de scie à chaîne, laquelle partie de corps (24) comporte l'unité d'entraînement (25) et où l'unité d'entraînement (25) comporte un moteur à combustion interne. 15

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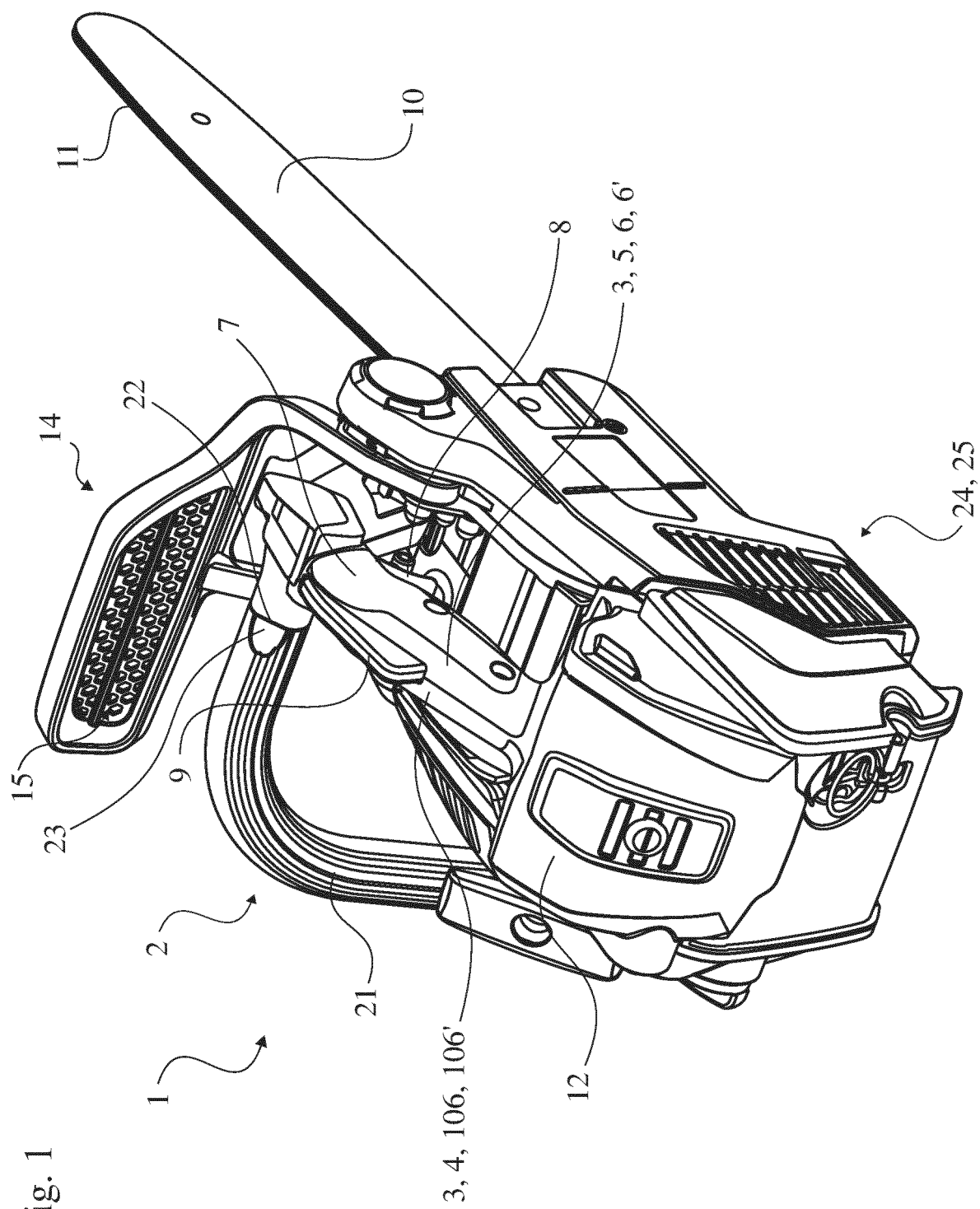
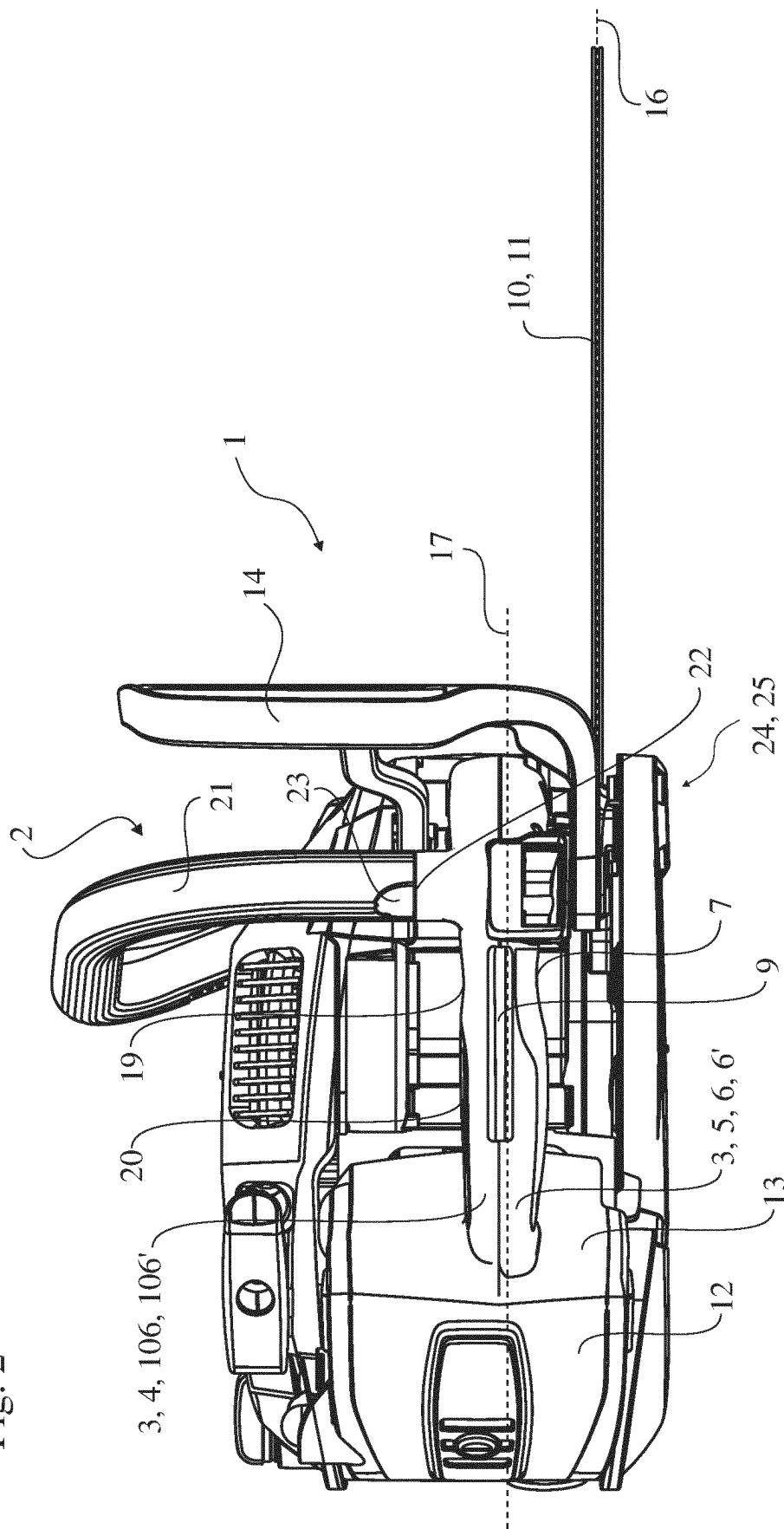
1
b.
E

Fig. 2



3
b
E

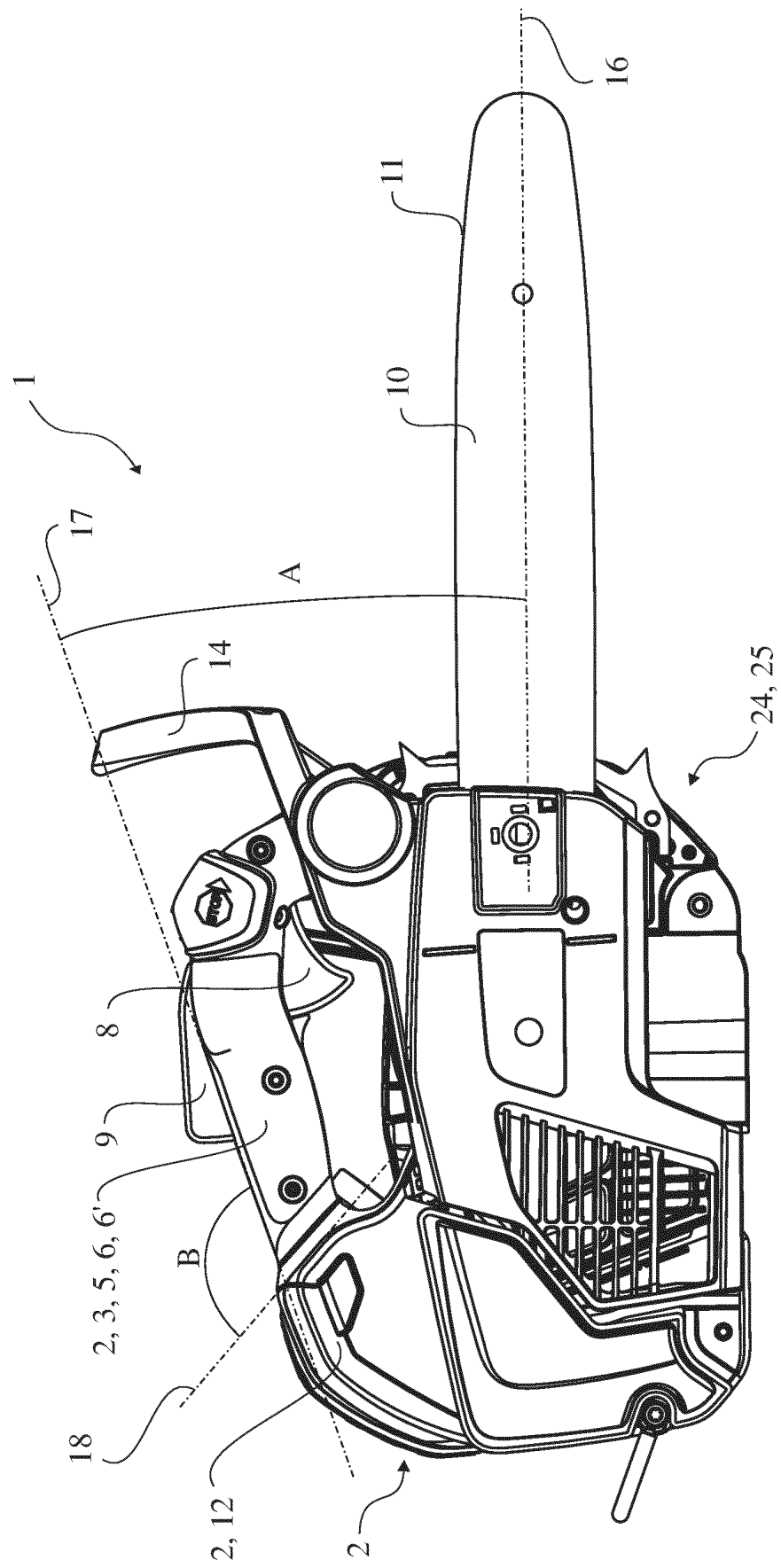


Fig. 4

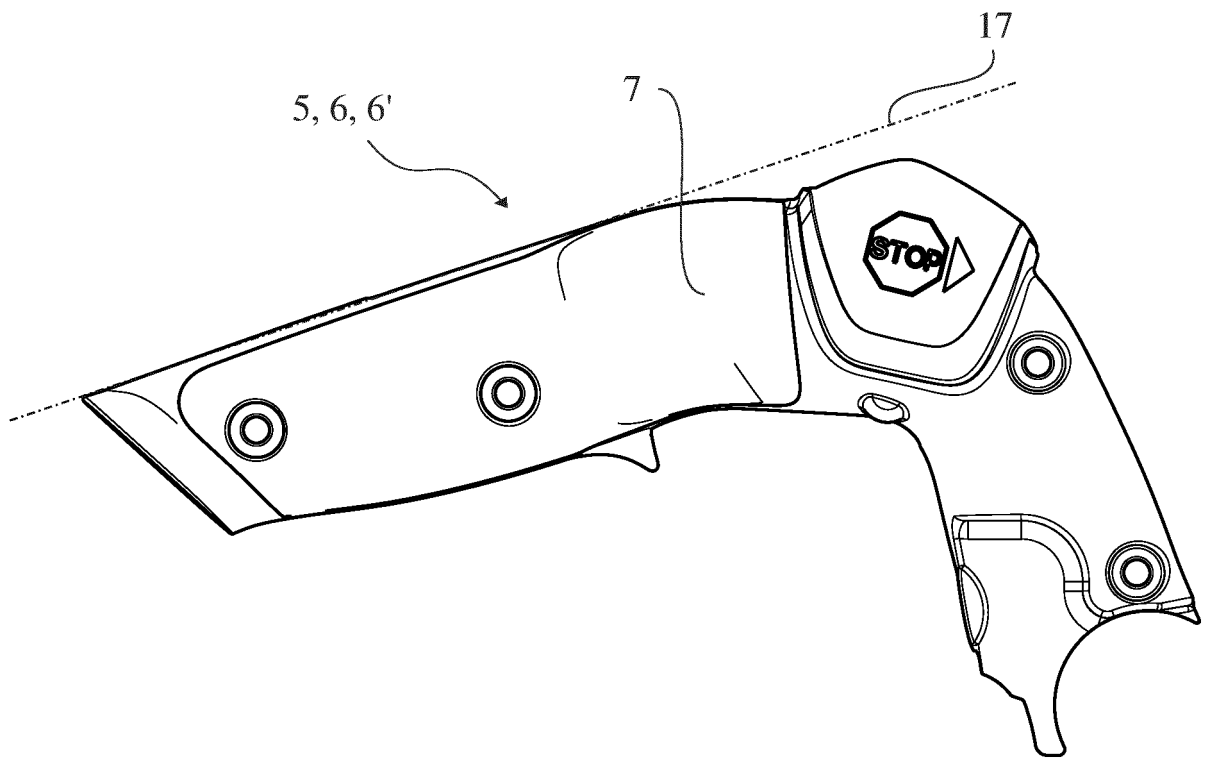


Fig. 5

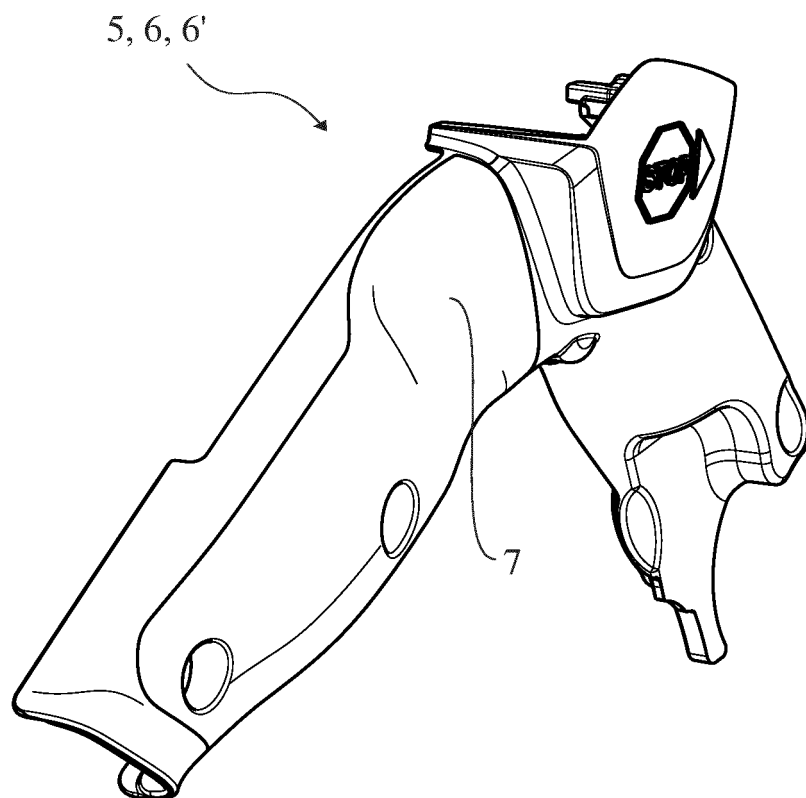


Fig. 6

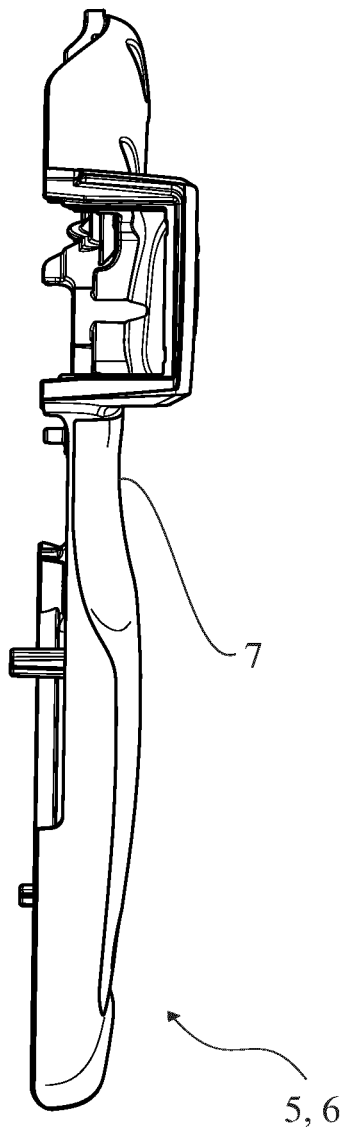
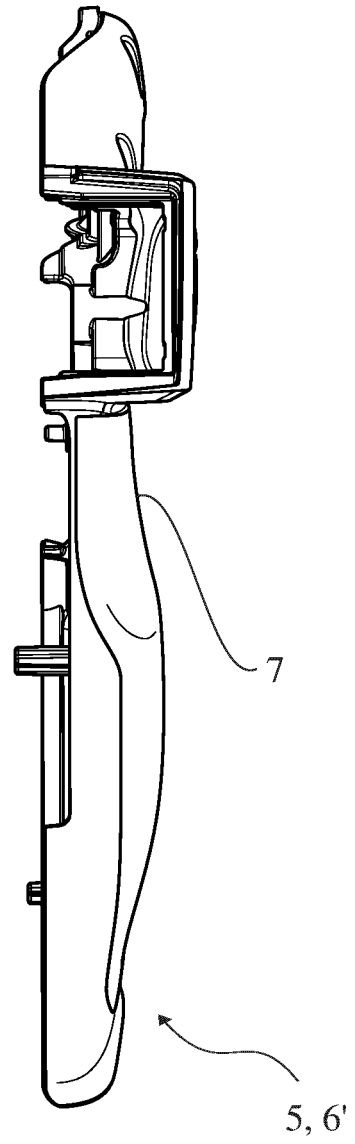


Fig. 7



REFERENCES CITED IN THE DESCRIPTION

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