

(19)



(11)

EP 1 623 802 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
08.10.2008 Bulletin 2008/41

(51) Int Cl.:
B27B 5/16 (2006.01)

(21) Application number: **05016704.8**

(22) Date of filing: **01.08.2005**

(54) **Flip over saw**

Eine zwischen einer Übertisch- und einer Untertischlage verschwenkbare Säge

Scie pivotable entre une position dessus la table et une position dessous la table

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI
SK TR**

• **Utsuno, Atsushi**
c/oMakita Corporation
Anjo
Aichi 446-8502 (JP)

(30) Priority: **04.08.2004 JP 2004228424**

(74) Representative: **Kramer - Barske - Schmidtchen**
European Patent Attorneys
Landsberger Strasse 300
80687 München (DE)

(43) Date of publication of application:
08.02.2006 Bulletin 2006/06

(73) Proprietor: **Makita Corporation**
Anjo-shi, Aichi-ken 446-8502 (JP)

(56) References cited:
EP-A- 0 271 755 EP-A- 0 586 172
US-A- 3 570 564 US-A- 4 531 441

(72) Inventors:
• **Ito, Katsuyasu**
c/oMakita Corporation
Anjo
Aichi 446-8502 (JP)

EP 1 623 802 B1

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).

Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to a flip over saw according to the preamble of claim 1 including a main body having a saw blade driven to rotate and a table at which the main body is held movable up and down, and a base at which the table and the main body are held rotatable 180 degrees. The flip over saw can be used as a miter saw when the main body is positioned over the table, and can be used as a table saw when the main body is positioned under the table protruding the saw blade over the table.

Description of the Related Art

[0002] A conventional flip over saw has a rectangular mounting base on which a table is horizontally supported rotatable 180 degrees around a center portion of the table and capable of being secured even if either one or the other surface of the table faces upwardly. Moreover, on one side of the table a main body is pivotally mounted movable up and down, and the main body has a saw blade which rotates driven by a motor. With this configuration, the flip over saw can be used as a miter saw when the main body is positioned over the table, in which the main body is lowered to cut a workpiece disposed on the table. On the other hand, the flip over saw can be used as a table saw when the main body is positioned under the table by rotating the table with a condition that the saw blade is secured at a bottom dead center to penetrate the table downwardly. In a table saw mode, a workpiece on the table can be slid with respect to the saw blade and cutting is conducted. As this kind of flip over saw, the U. S. Patent No. 5787779 discloses a well-known structure.

[0003] In such a flip over saw as described in the above patent, a heavyweight motor is located at the rear side of the table when it is used as a miter saw, so that the table is unbalanced and prone to rotate. With this configuration, malfunctional table rotation might damage the table and the main body. In addition, the reverse operation of the table becomes hard since the center of gravity of the table being far from the center of rotation generates a large centrifugal force in reversing, thereby lowering operability.

[0004] US 4,531,441, US 3,570,564 and EP 0 271 755 A1 disclose flip over saws which are a combined table and miter saw. By rotating a horizontal table supported on a base the saw can be switched from a miter saw mode to a table saw mode. A main body is supported by a support arm provided on one side of the table and has a saw blade driven to rotate by a motor. The motor is respectively disposed behind the center of rotation of the table with respect to the base when regarded in a cutting

direction in the miter saw mode and at a top dead center of the main body.

[0005] EP 0 586 172 A2 which forms the preamble of claim 1 discloses a pivoting power tool with a table. The table is pivotable about an axis with respect to a frame, which axis moves along an arc between two end positions which it assumes in the miter saw mode and the table saw mode, respectively. In the miter saw mode and at the top dead center of the main body, the motor which is provided on a support arm is positioned behind the center of rotation.

[0006] In order to overcome the above problems, an object of the present invention is to provide a flip over saw which prevents the table's accidental rotation while excellent operability in reversing the table is secured.

SUMMARY OF THE INVENTION

[0007] In order to achieve the above object, a flip over saw comprising the features of claim 1 is provided. Preferred embodiments are defined by the dependent claims. The present invention is characterized in that

[0008] the center of motor is located in front of the center of rotation of the table with the main body being at the top dead center in a miter saw mode in order to prevent the accidental rotation of the table more effectively.

[0009] In addition, preferably the main body is pivotally mounted on a support arm via a support shaft rotatably in the upper and lower direction. Then, the distance between the center of rotation of the table and the center of motor is shorter than that between the center of rotation of the table and the center of the support shaft with the main body being at a bottom dead center in a miter saw mode in order to obtain excellent operability in reversing the table from the miter saw mode position to the table saw mode position.

[0010] According to the present invention, since the table is well-balanced in the miter saw mode, the table is protected from being reversed even if locking of the table is released by malfunction. As a result, damage to the table and the main body caused by accidental reverse of the table can be prevented. In addition, since the center of gravity is positioned near the center of rotation, the table's reverse operation becomes easier, thereby improving operability.

[0011] According to a preferred embodiment of the present invention, reversing of the table for conversion to the table saw mode is conducted by flipping up the front part of the table upwardly. By doing this, the center of gravity is positioned to the front, thereby preventing the accidental reverse of the table from the miter saw mode more effectively.

[0012] According to the present invention, since the motor is closer to the center of rotation of the table the moment of inertia in reversing becomes small, so that reversing can be conducted easily with a light pressure. Therefore, an excellent operability can be achieved in reversing the table upon conversion from the miter saw

mode to the table saw mode.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013]

Fig. 1 is an overall view of a flip over saw (in the miter saw mode).

Fig. 2 is a plain view of the flip over saw.

Fig. 3 is an explanation view showing a locking state at the bottom dead center.

Fig. 4 is an explanation view of a flip over saw (in the table saw mode).

Fig. 5 is an explanation view showing a positional relationship between a motor and a rotating shaft.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0014] Hereinafter, embodiments of the present invention will be explained with reference to the drawings.

[0015] Fig. 1 is an overall view showing an example of a flip over saw and Fig. 2 is a plain view thereof. A flip over saw 1 has a base 2 which is a mounting in rectangular shape in a plain view and a table 3 placed on the base 2, and a saw blade unit 4 mounted on the table 3. The table 3 is held rotatable 180 degrees around the rotating shafts 5, 5 extending in the lateral direction (in Figs. 1 and 2, the right is forward). Moreover, the table 3 can be secured in a horizontal state by a stopper mechanism 6 even if either one or the other surface of table 3 faces upwardly. The table 3 also has a circular turntable 7 which is horizontally turnable, and a guide fence 8 parallel to the rotating shaft 5 so as to transverse on the turntable 7.

[0016] The saw blade unit 4 has a support arm 9 standing at the rear part of the turntable 7 and a main body 11 held to be movable up and down by a support shaft 10 at the upper end of the support arm 9. At the left side of a blade cover 12 which is a housing of the main body 11, a motor 13 and a handle 14 are provided. In the blade cover 12, a circular saw blade 15 driven to rotate by the motor 13 is provided. The main body 11 is urged toward the top dead center as shown in Fig. 1 by a torsion spring (not shown) provided on the support shaft 10. As shown in Fig. 3, the main body 11 is lowered to the bottom dead center where it penetrates a slit (not shown) provided at the center of the turntable 7 when a handle 14 is held down. Then a workpiece on the turntable 7 can be cut by the rotating saw blade 15. In this way, the flip over saw can be used as a miter saw. The reference number 16 denotes a safety cover which is at the position of covering the saw blade 15 when the main body 11 is at the top dead center and rotated to expose the saw blade 15 in accordance with lowering of the main body 11.

[0017] The support arm 9 can be tilted with the main body 11 in the right direction (the lower direction of Fig. 2) on the turntable 7. Fixing the tilted support arm 9 and

the main body 11 by a lever 17 at an arbitrary tilting position provides the saw blade 15 with an angle in the perpendicular direction. With the tilt of the main body 11, bevel cutting can be conducted with respect to the workpiece on the turntable 7. Moreover, the turntable 7 can turn in a horizontal direction with the main body 11 when a handle 14 is held down. In accordance with the selected angle of the horizontal turn of the turntable 7, orthogonal cutting and miter cutting can be conducted. In the orthogonal cutting, the saw blade 15 is perpendicular to the guide fence 8. On the other hand, in the miter cutting the saw blade 15 is horizontally slanted from the perpendicular position.

[0018] The main body 11 can be secured at the bottom dead center as shown in Fig. 3 by means of a locking mechanism 18 provided between the support arm 9 and the main body 11. As shown in Fig. 4, by reversing the table 3 with this secured condition of the main body 11, a table saw mode can be obtained wherein only the saw blade 15 protrudes above the table 3 on which a workpiece is slid for cutting. In this table saw mode, the rotating shaft 5 corresponds to the center of rotation of the table 3. Here, L1 is defined as the distance between the center of axle O of the rotating shaft 5 and the center O1 of the motor 13, and L2 is defined as the distance between the center of axle O of the rotating shaft 5 and the center O2 of the support shaft 10. Then, L1 is set to be shorter than L2.

[0019] In the miter saw mode, the rotating shafts 5, 5 of the table 3 are positioned on the table 3, so that there is a difference in height of the table 3 between at the first rotating position as shown in Figs. 1-3 (the miter saw mode) and at the second rotating position as shown in Fig. 4 (the table saw mode). (The table 3 in the table saw mode is higher.)

[0020] Moreover, in order to allow the table 3 to rotate, an opening 19 is provided at the center of the base 2 in the longitudinal direction. In the inner lateral edges of this opening 19, a pair of first stopper rubbers 20, 20 which support the lower surface of the table 3 at the first rotating position are provided on the front side of the opening 19. On the other hand, a pair of second stopper rubbers 21, 21 are provided on the rear side of the opening 19. The second stopper rubbers 21, 21 are positioned on the table 3 at the first rotating position, and support the lower surface of the table 3 at the second rotating position.

[0021] With this configuration, the table 3 can be reversed only in the direction where the front part of the table is flipped up (the direction of an arrow in Fig. 3) in converting from the miter saw mode to the table saw mode. On the other hand, the table 3 can be reversed only in the direction in which the rear part of the table is flipped up (the direction of an arrow of Fig. 4) in converting from the table saw mode to the miter saw mode. It should be noted that the rotating shafts 5, 5 are not positioned at the center of the table 3 in the longitudinal direction, but instead at a slightly rearward position in the first rotating position, so that the table 3 does not interfere with

the first stopper rubbers 20, 20 upon conversion from the miter saw mode to the table saw mode.

[0022] As shown in Fig. 5, in this flip over saw 1, a motor 13 is located adjacent to the upper side of the rotating shafts 5, 5 of the table 3 with the main body being at the top dead center in a miter saw mode where the main body 11 is positioned above the table. According to the invention, the motor's location adjacent to the upper side of the rotating shafts 5, 5 is achieved as follows. When the main body is at the top dead center, the center O1 of the motor 13 is located at the area slightly forward from the vertical surface S penetrating the center of axle O of the rotating shafts 5, 5 of the table 3. Then, the horizontal distance H between the center O1 and the vertical surface S is set to be smaller.

[0023] In the flip over saw configured as described above, in the miter saw mode the table 3 is secured by means of a stopper mechanism 6 with the saw blade unit 4 raised as shown in Figs. 1-3. Then the handle 14 is held to lower the main body 11 in which the blade saw 15 is rotating, so that a workpiece disposed on the turntable 7 can be cut, specifically, the bevel cutting by tilting the main body 11 and the miter cutting by horizontally turning the turntable 7 are achieved.

[0024] Here, because of the location of the motor 13, the center of gravity of the main body 11 is substantially positioned at the center of the table 3 in the longitudinal direction (that is, adjacent to the rotating shaft 5). Therefore, the accidental reverse of the table 3 can be prevented even if the stopper mechanism 6 is released by malfunction and so on.

[0025] On the other hand, conversion into the table saw mode is conducted as follows. First, the main body 11 is lowered to the bottom dead center to be secured by the locking mechanism 18. Then the stopper mechanism 6 is released and the table 3 is turned 180 degrees in the direction where the front part of the table is flipped up until the table 3 is stopped at the reverse position abutting the second stopper rubbers 21, 21. Likewise, upon conversion into the miter saw mode, the table 3 is turned 180 degrees in the direction where the rear part of the table is flipped up until the table 3 is stopped at the reverse position abutting the first stopper rubbers 20, 20. In these reverse operations, the motor 13 of the main body 11 locked at the bottom dead center is further closer to the rotating shaft 5 in addition to above-described location. Consequently, the moment of inertia upon reversing becomes smaller, so that the reverse can be conducted easily with a light pressure.

[0026] Since the table 3 is well-balanced even in the miter saw mode, the table 3 is protected from reversing even if the stopper mechanism 6 is released by malfunction. As a result, damage to the table 3 and the main body 11 caused by accidental reverse can be prevented. In addition, since the center of gravity is closer to the center of rotation, reverse operation of the table 3 becomes easier, thereby improving operability.

[0027] Moreover, when the main body 11 is at the top

dead center in the miter saw mode, the center of gravity is positioned forward since the motor 13's center O1 is positioned in front of the table 3's center of rotation O. As a result, the accidental reverse of the table 3 from the miter saw mode can be prevented more effectively.

[0028] On the other hand, when the main body 11 is at the bottom dead center in the miter saw mode, the distance between the table 3's rotating center O and the motor 13's center O1 is shorter than that between the rotating center O and the support shaft 10's center O2. Consequently, the moment of inertia becomes small in reversing the table 3, so that reverse can be conducted easily with a light pressure. Therefore, an excellent operability can be achieved upon reverse of the table 3 to convert from the miter saw mode to the table saw mode.

[0029] Further, the structure of the flip over saw is not limited to the above embodiments. The main body capable of tilting to both sides may be applicable to the present invention, and on the contrary, the structure excluding bevel cutting or miter cutting may also be applicable.

Claims

1. A flip over saw comprising:

- a base (2);
 - a horizontal table (3) supported on the base (2) rotatable 180 degrees;
 - a main body (11) supported by a support arm (9) provided on one side of the table (3) and having a saw blade (15) driven to rotate by a motor (13), and
 - a locking mechanism (18) provided between the main body (11) and the support arm (9), being able to lock the main body (11) at the bottom dead center in which the saw blade (15) penetrates the table (3),
- wherein the flip over saw can be used as a miter saw in which the saw blade (15) cuts a workpiece on the table (3) by lowering the main body (11) when the table (3) is at the first rotating position where the main body (11) is positioned above the table(3),
- and wherein the flip over saw can be used as a table saw in which a workpiece is slid with respect to the saw blade (15) protruding upwardly while penetrating the table (3) when the table (3) is at the second rotating position where the main body (11) locked at the bottom dead center by the locking mechanism (18) is positioned below the table (3), wherein the motor (13) is located right above the center of rotation (5) of the table (3) or adjacent thereto with the main body (11) being at the top dead center when the table (3) is positioned at the first rotating position.
- characterized in that** the center of the motor (13) is positioned in front of the center of rotation

- (5) of the table (3) with the main body (11) being at the top dead center when the table (3) is positioned at the first rotating position.
2. A flip over saw according to Claim 1, **characterized in that** the table (3) is reversed in the direction in which the front part of the table (3) is flipped up in reversing from the first rotating position to the second rotating position. 5
 3. A flip over saw according to one of Claims 1 to 2, **characterized in that** the main body (11) is held movable up and down by a support shaft (10) provided with a support arm (9) standing on the table (3). 10
 4. A flip over saw according to Claim 3, **characterized in that** the distance between the center of rotation (5) of the table (3) and the center of the motor (13) is shorter than that between the center of rotation (5) of the table (3) and the center of the support shaft (10) with the main body (11) being at a bottom dead center when the table (3) is positioned at the first rotating position. 15 20
 5. A flip over saw according to one of Claims 1 to 4, **characterized in that** the motor (13) is located on one side of the saw blade (15) positioned on the upper side of the main body (11). 25
 6. A flip over saw according to one of Claims 1 to 5, **characterized in that** the center of rotation (5) of the table (3) is positioned rearward when the table (3) is at the first rotating position, wherein at the first rotating position the table (3) is supported by a first stopper (20) protruding into lateral inner surfaces at the front of an opening (19) of the base (2), and wherein at the second rotating position the table (3) is supported by a second stopper (21) protruding into the lateral inner surfaces at the rear of the opening (19) of the base (2). 30 35 40
 7. A flip over saw according to Claim 8, **characterized in that** the center of rotation (5) of the table (3) is positioned on the table (3) at the first rotating position, so that the table (3) at the second rotating position is higher than that at the first rotating position. 45
 8. A flip over saw according to one of Claims 1 to 7, **characterized in that** a biasing means which urges the main body (11) to the top dead center is provided. 50
 9. A flip over saw according to one of Claims 1 to 8, **characterized in that** the table (3) has a turntable (7) which can turn horizontally and on which the main body (11) is provided, whereby miter cutting is conducted in accordance with the selected angle of the horizontal turn of the turntable (7) when the flip over saw is used as a miter saw. 55

10. A flip over saw according to one of Claims 1 to 9, **characterized in that** the main body (11) can be tilted to right and left sides and fixed at an arbitrary tilting position by a lever (17), whereby bevel cutting is conducted in accordance with the selected angle perpendicular to the saw blade (4) when the flip over saw is used as a miter saw.

11. A flip over saw according to claim 9 or 10, **characterized in that** on the table (3) a guide fence (8) parallel to the rotating shaft (5) of the table (3) is provided so as to transverse on the turntable (7).

12. A flip over saw according to one of Claims 1 to 11, **characterized in that** the main body (11) is provided with a handle (14) by which the main body (11) is moved up and down on the side where the motor (13) is provided.

Patentansprüche

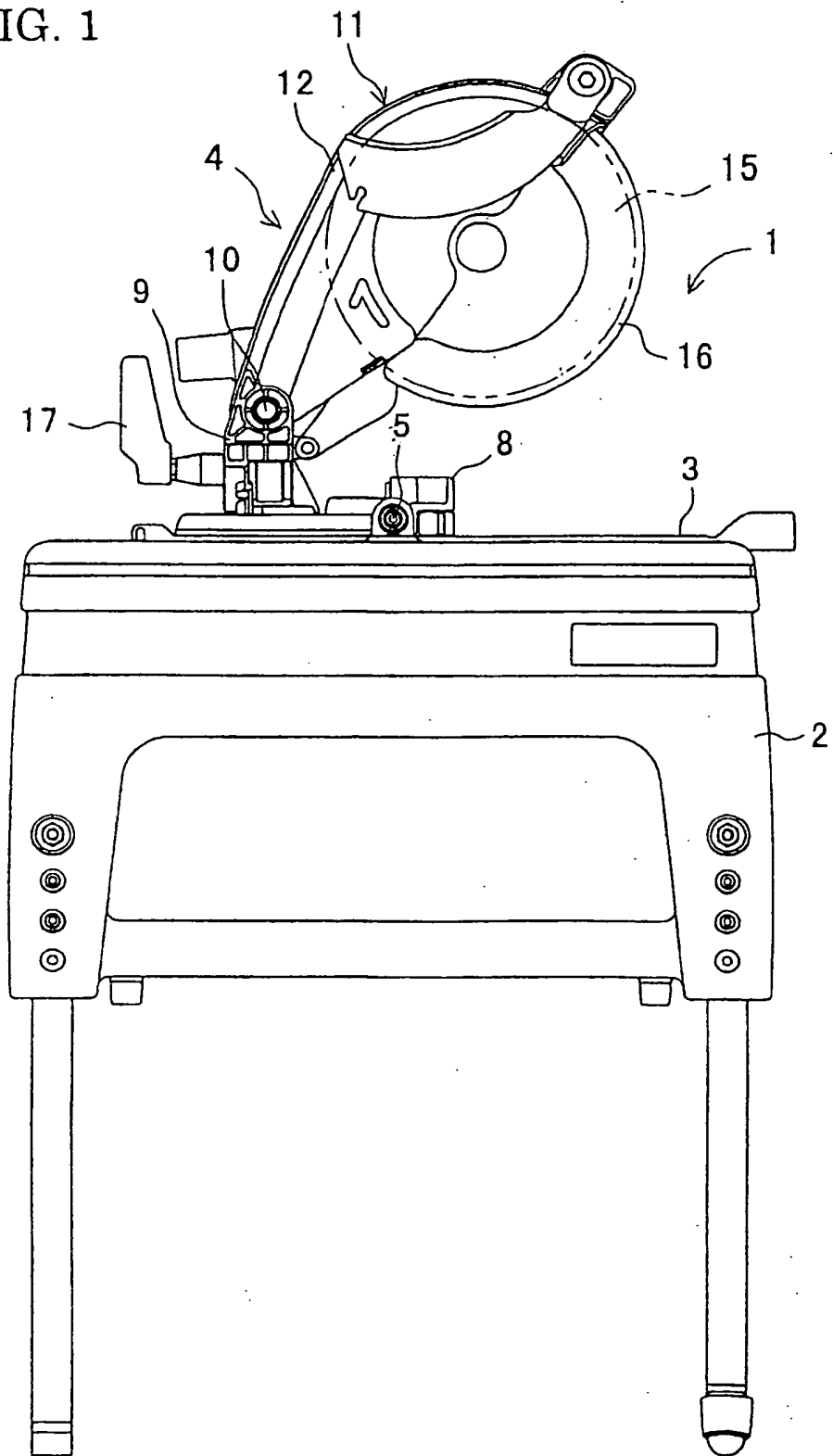
1. Schwenkbare Tischsäge, enthaltend:

eine Basis (2);
einen horizontalen Tisch (3), der um 180 Grad drehbar der auf der Basis (2) gehalten wird;
einen Hauptkörper (11), der durch einen Stützarm (9) gehalten wird, der auf einer Seite des Tisches (3) vorgesehen ist, und der ein Sägeblatt (15) aufweist, das von einem Motor (13) zur Drehung angetrieben wird, und
einen Sperrmechanismus (18), der zwischen dem Hauptkörper (11) und dem Stützarm (9) vorgesehen ist, und der in der Lage ist, den Hauptkörper (11) am unteren Totpunkt zu sperren, an dem das Sägeblatt (15) den Tisch (3) durchdringt,
wobei die schwenkbare Tischsäge als eine Gehrungssäge verwendet werden kann, bei der das Sägeblatt (15) ein Werkstück auf dem Tisch (3) schneidet, indem der Hauptkörper (11) abgesenkt wird, wenn sich der Tisch in der ersten Drehposition befindet, in der sich der Hauptkörper (11) über dem Tisch (3) befindet, und wobei die schwenkbare Tischsäge als eine Tischsäge verwendet werden kann, bei der ein Werkstück bezüglich zum Sägeblatt (15) bewegt wird, das nach oben hervorragt, wobei es den Tisch (3) durchdringt, wenn sich der Tisch (3) in der zweiten Drehposition befindet, in der der Hauptkörper (11), der durch den Sperrmechanismus (18) am unteren Totpunkt gesperrt ist, sich unter dem Tisch (3) befindet, wobei sich der Motor (13) direkt über dem Drehzentrum (5) des Tisches (3) oder daneben befindet, wobei sich der Hauptkörper (11) am oberen Totpunkt befindet, wenn sich der Tisch (3) in der ersten

- Drehposition befindet;
- dadurch gekennzeichnet, dass** sich das Zentrum des Motors (13) vor dem Drehzentrum (5) des Tisches (3) befindet, wobei sich der Hauptkörper (11) am oberen Totpunkt befindet, wenn sich der Tisch (3) in der ersten Drehposition befindet.
2. Schwenkbare Tischsäge nach Anspruch 1, **dadurch gekennzeichnet, dass** der Tisch (3) in der Richtung herumgedreht wird, in der der vordere Teil des Tisches (3) beim Herumdrehen von der ersten Drehposition zur zweiten Drehposition nach oben geklappt wird.
 3. Schwenkbare Tischsäge nach einem der Ansprüche 1 bis 2, **dadurch gekennzeichnet, dass** der Hauptkörper (11) durch einen Halterungsschaft (10), der mit einem Stützarm (9) versehen ist, der auf dem Tisch (3) steht, nach oben und unten bewegbar gehalten ist.
 4. Schwenkbare Tischsäge nach Anspruch 3, **dadurch gekennzeichnet, dass** der Abstand zwischen dem Drehzentrum (5) des Tisches (3) und dem Zentrum des Motors (13) kürzer ist als der zwischen dem Drehzentrum (5) des Tisches (3) und dem Zentrum des Halterungsschafts (10), wobei sich der Hauptkörper (11) an einem unteren Totpunkt befindet, wenn sich der Tisch (3) in der ersten Drehposition befindet.
 5. Schwenkbare Tischsäge nach einem der Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** sich der Motor (13) auf der einen Seite des Sägeblatts (15) befindet, das auf der oberen Seite des Hauptkörpers (11) positioniert ist.
 6. Schwenkbare Tischsäge nach einem der Ansprüche 1 bis 5, **dadurch gekennzeichnet, dass** sich das Drehzentrum (5) des Tisches (3) hinten befindet, wenn sich der Tisch (3) in der ersten Drehposition befindet, wobei der Tisch (3) in der ersten Drehposition durch einen ersten Stopper (20) gestützt wird, der in seitliche Innenflächen an der Vorderseite einer Öffnung (19) der Basis (2) ragt, und wobei der Tisch (3) in der zweiten Drehposition durch einen zweiten Stopper (21) gestützt wird, der in die seitlichen Innenflächen an der Rückseite der Öffnung (19) der Basis (2) ragt.
 7. Schwenkbare Tischsäge nach Anspruch 8, **dadurch gekennzeichnet, dass** sich das Drehzentrum (5) des Tisches (3) an der ersten Drehposition auf dem Tisch befindet, so dass der Tisch (3) an der zweiten Drehposition höher ist als an der ersten Drehposition.
 8. Schwenkbare Tischsäge nach einem der Ansprüche 1 bis 7, **dadurch gekennzeichnet, dass** ein Vorspannmittel vorgesehen ist, das den Hauptkörper (11) zum oberen Totpunkt drängt.
 9. Schwenkbare Tischsäge nach einem der Ansprüche 1 bis 8, **dadurch gekennzeichnet, dass** der Tisch (3) einen Drehtisch (7) aufweist, der sich horizontal drehen kann, und auf dem der Hauptkörper (11) vorgesehen ist, wobei Gehrungssägen in Übereinstimmung mit dem ausgewählten Winkel der horizontalen Drehung des Drehtisches (7) durchgeführt wird, wenn die schwenkbare Tischsäge als Gehrungssäge verwendet wird.
 10. Schwenkbare Tischsäge nach einem der Ansprüche 1 bis 9, **dadurch gekennzeichnet, dass** der Hauptkörper (11) zur rechten und linken Seite geneigt werden kann und durch einen Hebel (17) in einer beliebigen Neigungsposition fixiert werden kann, wodurch Schrägschneiden in Übereinstimmung mit dem ausgewählten Winkel senkrecht zum Sägeblatt (4) durchgeführt wird, wenn die schwenkbare Tischsäge als Gehrungssäge verwendet wird.
 11. Schwenkbare Tischsäge nach Anspruch 9 oder 10, **dadurch gekennzeichnet, dass** auf dem Tisch (3) ein Führungsgitter (8) parallel zur Drehachse (5) des Tisches (3) vorgesehen ist, so dass es schräg auf dem Drehtisch (7) verläuft.
 12. Schwenkbare Tischsäge nach einem der Ansprüche 1 bis 11, **dadurch gekennzeichnet, dass** der Hauptkörper (11) mit einem Handgriff (14) versehen ist, durch den der Hauptkörper (11) auf der Seite, auf der sich der Motor (13) befindet, nach oben und unten bewegt werden kann.
- ## Revendications
1. Scie basculable, comportant :
 - une base (2) ;
 - une table horizontale (3) supportée sur la base (2), pouvant tourner sur 180 degrés ;
 - un corps principal (11) supporté par un bras de support (9) agencé sur un premier côté de la table (3), et ayant une lame de scie (15) entraînée en rotation par un moteur (13), et
 - un mécanisme de verrouillage (18) agencé entre le corps principal (11) et le bras de support (9), étant capable de verrouiller le corps principal (11) au niveau du point mort bas dans lequel la lame de scie (15) pénètre dans la table (3), dans laquelle la scie basculable peut être utilisée en tant que scie à onglet dans laquelle la lame de scie (15) découpe une pièce à usiner

- sur la table (3) en abaissant le corps principal (11) lorsque la table (3) est dans la première position de rotation dans laquelle le corps principal (11) est positionné au-dessus de la table (3), et dans laquelle la scie basculable peut être utilisée comme une scie circulaire à table dans laquelle une pièce à usiner est coulissée par rapport à la lame de scie (15) faisant saillie vers le haut tout en pénétrant la table (3) lorsque la table (3) est dans la seconde position de rotation dans le corps principal (11) verrouillé au niveau du point mort bas par le mécanisme de verrouillage (18) est positionné sous la table (3), dans laquelle le moteur (13) est situé juste au-dessus du centre de rotation (5) de la table (3), ou adjacent à celui-ci, le corps principal (11) étant au niveau du point mort haut lorsque la table (3) est positionnée dans la première position de rotation, **caractérisée en ce que** le centre du moteur (13) est positionné en face du centre de rotation (5) de la table (3), le corps principal (11) étant au niveau du point mort haut lorsque la table (3) est positionnée dans la première position de rotation.
2. Scie basculable selon la revendication 1, **caractérisée en ce que** la table (3) est inversée dans la direction dans laquelle la partie avant de la table (3) est basculée vers le haut lors d'une inversion à partir de la première position de rotation vers la seconde position de rotation.
 3. Scie basculable selon la revendication 1 ou 2, **caractérisée en ce que** le corps principal (11) est maintenu mobile vers le haut et vers le bas par un arbre de support (10) muni d'un bras de support (9) debout sur la table (3).
 4. Scie basculable selon la revendication 3, **caractérisée en ce que** la distance entre le centre de rotation (5) de la table (3) et le centre du moteur (13) est plus courte que celle entre le centre de rotation (5) de la table (3) et le centre de l'arbre de support (10), le corps principal (11) étant au niveau du point mort bas lorsque la table (3) est positionnée dans la première position de rotation.
 5. Scie basculable selon l'une quelconque des revendications 1 à 4, **caractérisée en ce que** le moteur (13) est situé sur un côté de la lame de scie (15) positionné sur le côté supérieur du corps principal (11).
 6. Scie basculable selon l'une quelconque des revendications 1 à 5, **caractérisée en ce que** le centre de rotation (5) de la table (3) est positionné vers l'arrière lorsque la table (3) est dans la première position de rotation, dans laquelle dans la première position de rotation, la table (3) est supportée par un premier butoir (20) faisant saillie dans les surfaces latérales intérieures à l'avant d'une ouverture (19) de la base (2), et dans laquelle dans la seconde position de rotation, la table (3) est supportée par un second butoir (21) faisant saillie dans les surfaces latérales intérieures à l'arrière de l'ouverture (19) de la base (2).
 7. Scie basculable selon la revendication 8, **caractérisée en ce que** le centre de rotation (5) de la table (3) est positionné sur la table (3) dans la première position de rotation, de telle sorte que la table (3), dans la seconde position de rotation, est plus haute que dans la première position de rotation.
 8. Scie basculable selon l'une quelconque des revendications 1 à 7, **caractérisée en ce que** des moyens de rappel poussant le corps principal (11) vers le point mort haut sont fournis.
 9. Scie basculable selon l'une quelconque des revendications 1 à 8, **caractérisée en ce que** la table (3) dispose d'une platine (7) qui peut tourner horizontalement et sur laquelle le corps principal (11) est agencé, dans laquelle la coupe en onglet est réalisée conformément à l'angle sélectionné du tour horizontal de la platine (7) lorsque la scie basculable est utilisée en tant que scie à onglet.
 10. Scie basculable selon l'une quelconque des revendications 1 à 9, **caractérisée en ce que** le corps principal (11) peut être incliné vers les côtés droit et gauche, et fixé dans une position de basculement arbitraire par un levier (17), de sorte qu'une coupe en biseau est réalisée conformément à l'angle sélectionné, perpendiculairement à la lame de scie (4), lorsque la scie basculable est utilisée en tant que scie à onglet.
 11. Scie basculable selon la revendication 9 ou 10, **caractérisée en ce que** sur la table (3), une barrière de guidage (8) parallèle à l'arbre rotatif (5) de la table (3) est agencée de manière à être transversale sur la platine (7).
 12. Scie basculable selon l'une quelconque des revendications 1 à 11, **caractérisée en ce que** le corps principal (11) est muni d'une poignée (14) par l'intermédiaire de laquelle le corps principal (11) est déplacé vers le haut et vers le bas sur le côté où le moteur (13) est agencé.

FIG. 1



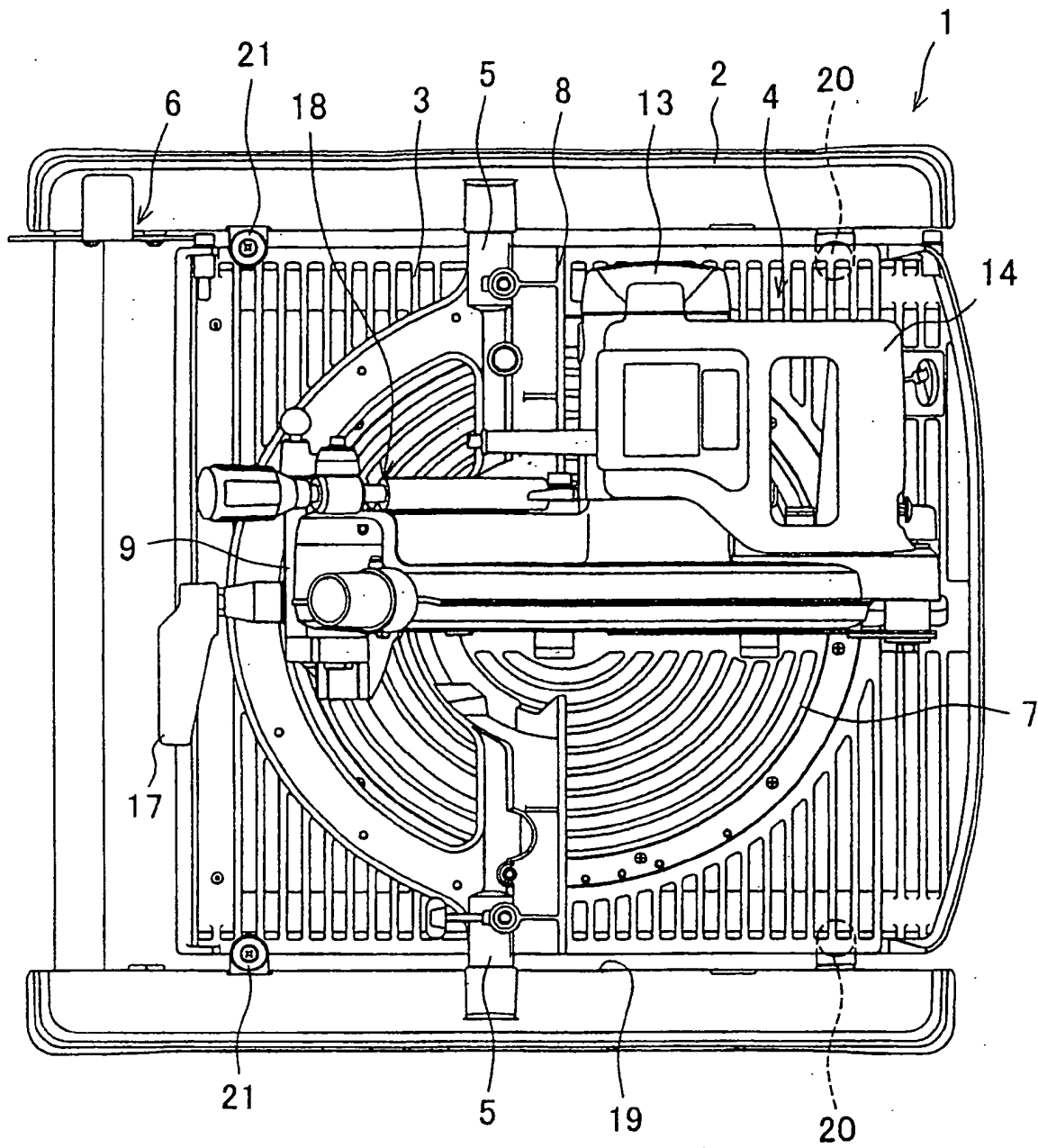


FIG. 2

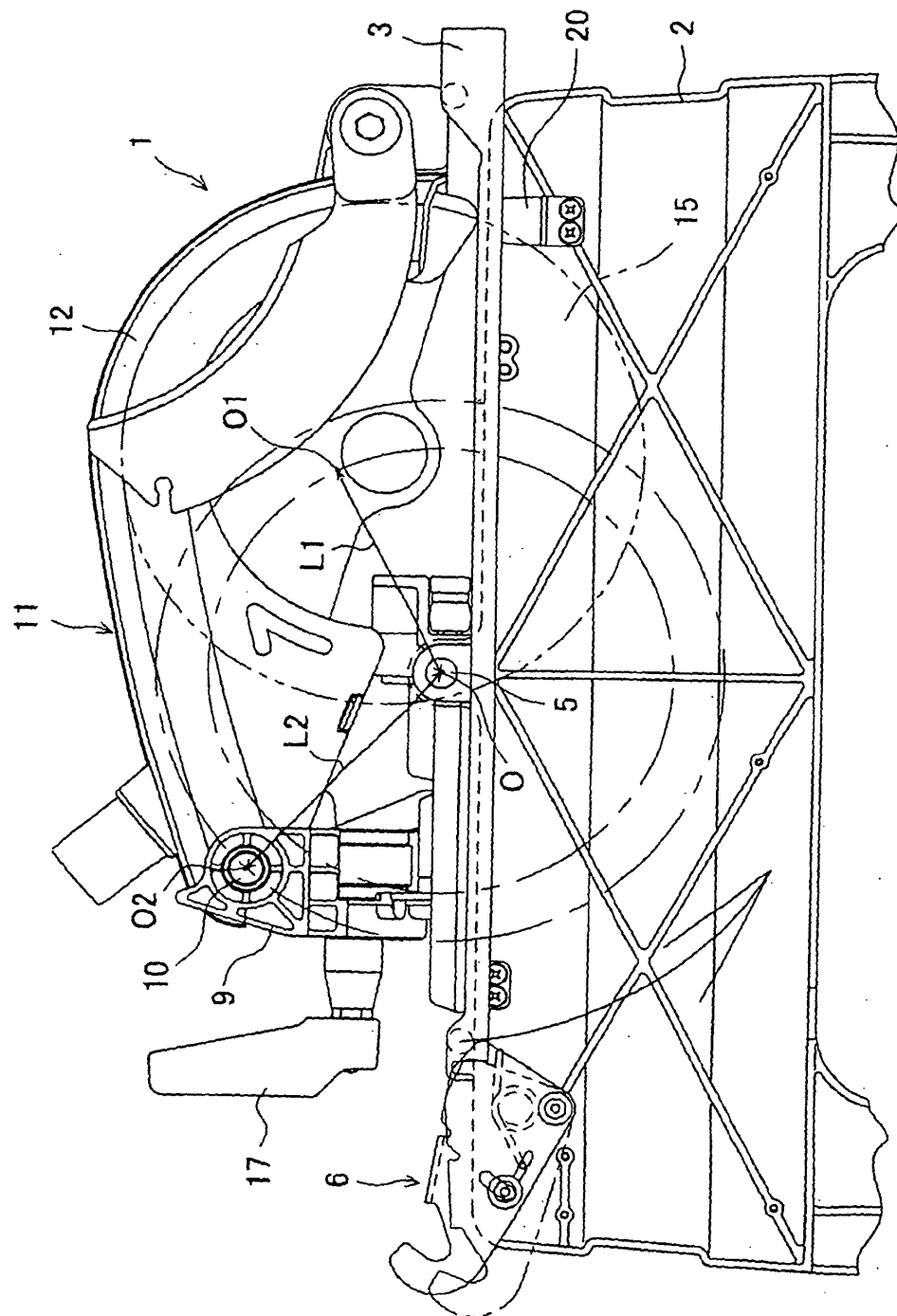


FIG. 3

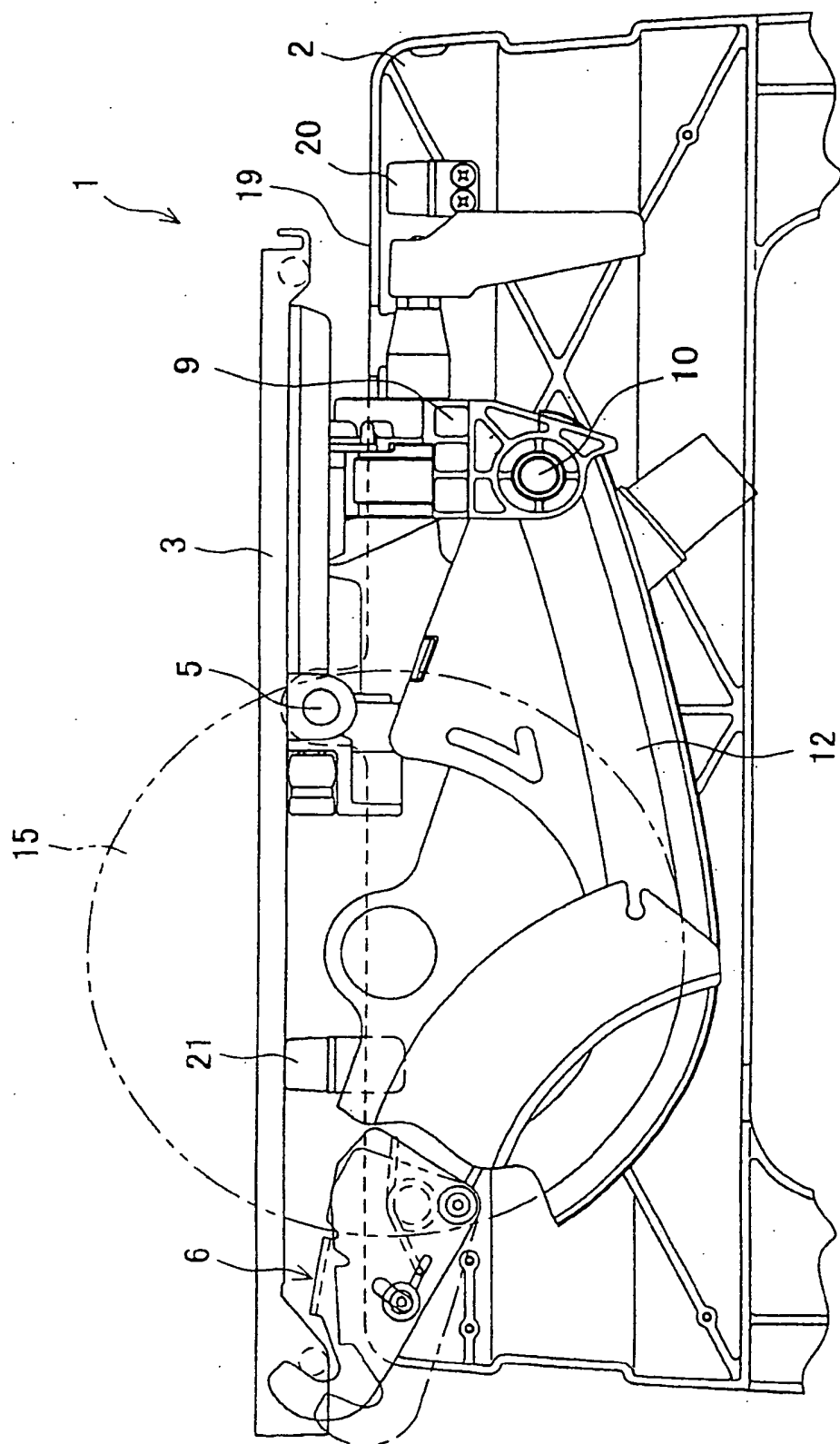


FIG. 4

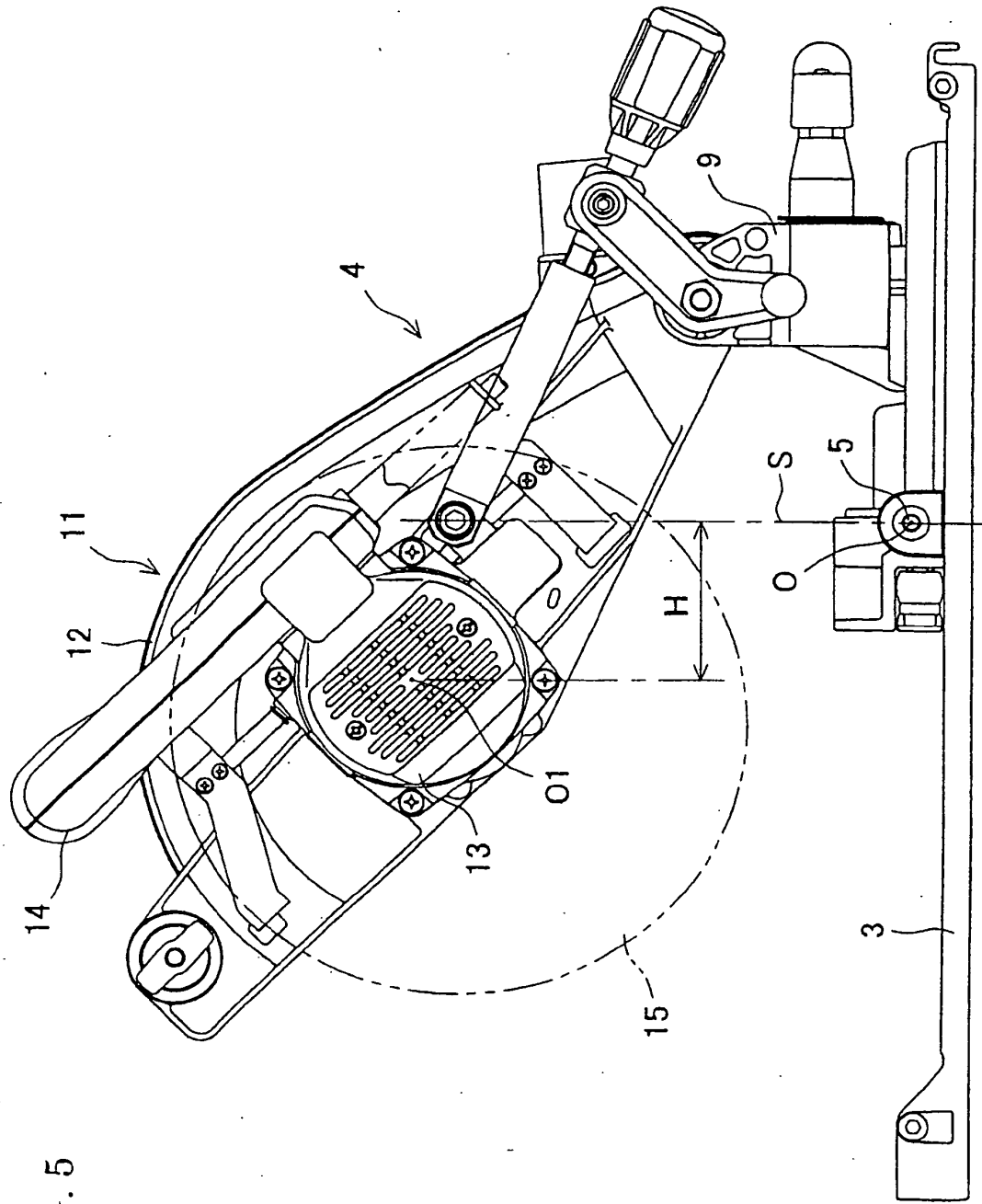


FIG. 5

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 5787779 A [0002]
- US 4531441 A [0004]
- US 3570564 A [0004]
- EP 0271755 A1 [0004]
- EP 0586172 A2 [0005]