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(71) **Applicant(s):** OUTILS WOLF SOCIETE ANONYME — FR

(72) **Inventor(s):**

(73)

Patent proprietor(s):

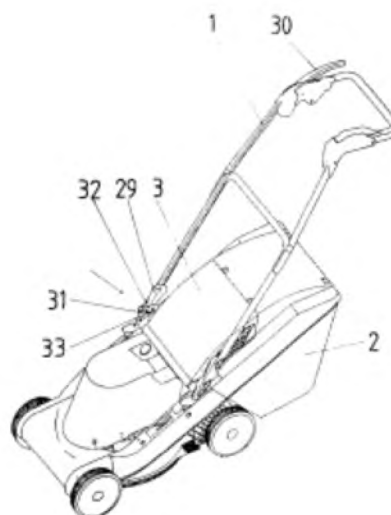
(74) **Authorized representative(s):** NUSS

(54) **LAWNMOWER COMPRISING A SAFETY DEVICE FOR PREVENTING ACCESS TO THE ROTATING CUTTING BLADE**

(57) The present invention relates to a lawnmower, in particular a push mower or self-propelled mower, equipped with a handlebar (1) and comprising a cutting device capable of ensuring that the cut grass is collected, by means of an ejection duct, in a receptacle (2) arranged at the rear.

The mower is characterized in that it includes a safety device preventing access to the rotating cutting blade, while making it possible for the hooking and unhooking operations for the cut-grass receiving receptacle (2) to be carried out only when the blade is stationary.

Specifically, the invention is applicable in the field of lawnmower design, in particular push mowers or self-propelled mowers.



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DESCRIPTION

The present invention relates to the field of design of lawnmowers, in particular push mowers or self-propelled mowers, comprising a cutting device which directs the cut grass by means of an ejection duct into a receptacle arranged at the rear, and concerns a mower that includes a safety device preventing access to the rotating cutting blade.

The cut-grass receiving receptacles generally equipped on lawnmowers of this type are most often in the form of a basket or a rigid or flexible bag and are hooked on behind the mower at the outlet of the ejection duct for the cut grass. These baskets or bags may have a top opening that allows them to be emptied and then covered, during the mowing, by a cover that is rigidly connected to the rear of the mower and forms a deflector when grass is mown without being collected.

However, while these existing collection receptacles are satisfactory as regards the cut-grass holding capacities, handling them is still relatively cumbersome since they are hooked on below the handlebar, which prevents simple access because said handlebar is generally locked in its in-use position.

Furthermore, the cover-deflector provided above the outlet of the ejection duct complicates the unhooking and hooking operations, since it needs to be raised or held manually during these operations.

Although the rotation of the cutting blade is subordinated to a hold-to-run safety control, the risk of injury due to projections or the accidental entry of a digit into the cutting zone cannot be entirely prevented, for the very reason that the actuation of this control is left up to the user.

The aim of the present invention is to overcome these drawbacks by proposing a lawnmower, in particular a push mower or self-propelled mower, that is equipped with a handlebar, comprises a cutting device capable of ensuring that the cut grass is collected, by means of an ejection duct, in a receptacle arranged at the rear, ensures that the cut-grass receiving receptacle can be hooked and unhooked in a simple manner and protects the user against any risk of injury during or in between these operations.

To this end, the lawnmower is characterized in that it includes a safety device preventing access to the rotating cutting blade.

The invention will be better understood on the basis of the description below, which relates to preferred embodiments given by way of non-limiting example and explained with reference to the accompanying drawings, in which:

- 5 Fig. 1 is a perspective view of a mower equipped with the device according to the invention, in an operating position;
- Fig. 2 is a partial side elevation view, on a larger scale, of a first embodiment of the safety device;
- Fig. 3 is a partial side elevation view of the rear portion of a mower equipped with the device according to Fig. 2, showing decoupling of the cutting blade with the
- 10 handlebar in an in-use position and a position hinged down forward;
- Fig. 4 is a view similar to that of Fig. 3, with the cutting blade coupled and the handlebar in an in-use position and a position hinged down forward;
- Fig. 5 is a view similar to that of Fig. 1, showing an alternative embodiment of the safety device, the mower being in a position with the cover pivoted upward;
- 15 Fig. 6 and 7 are partial perspective views, on a larger scale, showing the means for locking the handlebar on the casing of the mower;
- Fig. 8 is a schematic view showing the functioning of the means for activating the cutting means;
- 20 Fig. 9 is a schematic partial perspective view showing an alternative embodiment of the removable link; and
- Fig. 10 and 11 are partial schematic views showing different embodiments of the cutting-blade activation means.

- 25 By way of example, Fig. 1 to 5 of the accompanying drawings show a lawnmower, in particular a push mower or self-propelled mower, equipped with a handlebar 1 and comprising a cutting device capable of ensuring that the cut grass is collected, by means of an ejection duct, in a receptacle 2 arranged at the rear. In the embodiment shown, this mower is of the electric push mower type, but it could also be of the self-propelled type
- 30 comprising an electric motor or a thermal engine.

According to the invention, this lawnmower includes a safety device preventing access to the rotating cutting blade.

- 35 According to a first embodiment of the invention, specifically shown in Fig. 1 to 4 of the accompanying drawings, said safety device is formed by a safety cover 3 hinged to the mower, which cover forms a deflector when grass is mown without being collected and/or

ensures the cut-grass receiving receptacle 2 is closed at the top and is rigidly connectable to the handlebar 1 of the mower, when said handlebar pivots, and by a means 28 for controlling the activation or rotation of the cutting blade.

- 5 The means 28 for controlling the activation or rotation of the cutting blade is advantageously provided in the form of a remote control cable 29, which acts on a motor brake, a brake coupling or an electrical supply contactor and is actuated by means of a hold-to-run control component 30, such as a handle, a lever, a bow or the like, provided on the handlebar 1, said cable being equipped with a drive part 31 that interacts with a hook 32 that is
10 assembled on the handlebar 1 so as to be pivotable counter to the action of a return spring (not shown) and establishes a releasable connection to the safety cover 3 by interlocking with a pin or detent 33 provided on the corresponding face of said cover 3.

- Thus, when the control is not actuated, for example when the user is getting ready to empty
15 the cut-grass receiving receptacle 2, the cable 29 is released and the driving of the blade is interrupted, either by cutting the power to the motor or by interrupting the drive of the spindle of the blade by acting on a brake and/or a coupling. Simultaneously, the hook 32 pivots into its position 32a shown in Fig. 2, under the action of the return spring, in which position said hook interacts with the detent 33 of the corresponding face of the cover 3 (Fig. 2 and 3). As
20 a result, the cover 3 is connected to the handlebar 1 and, once said handlebar has been unlocked, can be tilted upward so as to allow said cut-grass receiving receptacle 2 to be detached.

- During this tilting, the distance between the sleeve stops of the cable 29 varies from a length
25 x to a length x' less than the first, corresponding to an additional slack of the cable 29 to make it impossible for the cutting blade to resume rotation when the handlebar 1 is in the forward-tilted position.

- Upon the actuation of the control means 28, the cable 29 is tensioned by means of the hold-
30 to-run control component 30, thereby displacing the drive part 31 against the hook 32 assembled on the handlebar 1 and causing said hook to pivot into a position 32b counter to the action of the return spring and thus disconnecting it from the safety cover 3 by releasing the pin or detent 33 provided on the corresponding face of said cover 3. As a result, the cover 3 is automatically released in order to be positioned on the cut-grass receiving
35 receptacle 2 when said receptacle is in place or, if no such receptacle is provided, in front of the ejection duct such that protection against projections is always ensured.

If the handlebar 1 were to be inadvertently pivoted forward during the operation of the blade, without the hold-to-run control component 30 being released, the safety cover 3 would not follow the movement of said handlebar 1 and would remain in the protection position above the receptacle 2 or in front of the ejection duct. In addition, since the distance between the sleeve stops of the cable 29 is reduced during said pivoting, said cable would be released, resulting in sufficient slack to ensure that the driving of the blade would be automatically interrupted due to the power supply to the motor being cut off or due to the driving of the spindle thereof being interrupted through action on a brake and/or a coupling.

10 In addition, the very presence of the hook creates an obstacle to any attempt at opening the safety cover 3 while the handlebar 1 is in the working position, thereby reducing the risk of projections towards the user.

Fig. 5 of the accompanying drawings shows another alternative embodiment of the invention, in which the safety device preventing access to the rotating cutting blade is formed by a safety cover 3 hinged to the mower, which cover forms a deflector when grass is mown without being collected and/or ensures that the cut-grass receiving receptacle 2 is closed at the top, and is rigidly connectable to the handlebar 1 of the mower, in particular when said handlebar is pivotable, and by a means 4 for automatically activating the cutting blade.

20 When the handlebar 1 is pivotable, the safety cover 3 can be driven into an upward-pivoted position simultaneously with the forward pivoting of the handlebar 1 (Fig. 5), thereby releasing access to the rear portion of the mower to unhook or hook on the cut-grass receiving receptacle 2.

25 Advantageously, the safety cover 3 is pivotally assembled on a shaft 5 for hinging the handlebar 1 to the casing 6 of the mower and is connected to said handlebar 1 by means of a removable link 7 hinged to the handlebar 1 at one end and to the cover 3 at the other end. Preferably, the link 7 is a flexible link and is removably connected to the handlebar 1 by means of either screwed attachment or resiliently deformable interlocking attachment. Resiliently deformable interlocking refers in particular to a clip-type assembly.

According to an alternative embodiment of the invention, shown in Fig. 10 of the accompanying drawings, the link 7 may be provided in the form of an element having a plurality of fasteners 7' at different clearances, which can be connected to both the handlebar 1 and the cover 3. Thus, depending on the length of the link 7 required depending on whether the cover has to rest on the receptacle 2 or directly on the casing 6 in order to

block the ejection duct, an end fastener 7 and an intermediate fastener 7' or the end fasteners 7 are each connected to the handlebar 1 and to the cover 3, in order to always enable closure by the cover.

5 According to an alternative embodiment of the invention (not shown in the accompanying drawings), the cover 3 can also be indirectly actuated by the handlebar 1, said handlebar acting, when in a forward-pivoted position, on an electric contactor feeding an electromagnet or an electric actuating drive for tilting the cover 3 upward. This type of assembly of an actuating drive or an electromagnet and supply contactor is simple to implement for a person
10 skilled in the art and does not require any further description.

According to another alternative embodiment of the invention (not shown in the accompanying drawings), it is also possible for the cover 3 to be indirectly actuated by the handlebar 1 by means of a hydraulic or pneumatic control circuit that uses a first activation-
15 control actuating drive, which is acted upon by the handlebar 1 when in its forward-pivoted position and causes the displacement of the piston of a second actuating drive acting on the cover 3 in respect of upward tilting. An embodiment of this kind is equally perfectly within the reach of a person skilled in the art and does not need discussing in further depth either.

20 As shown particularly in Fig. 7 and 8 of the accompanying drawings, the handlebar 1 is assembled so as to be able to pivot on the hinge shaft 5 by means of curved end pieces 8 that interact with the ends of said shaft 5 by means of bearings 9 provided at the bend of said end pieces 8, the free end of said end pieces being equipped with a detent 10 intended for interacting with a means 11 for locking the handlebar 1 in an in-use position.

25 Advantageously, this means 11 is formed by at least one pivoting lock 12 hinged to a spindle 13 of a plate 14 attached to the corresponding side of the casing 6 of the mower, said pivoting lock 12 being loaded by a return spring 15 and being provided with an extension piece 16 for holding the detent 10 of the corresponding end piece 8 of the handlebar 1 in the
30 in-use position, and formed by at least one tab 17 for activating the lock 12, said tab being supported against a wing 18 of said lock 12, this wing being opposite the extension piece 16 with respect to the spindle 13, and being rigidly connected to the shaft 5 for hinging the handlebar 1.

35 Therefore, pressure on the tab 17, for example by means of a foot, induces a force on the wing 18 of the lock 12, which is aimed at tilting said lock about the spindle 13 counter to the action of the return spring 14. As a result, the detent 10 of the corresponding end piece 8 is

released by the extension piece 16 such that the handlebar 1 can be tilted into its forward-pivoted position shown in Fig. 5 and 9. In the embodiment according to the accompanying drawings, the locking means 11 includes a lock 12 and the corresponding elements for each end piece 8 of the handlebar 1, which has the advantage of enabling movement

indiscriminately for each side of the mower. However, an embodiment that does not envisage providing an end piece could be conceivable.

Due to the connection by means of the link 7 between the handlebar 1 and the cover 3, pivoting the handlebar 1 towards the front of the mower into a position corresponding to that shown in Fig. 7, after said handlebar has been unlocked by the means 11, raises said cover 3 into a position that enables simple access to the handle 19 for holding the cut-grass receiving receptacle 2, in order to unhook said receptacle. It goes without saying that hooking on is similarly simplified, since the entire rear portion of the mower is kept free.

According to a first embodiment of the invention shown schematically in Fig. 9 and 10 of the accompanying drawings, the means 4 for automatically activating the cutting blade is substantially formed by an activation actuator 20 arranged in the rear face of the casing 6 of the mower, which face forms a support face for the cut-grass receiving receptacle 2, and by an extension piece 21, which protrudes from the inner face of the cover 3 and interacts directly or indirectly with the actuator 20 when said cover 3 is in a position hinged down on the receptacle 2 or on the rear face of the casing 6 of the mower. An activation actuator 20 of this kind is thus acted upon when the cover 3 is pivoted upwards either alone or together with forward pivoting of the handlebar 1.

The activation actuator 20 can be an electrical supply cut-off switch for an electric motor or for the ignition circuit of a thermal engine. In the case of mowers equipped with a decouplable blade, the activation actuator 20 can be in the form of a mechanical device that acts on the blade-driving coupling and is arranged within the kinematics of the control and said coupling.

According to one feature of the invention, the cut-grass receiving receptacle 2 is provided with an intermediate tilting lever 22 for indirectly actuating the actuator 20 by means of the extension piece 21 when said receptacle 2 is in the in-use position, said intermediate lever 22 thus being supported against said actuator 20 by means of the extension piece 21. To promote activation of the actuator 20 when the cover 3 is raised, either manually or by means of the handlebar 1. To unhook the cut-grass receiving receptacle 2, the intermediate tilting lever 22 is loaded by a return spring (not shown in Fig. 9) that is supported against the

interior of the cut-grass receiving receptacle 2 or is assembled in the form of a helical spring on the tilt spindle of the lever 22.

Thus, when the handlebar 1 is in the forward-pivoted position, in which it tiltingly drives the cover 3 upward by means of the link 7, or when the cover 3 is in a manually raised position, the extension piece 21 is brought out of contact with the lever 22, which is repelled from the actuator 20 such that said actuator automatically activates, resulting in corresponding activation of the blade drive motor or of the coupling of the blade drive.

When the mower is used without the cut-grass receiving receptacle 2, the extension piece 21 of the cover 3 acts directly on the actuator 20 in the in-use position, the cover 3 resting on the rear face of the casing 6 of the mower, and makes it possible to create windrows without the risk of injury to the user due to projections. In this configuration, the handlebar 1 is not connected to the cover 3, due to the reduced length of the link 7, since safety during operation is ensured entirely by the position of the cover 3, the accidental or voluntary raising of which results immediately in stoppage of the rotation of the blade, in exactly the same manner as described above. However, to avoid inadvertent activation of the actuator 20 following a relatively weak impact or vibrations, the cover 3 is advantageously loaded by a return spring (not shown), which ensures a minimum contact pressure of the extension piece 21 on said actuator 20.

Fig. 10 of the accompanying drawings shows an alternative embodiment of the invention, in which the cutting-blade activation means 4 is formed by an electrical, electromechanical or mechanical activation actuator 23 that interacts with a cam 24 provided on the handlebar 1 or on the assembly end pieces 8 of said handlebar. In this embodiment, the actuator 23 is acted upon as soon as the handlebar 1 is tilted forward, either with or without the cover 3 being pivoted upward. Thus, any forward tilting of the handlebar 1 results in action on the actuator 23 by means of the cam 24, and thus in the activation of the stoppage of the motor and/or the decoupling and braking of the cutting blade.

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It is also possible to implement the cutting-blade activation means 4 in the form of an electrical, electromechanical or mechanical activation actuator 25, which is acted on by a pivoting transmission lever 26 equipped with an extension piece 27 that is intended for interacting with the lower portion of the tab 17 of the means 11 for locking and unlocking the handlebar (Fig. 11). The unlocking of the handlebar 1 with a view to tilting it forwards, either with or without the cover 3 being accordingly pivoted upward, is thus made possible in a very

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simple manner, with the immediate effect of instantaneous activation of the control member 25.

As is known, the lever 26 is advantageously loaded, at its end opposite the pivoting, by a return spring that favors the automatic return of the activation actuator 25 to the in-use position. In this embodiment, the unlocking of the handlebar 1 with a view to tilting it forward results automatically in the cutting-blade drive motor being stopped and/or the cutting blade being decoupled and/or braked.

10 The activation actuators 23 and 25 are advantageously similar to the activation actuator 20 and are preferably of the all-or-nothing type, that is to say that they allow the controlled element to be restarted only after they have been interlocked again as a result of their control component returning to the in-use position.

15 According to another alternative embodiment of the invention (not shown in the accompanying drawings), the safety device preventing access to the rotating cutting blade can be formed by a safety cover 3 hinged to the mower, which cover forms a deflector when grass is mown without being collected and/or ensures that the cut-grass receiving receptacle 2 is closed at the top, and is rigidly connectable to the handlebar 1 of the mower, in particular when said handlebar is pivotable, and by a means for locking the safety cover and/or the handlebar in the in-use position, that is to say when the cutting blade is actuated. A locking means of this kind can advantageously be in the form of an electrical, electromechanical or mechanical control integrated into the handlebar or into a means for controlling the blade rotation, the mower drive traction or the motor rotational speed, said means actuating an electromagnetic or mechanical lock that is assembled on the casing of the mower and interacts with a corresponding recess provided in at least one end piece of the handlebar or in a tab for activating the lock of said handlebar, or with a corresponding face of said lock or said end piece and/or with a recess provided in the cover or with a face of said cover.

30 The electrical, electromechanical or mechanical control, which is integrated into the handlebar or into a means for controlling the blade rotation, the mower drive traction or the motor rotational speed, is in the form of a spring-activated lever, which can be locked by means of manual pressure or by means of a snap-in engagement device and interacts with an electrical contact for controlling an electromagnetic lock or with a cable or an actuation linkage of a mechanical lock.

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This electromagnetic or mechanical lock assembled on the casing 1 of the mower acts on at least one end of the handlebar or of an end piece thereof or on the handlebar-lock activation tab and/or on the cover, by means of a positive fit with corresponding recesses or by being supported against a corresponding face. Thus, it is conceivable to make the lock enter a
5 through-hole in an end piece of the handlebar, thus preventing said handlebar from pivoting at all, or in a through-hole in the handlebar-lock activation tab, thus preventing the handlebar being unlocked by immobilizing said tab. Likewise, the interaction of the lock with the cover is conceivable in the form of said lock entering the material of the cover, thus holding said cover to prevent it rotating about its spindle on the casing.

10 Lastly, the support of the lock against a face of the elements to be locked is brought about simply on the side towards which said elements, the end thereof or the corresponding face thereof pivot(s) in order to actuate the means for automatically activating the cutting blade. This pivoting is thus also prevented.

15 Consequently, due to the very assembly of the control in the handlebar or in a means for controlling the blade rotation, the mower drive traction or the motor rotational speed, the actuation of a control or simply holding the handlebar to carry out mowing leads to corresponding locking of the handlebar, thereby preventing access to the rotating cutting
20 blade during mower operation.

Owing to the invention, it is possible to implement a safety device preventing access to the rotating cutting blade, for lawnmowers of the push mower or self-propelled type, that makes it possible to carry out the cut-grass receiving receptacle hooking and unhooking operations
25 only when the blade is stationary, and so without any danger to the user. Indeed, depending on the specific case, during these operations the device automatically shuts off the cutting blade or prevents the operation while the cutting blade is still rotating, such that any risk of accidental injury by an object being projected or entering the active area of said cutting blade is avoided.

30 Furthermore, at the same time as the cutting blade is shut off, access to the rear of the mower and the various operations are made much simpler.

It goes without saying that the invention is not restricted to the embodiments described and
35 shown in the accompanying drawings. Modifications are always possible, particularly in terms of the design of the various elements or through replacements with equivalent

techniques, without departing from the scope of the protection of the invention in the process.

CLAIMS

1. Lawnmower, in particular a push mower or self-propelled mower, equipped with a handlebar (1) and comprising a cutting device capable of ensuring that the cut grass is collected, by means of an ejection duct, in a receptacle (2) arranged at the rear, characterized in that it includes a safety device preventing access to the rotating cutting blade.
2. Lawnmower according to claim 1, characterized in that the safety device is formed by a safety cover (3) hinged to the mower, which cover forms a deflector when grass is mown without being collected and/or ensures the cut-grass receiving receptacle (2) is closed at the top, and is rigidly connectable to the handlebar (1) of the mower when said handlebar pivots, and by a means (28) for controlling the activation or rotation of the cutting blade.
3. Lawnmower according to claim 2, characterized in that the means (28) for controlling the activation or rotation of the cutting blade is provided in the form of a remote control cable (29), which acts on a motor brake, a brake coupling or an electrical supply contactor and is actuated by means of a hold-to-run control component (30), such as a handle, a lever, a bow or the like, provided on the handlebar (1), said cable being equipped with a drive part (31) that interacts with a hook (32) assembled on the handlebar (1) so as to be pivotable counter to the action of a return spring and establishes a releasable connection to the safety cover (3) by interlocking with a pin or detent (33) provided on the corresponding face of said cover (3).
4. Lawnmower according to claim 1, characterized in that the safety device is formed by a safety cover (3) hinged to the mower, which cover forms a deflector when grass is mown without being collected and/or ensures that the cut-grass receiving receptacle (2) is closed at the top, and is rigidly connectable to the handlebar (1) of the mower, in particular when said handlebar is pivotable, and by a means (4) for automatically activating the cutting blade.
5. Lawnmower according to claim 4, characterized in that the safety cover (3) is pivotally assembled on a shaft (5) for hinging the handlebar (1) to the casing (6) of the mower and is connected to said handlebar (1) by means of a removable link (7) hinged to the handlebar (1) at one end and to the cover (3) at the other end.

6. Lawnmower according to claim 5, characterized in that the link (7) is a flexible link and is removably connected to the handlebar (1) by means of either screwed attachment or resiliently deformable interlocking attachment.
- 5 7. Lawnmower according to claim 5, characterized in that the link (7) is provided in the form of an element having a plurality of fasteners (7') at different clearances, which can be connected to both the handlebar (1) and the cover (3).
8. Lawnmower according to claim 4, characterized in that the cover (3) is indirectly
10 actuated by the handlebar (1), said handlebar acting, when in a forward-pivoted position, on an electric contactor feeding an electromagnet or an electric actuating drive for tilting the cover (3) upward.
9. Lawnmower according to claim 4, characterized in that the cover (3) is indirectly
15 actuated by the handlebar (1) by means of a hydraulic or pneumatic control circuit that uses a first activation-control actuating drive, which is acted upon by the handlebar (1) when in its forward-pivoted position and causes the displacement of the piston of a second actuating drive acting on the cover (3) in respect of upward tilting.
- 20 10. Lawnmower according to any of claims 4 and 5, characterized in that the handlebar (1) is assembled so as to be able to pivot on the hinge shaft (5) by means of curved end pieces (8) that interact with the ends of said shaft (5) by means of bearings (9) provided at the bend of said end pieces (8), the free end of said end pieces being equipped with a detent (10) intended for interacting with a means (11) for locking the handlebar (1) in an in-
25 use position.
11. Lawnmower according to any of claims 5 and 10, characterized in that the means (11) for locking the handlebar (1) in the in-use position is formed by at least one pivoting lock (12) hinged to a spindle (13) of a plate (14) attached to the corresponding side (6) of the
30 mower, said pivoting lock (12) being loaded by a return spring (15) and being provided with an extension piece (16) for holding the detent (10) of the corresponding end piece (8) of the handlebar (1) in the in-use position, and formed by at least one tab (17) for activating the lock (12), said tab resting against a wing (18) of said lock (12), this wing being opposite the extension piece (16) with respect to the spindle (13), and being rigidly connected to the shaft
35 (5) for hinging the handlebar (1).

12. Lawnmower according to any of claims 4 and 5, characterized in that the means (4) for automatically activating the cutting blade is substantially formed by an activation actuator (20) arranged in the rear face of the casing (6) of the mower, which face forms a support face for the cut-grass receiving receptacle (2), and by an extension piece (21), which
5 protrudes from the inner face of the cover (3) and interacts directly or indirectly with the actuator (20) when said cover (3) is in a position hinged down on the receptacle (2) or on the rear face of the casing (6) of the mower.
13. Lawnmower according to claim 12, characterized in that the activation actuator (20)
10 is an electrical supply cut-off switch for an electric motor or for the ignition circuit of a thermal engine.
14. Lawnmower according to claim 12, characterized in that the activation actuator (20) is in the form of a mechanical device that acts on the blade-driving coupling and is arranged
15 within the kinematics of the control and said coupling.
15. Lawnmower according to any of claims 4 and 12, characterized in that the cut-grass receiving receptacle (2) is provided with an intermediate tilting lever (22) for indirectly actuating the actuator (20) by means of the extension piece (21) when said receptacle (2) is
20 in the in-use position, said intermediate lever (22) thus being supported against said actuator (20) by means of the extension piece (21).
16. Lawnmower according to claim 15, characterized in that the intermediate tilting lever (22) is loaded by a return spring that is supported against the interior of the cut-grass
25 receiving receptacle (2) or is assembled in the form of a helical spring on the tilt spindle of the lever (22).
17. Lawnmower according to any of claims 4, 5, 7 to 9 and 12, characterized in that the cover (3) is loaded by a return spring that ensures a minimum contact pressure from the
30 extension piece (21) on the actuator (20).
18. Lawnmower according to any of claims 4 and 5, characterized in that the means (4) for activating the cutting blade when the cover (3) is in a upward-pivoted position and/or the handlebar (1) is in a forward-pivoted position is formed by an electrical, electromechanical or
35 mechanical activation actuator (23) that interacts with a cam (24) provided on the handlebar (1) or on the assembly end pieces (8) of said handlebar.

19. Lawnmower according to any of claims 4 and 11, characterized in that the means (4) for activating the cutting blade is formed by an electrical, electromechanical or mechanical activation actuator (25), which is acted on by a pivoting transmission lever (26) equipped with an extension piece (27) that is intended for interacting with the lower portion of the tab (17) of the means (11) for locking and unlocking the handlebar.

20. Lawnmower according to any of claims 12, 18 and 19, characterized in that the activation actuators (20, 23 and 25) are of the all-or-nothing type, that is to say that they allow the controlled element to be restarted only after they have been interlocked again as a result of their control component returning to the in-use position.

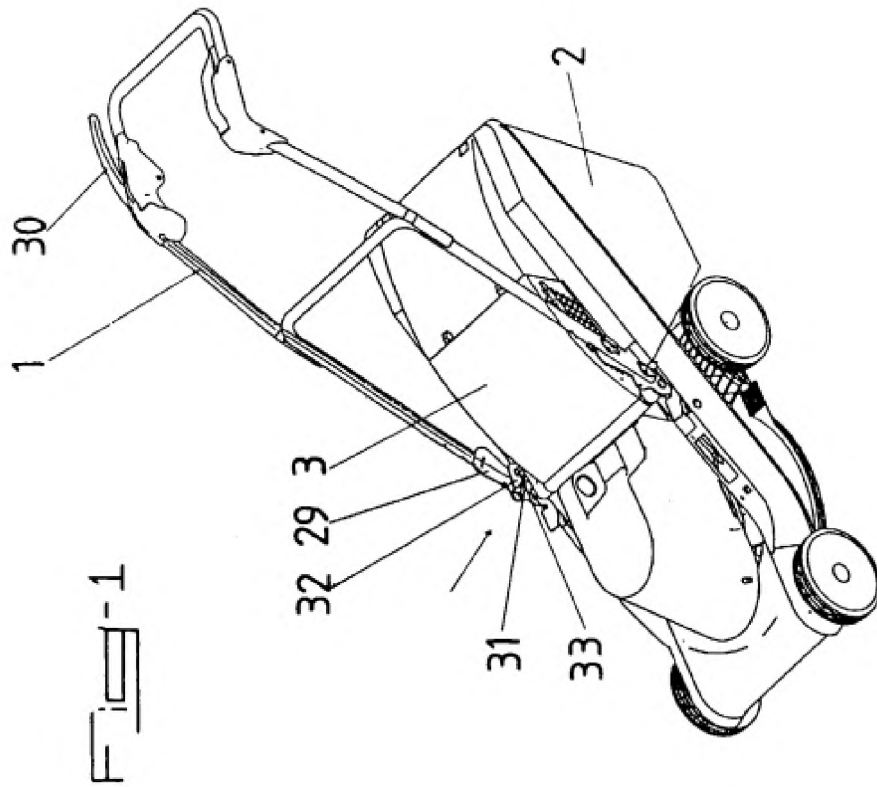
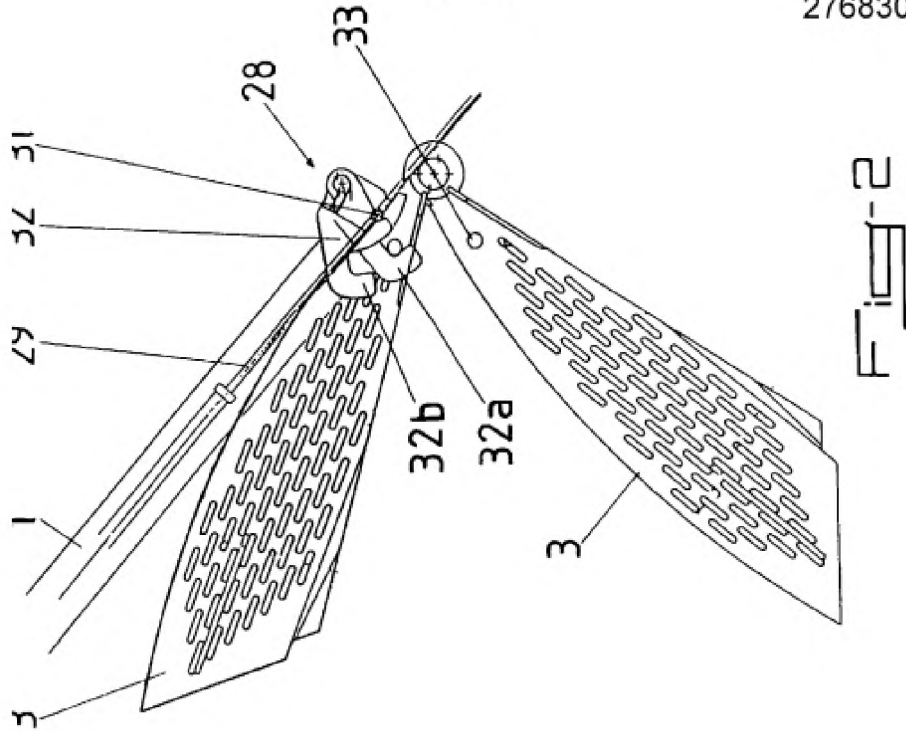
21. Lawnmower according to claim 1, characterized in that the safety device is formed by a safety cover (3) hinged to the mower, which cover forms a deflector when grass is mown without being collected and/or ensures that the cut-grass receiving receptacle (2) is closed at the top, and is rigidly connectable to the handlebar (1) of the mower, in particular when said handlebar is pivotable, and by a means for locking the safety cover and/or the handlebar in the in-use position, that is to say when the cutting blade is actuated.

22. Lawnmower according to claim 21, characterized in that the locking means is in the form of an electrical, electromechanical or mechanical control integrated into the handlebar or into a means for controlling the blade rotation, the mower drive traction or the motor rotational speed, said means actuating an electromagnetic or mechanical lock assembled on the casing of the mower and interacting with a corresponding recess provided in at least one end piece of the handlebar or in a tab for activating the lock of said handlebar, or with a corresponding face of said lock or said detent and/or with a recess provided in the cover or with a face of said cover.

23. Lawnmower according to claim 22, characterized in that said electrical, electromechanical or mechanical control, which is integrated into the handlebar or into a means for controlling the blade rotation, the mower drive traction or the motor rotational speed, is in the form of a spring-activated lever, which can be locked by means of manual pressure or by means of a snap-in engagement device and interacts with an electrical contact for controlling an electromagnetic lock or with a cable or an actuation linkage of a mechanical lock.

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Pl. 2/10

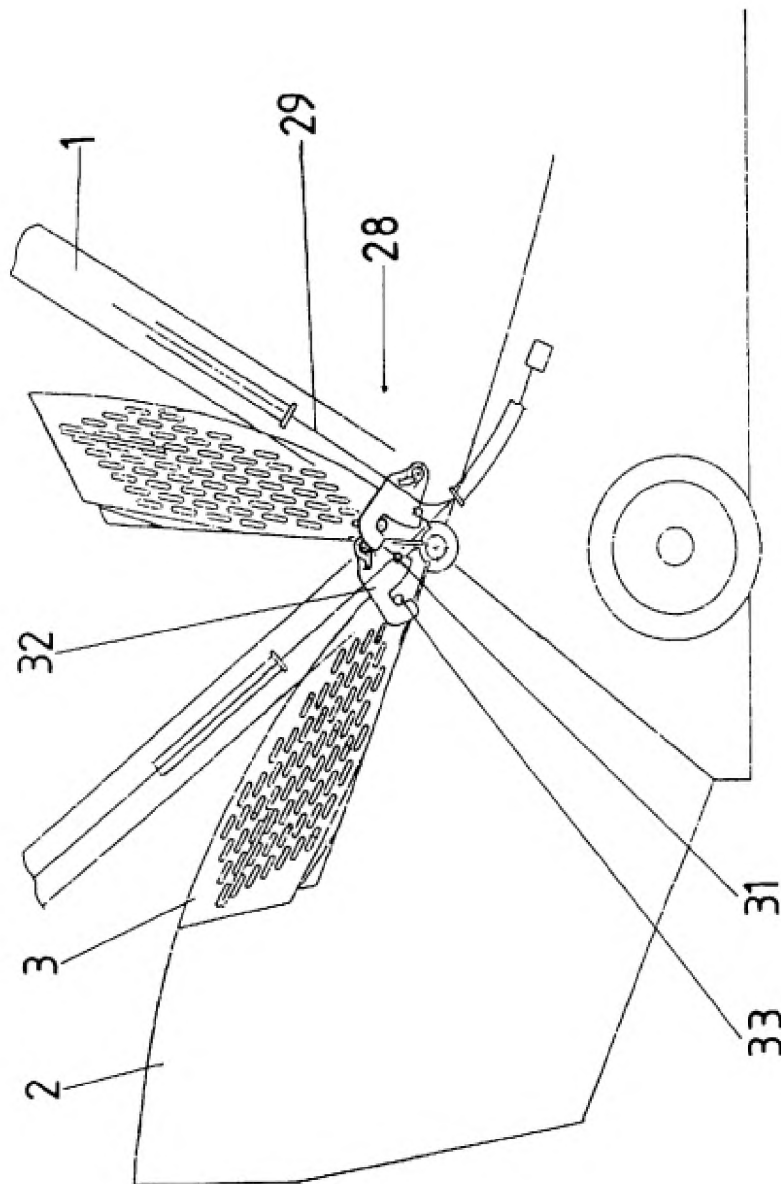
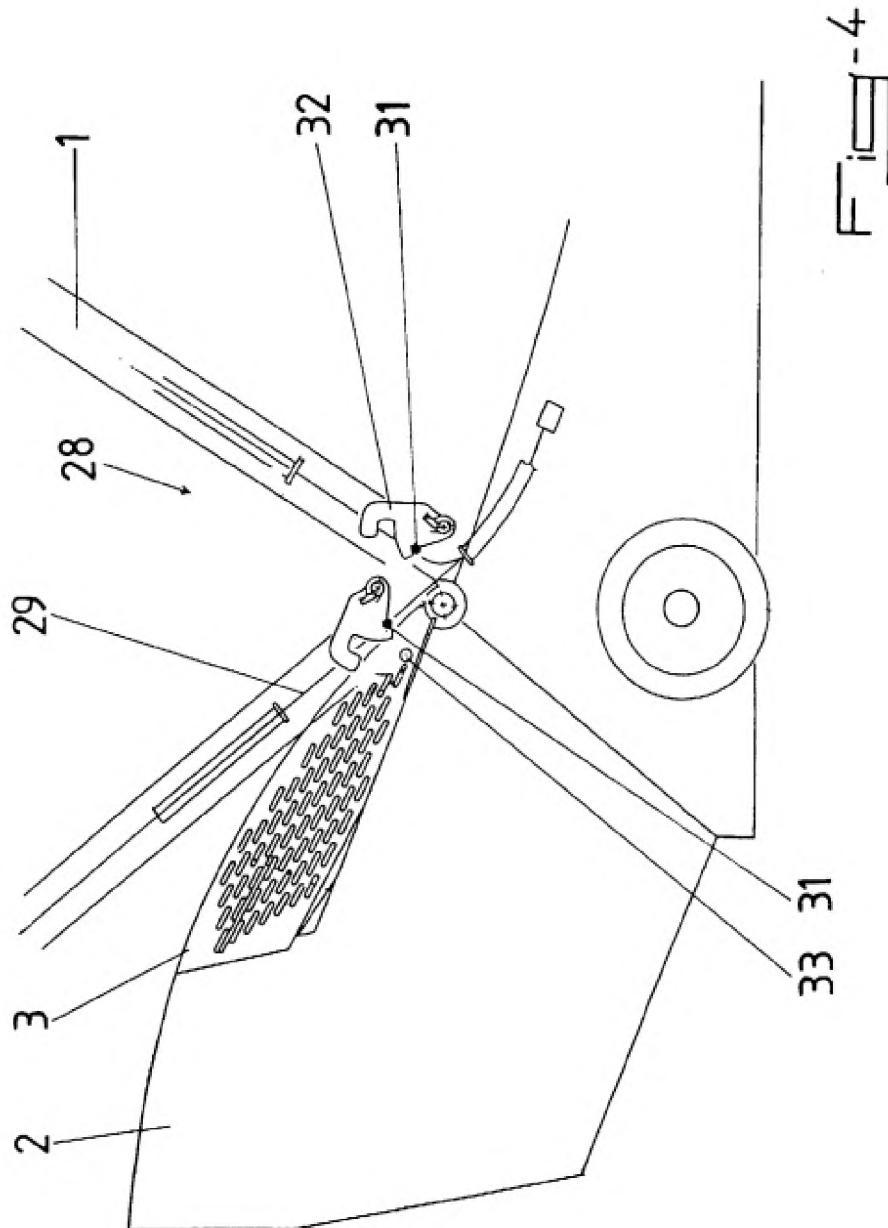


FIG-3



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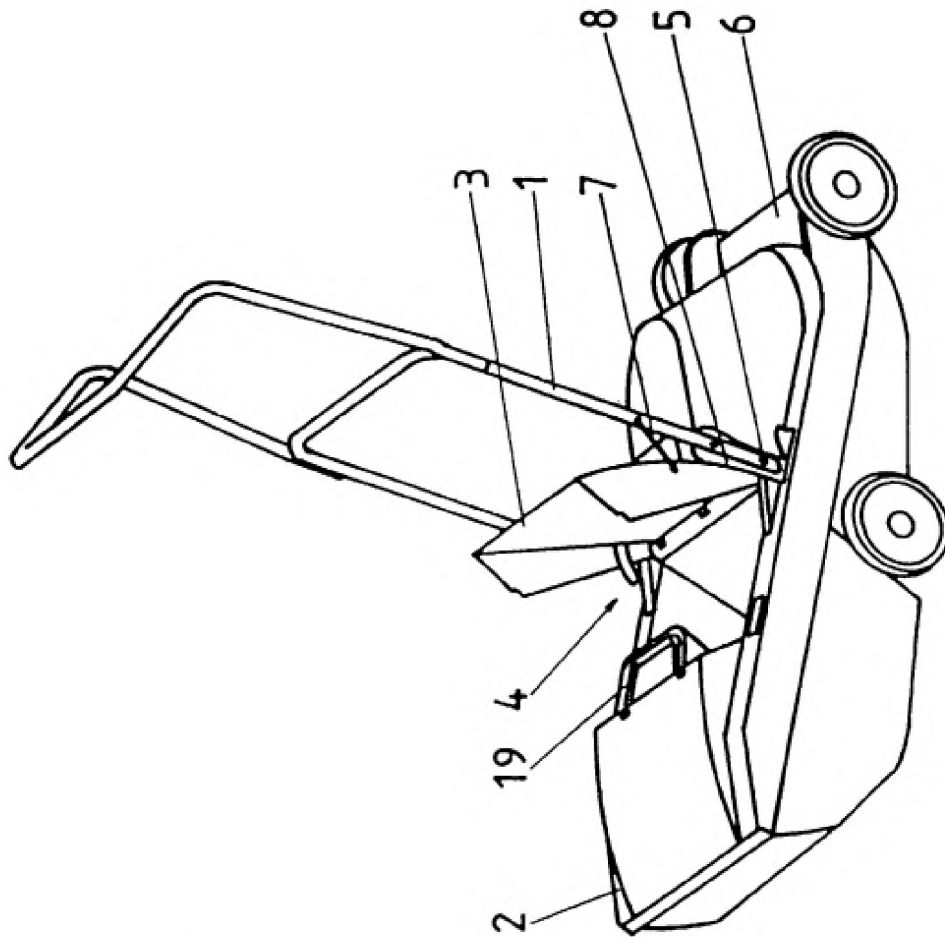
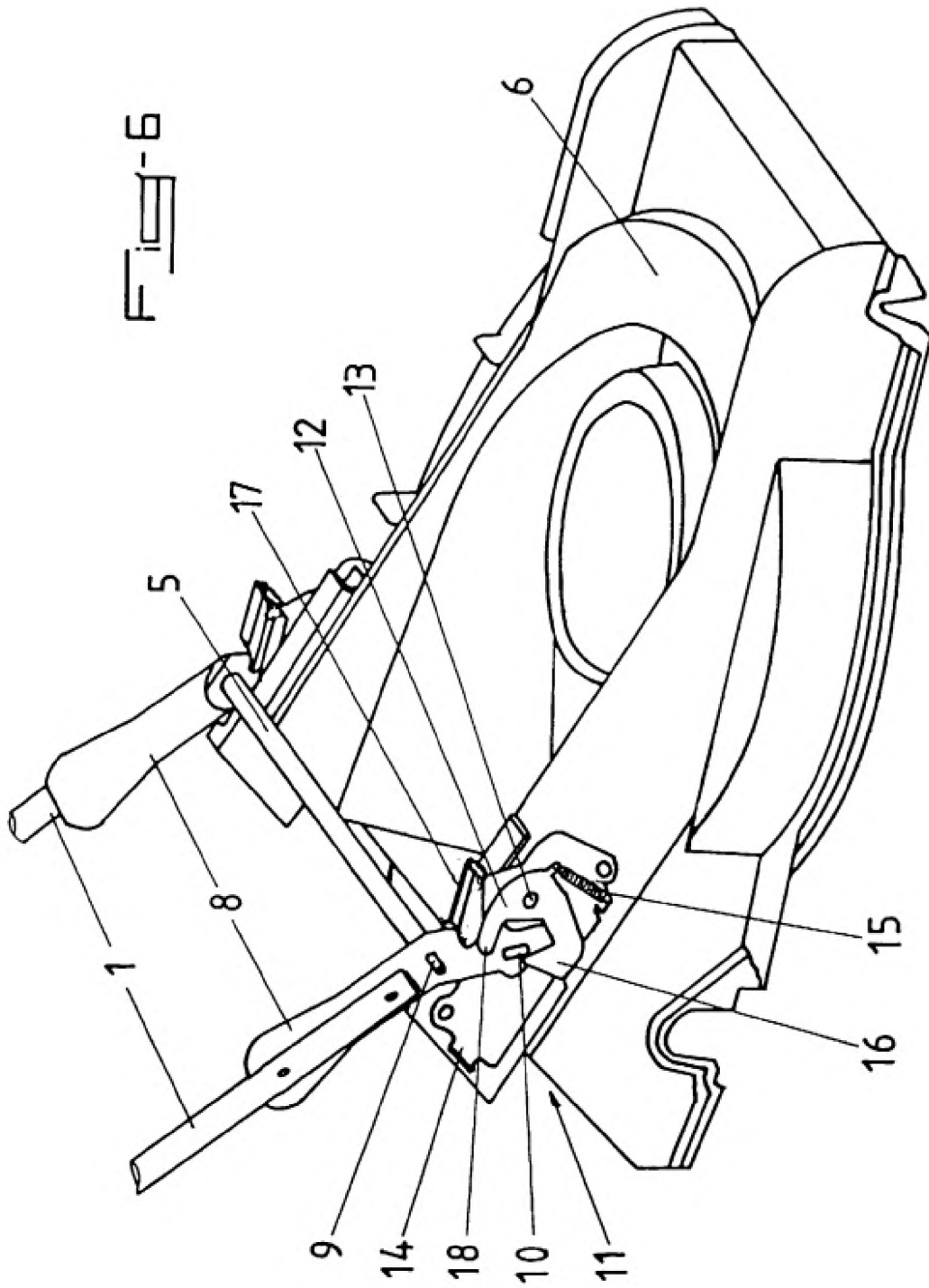
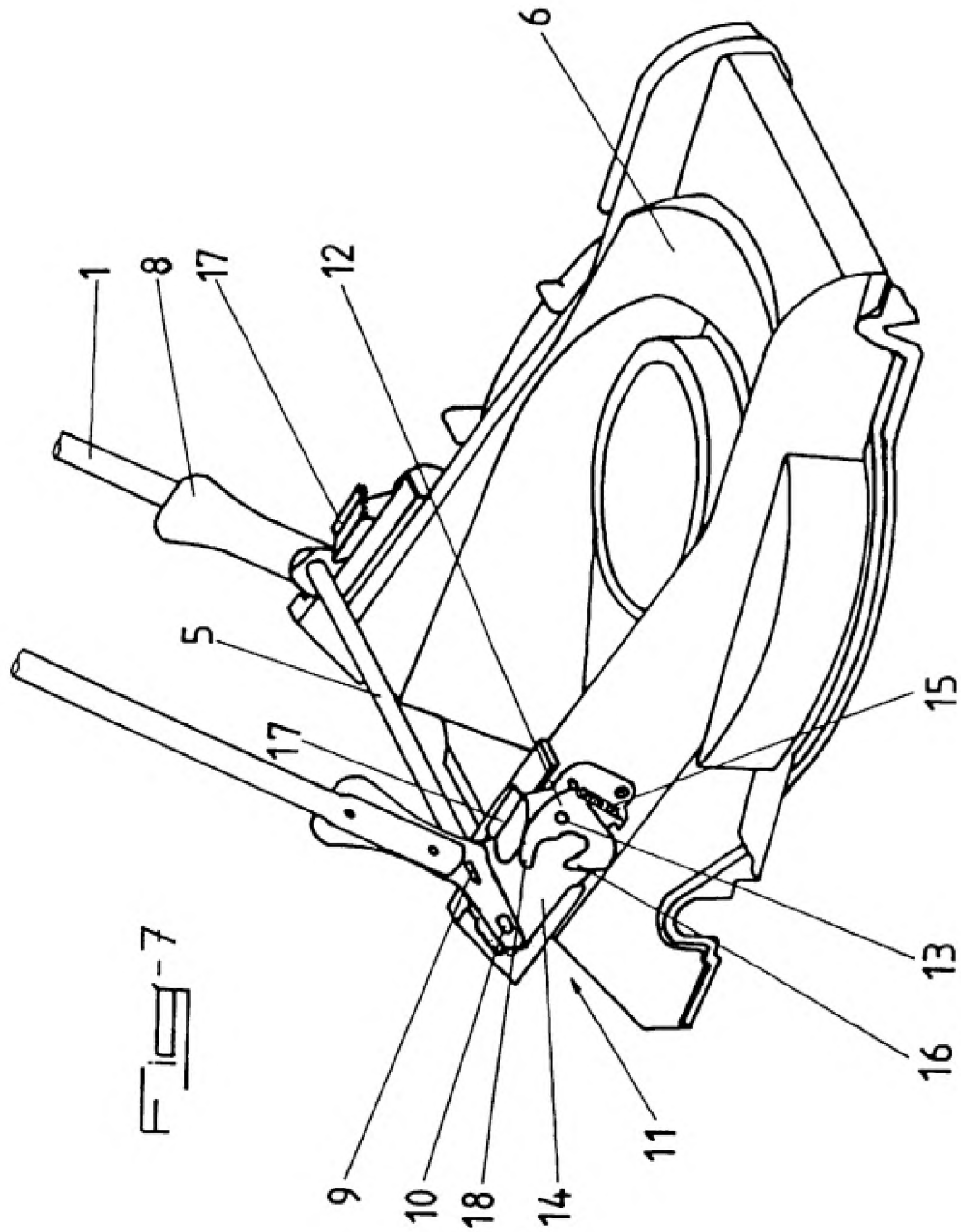


Fig-5

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Fig-8

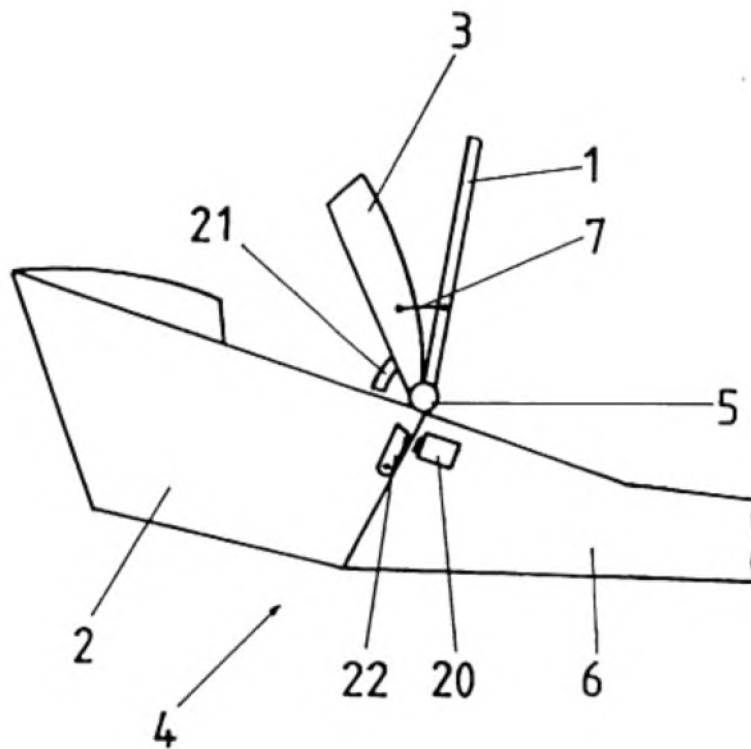
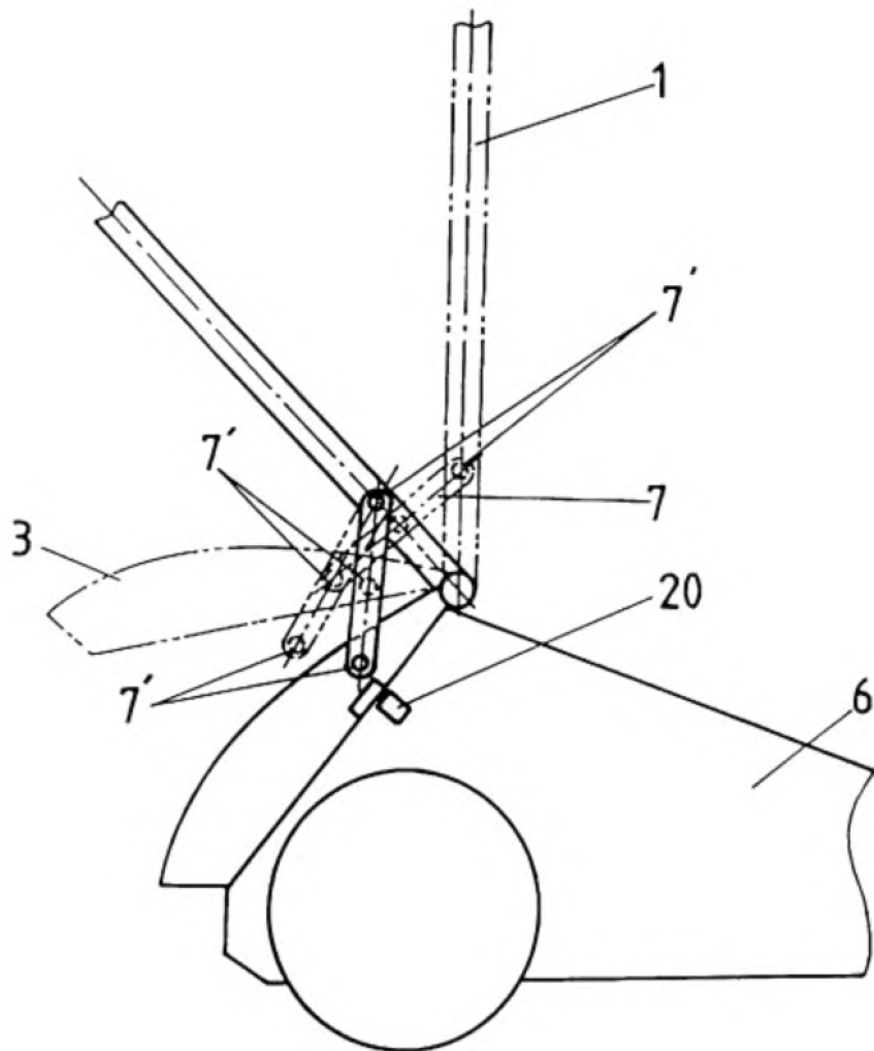


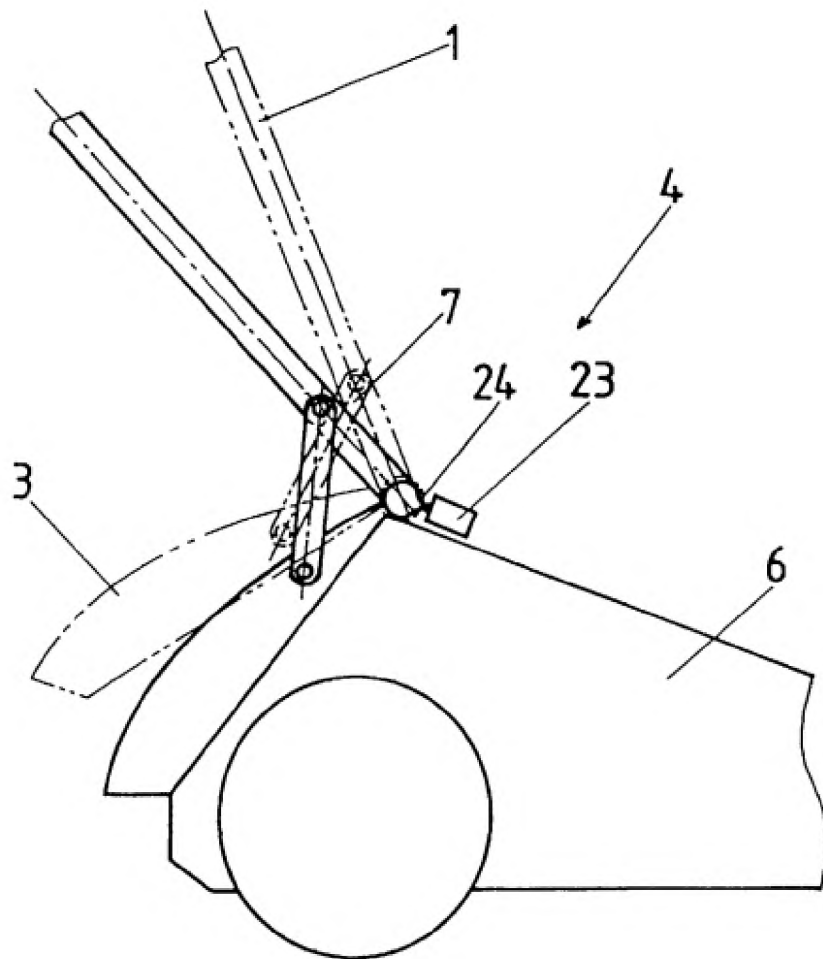
Fig-9



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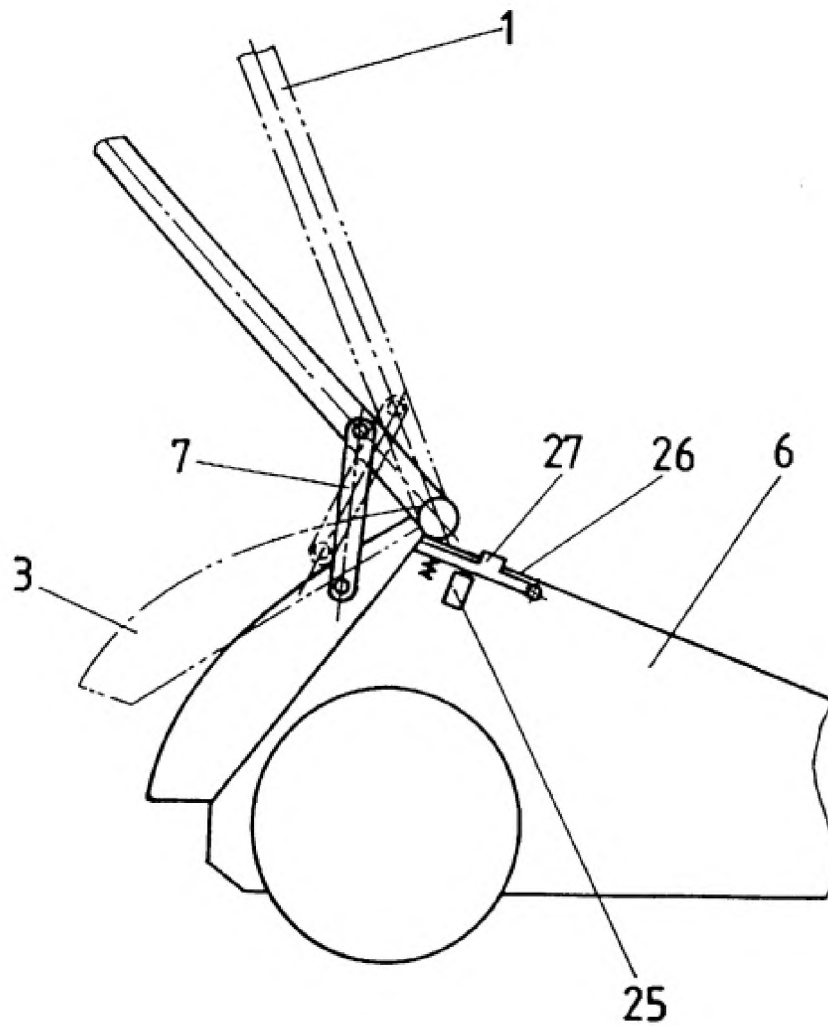
Fig-10



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Pl. 10/10

Fig-11



TRANSLATOR CERTIFICATION

I, Dean Evans MA MITI, declare as follows:

I am over eighteen years of age and fully competent to make this affidavit. I have personal knowledge of the information contained in this affidavit, and it is true and accurate to the best of my knowledge.

I am a translator fluent in the French and English languages. My qualifications are MA Applied Translation Studies, University of Leeds; Qualified Member of the Institute of Translation and Interpreting (MITI). I provide this affidavit on behalf of Morningside Translations at the request of One World Technologies, Inc. d/b/a Techtronic Industries Power Equipment.

I reviewed the French original and English translation of French Patent Publication 2 768 300 A1. attached hereto. I attest that the English translation is a true and accurate translation of the French Patent Publication 2 768 300 A1.

I declare under penalty of perjury of the laws of the United States of America that the foregoing information is true and accurate to the best of my knowledge. I understand that willful false statement and the like are punishable by fine or imprisonment, or both (18. U.S.C. § 1001).

Executed November 29, 2019, in Tunbridge Wells



Signature



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