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(12) Utility Model Patent



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(54) Title of Invention

Retractable handle of lawn mower

(57) Abstract of Disclosures

The present utility model provides a retractable handle of a lawn mower, which comprises a first handle portion, which is connected to a main body portion of a mower, wherein the first handle portion comprises two rod members arranged in parallel; a second handle portion which comprises two free ends which can be respectively connected with the two rod members; a connecting device, which is transversely arranged between the two rod members, wherein the connecting device comprises at least one pivot member which is pivotable around a pivot, the pivot member is provided with a first pivoting position and a second pivoting position for pivoting around the pivot, in the first pivoting position, the second handle portion is locked to the first handle portion, and in the second pivoting position, the second handle portion can be

unlocked relative to the first handle portion. The unlocking and locking of the second handle portion relative to the first handle portion is achieved through the connecting device, so that when the lawn mower is used or stored, the handle can be flexibly switched according to the actual working condition.



CN 202019551 U

What is claimed is:

1. A retractable handle, comprising:
a first handle portion;
a second handle portion which is retractable with respect to the first handle portion; and
a connecting device configured to lock or unlock the second handle portion with the first handle portion;
characterized in that: the connecting device comprises at least one pivoting member which is pivotable around a pivot, the pivoting member has a first pivoting position and a second pivoting position for pivoting around the pivot, in the first pivoting position, the second handle portion is locked to the first handle portion, and in the second pivoting position, the second handle portion is unlocked from the first handle portion.
2. The retractable handle according to claim 1, characterized in that the connecting device further comprises a driving member and a pressing member, the pivoting member comprises a first end and a second end, the first end abuts against the driving member, the second end abuts against the pressing member, and the pressing member is pressed onto the second handle portion through a hole provided on the first handle portion.
3. The retractable handle according to claim 2, characterized in that a direction of movement of the driving member at the first end and the direction of movement of the pressing member at the second end are substantially perpendicular to each other.
4. The retractable handle according to claim 2, characterized in that the connecting device further comprises a resetting member acting on the pivoting member, the resetting member cooperates with the driving member such that the pivoting member is switchable between the first pivoting position and the second pivoting position.
5. The retractable handle according to claim 2, characterized in that the connecting device further comprises a pin and a pin resetting member, the pin is engageable with a first insertion hole disposed on the first handle portion and a second insertion hole disposed on

the second handle portion, and the first end of the pivoting member is connected to the pin.

6. The retractable handle according to any one of claims 2 to 5, characterized in that the connecting device comprises a housing, the driving member is supported on the housing, the pressing member and the pivoting member are disposed in the housing, and the pivot is formed on the housing.
7. The retractable handle according to claim 1, characterized in that the connecting device is arranged at a junction of the first handle portion and the second handle portion.
8. A retractable handle for a lawn mower, comprising:
 - a first handle portion connected to a main body portion of the lawn mower, wherein the first handle portion comprises two rod members arranged in parallel;
 - a second handle portion comprises two free ends respectively connected to the two rod members;
 - a connecting device disposed transversely between the two rod members;characterized in that: the connecting device comprises at least one pivoting member which is pivotable around a pivot, the pivoting member has a first pivoting position and a second pivoting position for pivoting around the pivot, in the first pivoting position, the second handle portion is locked to the first handle portion, and in the second pivoting position, the second handle portion is unlocked from the first handle portion.
9. The retractable handle according to claim 8, characterized in that the connecting device further comprises a driving member and a pressing member, the pivoting member comprises a first end and a second end, the first end abuts against the driving member, the second end abuts against the pressing member, and the pressing member is pressed onto the second handle portion through a hole provided on the first handle portion.

10. The retractable handle according to claim 9, characterized in that a direction of movement of the driving member at the first end and the direction of movement of the pressing member at the second end are substantially perpendicular to each other.
11. The retractable handle according to claim 9, characterized in that the connecting device further comprises a resetting member acting on the pivoting member, the resetting member cooperates with the driving member such that the pivoting member is switchable between the first pivoting position and the second pivoting position.
12. The retractable handle according to claim 9, characterized in that the connecting device further comprises a pin and a pin resetting member, the pin is engageable with a first insertion hole disposed on the first handle portion and a second insertion hole disposed on the second handle portion, and the first end of the pivoting member is connected to the pin.
13. The retractable handle according to any one of claims 8 to 12, characterized in that the connecting device comprises a housing, and the pivot is formed on the housing.

Retractable handle of lawn mower

Technical Field

[0001] The present utility model relates to a retractable handle which can be quickly locked, in particular to a retractable handle which can be quickly locked for use on a lawn mower.

Background Art

[0002] A lawn mower is a lawn maintenance device, a lawn mower typically comprises a cutting device and a chassis carrying the cutting device. The chassis is mounted on a frame having four wheels, and one end of the frame is provided with a handle for pushing the mower body during operation.

[0003] When a user finishes using a lawn mower, the mower needs to be transported from the lawn to the storage place. This involves the storage of the mower. In the existing technology, the handle of the mower usually does not have a retractable function, and the handle is long. It takes up a lot of space, so it is difficult to adapt from a large volume when used to mow a lawn to a small volume at the time of storage.

[0004] If the handle of the mower is provided with a retractable structure, the handle portion can be quickly retracted during transportation and storage, and the handle portion can be quickly expanded and has sufficient strength and reliability when used as a lawn mower. The foregoing is undoubtedly one focus of research and development of lawn mower handles, which will bring great convenience to users.

Summary of the Utility Model

[0005] In view of the problems to be solved discussed in the above background art, the present utility model provides a retractable handle for a lawn mower.

[0006] In order to achieve the above objectives, the present utility model adopts the following technical solutions:

[0007] First, one aspect of the present utility model provides a retractable handle, which comprises a first handle portion; a second handle portion which is retractable with respect to the first handle portion; and a connecting device configured to lock or unlock the second handle portion with the first handle portion; the connecting device comprises at least one pivoting member which is pivotable around a pivot, the pivoting member has a first pivoting position and a second pivoting position for pivoting around the pivot, in the first pivoting position, the second handle portion is locked to the first handle portion, and in the second pivoting position, the second handle portion is unlocked from the first handle portion.

[0008] Second, another aspect of the present utility model provides a retractable handle for a lawn mower, which comprises a first handle portion connected to a main body portion of the lawn mower, wherein the first handle portion comprises two rod members arranged in parallel; a second handle portion comprises two free ends respectively connected to the two rod members; a connecting device disposed transversely between the two rod members; the connecting device comprises at least one pivoting member which is pivotable around a pivot, the pivoting member has a first pivoting position and a second pivoting position for pivoting around the pivot, in the first pivoting position, the second handle portion is locked to the first handle portion, and in the second pivoting position, the second handle portion is unlocked from the first handle portion.

[0009] Further, the connecting device further comprises a driving member and a pressing member, the pivoting member comprises a first end and a second end, the first end abuts against the driving member, the second end abuts against the pressing member, and the pressing member is pressed onto the second handle portion through a hole provided on the first handle portion.

[0010] Further, a direction of movement of the driving member at the first end and the direction of movement of the pressing member at the second end are substantially perpendicular to each other.

[0011] Further, the connecting device further comprises a resetting member acting on the pivoting member, the resetting member cooperates with the driving member such that the

pivoting member is switchable between the first pivoting position and the second pivoting position.

[0012] Further, the connecting device further comprises a pin and a pin resetting member, the pin is engageable with a first insertion hole disposed on the first handle portion and a second insertion hole disposed on the second handle portion, and the first end of the pivoting member is connected to the pin.

[0013] Further, the connecting device comprises a housing, the driving member is supported on the housing, the pressing member and the pivoting member are disposed in the housing, and the pivot is formed on the housing.

[0014] Further, the connecting device is arranged at a junction of the first handle portion and the second handle portion.

[0015] By adopting the above technical solutions, the following beneficial technical effects can be achieved:

[0016] 1) the driving member and the resetting member in the connecting device cooperate to drive the pivoting member and the pressing member to lock and unlock the second handle portion relative to the first handle portion of the handle, so that when the mower is used or stored, the handle can be flexibly switched according to the actual working condition.

[0017] 2) The pivoting member is connected with one end of the pressing block, and at the same time, a pin can be used for connection, where the pin fits in a hole on the handle portion. When the pressing member presses the handle portion, the pin further locks the handle portion, so that the connection between the first handle portion and the second handle portion is more stable.

Brief Description of the Drawings

[0018] Figure 1 is a schematic view of a lawn mower having a handle according to the present utility model.

[0019] Figure 2 is a schematic view of the handle having a connecting device for locking and unlocking it.

[0020] Figure 3 is a partial schematic view of the second handle portion being locked to the first handle portion by the connecting device.

[0021] Figure 4 is a partial schematic view of the second handle portion being released from the first handle portion by the connecting device.

Description of Embodiments

[0022] The present utility model will be described in detail below in conjunction with the accompanying drawings and specific embodiments.

[0023] As shown in Figure 1, the present utility model takes a push type lawn mower 1 as an example, it comprises a main body portion 11 and a handle 2 connected to the main body portion 11. The handle 2 includes a first handle portion 21 pivotable relative to the main body portion 11. The first handle portion 21 has two rod members arranged in parallel, the rod members can be configured as a hollow tube. The handle 2 further comprises a second handle portion 22 retractably connected to the first handle portion 21, the second handle portion 22 is a tube that is configured in a generally U-shape with two free ends of the tube being respectively connected with the two tubes of the first handle portion 21 in a sleeving manner. A grip portion 22' is also provided on the second handle portion 22. Referring to Figure 2, the second handle portion 22 may also be constructed as two generally L-shaped tubes with a grip portion 22' disposed between the two L-shaped tubes.

[0024] As shown in Figure 1, Figure 2 and Figure 3, at the junction of the first handle portion 21 and the second handle portion 22 of the handle 2, a connecting device 3 is further provided, and the connecting device 3 is formed by a front half housing and a rear half housing.

The main body portion 3' of the housing is transversely disposed between the two symmetrical tubular members of the first handle portion 21. The connecting device 3 comprises a pushing driving member 31 which is disposed substantially in the middle of the main body portion 3' and can be manually operated by an operator. The pressing driving member 31 can drive each of the left and right pressing mechanisms located on the left and right sides. The left and right pressing mechanisms each are configured to release or press the tubular free ends of the second handle portion 22 into the left and right tubular members of the first handle portion 21. Moreover, the left and right pressing mechanisms have the same structure.

[0025] The left pressing mechanism is used as one example for detailed description. As shown in Figure 3, the pressing mechanism includes a pivoting member 32 that can be driven by the driving member 31, a resetting member 33 that cooperates with the driving member 31 to pivot the pivoting member 32, and a pressing member 37 abuts against the pivoting member 31. The driving member 31 can be connected to the pivoting member 32 in an abutting manner, and the pivoting member 32 is pivotally disposed in the housing of the connecting device 3 about the pivot 34, and the pivot 34 is directly formed on the housing of the connecting device 3. The pivoting member 32 has a first end 321 abutting against the driving member 31 and a second end 322 pressing the pressing member 37. The pressing member 37 is pressed through a hole 211 provided on the first handle portion 21 to further press on the tube of the second handle portion 22. A resetting member 33 is also applied to the pivoting member 32. The resetting member 33 may preferably be a pressing spring 33a. The pressing spring 33a and the driving member 31 are respectively disposed above and below the pivoting member 32. Thus, when it is desired to lock the second handle portion 22 relative to its first handle portion 21 of the handle 2, the pivoting member 32 pivots about the pivot 34 under the pressing spring 33a and its second end 322 presses the pressing member 37 on an outer wall of the tube of the second handle portion 22. At this time, the pivoting member 32 is in the first pivoting position about the pivot 34. In reference to Figure 4, when it is necessary to retract the second handle portion 22 relative to its first handle portion 21 of the handle 2, it is only necessary to press the driving member 31 to overcome the top force of the pressing spring 33a. Such that the pivoting member 32 pivots in an opposite direction about the pivot 34, thereby releasing the pressing member 37 and the second handle

portion 22. At this time, the pivoting member 32 is in the second pivoting position about the pivot 34.

[0026] In this embodiment, in the locking state, one end of the pivoting member 32 presses the pressing member 37 firmly against the second handle portion 22, and the pressing member is preferably a pressing block having a large contact area with the outer wall of the second handle portion 22, which can increase the friction between the pressing member 37 and the second handle portion 22; in addition, it may illuminate a radial gap present when the tube of the second handle portion 22 and the tube of the first handle portion 21 are connected in a sleeving manner, so that the second handle portion 22 does not move relative to the first handle portion 21. The pressing member 37 is not limited to the form of a pressing block, and in other embodiments, the pressing member 37 may be integrally formed with the pivoting member 32.

[0027] The connecting device of the present utility model may also be provided with a further locking structure to enhance the strength of the handle and the reliability of the locking function. The further locking structure includes a pin 36, a resetting spring 35 for resetting the pin. In this case, the pin 36 is inserted into a first insertion hole 212 of the first handle portion 21 and a second insertion hole 222 of the second handle portion 22. The second handle portion 22 can be further locked on the first handle portion 21, and the second insertion hole 222 on the second handle portion 22 can be arranged as a row of equally spaced holes (not shown). The pin 36 is optionally placed in one hole among the row of holes. The pin 36 is coupled to the pivoting member 32. Preferably, the end of the pivoting member 32 that abuts the pressing member 37 extends from a projection 323 for pulling the pin 36 out of the insertion hole.

[0028] The operation procedure of the lawn mower handle of the present utility model is as follows: pressing the driving member 31 to drive the pivoting member 32 to pivot, so that the pressing member 37 is released. At the same time, the pivoting member 32 drives the locking pin 36 to translate, so as to be disengaged from the insertion hole 222 of the second handle portion 22; so far, the two pressing members 37 and the locking pin 36 are in an unlocked state. At this time, the tube of the free end of the second handle portion 22 can slide freely in the outer tube of the first handle portion 21. When the user's hand leaves, the above components are

moved in opposite directions, and the inner tube of the second handle portion 22 can be firmly locked with the outer tube of the first handle portion 21 without relative displacement.

[0029] The handle for the lawn mower disclosed in the present utility model is not limited to the contents described in the above embodiments and the structure represented by the drawings. For example, the free end of the second handle portion can also be sleeved over the first handle portion. Therefore, correspondingly the hole for accommodating the pressing member is disposed on the second handle portion. The resetting member that cooperates with the driving member to drive the pivoting member is also not limited to a pressing spring, and may be a tension spring. Meanwhile, the resetting member is not limited to being disposed on opposite sides of the pivoting member with respect to the driving member, and even the resetting member is not required, as manual resetting may be adopted. The first end of the pivoting member can also extend out of the housing of the connecting device to operate in place of the driving member. The concept of the present invention can also be achieved when the pressing mechanism of the above connecting device has only one set instead of two sets on both the left and right sides. In summary, obvious changes, substitutions or modifications to the shapes and positions of the components of the present utility model are within the scope of the present utility model.

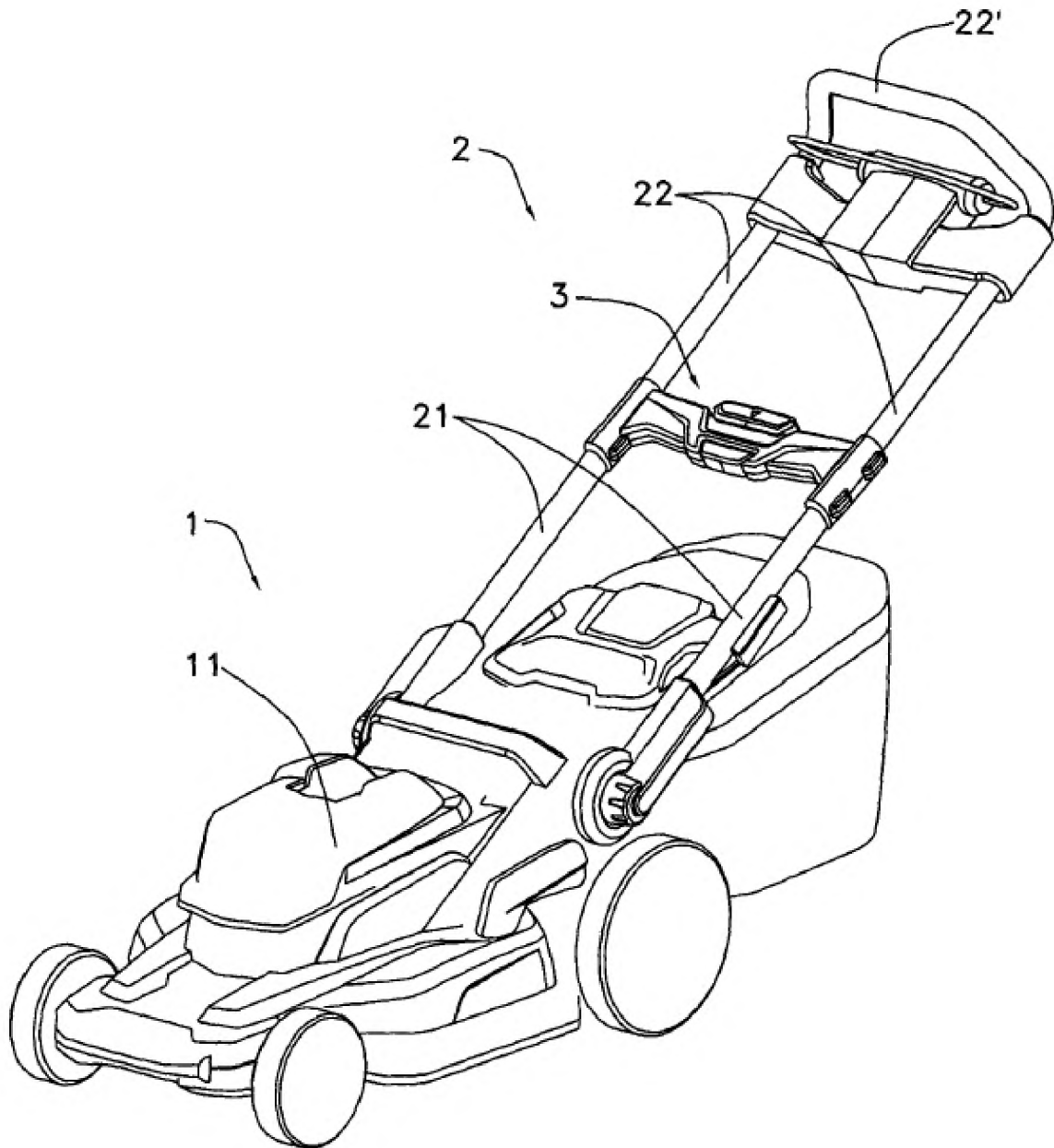


Figure 1

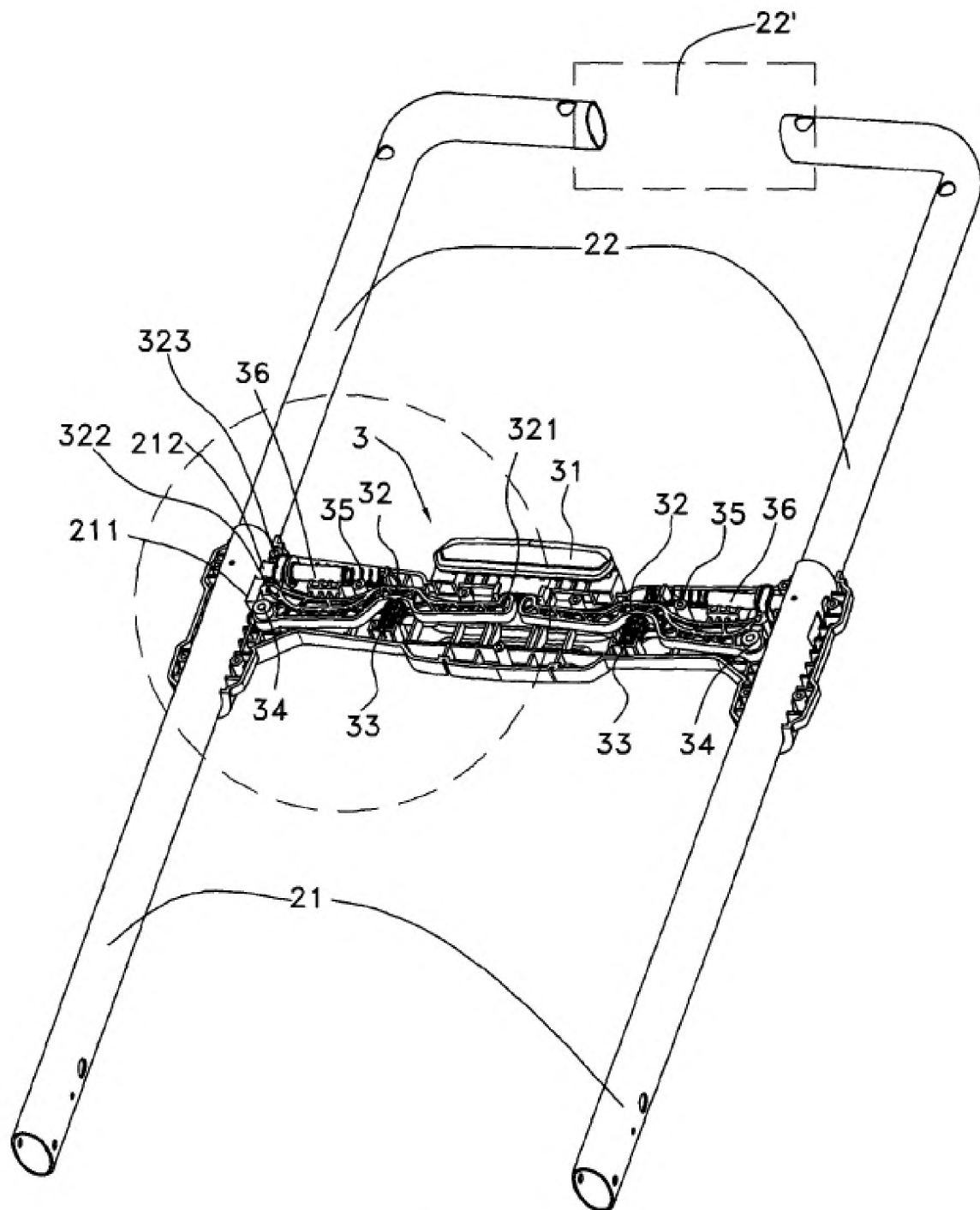


Figure 2

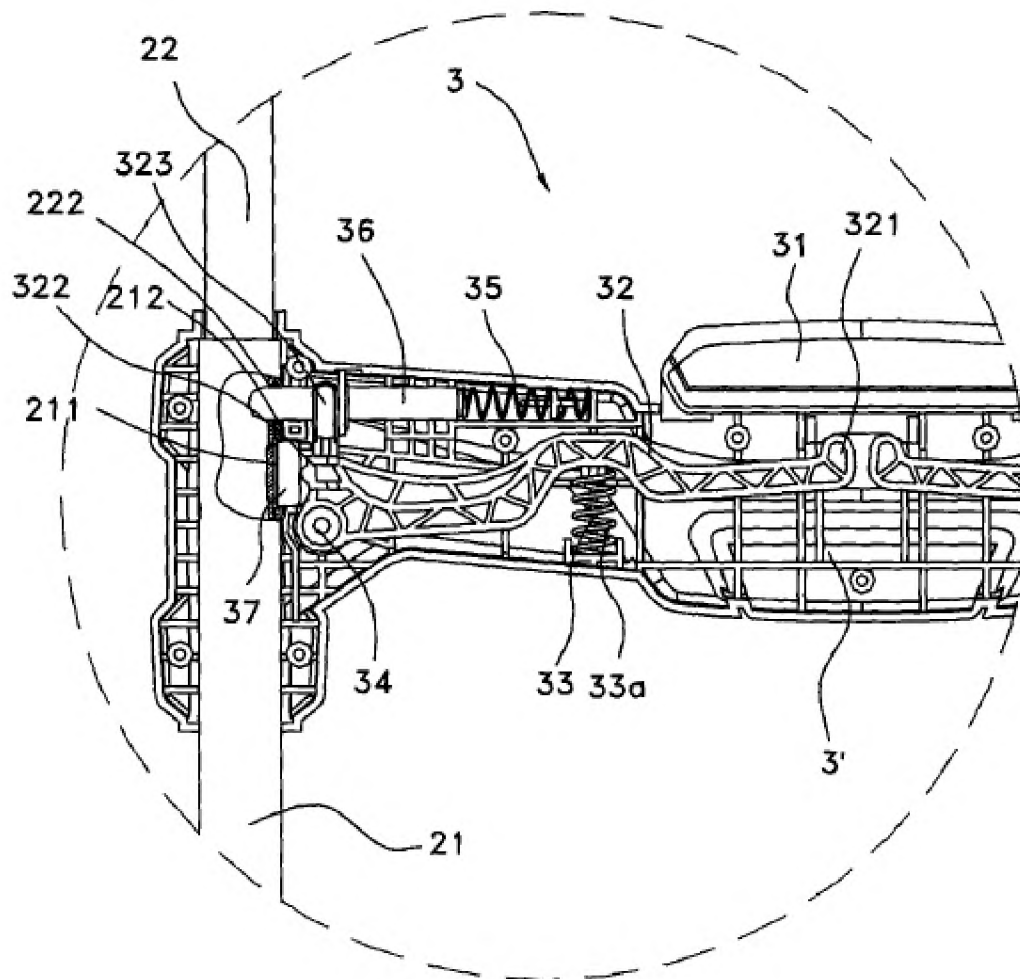


Figure 3

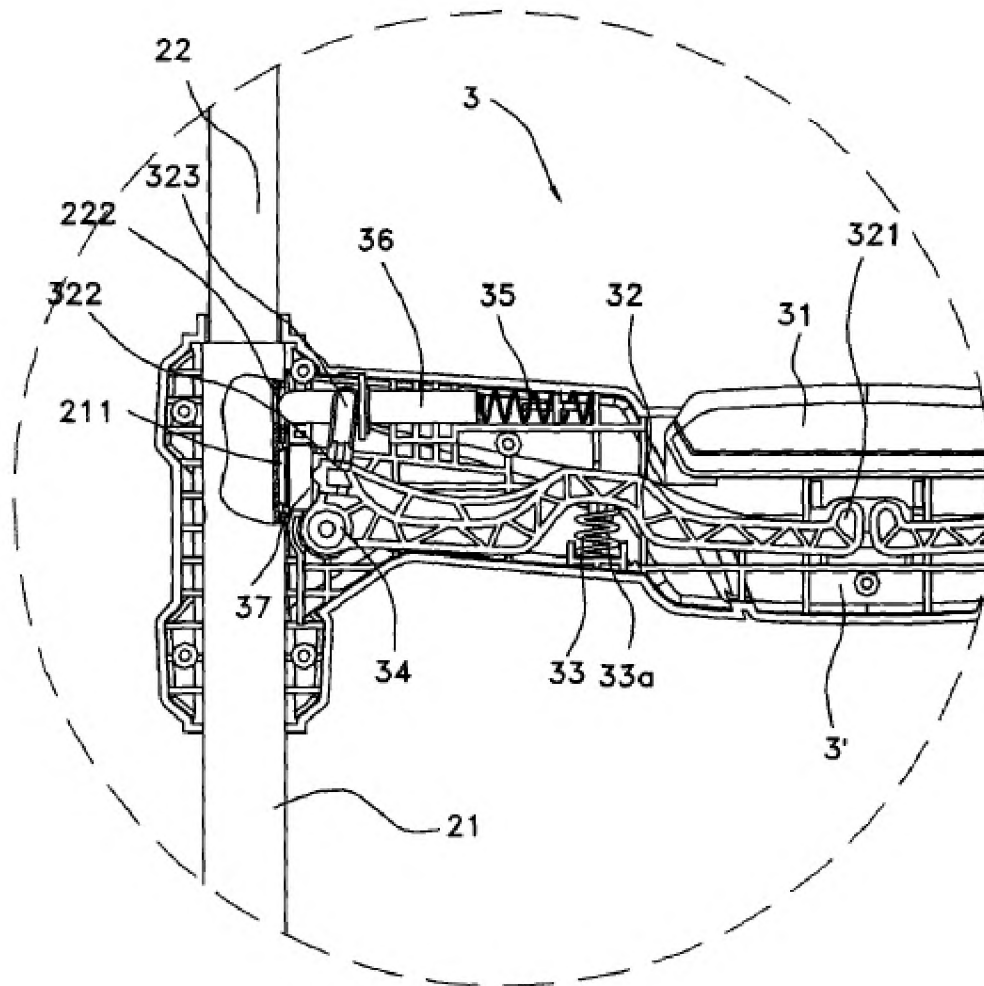


Figure 4



TRANSLATOR CERTIFICATION

I, Qiang Li, 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 Chinese and English languages. My qualifications are that I have been working as a registered patent law practitioner for over 10 years. 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 Chinese original and English translation of Chinese Utility Model Patent CN 202019551 U. attached hereto. I attest that the English translation is a true and accurate translation of the Chinese Utility Model Patent CN 202019551 U.

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 on November 7, 2019, at 5 Peach Leaf Ct, North Potomac, MD 20878

Signature

QIANG Li

Print



(12) 实用新型专利

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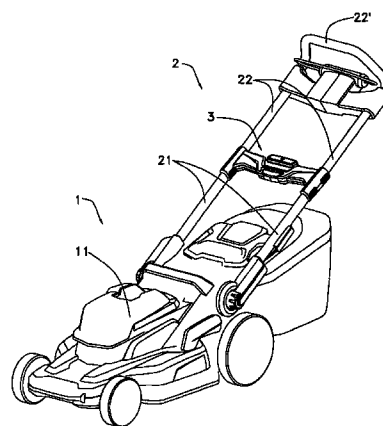
权利要求书 2 页 说明书 3 页 附图 4 页

(54) 实用新型名称

割草机可伸缩把手

(57) 摘要

本实用新型提供一种割草机可伸缩把手, 包含: 与割草机的本体部分连接的第一把手部分, 该第一把手部分包含平行设置的两个杆件; 一第二把手部分, 具有两个可分别与两个杆件相连的自由端; 一连接装置, 横置在两个杆件之间; 其中: 连接装置包含至少一个可绕枢轴转动的枢转件, 枢转件具有绕所述枢轴转动的第一枢转位置及第二枢转位置, 在第一枢转位置上, 第二把手部分被锁定在所述第一把手部分上, 在第二枢转位置上, 第二把手部分可相对于第一把手部分被松开。通过该连接装置实现把手的第二把手部分相对第一把手部分的释放及锁定, 使得割草机在使用或存储时, 其把手可根据实际工况灵活的切换长度尺寸。



1. 一种可伸缩把手,包含:

第一把手部分;

相对第一把手部分可伸缩的第二把手部分;及,

可释放或锁定所述第二把手部分于所述第一把手部分上的连接装置;

其特征在于:所述连接装置包含至少一个可绕枢轴转动的枢转件,所述枢转件具有绕所述枢轴转动时的第一枢转位置及第二枢转位置,在所述第一枢转位置上,所述第二把手部分被锁定在所述第一把手部分上,在第二枢转位置上,所述第二把手部分可相对于第一把手部分被松开。

2. 根据权利要求1所述的可伸缩把手,其特征在于:所述连接装置还包括驱动件和压紧件,所述枢转件具有第一端及第二端,所述第一端可与所述驱动件抵接,所述第二端可与所述压紧件抵接,所述压紧件可穿过设于第一把手部分上的孔而挤压到第二把手部分上。

3. 根据权利要求2所述的可伸缩把手,其特征在于:所述驱动件在所述第一端处的移动方向和所述压紧件在所述第二端处的移动方向实质上垂直。

4. 根据权利要求2所述的可伸缩把手,其特征在于:所述连接装置还包含一作用在所述枢转件上的复位件,所述复位件和所述驱动件配合使得所述枢转件在所述第一位置及第二位置上转换。

5. 根据权利要求2所述的可伸缩把手,其特征在于:所述连接装置还包含销及销复位件,所述销与分别设置在第一把手部分的第一插孔及第二把手部分上的第二插孔配合,所述枢转件的第一端与所述销连接。

6. 根据权利要求2至5任一项所述的可伸缩把手,其特征在于:所述连接装置具有壳体,所述驱动件支撑在所述壳体上,所述压紧件及枢转件置于所述壳体内,所述枢轴形成于所述壳体上。

7. 根据权利要求1所述的可伸缩把手,其特征在于:所述连接装置位于第一把手部分和第二把手部分的连接处。

8. 一种割草机可伸缩把手,包含:

与所述割草机的本体部分连接的第一把手部分,该第一把手部分包含平行设置的两个杆件;

一第二把手部分,具有两个可分别与所述两个杆件相连的自由端;

一连接装置,横置在所述两个杆件之间;

其特征在于:所述连接装置包含至少一个可绕枢轴转动的枢转件,所述枢转件具有绕所述枢轴转动时的第一枢转位置及第二枢转位置,在所述第一枢转位置上,所述第二把手部分被锁定在所述第一把手部分上,在第二枢转位置上,所述第二把手部分可相对于第一把手部分被松开。

9. 根据权利要求8所述的可伸缩把手,其特征在于:所述连接装置还包括驱动件和压紧件,所述枢转件具有第一端及第二端,所述第一端可与一驱动件抵接,所述第二端可与一压紧件抵接,所述压紧件可穿过设于第一把手部分上的孔而挤压到第二把手部分上。

10. 根据权利要求9所述的可伸缩把手,其特征在于:所述驱动件在所述第一端处的移动方向和所述压紧件在所述第二端处的移动方向实质上垂直。

11. 根据权利要求9所述的可伸缩把手,其特征在于:所述连接装置还包含一作用在所

述枢转件上的复位件,所述复位件和所述驱动件配合使得所述枢转件在所述第一位置及第二位置上转换。

12. 根据权利要求9所述的可伸缩把手,其特征在于:所述连接装置还包含销及销复位件,所述销与分别设置在第一把手部分的第一插孔及第二把手部分上的第二插孔配合,所述枢转件的第一端与所述销连接。

13. 根据权利要求8至12任一项所述的可伸缩把手,其特征在于:所述连接装置具有壳体,所述枢轴形成于所述壳体上。

割草机可伸缩把手

技术领域

[0001] 本实用新型涉及一种可快速锁定的伸缩把手,特别是涉及一种割草机上用的可快速锁定的伸缩把手。

背景技术

[0002] 在已知的草坪维护设备中,以车式割草机为例,包含一切割装置、一承载切割装置的底盘,底盘装在一具有四个轮子的框架上,框架的一端安有供作业时推动割草机本体移动把手。

[0003] 当用户在使用完割草机时,需要将其从草坪运输到仓库,此时就会涉及到割草机的储藏问题,现有技术中,割草机的把手通常不具有伸缩功能,长把手很占空间,因此很难适应从使用时占据的一个大体积到储藏时的小空间的状况。

[0004] 如果,将割草机的把手设置成可伸缩的结构,在储藏及包装运输的时候,能够快速地将把手部分收缩短,而在正常使用的时候,把手部分可快速打开并具有足够的强度及可靠性,无疑是割草机把手研究开发的焦点,将给使用者带来很大的便利。

发明内容

[0005] 针对上述背景技术中存在的亟待解决的问题,本实用新型提供一种割草机可伸缩把手。

[0006] 为实现上述目的,本实用新型采用以下技术方案:

[0007] 首先,一方面提供一种可伸缩把手,包含:第一把手部分;相对第一把手部分可被拉出或压缩的第二把手部分;及,可释放或锁定所述第二把手部分于所述第一把手部分上的连接装置;其中:所述连接装置包含至少一个可绕枢轴转动的枢转件,所述枢转件具有绕所述枢轴转动时的第一枢转位置及第二枢转位置,在所述第一枢转位置上,所述第二把手部分被锁定在所述第一把手部分上,在第二枢转位置上,所述第二把手部分可相对于第一把手部分被松开。

[0008] 再次,另一方面提供一种割草机可伸缩把手,包含:与所述割草机的本体部分连接的第一把手部分,该第一把手部分包含平行设置的两个杆件;一第二把手部分,具有两个可分别与所述两个杆件相连的自由端;一连接装置,横置在所述两个杆件之间;其中:所述连接装置包含至少一个可绕枢轴转动的枢转件,所述枢转件具有绕所述枢轴转动时的第一枢转位置及第二枢转位置,在所述第一枢转位置上,所述第二把手部分被锁定在所述第一把手部分上,在第二枢转位置上,所述第二把手部分可相对于第一把手部分被松开。

[0009] 进一步地,所述连接装置还包括驱动件和压紧件,所述枢转件具有第一端及第二端,所述第一端可与所述驱动件抵接,所述第二端可与所述压紧件抵接,所述压紧件可穿过设于第一把手部分上的孔而挤压到第二把手部分上。

[0010] 进一步地,所述驱动件在所述第一端处的移动方向和所述压紧件在所述第二端处的移动方向实质上垂直。

[0011] 进一步地,所述连接装置还包含一作用在所述枢转件上的复位件,所述复位件和所述驱动件配合使得所述枢转件在所述第一位置及第二位置上转换。

[0012] 进一步地,所述连接装置还包含销及销复位件,所述销与分别设置在第一把手部分的第一插孔及第二把手部分上的第二插孔配合,所述枢转件的第一端与所述销连接。

[0013] 进一步地,所述连接装置具有壳体,所述驱动件支撑在所述壳体上,所述压紧件及枢转件置于所述壳体内,所述枢轴形成于所述壳体上。

[0014] 进一步地,所述连接装置位于第一把手部分和第二把手部分的连接处。

[0015] 通过采用以上技术方案,可实现以下的有益技术效果:

[0016] 1) 连接装置中的驱动件和复位件配合,带动枢转件及压紧件,实现把手的第二把手部分相对第一把手部分的释放及锁定,使得割草机在使用或存储时,其把手可根据实际工况灵活的切换长度尺寸。

[0017] 2) 枢转件连接有压块的一端,同时还可以连接有销,销配合在把手部分的孔内,在实现压紧件压紧把手部分的同时,销进一步将把手部分锁定,使得第一把手部分与第二把手部分之间的连接更稳固。

附图说明

[0018] 图 1 是具有本实用新型的把手的割草机的示意图;

[0019] 图 2 是把手上设有可释放及锁定的连接装置的示意图;

[0020] 图 3 是第二把手部分通过连接装置被锁定到第一把手部分上时的局部示意图;

[0021] 图 4 是第二把手部分通过连接装置被从第一把手部分上松开时的局部示意图。

具体实施方式

[0022] 下面结合附图对本实用新型的具体实施方式作进一步详细的说明:

[0023] 如图 1 所示,本实用新型以一种车式割草机 1 为例,包含一主体部分 11 及连于该主体 11 部分上的把手 2,把手 2 包含可相对主体 11 枢转的第一把手部分 21,该第一把手部分 21 为两根平行设置的杆件,该杆件可以被构造成中空的管子,把手 2 还包含相对第一把手部分 21 可伸缩连接的第二把手部分 22,该第二把手部分 22 为被构造成大致 U 形的管子,该管子的两个自由端分别与所述第一把手部分 21 的两根管子套接。第二把手部分 22 上还设有握持部分 22'。参见图 2,第二把手部分 22 还可被构造成两个大致 L 形的管子,两个 L 形的管子之间设置握持部 22'。

[0024] 结合图 1、图 2 及图 3 所示,在把手 2 的第一把手部分 21 和第二把手部分 22 的连接处,还设置有连接装置 3,连接装置 3 由前后两半壳体对合而成,其壳体的主体部分 3' 横置在第一把手部分 21 的左右对称的两个管状杆件之间,连接装置 3 包含一大致置于主体部分 3' 中部的便于操作者手动操作的推压驱动件 31,该推压驱动件 31 可带动左、右各一套压紧机构,该左、右各一套压紧机构分别用于将第二把手部分 22 的管状自由端释放或压紧于第一把手部分 21 的左右管状杆件内,并且,该左、右各一套压紧机构结构一致。

[0025] 以下只以左侧的压紧机构进行详述,如图 3 所示,压紧机构包含可由驱动件 31 驱动的枢转件 32、与驱动件 31 配合带动枢转件 32 枢转的复位件 33、及,与枢转件 31 抵压的压紧件 37。驱动件 31 可抵接地连接于枢转件 32 上,枢转件 32 绕枢轴 34 可枢转地设置在

连接装置 3 的壳体内, 枢轴 34 直接形成于连接装置 3 的壳体上。枢转件 32 具有与驱动件 31 抵接的第一端 321 及推压压紧件 37 的第二端 322, 压紧件 37 穿过设在第一把手部分 21 上的孔 211 而可挤压在第二把手部分 22 的管上, 枢转件 32 上还作用有复位件 33, 该复位件 33 可优选一压紧弹簧 33a, 压紧弹簧 33a 和驱动件 31 分别设置在枢转件 32 的上下两侧, 当需要将把手 2 的第二把手部分 22 相对其第一把手部分 21 锁定时, 枢转件 32 在压紧弹簧 33a 的顶支下绕轴 34 转动, 并且其第二端 322 将压紧件 37 牢固地挤压在第二把手部分 22 的管外壁上, 此时, 枢转件 32 处于绕枢轴 34 的第一枢转位置上; 结合图 4, 当需要将把手 2 的第二把手部分 22 相对其第一把手部分 21 缩进时, 只需按压驱动件 31, 克服压紧弹簧 33a 的顶支力, 使枢转件 32 绕轴 34 反向转动, 进而释放压紧件 37 和第二把手部分 22, 此时, 枢转件 32 处于绕枢轴 34 的第二枢转位置上。

[0026] 本实施方式中, 在锁定状态时, 枢转件 32 的一端将压紧件 37 牢牢地挤压在第二把手部分 22 上, 压紧件优选与第二把手部分 22 的外壁有较大接触面积的压紧块, 增大压紧件 37 和第二把手部分 22 之间的摩擦力, 同时可消除第二把手部分 22 的管和第一把手部分 21 的管子之间套接时存在的径向间隙, 使得第二把手部分 22 不会相对第一把手部分 21 发生晃动。上述压紧件 37 不限于采用压紧块的形式, 在其他实施方式中, 压紧件 37 也可与枢转件 32 制成一体。

[0027] 本实用新型的连接装置还可以设有进一步锁定的结构, 以加强把手的强度及锁定的可靠性, 该进一步锁定的结构包括销 36, 使销复位的复位弹簧 35, 销 36 同时插入到设于第一把手部分 21 上的第一插孔 212 及第二把手部分 22 上的第二插孔 222 中, 即可将第二把手部分 22 进一步锁定在第一把手部分 21 上, 第二把手部分 22 上的第二插孔 222 可设为一排等间距排列的孔 (未示出), 销 36 可选择地置于该一排插孔的其中一个内。销 36 与枢转件 32 相连, 优选地, 枢转件 32 与压紧件 37 相抵接的那一端伸出一凸出部 323, 用于将销 36 从插孔内拉出。

[0028] 本实用新型的割草机把手的使用操作过程是: 按压驱动件 31, 带动枢转件 32 旋转, 这样可松开压紧件 37, 同时, 枢转件 32 再带动锁定销 36 平移, 使之从第二把手部分 22 的插孔 222 中脱出, 至此两锁紧部件压紧件 37 和锁定销 36 都处于松开状态, 此时, 第二把手部分 22 的自由端的管子即可在第一把手部分 21 的外管内自由滑动; 当手松开后, 上述的零部件都做相反的运动, 第二把手部分 22 的内管即可和第一把手部分 21 的外管牢牢锁住, 没有相对位移。

[0029] 本实用新型所揭示的割草机用把手并不局限于以上实施例中的内容及附图所代表的结构, 比如, 第二把手部分的自由端也可套接在第一把手部分的外侧, 因此, 相应的, 容置压紧件的孔设置在第二把手部分上; 和驱动件配合带动枢转件的复位件也不限于压紧弹簧, 也可以为拉簧, 同时, 该复位件也不限于相对驱动件设于枢转件的两侧, 甚至, 该复位件也可不需要, 而采用手动复位; 枢转件的第一端也可伸出连接装置的壳体外从而代替驱动件可进行的操作; 上述连接装置的压紧机构在只具有一套而不是左右两侧均有的两套时, 也能实现本发明的构思。总之, 在本实用新型的基础上对其中构件的形状及位置所作的显而易见的改变、替代或者修改, 都在本实用新型要求保护的范围之内。

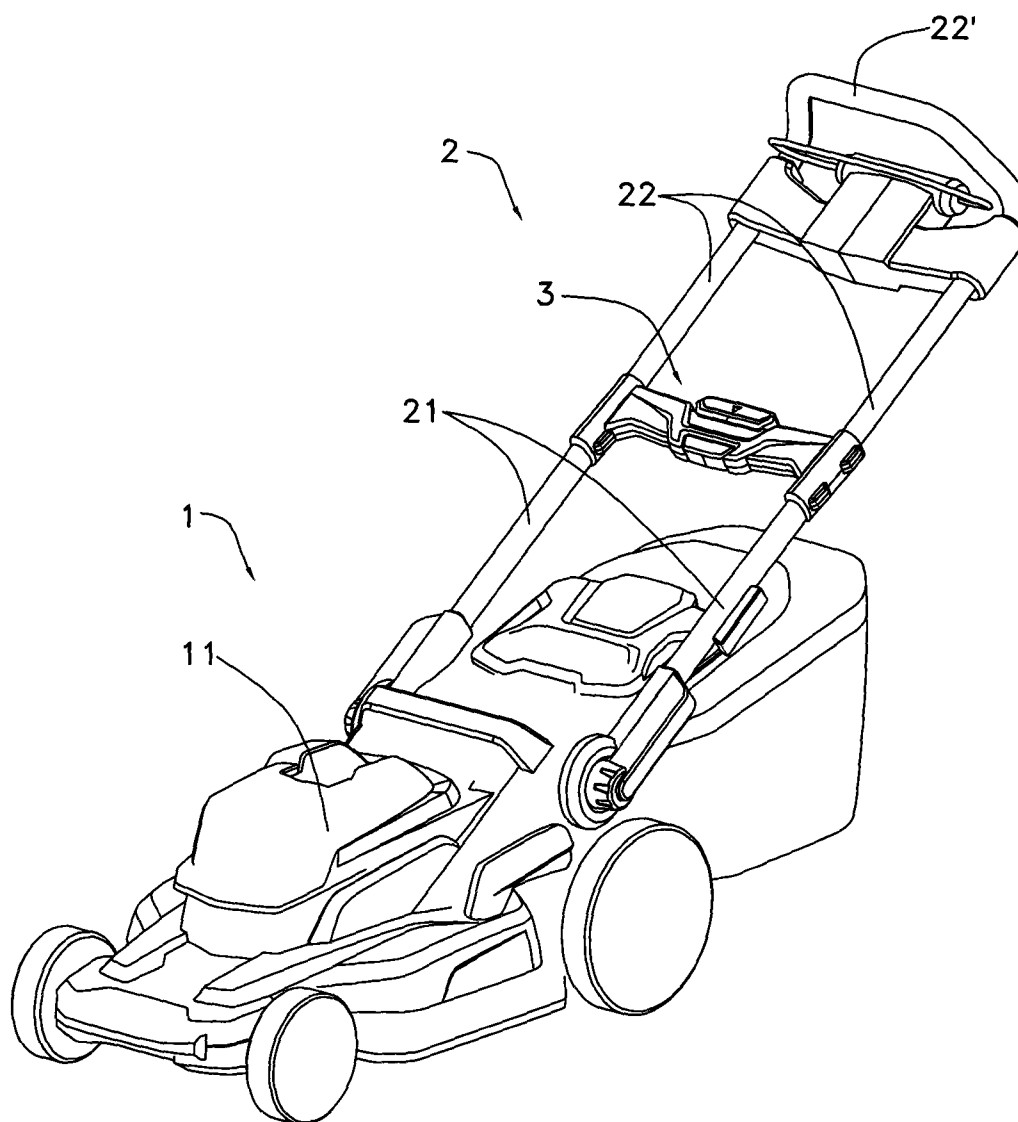


图 1

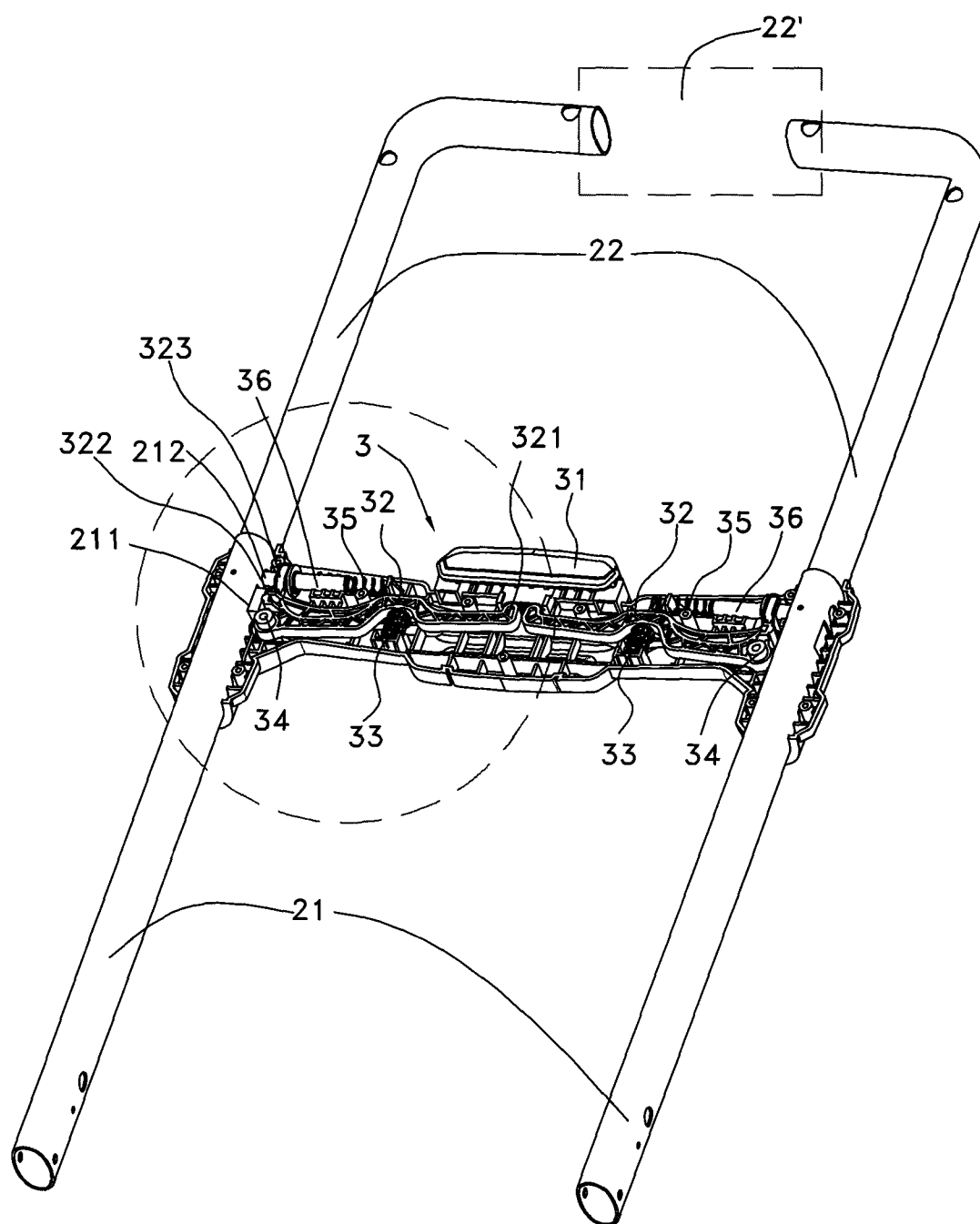


图 2

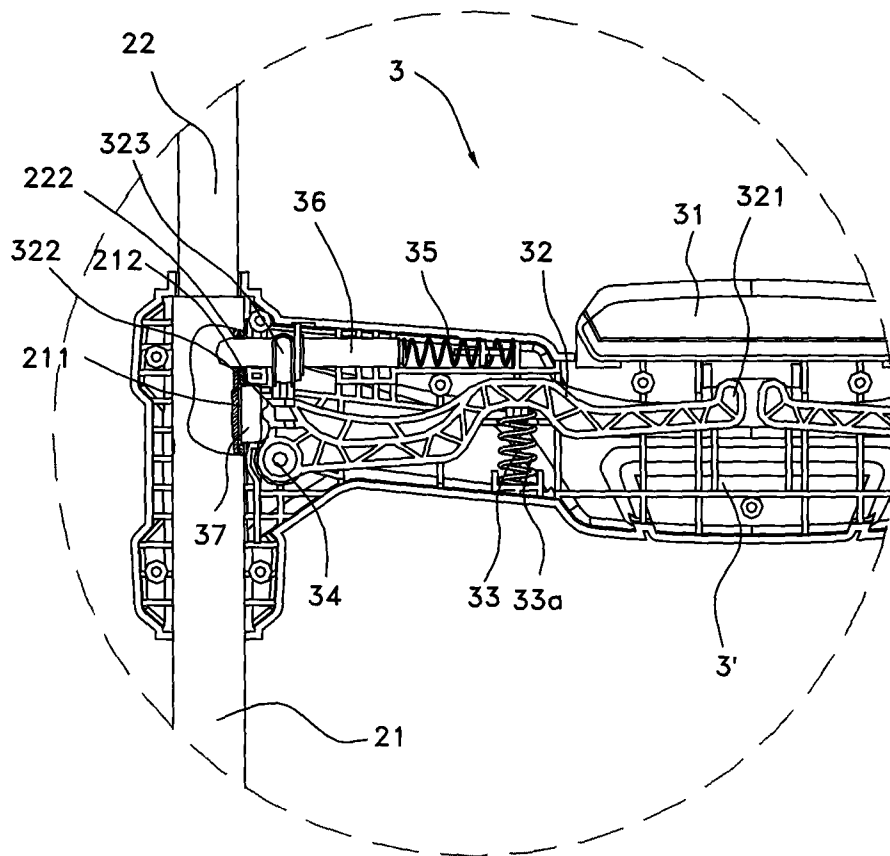


图 3

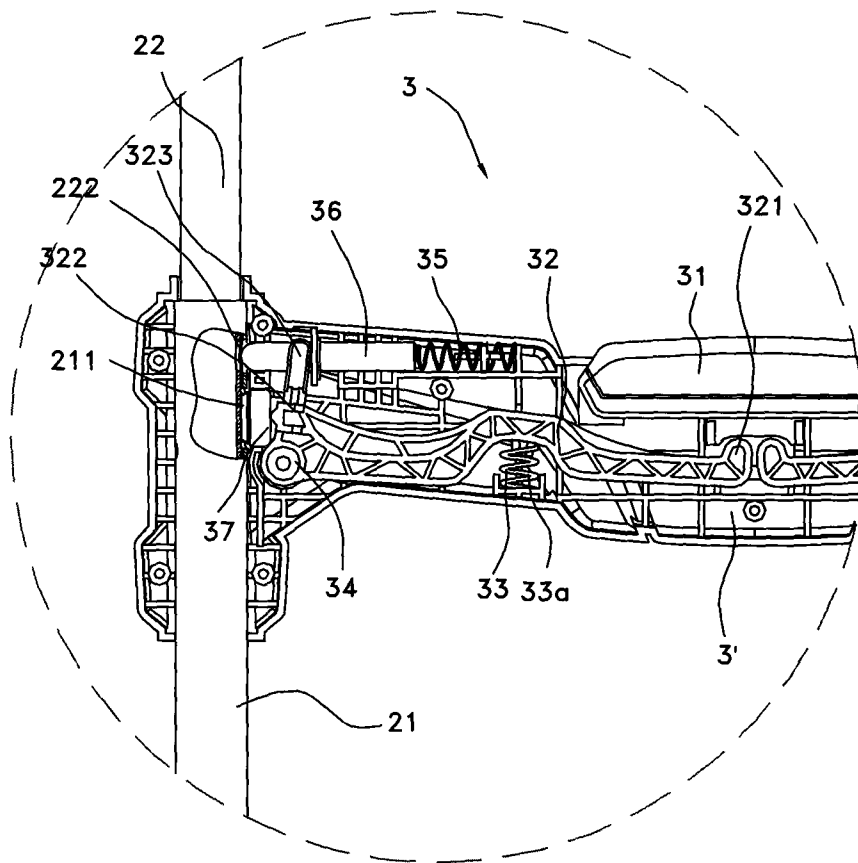


图 4