Innovation, Sciences et Développement économique Canada
Office de la Propriété Intellectuelle du Canada

Innovation, Science and Economic Development Canada
Canadian Intellectual Property Office

CA 2958100 C 2018/09/25

(11)(21) 2 958 100

(12) BREVET CANADIEN
CANADIAN PATENT

(13) C

(86) Date de dépôt PCT/PCT Filing Date: 2015/08/13
(87) Date publication PCT/PCT Publication Date: 2016/02/18
(45) Date de délivrance/Issue Date: 2018/09/25
(85) Entrée phase nationale/National Entry: 2017/02/14
(86) N° demande PCT/PCT Application No.: DE 2015/000412
(87) N° publication PCT/PCT Publication No.: 2016/023537
(30) Priorité/Priority: 2014/08/15 (DE10 2014 012 313.8)

(51) Cl.Int./Int.Cl. *B62B 3/04* (2006.01), *A22B 5/00* (2006.01), *B62B 5/00* (2006.01)

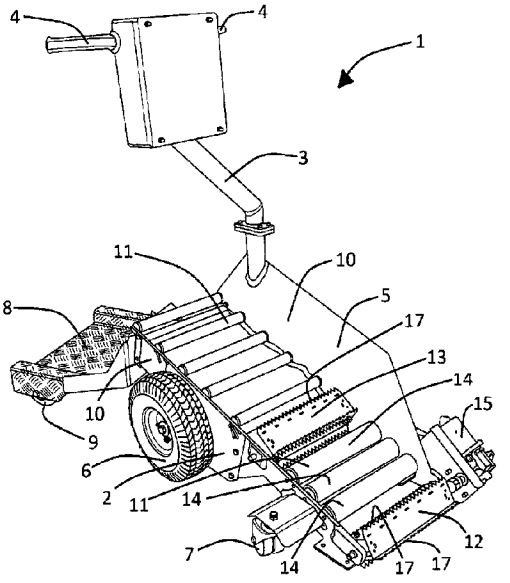
(72) Inventeur/Inventor:
MEIER, WOLFGANG, DE

(73) Propriétaire/Owner:
MEIER, WOLFGANG, DE

(74) Agent: OSLER, HOSKIN & HARCOURT LLP

(54) Titre : CHARIOT MANUEL, METHODE DE TRANSPORT D'OBJETS ET DE CARCASSES D'ANIMAUX AU MOYEN D'UN CHARIOT MANUEL

(54) Title: HAND TRUCK, METHOD FOR TRANSPORTING OBJECTS OR ANIMAL CARCASSES BY MEANS OF A HAND TRUCK



(57) Abrégé/Abstract:
A transport cart (1) and a method for transporting objects or animal carcasses by means of a transport cart (1) are proposed, wherein the transport cart (1) has a loading trough (5) which has a region which is arranged on a side of the loading trough (5) facing away from a handlebar (3) and/or from at least one handle (4), wherein the region has at least one loading and/or unloading device (12, 13), thus making loading and/or unloading possible such that the object which is to be transported or the transported object or the animal carcass which is to be transported or the transported animal carcass does not have to be touched by an operator.

Abstract

A transport cart (1) and a method for transporting objects or animal carcasses by means of a transport cart (1) are proposed, wherein the transport cart (1) has a loading trough (5) which has a region which is arranged on a side of the loading trough (5) facing away from a handlebar (3) and/or from at least one handle (4), wherein the region has at least one loading and/or unloading device (12, 13), thus making loading and/or unloading possible such that the object which is to be transported or the transported object or the animal carcass which is to be transported or the transported animal carcass does not have to be touched by an operator.

Hand truck, method for transporting objects or animal carcasses by means of a hand truck

Prior Art

The invention relates to a hand truck and to a method for transporting objects or animal carcasses by means of a hand truck.

Hand trucks such as those described, for example, in American patent application US 2007/194560 A1 are carts having two or more wheels that are used to transport objects, animals, or carcasses. The most familiar among the two-wheeled hand trucks is the dolly or sack truck, which has a base frame (frame) on whose lower end are arranged a rigid wheel axle with two carrying wheels and a carrier projecting forward that acts simultaneously as a standing support and is usually embodied as a receiving plate. In order to carry the objects to be transported, the carrier is pushed under the object, upon which the dolly is swiveled on the carrying wheels in order to lift the object to be transported off of the ground. One drawback, however, is that, depending on the weight of the object to be transported, it is necessary to exert substantial muscular force in order to lift the object on at least one side in order to push the carrier under it.

Dollies are used very frequently in agriculture as well. They are also used in the form of so-called carcass trucks in that context, for example in order to remove deceased animals from their stall. Hand carts for removing animal carcasses, particularly porcine carcasses from a pig stall, are known from utility model DE 200 06 027 U1, American patent US 4 052 080 A, and American patent US 5 620 193 A, in which a hoisting winch arranged on the supporting frame is used to pull an animal carcass hung on the cable onto a sloped carrier and the supporting frame. However, substantial muscular strength is required of the operator here, too, in order to pull the carcass onto the hand cart using the hoisting winch. In the meantime, carcass trucks having an electrically driven hoisting winches have also come into existence. Moreover, hand trucks are also already known which have an electrical traction drive, thereby facilitating transport for the operator. It is disadvantageous, however, that the operator has to touch the carcass in order to fasten the cable to the carcass, which is regarded as problematic for reasons of hygiene.

The Invention and Its Advantages

In contrast, the hand truck and the method according to the invention for transporting objects or animal carcasses by means of a hand truck, have the advantage that the hand truck has a loading recess with a bottom having a region that is arranged on a side of the loading recess facing away from a control arm or from at least one handle and extends to a front end of the loading recess, with the region having at least one loading and/or unloading device that forms a portion of the bottom of the loading recess and can be rotated in both directions, thereby enabling loading and/or unloading, so that the object to be or being transported or the animal carcass to be or being transported need not be touched by an operator.

According to an advantageous embodiment of the hand truck according to the invention, at least one loading and/or unloading device takes up at least part of the width of the loading recess.

According to an additional advantageous embodiment of the hand truck according to the invention, at least one loading and/or unloading device takes up at least part of the width of the loading recess.

According to an additional advantageous embodiment of the hand truck according to the invention, at least one loading and/or unloading device is tubular.

According to an additional advantageous embodiment of the hand truck according to the invention, at least one loading and/or unloading device has at least one prong, at least one guide rail, at least one toothed border, and/or a conveyor belt.

According to an additional advantageous embodiment of the hand truck according to the invention, the at least one loading and/or unloading device has a drive.

According to an embodiment of the hand truck according to the invention that is advantageous in this respect, the drive has a control by means of which the direction of and/or speed of rotation can be controlled.

According to an additional advantageous embodiment of the hand truck according to the invention, the drive is an electric motor or combustion engine, for example.

According to an additional advantageous embodiment of the hand truck according to the invention, the loading recess has at least one rotatably mounted roller (transport roller).

According to an advantageous embodiment of the hand truck according to the invention that is advantageous in this respect, at least one roller takes up at least part of the width of the loading recess.

According to an additional advantageous embodiment of the hand truck according to the invention, the hand truck has a traction drive.

According to an embodiment of the hand truck according to the invention that is advantageous in this respect, the drive has a control by means of which the direction and/or speed of travel can be controlled.

According to an additional advantageous embodiment of the hand truck according to the invention, the drive is an electric motor or combustion engine, for example.

According to an additional advantageous embodiment of the hand truck according to the invention, the hand truck has at least one support wheel (e.g., a roller) and/or at least one support skid.

According to an embodiment of the hand truck according to the invention that is advantageous in this respect, the at least one support wheel can be swiveled about a vertical axis.

According to an additional advantageous embodiment of the hand truck according to the invention, the hand truck has a seating area and/or a standing area for an operator.

According to an embodiment of the hand truck according to the invention that is advantageous in this respect, the seating area and/or the standing area are arranged on a trailer that can be coupled with and decoupled from the frame. This offers the advantage that an operator can ride along with the hand truck instead of having to walk along behind it.

According to an additional advantageous embodiment of the hand truck according to the invention, the trailer has at least two wheels.

According to an additional advantageous embodiment of the hand truck according to the invention, the hand truck is a carcass truck.

According to an advantageous embodiment of the method according to the invention for transporting objects or animal carcasses by means of a hand truck having a frame, at least one axle with at least one wheel on each side, a control arm or at least one handle and a loading recess, with the hand truck being driven toward the object or animal carcass to be transported in order to load the loading recess, in order to

set in motion a loading device or loading and unloading device for loading the loading recess in a region of at a front end of the loading recess arranged on a side of the loading recess facing away from the control arm or the at least one handle and forming a portion of the bottom of the loading recess, by means of which loading device or loading and unloading device the object or animal carcass to be transported is conveyed automatically into the loading recess in order to then begin the transport process, and/or the hand truck is driven to an unloading location for unloading of the loading recess in order to set into motion an unloading device or the loading and unloading device arranged at the front end of the loading recess and forming a portion of the bottom of the loading recess for unloading, by means of which unloading device or loading and unloading device the object or animal carcass to be transported is conveyed automatically from the loading recess; an operator walks along behind the hand truck or stands or sits on the hand truck during the transport.

According to an additional advantageous embodiment of the method according to the invention, the object or animal carcass to be transported is lying on the ground, and the loading device or loading and unloading device is introduced between the ground and the object or animal carcass to be transported for loading.

According to an additional advantageous embodiment of the method according to the invention, the object or animal carcass to be transported is not touched by the operator for the purpose of loading and/or unloading the object or animal carcass to be transported.

Additional advantages and advantageous embodiments of the invention can be seen from the following description, the drawing.

Drawing

A preferred exemplary embodiment of the object according to the invention is depicted in the drawing and explained in further detail in the following.

Fig. 1 shows a perspective view of a hand truck according to the invention;

Fig. 2 shows a rear view of a hand truck according to the invention; and

Fig. 3 shows a side view of a hand truck according to the invention.

Description of the Exemplary Embodiment

Fig. 1 shows a perspective view of a hand truck 1 according to the invention. The hand truck 1 has a frame 2 on which a control arm 3 with handles 4 and a loading recess 5 are arranged. Moreover, the hand truck 1 has wheels 6 arranged on an axle on both sides. Additional support is provided for the hand truck 1 by rollers 7, which are steerable, for which reason the hand truck 1 is very maneuverable. A trailer 8, which can be coupled and decoupled and has wheels 9 arranged on both sides on an axle, is arranged on the frame 2 and provides a place for an operator (not shown) to stand while holding the grips 4 and thereby operating the hand truck 1 during traction mode, for example, which is accomplished by means of an electric motor (not shown). The trailer 8 preferably has a non-slip surface (e.g., tear plate) in order to provide the operator with reliable footing.

In order to transport an object or an animal carcass, the loading recess 5 has inclined side walls 10 and a bottom on which the rollers 11 are arranged. A loading and/or unloading device 12 is located at the front

end of the loading recess 5 and is supported by a loading and/or unloading device 13 and interposed transport rollers 11 having a rubber coating 14. The loading and/or unloading device 12 can be driven by means of an electric motor 15. Likewise, the loading and/or unloading device 13 can be driven by an electric motor 16, which is shown in Fig. 3. The electric motors 15 and 16 enable the loading and/or unloading devices 12 and 13 to rotate in both directions, so that the loading and/or unloading devices 12 and 13 are rotated in one direction in order to load the loading recess 5 and in the other direction in order to unload the loading and/or unloading devices 12 and 13. Preferably, the loading and/or unloading devices 12 and 13 are rectangular and have toothed borders 17 on their edges. The toothed borders 17 offer the advantage that an object or animal carcass lying on the ground is lifted, so that the hand truck 1 is pushed during the loading of the object or the animal carcass into the loading recess 5 (optionally supported by forward travel of the hand truck 1) between the object or the animal carcass and the ground, and/or the object or the animal carcass is pulled into the loading recess 5. Preferably, the control arm 3 is arranged asymmetrically on the frame 2, so that the loading recess 5 is open at its end facing away from the loading and/or unloading device 12, whereby objects or animal carcasses that are longer than the loading recess 5 can also be transported with the hand truck 1. To unload the loading recess 5, the loading and/or unloading devices 12 and 13 rotate in the opposite direction, whereby the object or the animal carcass is conveyed out of the loading recess 5. By virtue of the loading and/or unloading devices 12 and 13, it is therefore unnecessary for an operator to touch the object or animal carcass to be loaded or unloaded.

Fig. 2 shows a rear view of a hand truck 1 according to the invention. The control console 18 is visible, which has an on/off switch 19 for the hand truck 1, a rocker switch 20 for the forward and backward traction modes and a rocker switch 21 with which the loading and/or unloading devices 12 and 13 are operated. A trailer (not shown) can be coupled with the frame 2 via the trailer coupling 22.

Fig. 3 shows a side view of a hand truck 1 according to the invention.

All of the features portrayed in the description, the following claims, and the drawing can be essential to the invention both individually and in any combination with one another.

List of Reference Symbols

1 hand truck

2 frame

3 control arm

4 handle

5 loading recess

6 wheel

7 roller

8 trailer

9 wheel

10 side wall

11 transport roller

12 loading and/or unloading device

13 loading and/or unloading device

14 rubber coating

15 electric motor

16 electric motor

17 toothed border

18 control console

19 on/off switch

20 rocker switch

21 rocker switch

22 trailer coupling

The embodiments of the present invention for which an exclusive property or privilege is claimed are defined as follows:

1. A hand truck, comprising

a frame;

at least one axle with at least one wheel on both sides;

a control arm and/or at least one handle; and

a loading recess having a width, a bottom, and a front end, as well as a region that is arranged on a side of the loading recess facing away from the control arm and/or the at least one handle, with the region having at least one loading and/or unloading device;

wherein the at least one loading and/or unloading device forms a portion of the bottom of the loading recess and is rotatable in both directions, and one of the at least one loading and/or unloading device is arranged at the front end of the loading recess.

2. The hand truck as set forth in claim 1,

wherein the at least one loading and/or unloading device takes up at least part of the width of the loading recess.

3. The hand truck as set forth in claim 1 or 2,

wherein the at least one loading and/or unloading device has a round or angular cross section.

4. The hand truck as set forth in any one of claims 1 to 3,

wherein the at least one loading and/or unloading device is tubular.

5. The hand truck as set forth in any one of claims 1 to 4,

wherein the at least one loading and/or unloading device has at least one prong, at least one guide rail, at least one toothed border, and/or a conveyor belt.

6. The hand truck as set forth in any one of claims 1 to 5,

wherein the at least one loading and/or unloading device has a drive.

7. The hand truck as set forth in claim 6,

wherein the drive has a drive control by means of which a direction of and/or a speed of rotation can be controlled.

8. The hand truck as set forth in claim 6 or 7,

wherein the drive is an electric motor or a combustion engine.

9. The hand truck as set forth in any one of claims 1 to 8,

wherein the loading recess has at least one rotatably mounted roller.

10. The hand truck as set forth in claim 9,

wherein the at least one roller takes up at least part of the width of the loading recess.

11. The hand truck as set forth in any one of claims 1 to 10,

wherein the hand truck has a traction drive.

12. The hand truck as set forth in claim 11,

wherein the traction drive has a traction drive control by means of which a direction and/or a speed of travel can be controlled.

13. The hand truck as set forth in claim 11 or 12,

wherein the traction drive is an electric motor or a combustion engine.

14. The hand truck as set forth in any one of claims 1 to 13,

wherein the hand truck has at least one support wheel and/or at least one support skid.

15. The hand truck as set forth in claim 14,

wherein the at least one support wheel can be swiveled about a vertical axis.

16. The hand truck as set forth in any one of claims 1 to 15,

wherein the hand truck has a seating area and/or a standing area for an operator.

17. The hand truck as set forth in claim 16,

wherein the seating area and/or the standing area are arranged on a trailer that can be coupled with and decoupled from the frame.

18. The hand truck as set forth in claim 17,

wherein the trailer has at least two wheels.

19. The hand truck as set forth in any one of claims 1 to 18,

wherein the hand truck is a carcass truck.

20. A method for transporting objects or animal carcasses by means of a hand truck having a frame, at least one axle with at least one wheel on both sides, a control arm and/or at least one handle, and a loading recess having a bottom, the method comprising the steps of

driving the hand truck toward the object or animal carcass to be transported in order to load the loading recess, in order to set in motion a loading device or loading and unloading device arranged at a front end of the loading recess, which end is arranged on a side of the loading recess facing away from the control arm or the at least one handle, and forming a portion of the bottom of the loading recess for loading the loading recess, by means of which loading device or loading and unloading device the object or animal carcass to be transported is conveyed automatically into the loading recess in order to then begin the transport process,

and/or

driving the hand truck to an unloading location for unloading of the loading recess in order to set into motion an unloading device or the loading and unloading device arranged at the front end of the loading recess and forming a portion of the bottom of the loading recess for unloading, by means of which unloading device or loading and unloading device the object or animal carcass to be transported is conveyed automatically from the loading recess.

21. The method as set forth in claim 20,

wherein an operator walks along behind the hand truck or stands or sits on the hand truck during the transport.

22. The method as set forth in claim 20 or 21,

wherein the object or animal carcass to be transported is lying on the ground, and the loading device or loading and unloading device is introduced between the ground and the object or animal carcass to be transported for loading.

23. The method as set forth in claim 21,

wherein the object or animal carcass to be transported is not touched by the operator for the purpose of loading and/or unloading the object or animal carcass to be transported.

24. The method as set forth in any one of claims 20 to 23,

wherein the hand truck is the hand truck as set forth in any one of claims 1 to 19.

Fig. 1

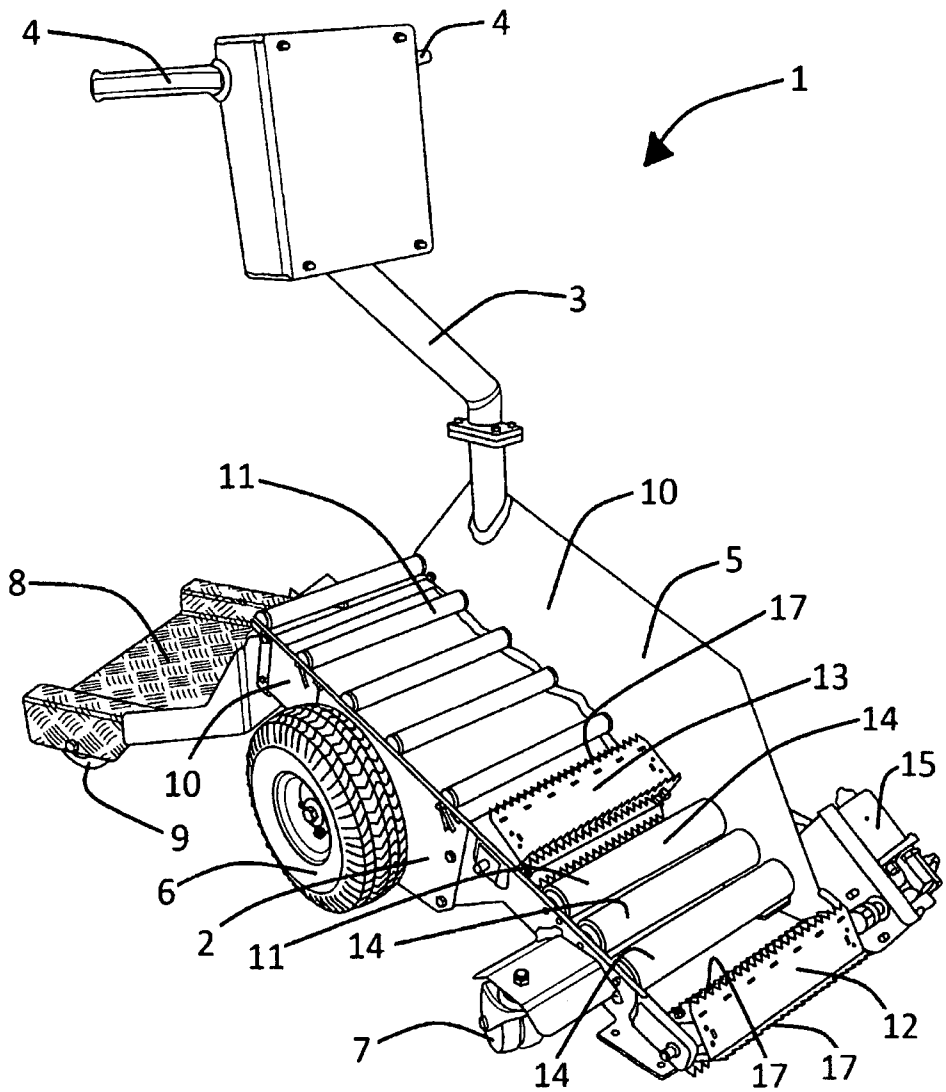


Fig. 2

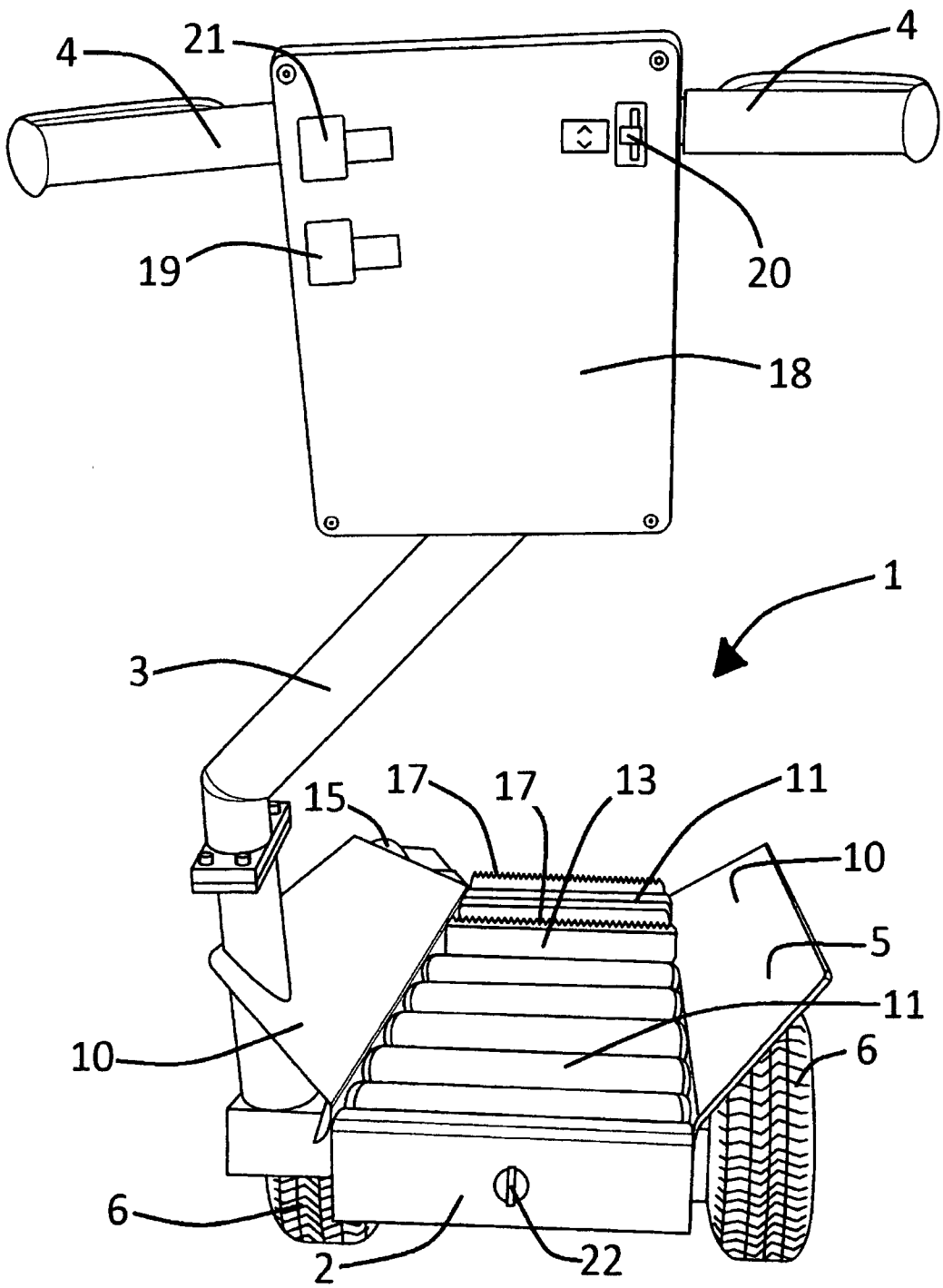
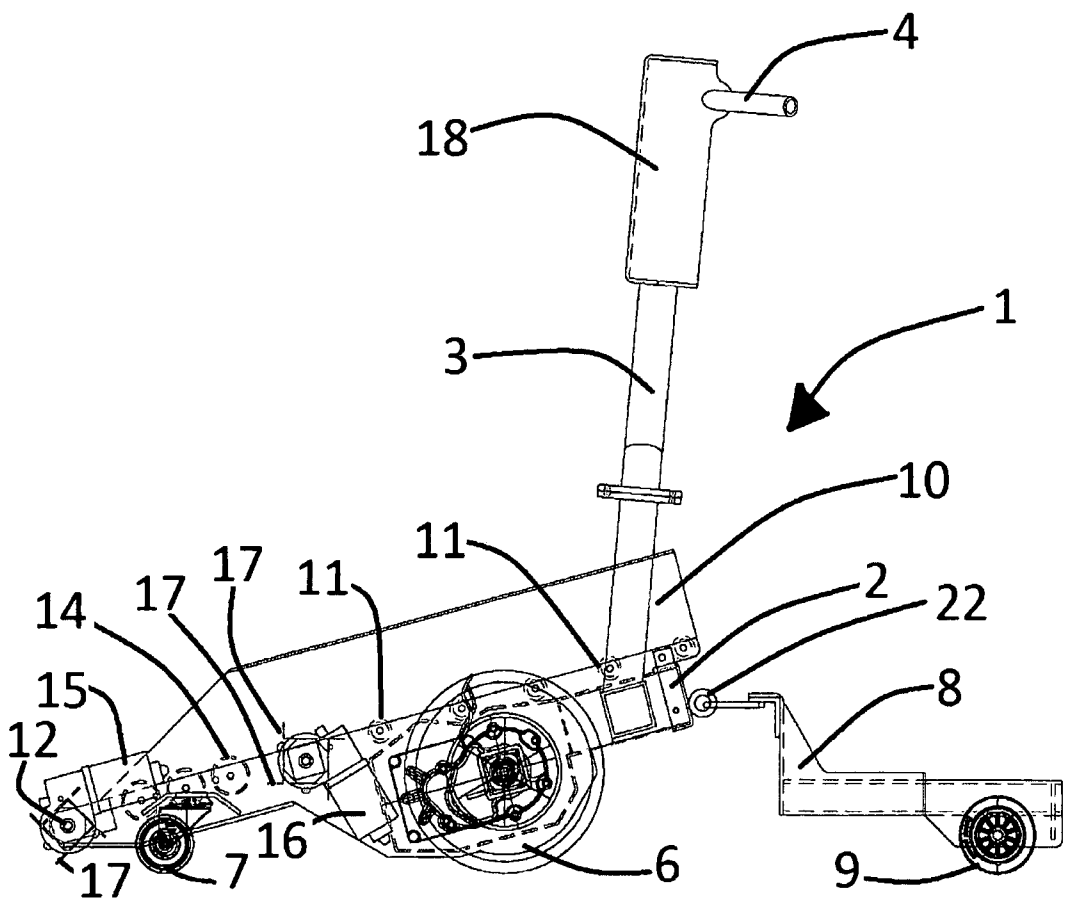
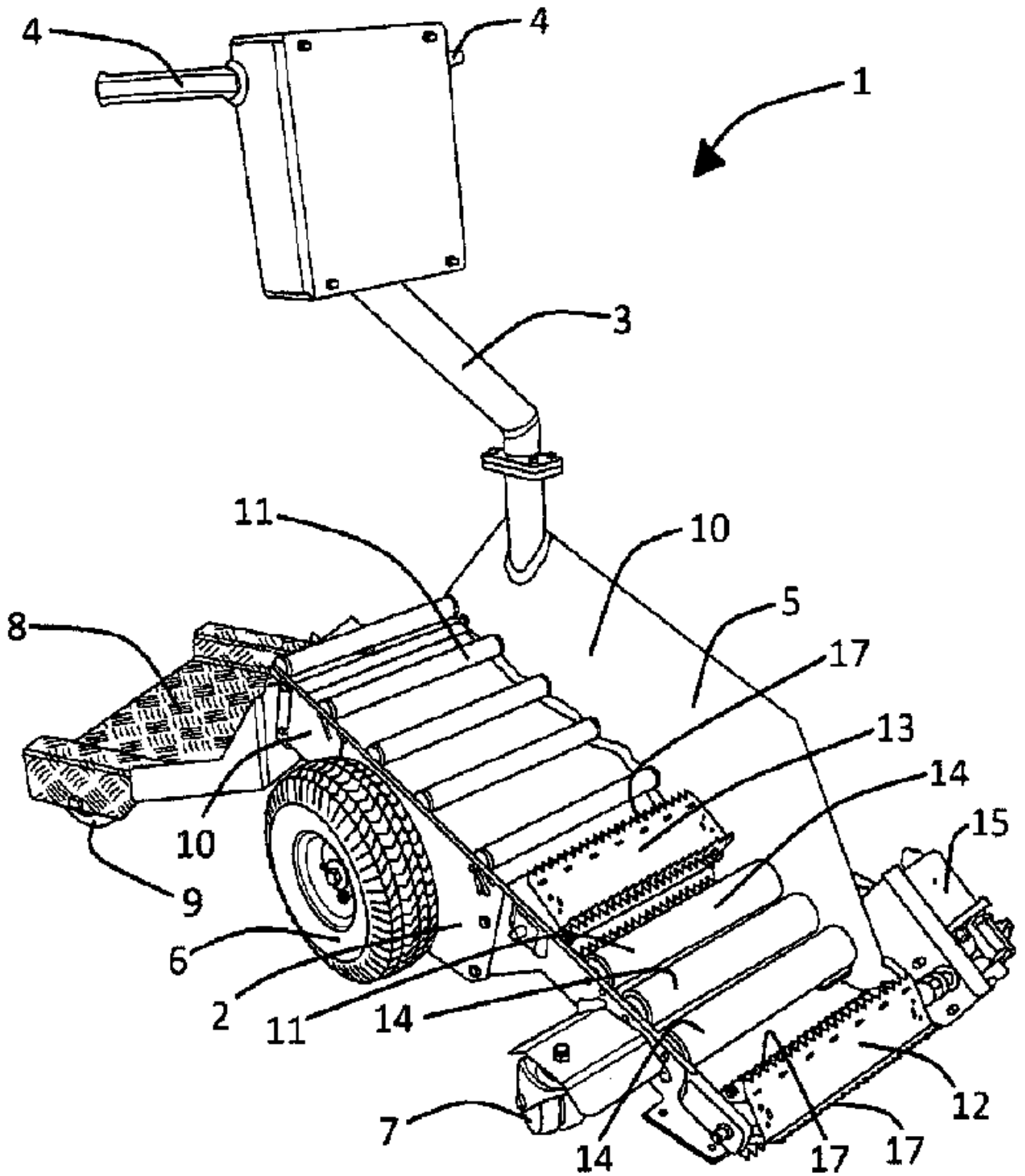


Fig. 3




4
4
1
3
11
10
5
8
17
13
14
15
10
9
6
2
11
14
7
14
17
17
12