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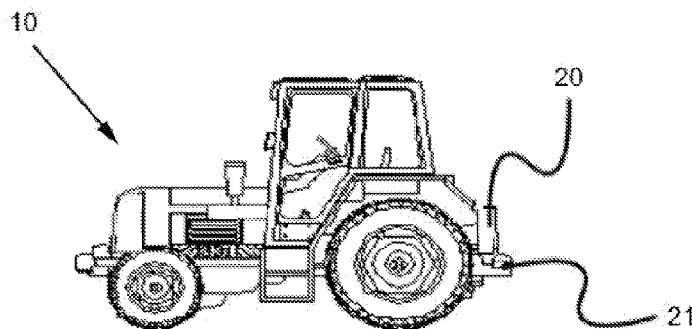


Figure 1

(57) Abstract: The present invention relates to an agricultural machine (10) with a lift (20). The improvement of the present invention is that there is at least one control unit (30) configured to send a command which will lift the lift (20) over a predetermined height when the rotation angle of the wheel (50) is higher than a predetermined value in accordance with the information received from an angle sensor (40) associated with the wheel (50).



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## AN AGRICULTURAL MACHINE WITH LIFT

### 5 TECHNICAL FIELD

The present invention relates to an agricultural machine with lift.

### 10 PRIOR ART

Croplands can be worked by agricultural machines by connecting various equipments to the back of said agricultural machines. Said equipment is connected to the agricultural machine by means of a lift. Thus, the height of the equipment can be adjusted by means of the lift.

15 While working on the cropland by means of agricultural machines, the user has to maneuver. The user has to control both the agricultural machine and the lift during maneuver. In other words, the user uses the agricultural machine and at the same time, the user controls the lift during maneuver. This weakens the control of the user. Moreover, in case the user does not lift the lift during sharp maneuvers, the lift and the equipment are damaged and even they  
20 may get broken. Studies have been made to prevent this damage.

As a result, because of all of the abovementioned problems, an improvement is required in the related technical field.

### 25 BRIEF DESCRIPTION OF THE INVENTION

The present invention relates to an agricultural machine, for eliminating the above mentioned disadvantages and for bringing new advantages to the related technical field.

30 An object of the present invention is to provide an agricultural machine which is controlled such that the items thereof are not damaged during maneuver.

An object of the present invention is to provide an agricultural machine where the lift is controlled autonomously during maneuver.

35

In order to realize all of the abovementioned objects and the objects which are to be deducted from the detailed description below, the present invention is an agricultural

machine with lift. Accordingly, there is at least one control unit configured to send a command which will lift the lift over a predetermined height when the rotation angle of the wheel is higher than a predetermined value in accordance with the information received from an angle sensor associated with the wheel. Thus, in case of maneuver, the lift of the agricultural machine is automatically lifted upwardly.

5

In a possible embodiment of the present invention, at least one height sensor is associated to at least one of the lift and the equipment. Thus, the height distance where the movement of the lift is provided is determined.

10

The present invention is moreover a lift control method for an agricultural machine. Accordingly, following steps are provided: detecting the rotation amount of the wheel by an angle sensor and thus detecting whether maneuver is realized or not; and giving the command by the control unit to the lift indicating that the equipment shall be lifted at a predetermined amount, in case the measured angle is higher than a predetermined value.

15

In a possible embodiment of the present invention, the following step is provided: in case the measured angle is lower than a predetermined value, a control unit gives the command to the lift indicating that the equipment shall be lowered at a predetermined amount.

20

In a possible embodiment of the present invention, the following step is provided: the height of the lift is determined by means of a height sensor and when the height is more than a predetermined value, the angle information coming from the angle sensor is ignored.

## 25 BRIEF DESCRIPTION OF THE FIGURES

Figure 1 is a representative view of the subject matter agricultural machine.

Figure 2 is a representative upper view of the subject matter agricultural machine.

30

## DETAILED DESCRIPTION OF THE INVENTION

In this detailed description, the subject matter agricultural machine (10) is explained with references to examples without forming any restrictive effect only in order to make the subject more understandable.

35

The present invention is essentially an agricultural machine (10) having a lift (20) placed to the rear part. A plow-like equipment (60) can be fixed to said lift (20). There is at least one height sensor (21) and at least one control unit (30) connected to the lift (20) or to the equipment (60). Moreover, the agricultural machine (10) comprises pluralities of wheels (50) and an angle sensor (40) is positioned which is provided in at least one of said wheels (50).

In cases where the equipment (60) connected to the agricultural machine (10) is used, the equipment (60) can be at least partially immersed into earth depending on the type of the equipment (60). In said agricultural machine (10), the angle sensor (40) associated with the wheel (50) continuously controls the position of the wheel (50), in other words, said angle sensor (40) controls whether the steer is rotated or not. Accordingly, when the wheel (50) is rotated at a predetermined amount, the condition is detected by the angle sensor (40) and the control unit (30) associated with the angle sensor (40) gives command to the lift (20). Thus, said equipment (60) is lifted upwardly at a predetermined amount by the lift (20). When the maneuver process of the agricultural machine (10) is completed and when the angle sensor (40) determines that the wheel is lowered than a predetermined angle, the control unit (30) sends a lowering command to the lift (20), and the lift (20) lowers the equipment (60) downwardly at a predetermined amount.

By means of this, in case the agricultural machine (10) maneuvers, the lift (20) and the equipment (60) are not damaged and said maneuver is comfortable. Moreover, the process manually realized by the user beforehand is realized autonomously now. Thus, the user does not have to give attention to the agricultural machine (10) and to the lift (20).

In said embodiment, by means of the height sensor (21), the height of the lift (20) can be controlled, and thus, the height of the equipment (60) can be controlled. Thus, the lifting and lowering amounts of the lift (20) are detected, and when the lift (20) is at a sufficient height, it can be detected whether the equipment (60) is safe or not and it can be determined whether the equipment (60) shall be lifted further or not.

The protection scope of the present invention is set forth in the annexed claims and cannot be restricted to the illustrative disclosures given above, under the detailed description. It is because a person skilled in the relevant art can obviously produce similar embodiments under the light of the foregoing disclosures, without departing from the main principles of the present invention.

**REFERENCE NUMBERS**

10 Agricultural machine

20 Lift

5      21 Height sensor

30 Control unit

40 Angle sensor

50 Wheel

60 Equipment

10

## CLAIMS

1. An agricultural machine (10) with a lift (20), **characterized** by comprising at least one control unit (30) configured to send a command which will lift the lift (20) over a predetermined height when the rotation angle of the wheel (50) is higher than a predetermined value in accordance with the information received from an angle sensor (40) associated with the wheel (50).  
5
2. The agricultural machine (10) according to claim 1, **wherein** at least one height sensor (21) is associated to at least one of the lift (20) and the equipment.  
10
3. A lift control method for an agricultural machine (10) according to claim 1, **wherein** the following steps are provided:  
detecting the rotation amount of the wheel (50) by an angle sensor (40) and thus  
15 detecting whether maneuver is realized or not,  
giving the command by the control unit (30) to the lift (20) indicating that the equipment (60) shall be lifted at a predetermined amount, in case the measured angle is higher than a predetermined value.
- 20 4. The lift control method according to claim 3, **wherein** the following step is provided: in case the measured angle is lower than a predetermined value, a control unit (30) gives the command to the lift (20) indicating that the equipment (60) shall be lowered at a predetermined amount.
- 25 5. The lift control method according to claim 3, **wherein** the following step is provided: the height of the lift (20) is determined by means of a height sensor (21) and when the height is more than a predetermined value, the angle information coming from the angle sensor (40) is ignored.

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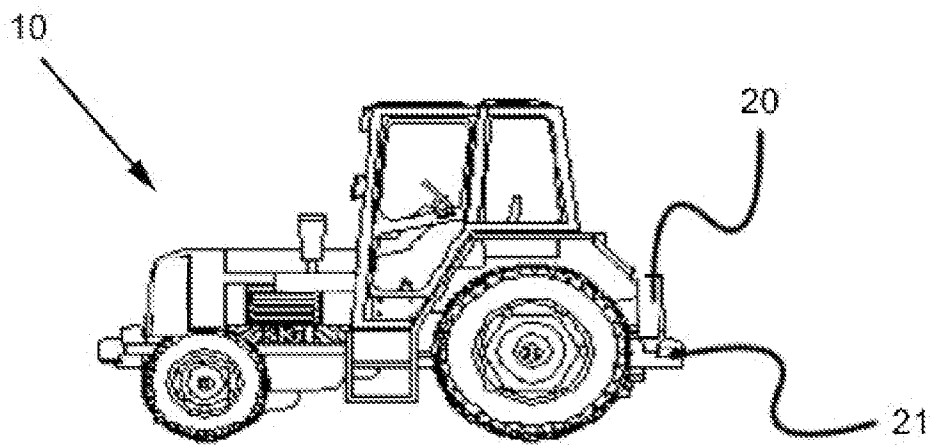


Figure 1

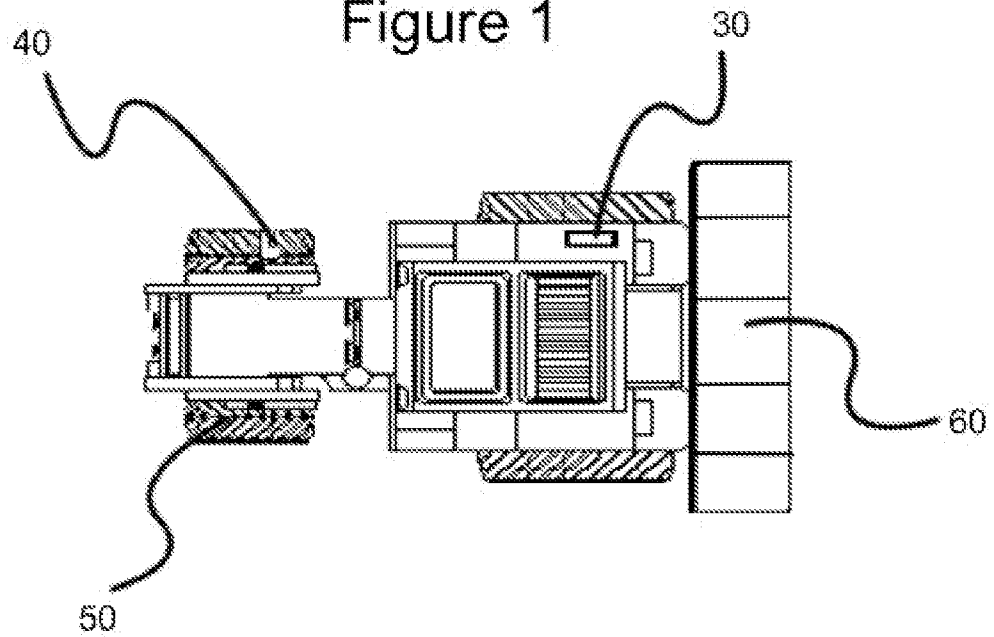


Figure 2