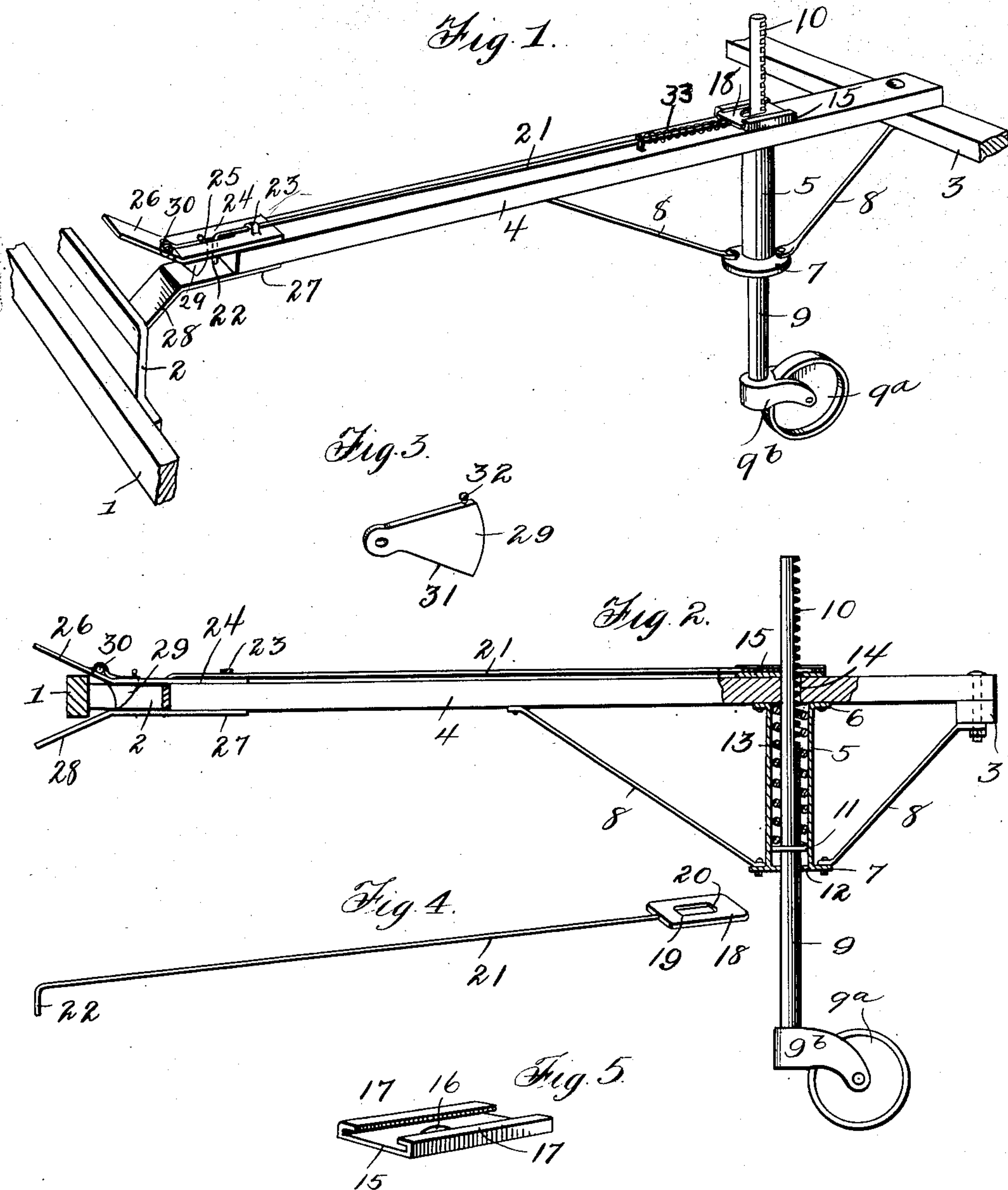


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PATENTED NOV. 27, 1906.

M. L. JOHNSON.
TONGUE SUPPORT.
APPLICATION FILED FEB. 6, 1906.



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TONGUE-SUPPORT.

No. 836,975.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MIRTON L. JOHNSON, a citizen of the United States of America, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Tongue-Supports, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in tongue-supports, and it pertains to that particular type of construction in which the tongue of the vehicle is supported by a caster-wheel having a vertical adjustment. Tongue-supports of this class have been employed in connection with a great variety of agricultural machines—such as threshing-machines, self-binding harvesters, and the like—and have been intended to perform the functions of reducing to a minimum the strain of the weight of the machine upon the draft-animals and of guiding and steadying the tongue, so that the operator may have more perfect control of the various levers.

As disclosed in the drawings, my invention is designed for use in connection with a hay-loader; but I do not wish to be understood as limiting myself to this form of application, inasmuch as by changing or making slight differences in the arrangement of the elements my invention can be used in connection with any of the machines known to the art in conjunction with this type of inventions.

As ordinarily employed the hay-loader follows the wagon and is attached to the rear thereof. It is often necessary for the operator to detach the wagon from the loader, at which times he has to leave the wagon, walk back of it, uncouple the tongue of the loader from the rear of the wagon, and return to his position. This operation consumes a great deal of time and adds much labor, inasmuch as the machines are very heavy and hard to move.

It is a desideratum of the present invention to provide a device which may be instantly attached and detached by the operator without leaving his seat upon the wagon and in which the tongue of the loader is automatically locked in the position at which it was carried when attached to the wagon. These objects and advantages are attained by the construction shown in the accompanying drawings, to be hereinafter specifically de-

scribed, like numerals designating like parts throughout the several views, in which—

Figure 1 is a perspective view showing the tongue detached from the machine and the relation of the front cross-bar thereof to said tongue. Fig. 2 is a longitudinal section, partly in elevation, showing the construction and arrangement of the detailed elements; and Figs. 3, 4, and 5 are specific detailed views of different elements employed in the operation of the device and which will be specifically hereinafter referred to in their description.

In the accompanying drawings the numeral 1 designates a transverse bar carried by the wagon at the rear thereof, which is provided with a clevis 2, that constitutes one element of the locking device employed for securing the hay-loader to the wagon. The hay-loader is provided with a transverse bar 3, adjacent to the forward portion thereof, which in turn carries a forwardly-projecting tongue 4, designed to be coupled to the bar 1. Depending from the tongue 4 is a hollow sleeve 5, provided at its upper and lower edges with peripheral flanges 6 and 7. Means for securing the sleeve 5 to the tongue 4 are passed through the flange 6, and diagonal braces 8 are employed on each side of said sleeve, said braces having their upper ends secured to the tongue 4 and the bar 3, respectively, and their lower ends to the flange 7. A post 9 is slidably mounted in said sleeve 5 and is provided with a series of rack-teeth 10 along its upper portion and with a lateral peripheral flange 11 adjacent to its lower end and within the sleeve 5. The post 9 constitutes the supporting means for the tongue 4, which is yieldably suspended therefrom by connections in said sleeve. In this function the post 9 carries at its lower end a caster-wheel 9^a, journaled in laterally-extending bearings 9^b, formed upon said post. The movement of the tongue 4 with relation to the post is limited by the engagement with the flange 11 of an inward extension 12 of the flange 7. The supporting means by which the tongue 4 rests upon the post 9 comprises an expansive spiral spring 13, sleeved upon said post between the flange 11 and the underneath surface of the tongue 4. The tongue 4 is provided with an opening 14, through which the post 9 passes, and mounted upon said tongue is a plate 15, provided with an opening 16, which registers with said opening

14, as shown in Fig. 5. The plate 15 is formed with inturned sides 17, which serve as guides for a sliding latch-plate 18. (Shown in Fig. 4.) The latch-plate 18 is provided with a central longitudinal slot 19 to permit the passage of the post 9 therethrough, and the outer edge of said slot (indicated at 20) is designed to engage between the teeth 10 upon said post 9 in locking the tongue in any position upon the same.

The plate 18 is provided with a forwardly-extending rod 21, formed with an angular downturned end 22. The rod 21 passes through an apertured lug 23 in a plate 24, mounted upon the end of the tongue 4, and the depending end 22 of said rod extends into a longitudinal slot 25 in said plate. The plate 24 constitutes one member of the locking device and is formed with an angular extremity 26. Mounted upon the underneath surface of the tongue 4 and diametrically opposite to the plate 24 is a plate 27, which is similar in shape to the plate 24 and is provided with an angular extremity 28, extending in an opposite direction to the extremity 26 of said plate 24. The clevis 2 is designed to pass between the extremities 26 and 28 of the plates 24 and 27, said extremities serving as guides. A pivoted latch member 29 (shown in detail in Fig. 3) is fulcrumed, as at 30, between the walls of the slot 25 and is designed to have movement in said slot. Said latch member 29 is formed with an inclined underneath surface 31, against which the clevis 2 impinges in the coupling operation. The latch-piece 29 is further provided along its upper edge and adjacent to the extremity thereof with a knob 32, to which is attached a cord designed to be manipulated by the operator.

The plate 18 when the wagon is disengaged from the hay-loader is forced against and held in engagement with the teeth 10 by an expansive spiral spring surrounding the same and having its one end secured to the tongue 4 and its other to a plate carried by the rod 21. As shown in Fig. 1, the wagon is detached from the hay-loader, and when it is desired to couple the same thereto the wagon is backed until the clevis 2 passes between the plates 24 and 25, the said clevis impinging against the inclined surface 31 of the latch-piece 29 and raising the same until the clevis has entirely passed said latch-piece, at which time the latter will drop by gravity upon the plate 27 and maintain the clevis between the plates 24 and 25. During this movement of the clevis it will also bear against the angular end 22 of the rod 21, the latter forcing the same inwardly, disengaging the plate 18 from the teeth 10 of the post 9, and permitting the tongue to have a free yielding motion in the movement of the loader.

The relation between the various parts in

the locked position is clearly set forth in Fig. 2, wherein the clevis 2 is shown in section. When it is desired to uncouple the wagon from the loader, the operator upon the wagon raises the latch-piece 29 by the cord mentioned until the latter is disengaged from the clevis 2 and the said clevis is withdrawn from between the plates 24 and 27. Simultaneously with the movement of the clevis 2 from between said plates the spring 33 will act to move the rod 21 forwardly until the wall 20 of the slot 19 engages between the teeth 10 of the post 9 and locks the tongue in the position upon said post at which it was maintained during the travel of the loader.

Having fully described my invention, I claim—

1. The combination with two independent vehicles, of a tongue carried by the one vehicle and adapted to be coupled to the other, a yieldably-mounted element carried by said tongue for supporting the same from the ground, means for engaging said element for locking the same in any desired relation to said tongue, coupling means carried by said tongue, a coupling element carried by the adjacent vehicle and designed to engage said means, and an element actuated by said coupling means for operating said locking means.

2. The combination with two independent vehicles, of a tongue carried by the one vehicle and designed to be coupled to the other, coupling means carried by said tongue, and a coupling element carried by the other vehicle and designed to cooperate with said means, a yieldable support carried by said tongue, means for locking said support, said locking means being actuated by said coupling element.

3. The combination with two independent vehicles, of a tongue carried by the one vehicle designed to be coupled to the other, coupling means carried by said tongue, a coupling element carried by the other vehicle and cooperating with said means, a yieldable support carried by said tongue, means for locking said support, and an element engaging said locking means and actuated by said coupling means, for operating the locking means to lock or release said support.

4. The combination with two independent vehicles, of a tongue carried by the one vehicle and designed to be coupled to the other, coupling means carried by said tongue, a coupling element carried by the other vehicle and designed to interlockingly engage said coupling means, a yieldable support carried by the tongue, locking means for said support, a member carried by said locking means and actuated by said coupling member to release the same from said support, and means for engaging said locking means with said support during the disengagement of said coupling element and said member.

5. The combination with two independent vehicles, of a tongue carried by the one vehicle and designed to be coupled to the other, coupling means carried by said tongue, a yieldable support carried by said tongue, means for locking said support in position with relation to said tongue, a coupling element carried by the other vehicle and designed to simultaneously interlock with the said coupling means and actuate said locking means to disengage the same from said support and means for engaging said locking means with said support during the period when the coupling element is disengaged from the coupling means.

6. The combination with two independent vehicles, of a tongue carried by the one vehicle and designed to be coupled to the other, a yieldably-mounted support carried by the tongue, means for locking said support in position with relation to said tongue, coupling means carried by said tongue, means carried by the other vehicle for simultaneously engaging said coupling means and actuate said locking means to release said support, and means for restoring said locking means to unlocked position with relation to said support.

7. The combination with two independent movable bodies designed to be detachably coupled together, of yieldable supporting means carried by the one body, coupling means comprising interlocking elements carried by each of said bodies, means for locking said supporting means in position with relation to said body, said last-named means being designed to be operated by said coupling means in engaging or disengaging said supporting means.

8. The combination with two independent

vehicles, of a tongue carried by the one vehicle designed to be detachably coupled to the other vehicle, supporting means yieldably carried by said tongue, coupling means carried by said tongue, means for locking said supporting means in position, with relation to said tongue, a coupling element carried by the other vehicle, and being designed to actuate said locking means into engagement or disengagement with said supporting means during the correspondingly-reverse operation of said coupling element with relation to said coupling means.

9. The combination with two independent vehicles, of a tongue carried by the one vehicle and designed to be detachably coupled to the other vehicle, a post carrying a castor-wheel extending through said tongue, resilient means for supporting said tongue from said post, a movable latch member for engagement with said post, automatic coupling means carried by said tongue, a coupling element carried by the other vehicle and designed to interlockingly engage said coupling means, a member carried by said latch member adapted to be engaged by said coupling element in its interlocked position with said coupling means, to release said latch member from engagement with said post, and means for returning said latch member into locking engagement with said post upon the disengagement of said coupling element from said coupling means.

In testimony whereof I affix my signature in the presence of two witnesses.

MIRTON L. JOHNSON.

Witnesses:

F. O. MEKOTA,

F. H. RENO.