(No Model.) 2 Sheets—Sheet 1.

W. A. BARBER.

DEVICE FOR ATTACHING HAY LOADERS TO VEHICLES.

No. 426,703. Patented Apr. 29, 1890.

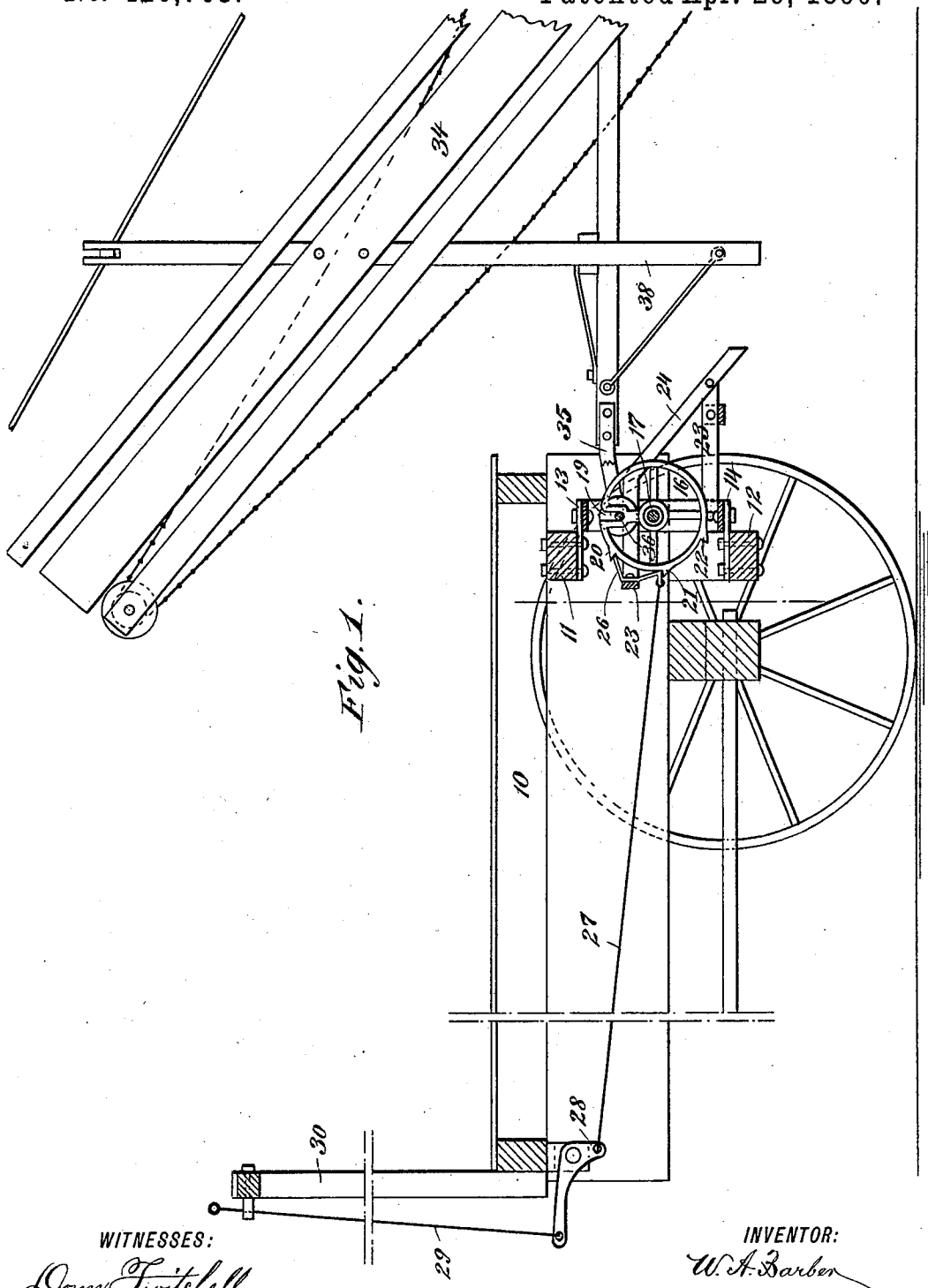


Fig. 1.

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Fig. 4.

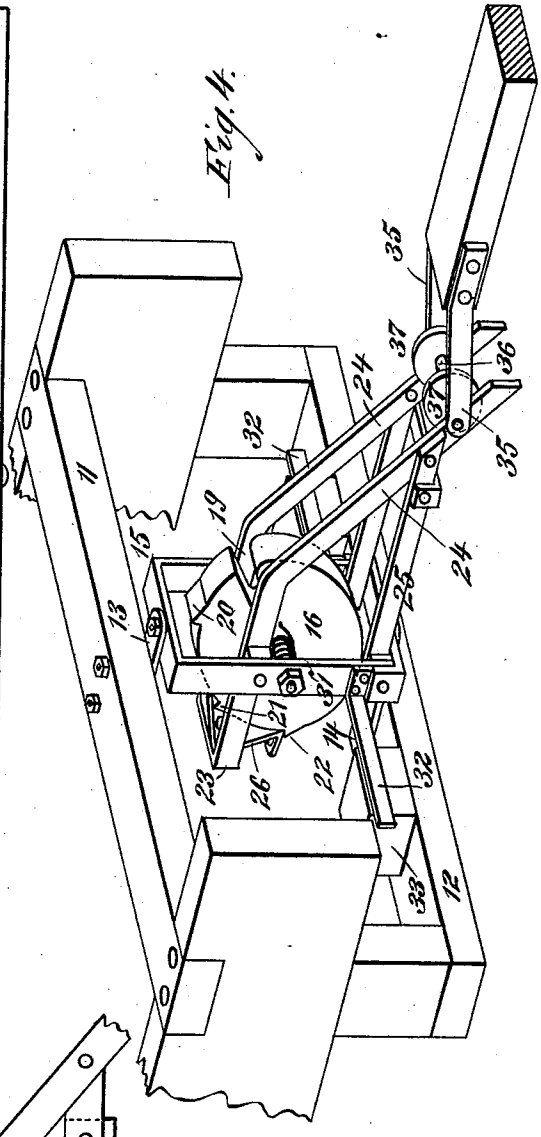


Fig. 2.

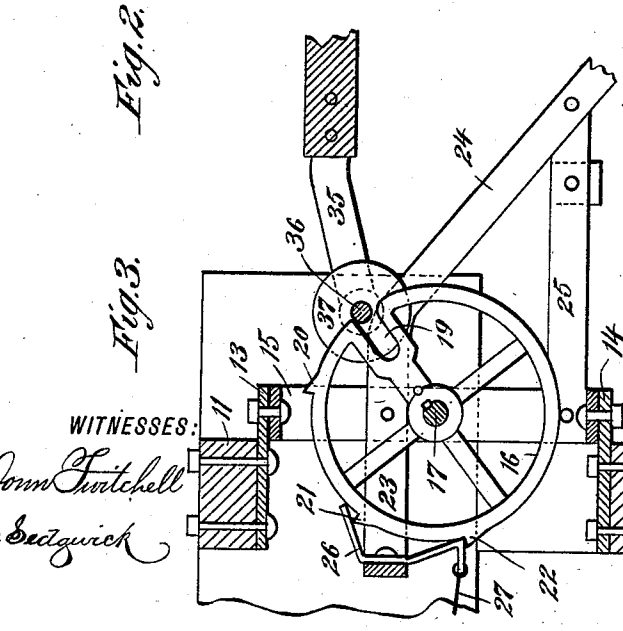


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM A. BARBER, OF SAVANNA, ILLINOIS.

DEVICE FOR ATTACHING HAY-LOADERS TO VEHICLES.

SPECIFICATION forming part of Letters Patent No. 426,703, dated April 29, 1890.

Application filed October 1, 1889. Serial No. 325,659. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. BARBER, of Savanna, in the county of Carroll and State of Illinois, have invented a new and Improved Device for Attaching Hay-Loaders to and Uncoupling them from Wagons, of which the following is a full, clear, and exact description.

My invention relates to a device adapted for attachment to a hay-wagon, whereby a hay-loader may be coupled thereto or uncoupled therefrom by the operator when upon the load, whether the team be moving or standing still.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter more fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference designate corresponding parts in all the views.

Figure 1 is a longitudinal vertical section through the body of a hay-wagon and the device attached thereto, illustrating the hay-loader as coupled to the wagon. Fig. 2 is a vertical section through the wagon immediately to the rear of the device. Fig. 3 is a central vertical section through the device and a portion of the wagon-body, illustrating the position of the said device when the loader is uncoupled from the wagon; and Fig. 4 is a perspective view of the rear end of a hay-wagon and the device applied thereto, the said device being in the uncoupled position.

To the sills 10 of a hay-rack two cross-pieces 11 and 12 are transversely secured at the rear, the cross-piece 11 being located above the cross-piece 12, as best shown in Figs. 1 and 3. To the opposed face of each of the cross-pieces 11 and 12, at the center of the same, straps 13 and 14 are respectively secured, which straps project rearward beyond the said cross-pieces at a right angle thereto. Between the said straps 13 and 14 a frame 15 is pivoted, said frame being preferably constructed of metal and made rectangular in general contour. In the center of the frame 15 a disk or wheel 16 is held to revolve, being rigidly mounted upon the axle 17, which axle is journaled in the side pieces of the frame, and is threaded at its outer extremity to receive a burr or nut 18, whereby the axle is held in proper place in the frame and the said frame is prevented from spreading.

In the periphery of the wheel or disk 16 a recess 19 is produced, and to the rear of the said recess three spaced teeth or projections 20, 21, and 22 are respectively formed, one face of the said teeth being straight and extending at a right angle upward from the periphery and the opposite face being inclined, as best illustrated in Fig. 3.

In forming the teeth or projections 20, 21, and 22 upon the wheel or disk the straight faces of the teeth 20 and 21 are made to face each other, and the straight face of the tooth 22 is made to face toward the inclined surface of the center tooth 21, as best illustrated in Fig. 3.

A horizontal yoke or U frame 23 is attached to the inner surface of the perpendicular rectangular frame 15 in such manner that the sides of the U-frame will be above the axle 17 and the body portion of the yoke or U-frame will be to the front of the disk or wheel 16, as is best illustrated in Fig. 4. The sides of the U or bow frame 23 extend longitudinally rearward, preferably to a point slightly in advance of the rear peripheral face of the wheel 16, and from thence downward at about an angle of forty degrees, as illustrated at 24 in Figs. 3 and 4. The lower ends of the said bow or U frame 23 are braced and strengthened by means of rods or bars 25, attached thereto at their outer ends and to the rectangular pivoted frame 15. Upon the inner face of the bow-section of the U or yoke section 23 an angle-latch 26 is rigidly secured, consisting of a spring-plate and comprising an upper member adapted, when the wheel or disk is in a coupled position, to contact with the straight face of the tooth 20, a straight body member which is secured to the frame 23, and a lower member capable of contact with the straight face of the center tooth 21 when the upper member contacts with the tooth 20. To the lower member of the latch 26 a rope, cord, or chain 27 is attached, which rope, cord, or chain leads forward to an elbow-lever 28, fulcrumed upon the sill at or near the front of the vehicle-body, the attachment of the rope or chain 27 to the lever be-

ing effected at the extremity of the vertical member thereof, as illustrated in Fig. 1. To the extremity of the horizontal member of the lever 28 a rod or its equivalent 29 is secured, which rod passes upward, guided by a staple attached to a standard 30 or by other equivalent means, to such a height that when the vehicle has received its load the upper end of the rod 29 will be within convenient reach of the operator when standing or sitting upon the load.

A spring 31 is coiled around the axle 17, preferably at one side of the wheel or disk 16, one end of which spring is rigidly fastened in the side of the pivoted frame 15, the other end of the spring being secured in any approved manner to the hub of the said disk or wheel, as best illustrated in Fig. 2. The said spring 31 exerts tension upon the wheel in such manner that the recess 19 therein will be made to incline rearward, as shown in Fig. 3—that is, the spring tends to retain the wheel or disk in what I denominate the "uncoupling position."

In order to permit the frame 15 to swing from side to side when necessary in carrying the hay-loader and yet normally retain the said frame in such position that the tongue of the loader may be readily coupled to the device, a spring-arm 32 is secured to each side of the swinging frame at or near its lower end, which arms project horizontally outward in the direction of the sills of the vehicle, as illustrated in Fig. 4, and contact with stop-blocks 33, attached to the lower cross-piece 12, one at each side of the said swinging frame. Thus the spring-arms 32 will yield sufficiently to permit the device to turn either to the right or to the left when attached to the loader and the wagon is turned, yet when the loader is detached from the device the said arms retain the swinging frame in such position that it will exactly face the rear.

The hay-loader 34, a portion of which is illustrated in Fig. 1, may be of any approved construction, and to the tongue of the loader at its extremity two downwardly-curved bars or arms 35 are secured, one at each side of the tongue, as shown in Fig. 4, between which arms at their outer extremities a pin 36 is inserted, provided at or near each end with a head 37, which heads are between the arms 35, and the pin 36 is of such length that the heads will travel between the members of the U or yoke frame 23, that portion of the pin between the head and the arms 35 contacting with the upper edge of the said members, as is also illustrated in Fig. 4. Thus when the pin 36 is made to enter the disk or wheel recess 19 it will neatly fit therein, and the heads 37 will be one at each side of the wheel or disk, a convenient distance therefrom. The arms 35 of the tongue of the loader are downwardly inclined or curved, in order that should the loader drop into a depression or when said loader is traveling upon undulating ground the arms will not interfere with the U-frame when the pin is in the wheel-recess.

The loader at or near the front end is provided with a vertical standard 38, attached to the body, and preferably also to the tongue, whereby when the loader is detached from the wagon or vehicle the said standard upon striking the ground will sustain the loader in an upright position. I do not, however, claim the attachment of the standard to the loader as novel.

The loader having been attached to the device—namely, the pin 36 having been entered into the recess 19 of the disk or wheel, as illustrated in Fig. 1, which causes the latch 26 to engage with the teeth 20 and 21—and it is desired to uncouple the loader, the load upon the wagon being sufficient, the operator, passing to the front of the load, draws upon the rod 29, whereby, through the medium of the angle-lever 28 and the rope, chain, or cord 27, the lower end of the latch is disconnected from the tooth 21, whereupon, the spring 31 acting, the wheel is forced to revolve in the direction of the rear, both by reason of the tension of the spring and the contact of the upper member of the latch with the tooth 20, which latter compels the said wheel to travel in the direction indicated. When the wheel is forced backward by the spring 31, the position will be as illustrated in Fig. 3, in which it will be observed that the lower member of the latch, contacting with the lower tooth 22, stops the movement of the wheel at the proper point, so that the mouth of the slot 19 is then immediately opposite the angle of the members of the U or yoke frame 23, as shown best in Fig. 4. Now, as the wagon containing its load is drawn ahead, the pin 36 passes from the slot 19, and, contacting with the inclined plane of the U or yoke frame 23, travels down the same until the standard 38 of the loader contacts with the ground.

To couple the loader to the wagon, the pin 36 is placed in contact with the inclined plane of the U or yoke frame 23, whereupon either by backing the wagon or by carrying the tongue of the loader forward the pin is entered into the wheel or disk slot 19, and upon pressure being exerted upon the pin the wheel or disk is carried forward until the latch contacts with the opposed straight faces of the two teeth 20 and 21.

I desire it to be understood that, while specific construction has been shown and described, other equivalent construction may be employed without departing from the spirit of the invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a wagon, of a skeleton frame pivoted between the sills of the wagon, a U-frame horizontally secured to the skeleton frame, forming an inclined plane at the rear, a disk or wheel journaled in the

skeleton frame, provided with a peripheral recess and a series of teeth upon the said periphery forward of the recess, and an angle-latch secured to the U-frame capable of engaging the teeth upon the said wheel or disk, substantially as shown and described.

2. The combination, with a wagon and a skeleton frame pivoted between the sills of the same, of a spring-actuated disk or wheel journaled in the said skeleton frame, provided with a peripheral recess and teeth upon the periphery forward of the recess, a U or yoke frame transversely secured to the skeleton frame, the members whereof are bent downward at the rear, forming an inclined plane, and an angle-latch pivoted to the U-frame capable of engaging the teeth upon the disk or wheel, substantially as shown and described.

3. The combination, with a wagon-body and a skeleton frame pivoted in the said body between the sills, of a spring-actuated disk or wheel journaled in the skeleton frame, having a recess produced in its periphery and teeth formed forward of the said recess, a U or yoke frame horizontally secured to the skeleton frame, the members whereof are rearwardly and downwardly inclined, an angle spring-latch secured to the U-frame capable of contact with the teeth of the wheel or disk, and means, substantially as shown and described, for operating the latch, as and for the purpose specified.

4. The combination, with a vehicle-body, a skeleton frame pivoted between the sills of the body, stop-blocks secured to the body, and spring-arms secured to the said skeleton frame contacting with said blocks, of an axle journaled in the skeleton frame, a wheel or disk secured to the said axle, having a recess produced in its periphery and teeth formed to the rear of the said recess, a spring attached to the skeleton frame and to the said disk, a U or yoke frame horizontally secured to the skeleton frame, the members of which are downwardly and rearwardly inclined, an angle spring-latch secured to the forward portion of the U-frame, adapted to contact with the teeth of the wheel, and means, substantially as shown and described, for manipulating the said latch, as and for the purpose specified.

5. A coupling for connecting a hay-loader to a wagon and disconnecting the same therefrom, comprising a pivoted skeleton frame, a disk or wheel journaled in said frame, having a recess produced in its periphery and teeth formed forward of the recess, a U or yoke frame horizontally attached to the skeleton frame, the members whereof are rearwardly and downwardly inclined, an angle spring-latch secured to the forward portion of the U-frame capable of contact with the teeth of the wheel, and a disk carrying a headed pin capable of attachment to the tongue of the loader and adapted to enter the wheel-recess, substantially as and for the purpose specified.

6. A coupling for connecting a hay-loader to a wagon and disconnecting the same therefrom, comprising a pivoted skeleton frame, a spring-actuated wheel or disk journaled in said frame, having produced in its periphery a recess and provided with teeth forward of the said recess, a U or yoke frame horizontally secured to the skeleton frame, the members whereof are rearwardly and downwardly inclined, an angle spring-latch secured to the forward portion of the U-frame and adapted to contact with the teeth of the wheel, a spring-arm extending from each side of the pivoted frame, and a pin journaled between the arms, adapted to be secured to the tongue of the loader, and provided with a head or disk at or near each end between said arms, the said disked or headed pin being adapted to travel upon the inclined plane of the U-frame and to enter the recess in the wheel, all combined for operation substantially as shown and described.

WILLIAM A. BARBER.

Witnesses:
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JOHN A. COOLEY, Jr.