

(No Model.)

2 Sheets—Sheet 1.

W. S. NICHOLS.
HAY LOADER.

No. 365,194.

Patented June 21, 1887.

Fig. 1.

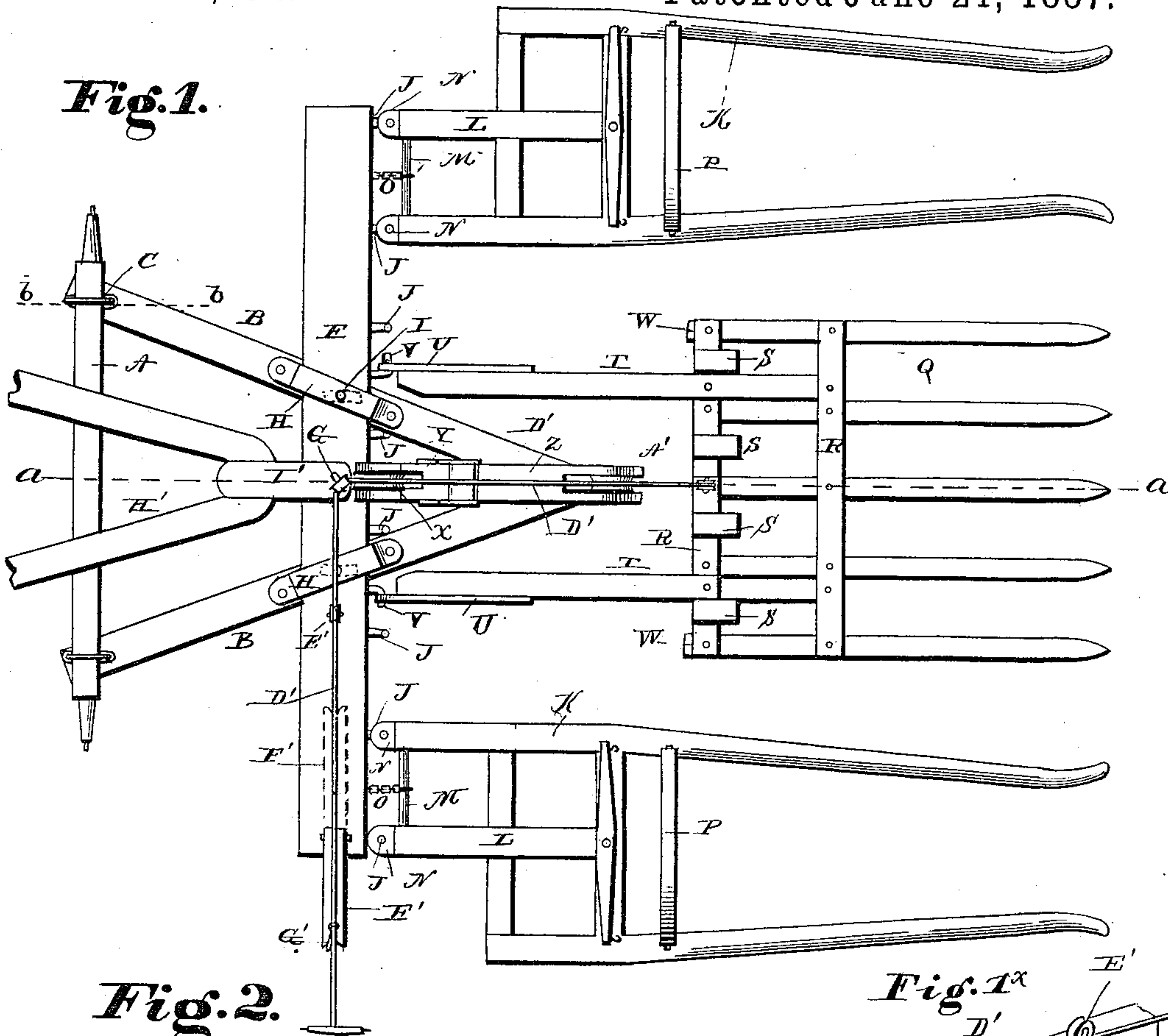


Fig. 2.

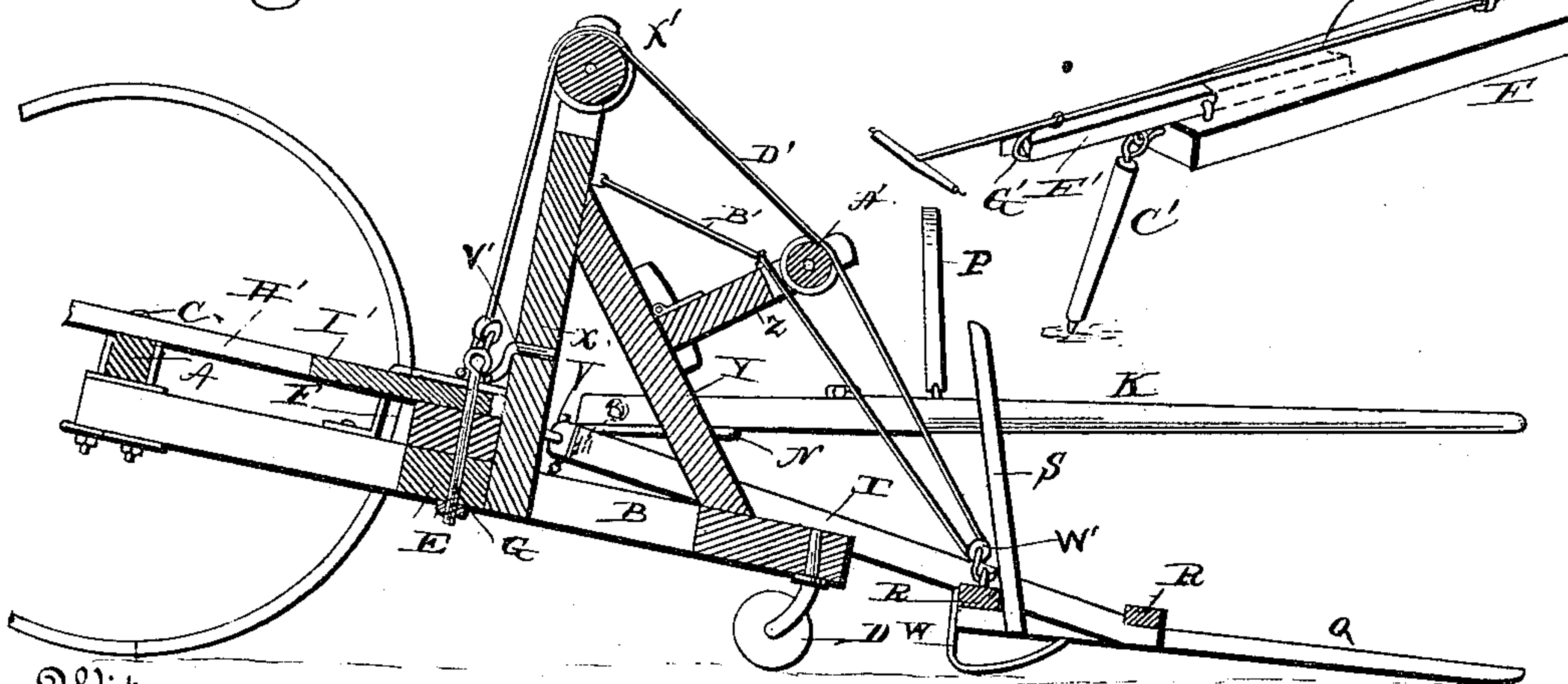
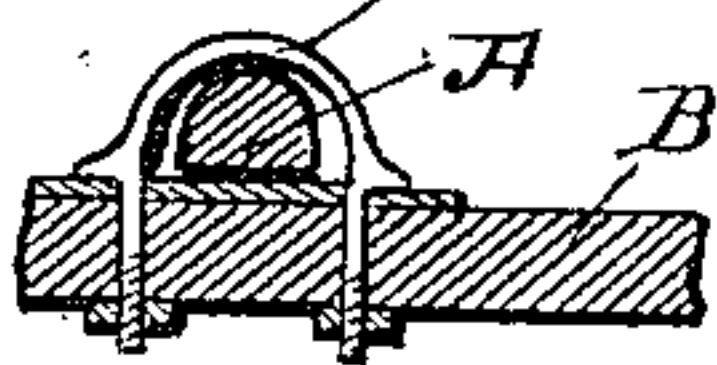


Fig. 1^x

Fig. 2^x



Witnesses

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By *his* Attorney
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

Fig 3^x

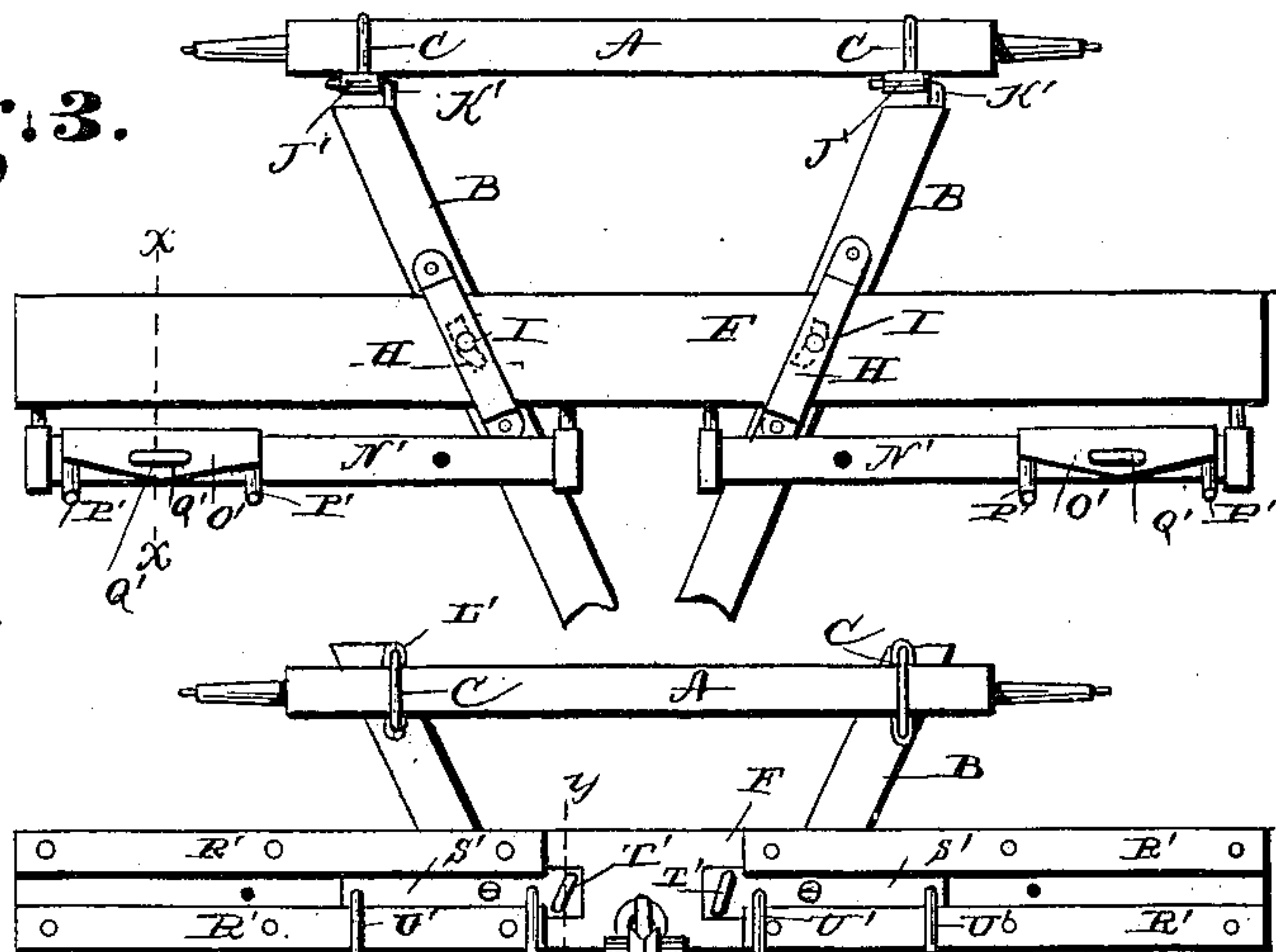
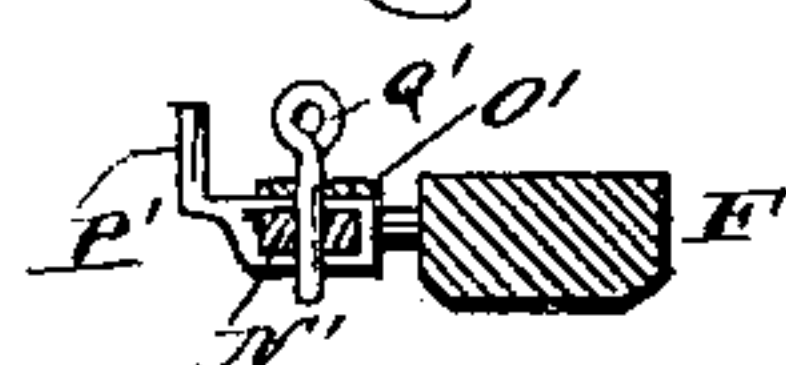


Fig. 4.

Fig 4^x

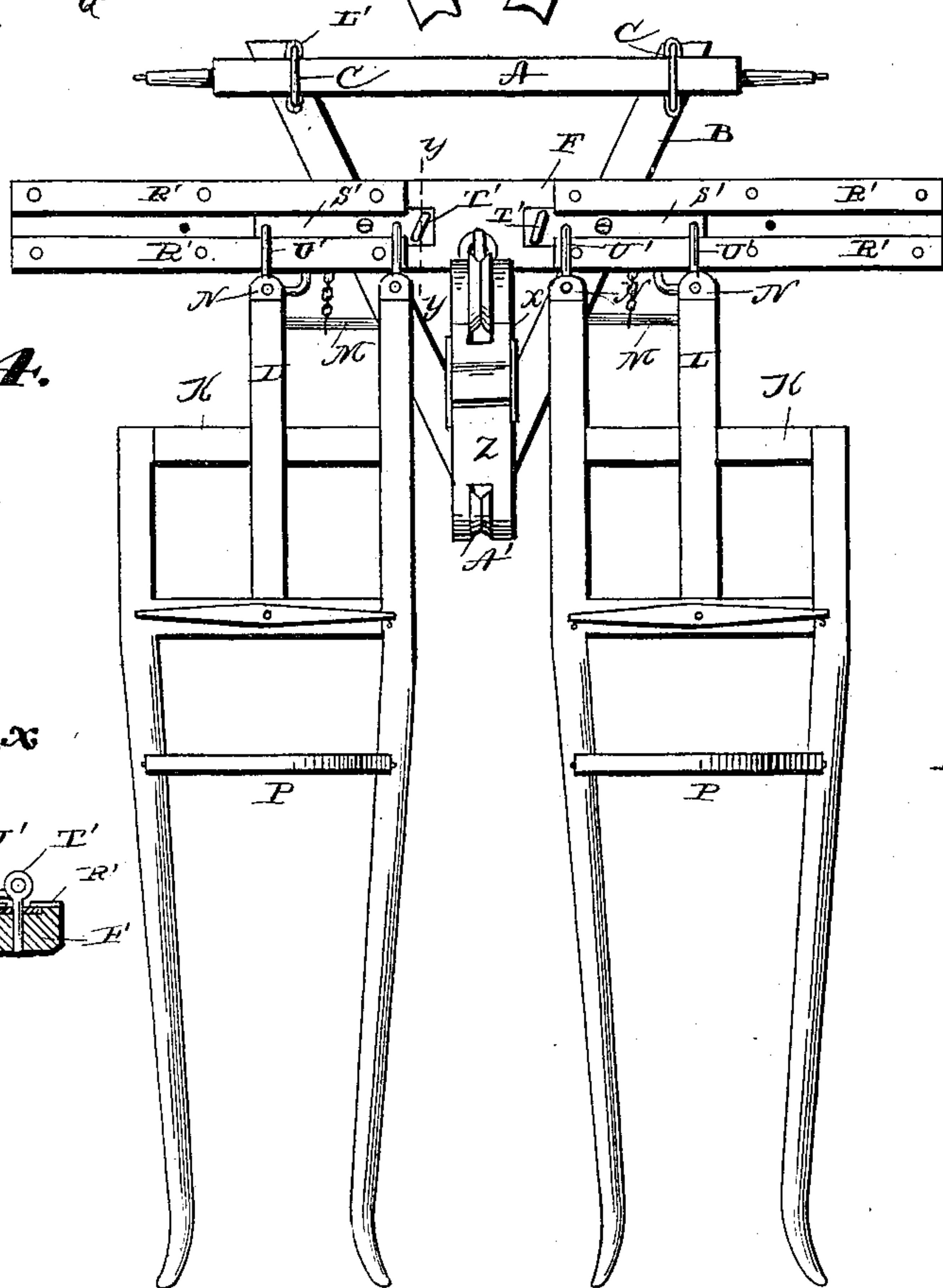
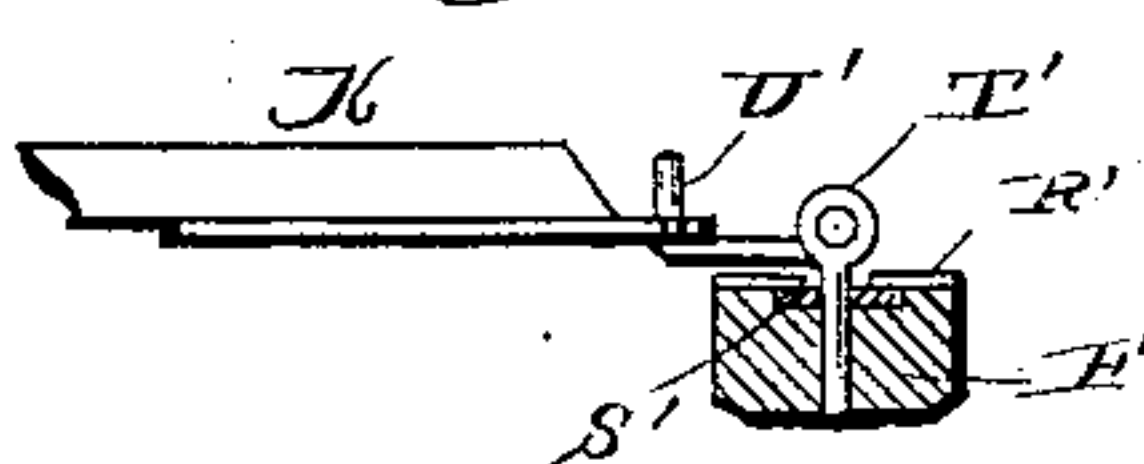
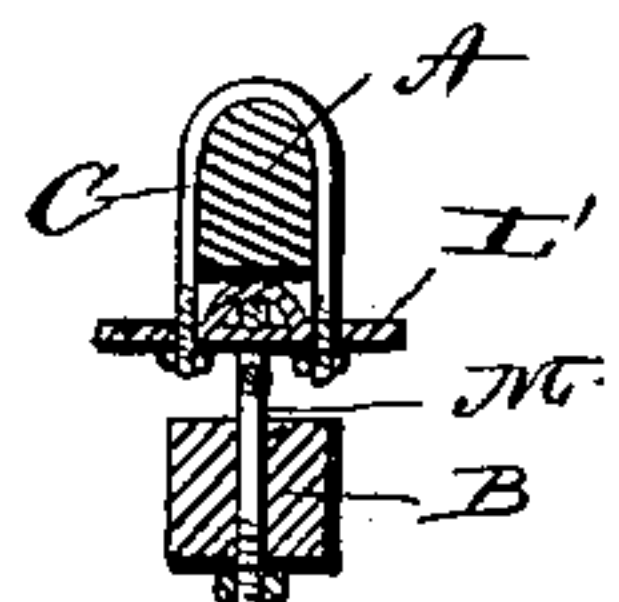


Fig. 5.



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UNITED STATES PATENT OFFICE.

WALTER S. NICHOLS, OF LOWELL, INDIANA.

HAY-LOADER.

SPECIFICATION forming part of Letters Patent No. 365,194, dated June 21, 1887.

Application filed November 20, 1886. Serial No. 219,489. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. NICHOLS, a citizen of the United States, and a resident of Lowell, in the county of Lake and State of Indiana, have invented certain new and useful Improvements in Hay-Loaders; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it ap-
10 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a plan view of my improved hay-loader. Fig. 1^x is a detail view of one end of the evener. Fig. 2 is a longitudinal vertical section of the same, taken on line *a a*. Fig. 2^x is a detail sectional view through line *b b* of Fig. 1. Fig. 3 is a plan view of a portion of said loader, showing a modification in some of its details. Fig. 3^x is a vertical section through the evener and thill attachment, taken on line *x x* of Fig. 3. Fig. 4 is a plan view of the machine, the fork having been removed and the thills shifted to their middle position, further modifications being shown in some of the details. Fig. 4^x is a vertical section through the evener and thill attachment, taken on line *y y* of Fig. 4; and Fig. 5 is a vertical section of another modification of the means for securing the frame to the axle of the wagon.

Like letters of reference indicate corresponding parts throughout the several figures.

My invention has relation to hay-loaders, and especially to that class in which the loading mechanism precedes the wagon, being attached to the forward axle of the same; and it consists in the improved construction and combination of parts constituting such a hay-loader, as will be hereinafter fully set forth.

In the accompanying drawings, A signifies the front axle, to which the loading mechanism is movably attached.

B designates an A-frame secured to said axle, as represented in Figs. 1 and 2, by means of ordinary shouldered bails or clips, C, which are rigidly secured to the ends of said frame, but so loosely secured to the axle as to allow a free vertical movement to the apex of said frame. To the forward end of this frame is attached a wheel, D, which is swiveled therein by its cylindrical shank. This wheel sup-

ports said end of the frame and allows it to move freely in whatever direction the wagon is turned.

To the upper side of the A-frame, above its cross-piece E, is secured the evener F by means of the eyebolt G, passed through it and said cross-piece, where it is secured by means of a nut at its lower end. Bails H pass over said evener at each side of said bolt, and are secured to the side pieces of the frame. Through these side pieces and bails pass bolts I, which also pass through slots in the evener, permitting the latter to have a slight oscillation about the eyebolt, limited, however, by the bolts I.

In the front edge of the evener are secured two pairs of hooks, J, to each half thereof, onto which are hooked the thills K, said thills being attached to the outermost pairs of hooks when loading hay and to the innermost ones when going to or from the lot. (See Figs. 1 and 4.) Each pair of thills is constructed with the rear end of the outside thill removed and its place supplied by the middle piece, L, which is joined to the cross-frame of the thills and extends rearwardly parallel to the long thill. The rear ends of this piece and of the long thill are joined by the brace-rod M. Plates N are secured to the under sides of the rear ends of the long thills and the middle pieces, and are provided with eyes at their rear ends, through which the hooks J are passed. Sections of chain O are attached to the evener and have hooks at their free ends, which are placed over the braces M, to hold the thills to their hooks.

To each pair of thills, near their rear end, is secured a strap, P, which is intended to be attached at its middle in any ordinary manner to the back-strap of the harness, so that the thills will be suspended from the horse's back if one of the team is taken from before the wagon to operate the fork. The fork is composed of teeth Q, secured to cross-pieces R, from the rear one of which upwardly project retaining-prongs S. The shank of the fork consists of two bars, T, which are secured to the under side of the front cross-piece of the fork and to the upper side of the rear one, whence they extend rearwardly to be hinged by means of the eye-plates U (secured to their sides) upon hooks V, projecting from the front edge of the evener equidistant from the mid-

dle point. To the under side of the fork at the rear ends of the outside teeth are secured shoes W, upon which the rear end of said fork slides.

5 From the front edge of the cross-piece of the A-frame arises a post, X, in the upper end of which is journaled a pulley-sheave, X'. From the rear side of said post projects a staple, V', through which the eyebolt G passes and aids in keeping said post in its upright
10 position. To the other side of the post and to the apex of the frame is secured a brace, Y, to the middle of which is hinged a vertically-swinging prop, Z, in the outer end of which is journaled a sheave, A'. This prop is prevented from swinging down too far by means of the stay-rope B', which is secured thereto and to the post X.

To one end of the evener is loosely secured,
20 by means of staples or screw-eyes, a drag-bar, C, the lower end of which is pointed, and by means of which said end of the evener is supported when a fork full of hay is being raised. The hoisting-rope D' is attached to the outer
25 end of the swinging prop. From there it passes to a pulley, W', removably secured in any suitable manner to a staple in the middle of the rear cross-bar of the fork, from said pulley up over the sheaves in the ends of the
30 swinging prop and the post, respectively, whence it leads down through a pulley secured to the eyebolt G, then through a pulley, E', attached to the evener, and out in line with the evener to a horse. Near that end of the
35 evener is hinged a stop, F', provided with a notch in the end, through which the hoisting-rope is guided, and which, in connection with a hook, G', attached to the hoisting-rope, affords a means for stopping the rope on its re-
40 turn movement, said hook catching in said notch, so as to hold the fork up from the ground, when it is desired to turn the wagon about. When said turning has been completed, the stop is raised and allowed to fall over onto
45 the evener (see dotted lines, Figs. 1, 1^x) till again needed in suspending the fork.

The hounds H' are represented in their customary place, and between their forward ends is a short pole, I', which is pinned through at
50 its forward end by the eyebolt G. This arrangement of tongue and hounds is for the purpose of keeping the axle in its proper position and of limiting the vertical play of the forward end of the A-frame.

55 In Fig. 1 the A-frame is represented joined to the axle, as described; but it may be joined, as seen in Fig. 3, by eye-plates J', secured by clips to the axle, in which are hinged hooks K', secured to the ends of said frame. The
60 connection may be also made, as seen in Figs. 4, 5, by means of plates L', secured by means of clips to the axle, and provided with eyes across their middle, in which are hinged by their eyes the bolts M', that are secured near
65 the ends of the A-frame.

The manner of adjustably securing the thills may also be varied, as shown, that con-

struction shown in Fig. 1 being the one already described.

The device represented in Figs. 3 and 3^x, 70 consists of a bar, N', secured by its ends to the front edge of each half of the evener, said bar being provided with a perforation near each end. Upon each bar is a sliding frame composed of a perforated plate, O', se- 75 cured at its ends to transverse loops, from the ends of which extend forward vertically-projecting hooks P', similar to the hooks J of the first form. A pin, Q', is placed through said plate and bar to hold the sliding frame at the 80 desired end of the bar.

Another form of attachment for the thills is shown in Figs. 4, 5, which consists in grooving the ends of the evener on the upper face, securing metal strips R' to said face to project 85 over the edges of said grooves, and providing plates S', each having a perforation in one end and adapted to slide in the ways formed by the grooves and the plates, and to be held at one end or the other of said ways by pins T', 90 passed through said perforations into holes in the evener. From the upper surface of each plate forwardly, then upwardly, project hooks U', to which the thills can be attached, as before described. 95

In hauling the wagon, with its hay-rack, to or from the lot, the fork is detached and the thills moved to the middle of the evener, when the horses will be about the usual distance 100 apart.

In the operation of loading, the thills are placed at the ends of the evener and the fork adjusted to the middle of the same, and the hoisting-rope connected thereto. Then the wagon is driven along astride a windrow or 105 a bunch or a cock of hay till the fork, which slides on the ground, is loaded, when the wagon is stopped and the drag-bar put in place to brace the evener. Then a horse of the team, with his pair of thills, may be swung around and 110 hooked to the end of the hoisting-rope and driven out in line with the evener till the fork is elevated and the hay dropped over onto the rack, the swinging prop acting somewhat as a derrick-boom in raising the fork. If the 115 farmer has a third horse, it may be attached to the hoisting-rope and driven along at the side of the wagon till needed in the hoisting operation.

Having thus fully described my invention, I 120 claim—

1. The combination of the axle, the wheels, the A-frame, the wheel under the apex, the fork hinged to the evener of said frame, and means, substantially as described, for attach- 125 ing horses to the frame.

2. The combination of the axle, the wheels, the A-frame, plates with eyes across their middles, clips securing said plates to the axle, eye- 130 bolt hinged in said plates and secured to the rear ends of said frame, a wheel under the apex of the frame, a fork, and means, substantially as described, for attaching horses to the frame.

3. The combination of the axle, the wheels, the A-frame hinged thereto, a wheel swiveled by its cylindrical shank to the apex of said frame, a short tongue secured between the hounds and to the frame, the fork hinged to the evener of the frame, and means, substantially as described, for attaching horses to the frame.

4. The combination of the axle, the wheels, a frame hinged thereto, an evener pivoted to the frame, a fork hinged to said evener, and thills adjustably attached to said evener, substantially as shown and described.

5. The combination of the axle, the wheels, a frame hinged thereto, a fork, an evener formed with a slot at each side of its middle, and pivoted upon said frame by a bolt passing through its middle and through a cross-piece of the frame, bails passing over said evener, bolts passing through the bails and the slots of the evener into the frame, and means, substantially as described, for securing thills to said evener.

6. The combination of the axle, the wheels, a frame hinged thereto, an evener pivoted to a cross-piece of the frame, a fork hinged to the evener, hooks attached thereto, and thills provided with eye-plates at their rear ends, a cross-bar joining said ends, and sections of chain provided with hooks for retaining said thills in place, as set forth.

7. The combination of the axle, the wheels, a frame hinged thereto, a fork, an evener pivoted to the frame, a perforated bar secured to the front edge of each half of the evener, a slide adapted to move upon each of said bars and consisting of a perforated plate joined at its ends to loops which surround the bar and are provided with hooks at one end, and pins for holding said slides in place, for the purpose specified.

8. The combination of the axle, the wheels, the A-frame, the evener, the fork, (hinged thereto,) and the drag-bar hinged to one end of said evener, and a rope secured at one end to the fork, the other end passed over the end

of the evener, and the drag-bar, for the purpose set forth.

9. The combination of the axle, the wheels, the A-frame, the evener, the fork, (hinged thereto,) the post with its sheave, the brace secured to its front side and to the frame, and the staple secured to its rear side and to the eyebolt upon which the evener is pivoted, pulley on the rake and at the eyebolt, a rope, and means, as described, for attaching horses to said evener.

10. The combination of the axle, the wheels, the A-frame, the evener, the fork, (hinged thereto,) the brace, the swinging prop hinged to said brace and provided with a sheave in its free end, the stay-rope, a hoisting-rope passing from said brace to a detachable pulley connected to the rear end of the fork, and passing, as described, out to the side of the mechanism, and means, substantially as described, for attaching horses to said evener.

11. The combination of the axle, the wheels, A-frame, evener, means for attaching horses thereto, a fork, stop F', hinged to one end of said evener, the hoisting-rope attached to the fork and located substantially as described, and a hook secured to said rope to engage said stop, for the purpose set forth.

12. The combination, with the axle, the wheels, A-frame, fork, evener, means for attaching horses to said evener, post, brace, and swinging prop, of a pulley secured to the eyebolt G, the pulley secured to the evener, and the hoisting-rope joined to the swinging prop and passing through a pulley detachably secured to the rear cross-bar of the fork, whence it passes over the sheaves in prop and post and through the pulleys upon the evener out in line with said evener to the horse, as set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

WALTER S. NICHOLS.

Witnesses:

ELKANAH W. PHELPS,
ROBT. DRISCOLL.