J. W. VANIMAN.

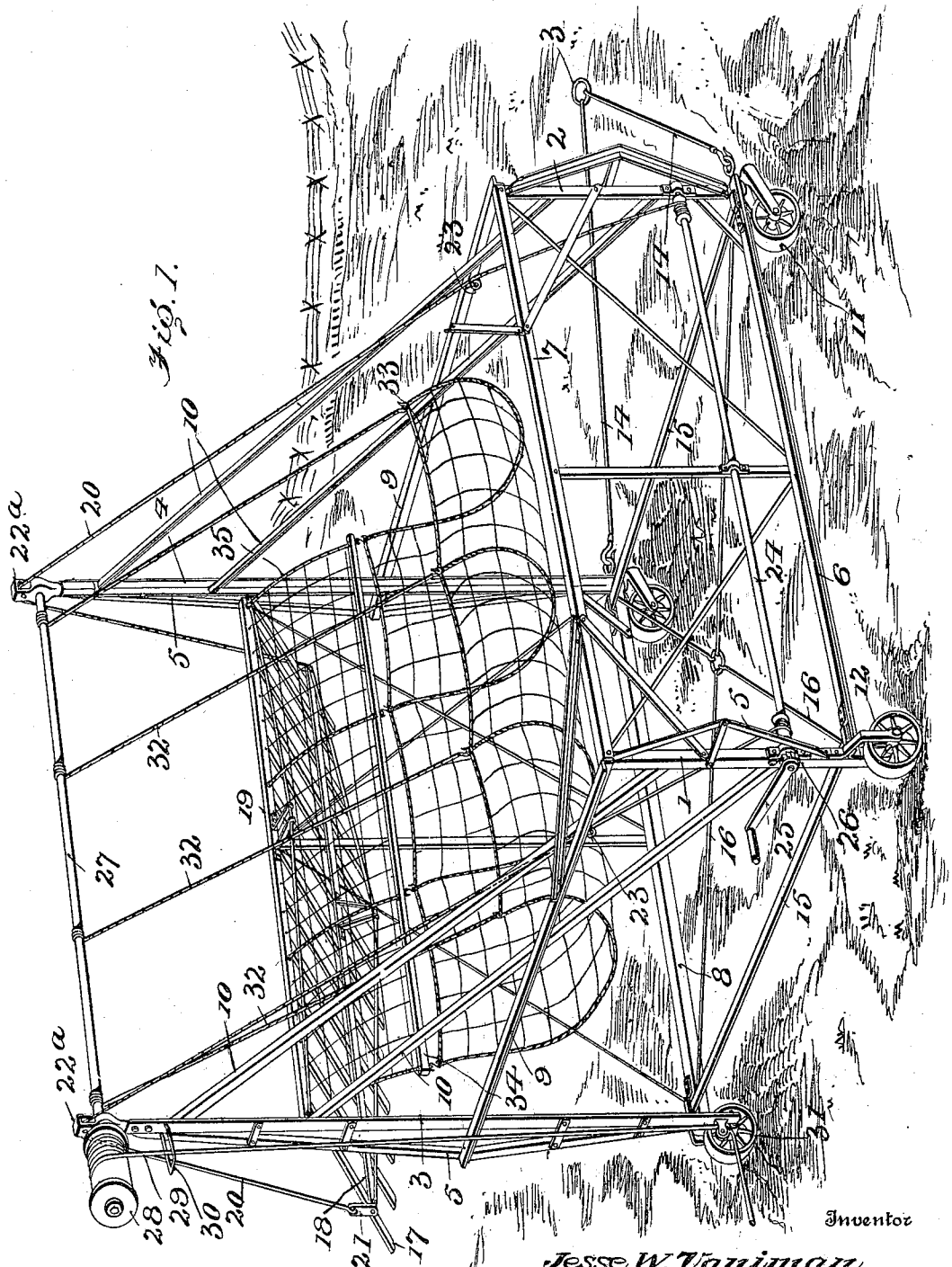
STACKER.

APPLICATION FILED APR. 20, 1909.

953,449. Patented Mar. 29, 1910.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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3 SHEETS—SHEET 2.

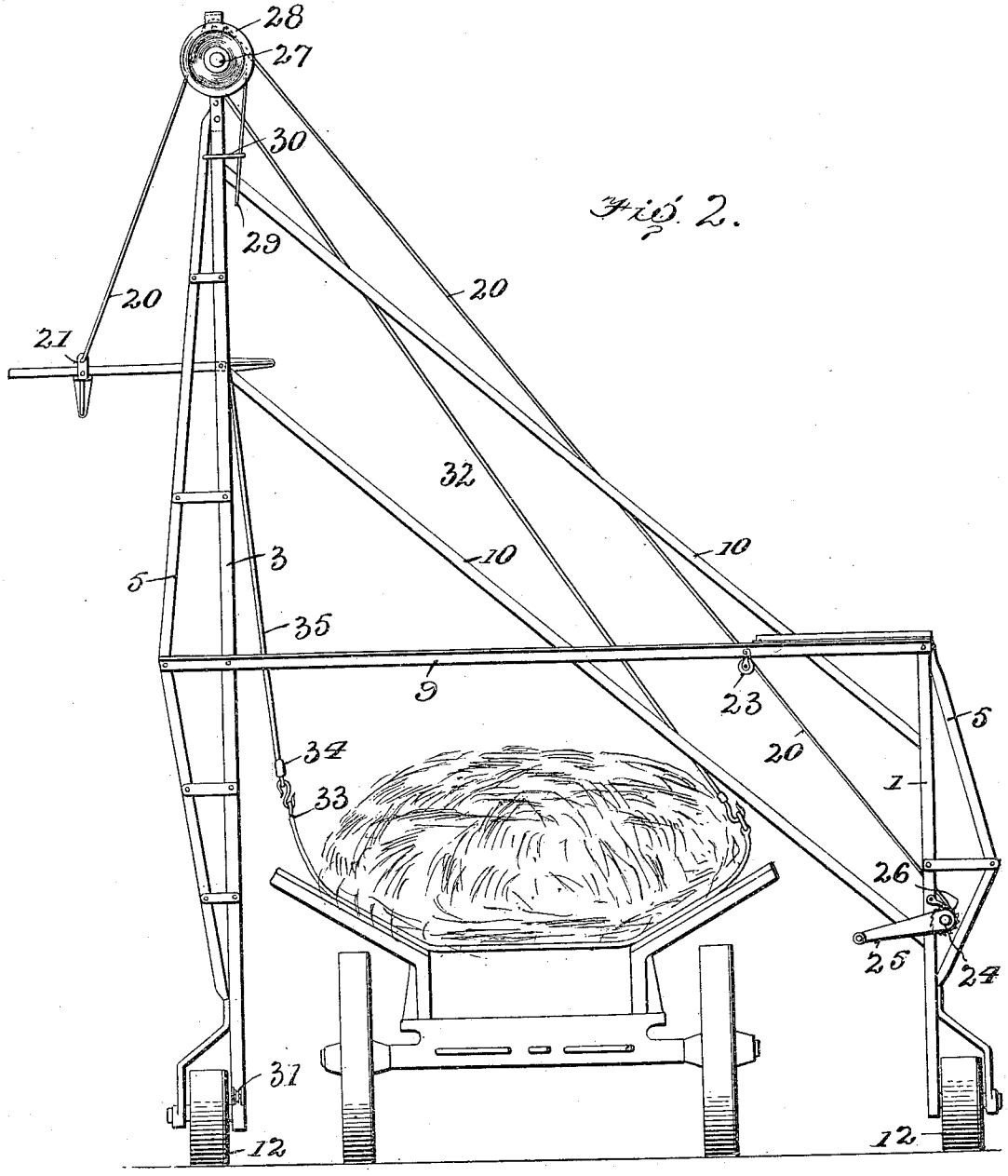

Fig. 2.

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3 SHEETS—SHEET 3.

Fig. 3.

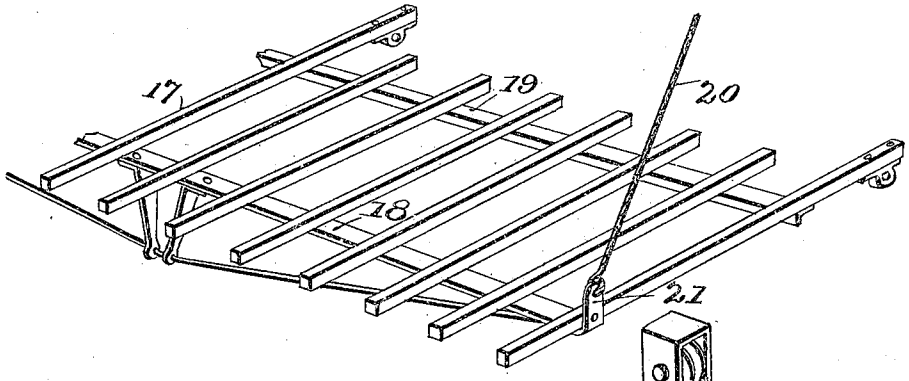
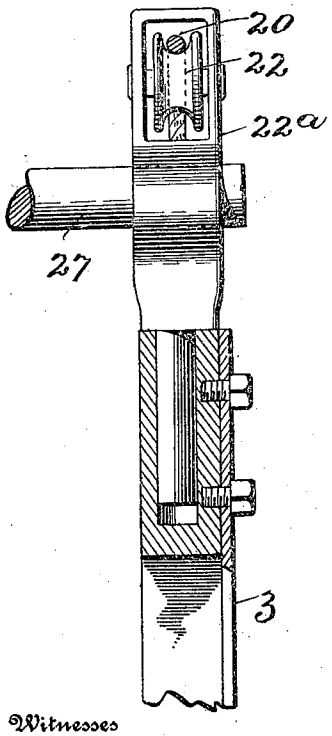


Fig. 5.



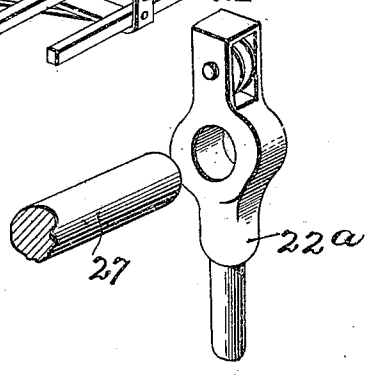
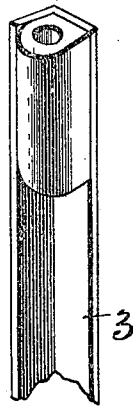


Fig. 4.



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UNITED STATES PATENT OFFICE.

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STACKER.

953,449. Specification of Letters Patent. **Patented Mar. 29, 1910.**

Application filed April 20, 1909. Serial No. 491,014.

To all whom it may concern:

Be it known that I, JESSE W. VANIMAN, citizen of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Stackers, of which the following is a specification.

This invention has for its object an improved construction of stacker for hay and the like designed to take the hay or grain directly from the wagon or hay rack in the field or elsewhere and deliver the same onto the stack being made, the operation being performed by my invention with a minimum amount of manual labor and in a relatively short time.

The invention consists in certain constructions arrangements and combinations of parts that I shall hereinafter fully set forth and claim.

For a full understanding of the invention, and the merits thereof, and also to acquire a knowledge of the details of construction, and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of a stacker embodying the improvements of my invention. Fig. 2 is an end view thereof. Fig. 3 is a perspective view of the fork. Fig. 4 illustrates in perspective a portion of the supports for a hoisting shaft, and Fig. 5 is a detail sectional side elevation of such parts showing them in assembled relation.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The framework of my improved stacker embodies relatively short corner posts 1 and 2 and relatively long corner posts 3 and 4, said posts being trussed as indicated at 5. The posts 1 and 2 are connected together by lower and upper longitudinally extending sills designated 6 and 7 respectively and other posts 3 and 4 are connected together by a lower longitudinally extending sill 8. Front and rear cross beams 9 connect the posts 1 and 2 at their upper ends and the posts 3 and 4 at points intermediate of the ends of the latter and are preferably extended beyond posts 3 and 4 to constitute the truss rods for the braces 5 of said last-named posts.

In order to increase the rigidity of the frame-work structure I provide upper and lower diagonal braces 10 which extend from the posts 1 and 2 to their corresponding posts 3 and 4. Preferably all of these braces are constructed of angle metal riveted or otherwise secured together. In addition to the above-named braces, any desired arrangement of brace rods may be used to assist in the rigidity of the structure. The frame-work is mounted upon front and rear traveling wheels 11 and 12, the front traveling wheels being caster wheels as shown so as to assist in guiding the apparatus over the fields or roads, as it is drawn forwardly by a team attached to the draft ring 13 connecting together the forward ends of the draft rods 14. While the apparatus is being drawn from one place to another, the lower sills 6 and 8 are rigidly connected together by transverse brace beams 15 and diagonally extending tie-rods 16 so as to prevent the parts from being sprung. But these brace beams and tie rods are removable, so that when the apparatus is in position for operation, a space is formed in or underneath the frame-work between the posts 1 and 2 and their corresponding posts 3 and 4 and underneath the transversely extending beams 9 so that the hay wagon or rack may be driven into the framework and its load taken therefrom and deposited on the stack.

17 designates a fork which is composed of any desired number of tines connected together near their outer ends by any suitable construction of cross bars 18 and near their inner ends with corresponding cross bars 19. The end tines of the series as shown have one or more intermediate tines projected farther than the corresponding ends of the other tines and are pivotally connected at their extremities to the frame work of the apparatus so that the forks will project outwardly from one side of the frame work at a predetermined distance below the upper ends of the posts 3 and 4. Two cables 20 are connected to one end of the fork 17 near the free end of the latter and preferably to brackets 21 secured to the ends of the cross bars 18. These cables 20 extend upwardly over pulleys 22 journaled in swiveled bearings 22^a mounted on the upper ends of the posts 3 and 4 and thence downwardly over pulleys 23 mounted in hangers that are secured to the beams

9. These cables are arranged to be wound upon the longitudinally extending windlass shaft 24 journaled in bearings secured to the posts 1 and 2 and an intermediate post, in the operation of the frame work, said shaft 24 being provided at one end with a crank handle 25, by which it may be turned and being also provided with a ratchet and pawl device 26. By this means it is evident that the fork 17 may be raised or lowered and held with its far end at the desired elevation, for the purpose which I shall describe in connection with other operations of the parts of the apparatus.

A hoisting shaft 27 is journaled in the swivel bearings 22 and projects out beyond one of said bearings and supports on one of said projecting ends a hoisting drum 28. The cable 29 is wound upon the drum 28 and preferably passes down through a guide loop 30 to the pulley 31, from whence it extends outwardly so that a horse may be hitched to it in the well known manner to draw upon the cable 29 and unwind it from the drum, thereby effecting the elevation of the hoisting shaft 21 about its longitudinal axis. Hoisting cables 32 are secured to the hoisting shaft 27 and arranged to be wound thereon at one end, the other ends of said hoisting cables 32 being arranged, as by the hook-and-eye fastening shown, for detachable connection to one side of the detachable net 33. The other side of the detachable net 33 is detachably connected in any desired manner, as by hooks and eyes to the bar 34 which constitutes one side of the permanent net 35. The other side of this last-named net is secured to the inner side of the fork 17.

In describing the practical operation of my improved stacking apparatus it is to be understood that the hay wagon or rack from which the hay or the like is to be taken and disposed upon the stack by my invention, is supplied with one of the detachable nets 33, the same being laid upon the bed of the wagon or rack before the load of hay is deposited thereon. After the hay or grain has been deposited upon the net 33 which has been laid upon the bed of the wagon, the wagon is driven into the frame-work of the stacking apparatus, it being understood that the brace beams 15 and tie-rods 16 have been first removed. One side of the removable net 23 is then engaged with the permanent net 35 by the snap hooks or similar fastening devices, while the opposite side of the detachable net is engaged with the hoisting cables 32, the team or other power hitched to the cable 29 is then started so as to draw upon the cable 29 and rotate the hoisting shaft 27 and that will cause the cables 32 to wind upon the shaft 27 and will draw the load of hay upwardly from the bed of the wagon in the net 33, until the load is finally passed through the space between the fork and the hoisting shaft 27 above it and finally discharged onto the fork. Should it be desired to retain a part or all of the load on the fork, the outer end of the fork may be raised by means of the hand windlass before described, but should it be desired to allow all of the grain, straw, or hay to fall onto the stack the outer end of the fork is depressed.

Having thus described the invention, what is claimed as new is:

1. A stacking apparatus, comprising a frame-work designed to receive a wagon or rack, a fork pivotally mounted upon said frame-work and projecting outwardly from one side thereof, a permanent net connected to the frame-work and extending inwardly from the fork, a detachable net arranged to be secured at one side to one side of the permanent net, hoisting cables arranged to be connected to the opposite side of said detachable net, and means elevated above the fork for drawing upon said cables whereby to discharge the load from the nets onto the fork.

2. A stacking apparatus, comprising a frame-work designed to receive a wagon or rack, a fork pivotally mounted upon said frame-work and projecting outwardly from one side thereof, a permanent net connected to the frame-work and extending inwardly from the fork, a detachable net arranged to be secured at one side to one side of the permanent net, hoisting cables arranged to be connected to the opposite side of said detachable net, and means for changing the inclination of the fork.

3. A stacking apparatus, comprising a frame-work, a fork pivotally mounted upon said frame-work and projecting outwardly from one side thereof, cables connected to the free end of the fork, elevated supports over which said cables extend, a windlass mounted on the frame-work and arranged to draw upon said cables to change the elevation of the outer end of the fork, a permanent net connected to the frame-work at the inner end of the fork, a detachable net arranged to be secured to the permanent net, hoisting cables arranged to be fastened to one side of the detachable net, a hoisting shaft journaled in the frame-work above the fork and having the upper ends of the hoisting cables fastened to it, a drum mounted upon said shaft, and a cable winding upon said drum.

4. A stacking apparatus comprising a supporting frame-work, a permanent net mounted in said frame-work and connected thereto at one side, a detachable net arranged for attachment at one side to one side of the permanent net, hoisting cables connected to the opposite side of said de-

tachable net and elevated means for drawing upon said cables whereby to discharge the load disposed in the detachable net.

5. A stacking apparatus comprising a supporting framework, a detachable net, hoisting devices arranged for detachable connection to one side of the net, means for actuating said hoisting devices, and means for holding the opposite sides of said net.

6. A stacking apparatus, comprising a supporting frame-work embodying relatively short posts and opposite longer posts, swiveled bearings mounted in the upper ends of said last-named posts, a fork pivotally mounted in the frame-work between the last-named posts and projecting outwardly therefrom, pulleys journaled in the swiveled bearings, cables connected to the fork near the free end thereof and fastened over said pulleys, a windlass shaft journaled in said bearings on the relatively short posts and around which shaft the cables are arranged to wind, a hoisting shaft journaled in said swiveled bearings, a drum mounted on said shaft, a cable secured to said drum and adapted to effect the rotation of the drum and shaft, a permanent net connected at one side to the frame-work above the end of the fork, a detachable net connected at one side to the opposite side of the permanent net, and hoisting cables connected to the said hoisting shaft.

7. A stacking apparatus comprising a supporting framework designed to receive a wagon or rack, a fork projecting outwardly from said rack, and supported thereby, a detachable net, a hoisting shaft mounted on the framework above the fork and spaced therefrom, means within the framework for holding one side of the detachable net below and spaced from the hoisting shaft, cables adapted to wind on said shaft and arranged for connection to the opposite side of the detachable net, and means for turning said shaft.

8. A stacking apparatus comprising a supporting framework, a fork projecting outwardly therefrom, a permanent net mounted in said framework substantially on a level with the fork, and connected at one side to the framework, a detachable net arranged for attachment at one side to the other side of the permanent net, hoisting cables connected to the opposite side of the detachable net, and elevated means for drawing upon said cables whereby to discharge the load therefrom onto the permanent net and thence to the fork.

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

JESSE W. VANIMAN. [L. S.]

Witnesses:

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