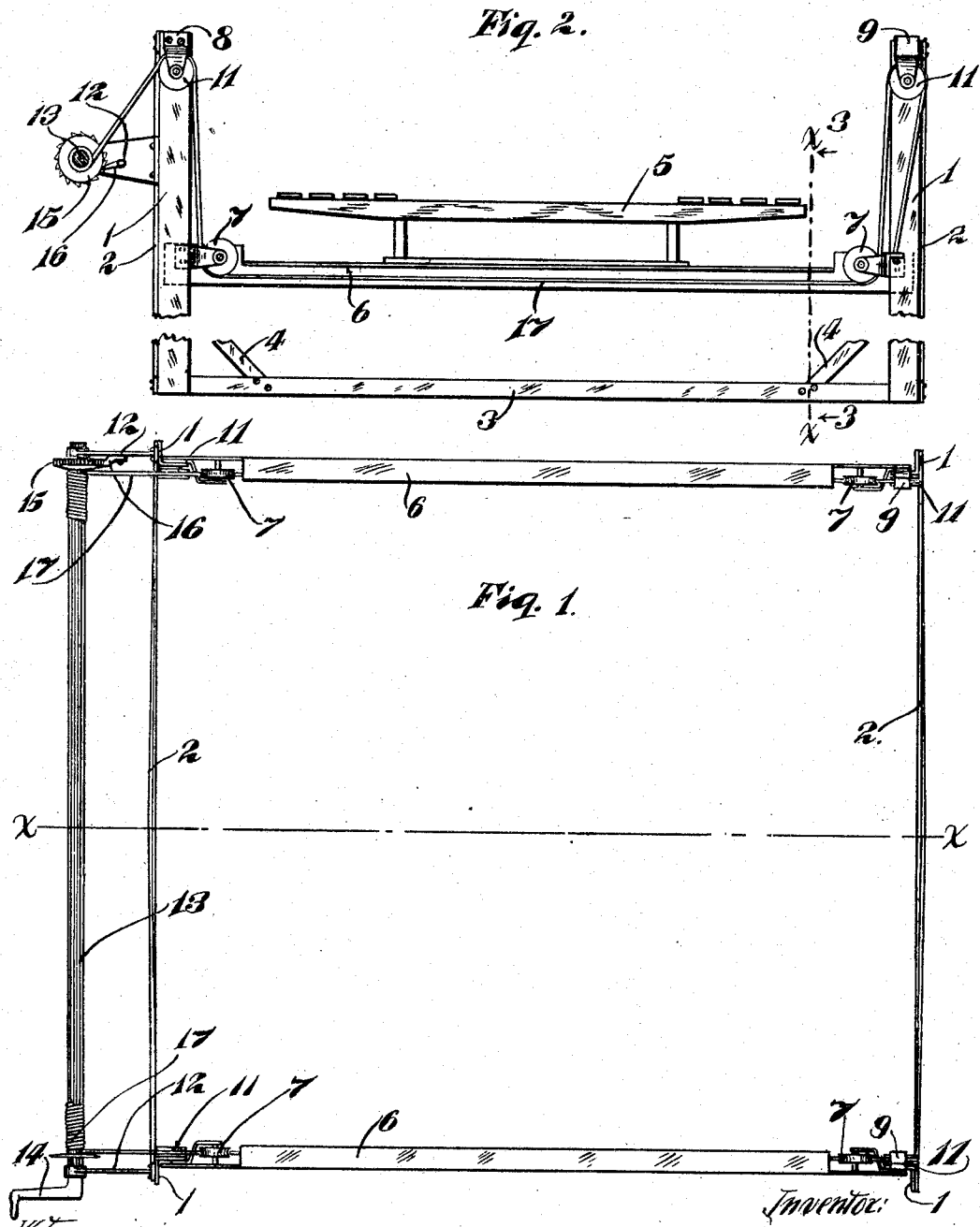


A. W. SORENSON.
HAY RACK AND BOX LIFTING DEVICE.
APPLICATION FILED MAR. 22, 1909.

947,088.

Patented Jan. 18, 1910.
2 SHEETS—SHEET 1.



Witnesses:
R. P. Hooks
Alice J. Swanson.

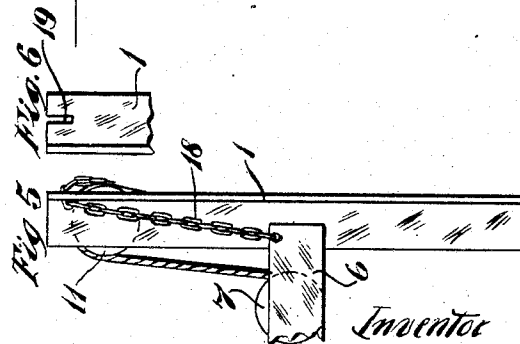
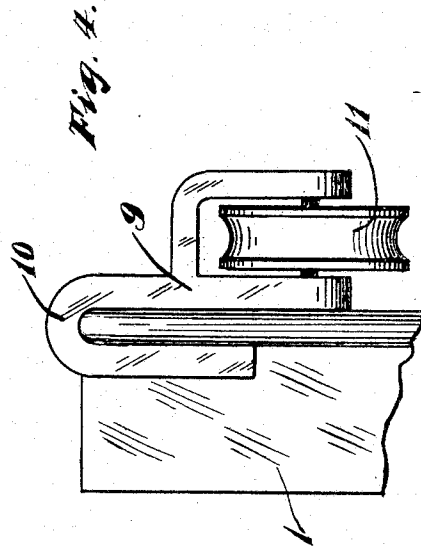
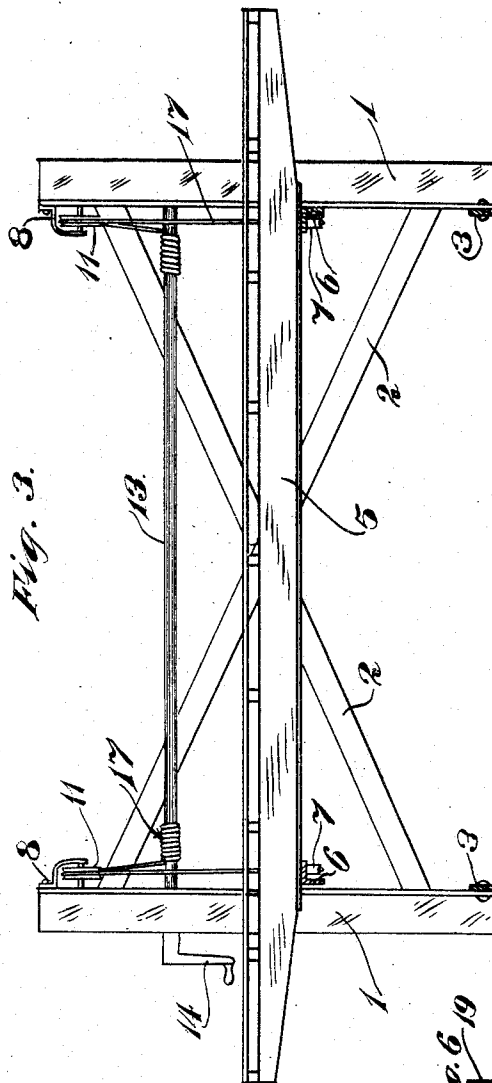
Inventor:
ANDREW W. SORENSON
By his Attorneys
Williamson Merchant

A. W. SORENSON.
HAY RACK AND BOX LIFTING DEVICE.
APPLICATION FILED MAR. 22, 1909.

947,088.

Patented Jan. 18, 1910.

2 SHEETS—SHEET 2.



Witnesses
R. P. Hicks,
Alice J. Swanson.

Inventor
Andrew W. SORENSON
By his Attorneys
William M. Muchant

UNITED STATES PATENT OFFICE.

ANDREW W. SORENSON, OF HUTCHINSON, MINNESOTA.

HAY-RACK AND BOX LIFTING DEVICE.

947,088.

Specification of Letters Patent.

Patented Jan. 18, 1910.

Application filed March 22, 1909. Serial No. 434,832.

To all whom it may concern:

Be it known that I, ANDREW W. SORENSON, citizen of the United States, residing at Hutchinson, in the county of McLeod and State of Minnesota, have invented certain new and useful Improvements in Hay-Rack and Box Lifting Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide a simple and efficient device for lifting hay racks and wagon boxes from their running gears, and to this end, it consists of the novel devices and combination of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a plan view of the improved lifting device; Fig. 2 is a side elevation of the same, with some parts broken away and with a hay rack shown in position on the lifting parts thereof; Fig. 3 is a longitudinal section taken on the line $x^3 x^3$ of Fig. 2; Fig. 4 is a detail view in side elevation showing one of the detachable sheave hangers applied in working position. Fig. 5 is a front elevation showing a chain connection between a corner post and a lifting bar; and Fig. 6 is a side elevation of the upper end of the post shown in Fig. 5.

The frame work of the device involves four vertical posts 1 preferably constructed of angle iron and tied together at their sides by suitable cross braces 2. The transversely opposite posts, at their extreme lower ends, are tied together by tie bars 3, over which the wheels of the vehicle may be readily driven. The end portions of these tie bars 3 are preferably further connected to the lower end portions of the posts 1 by short oblique brace bars 4.

The rack 5, or a wagon box, is adapted to be lifted from its running gear by a pair of transversely extended so-called floating lifting bars 6 that extend from the one transverse post to the other but are free therefrom. In the end portions of the lifting bars 6, cable guide sheaves 7 are loosely journaled. Sheave supporting brackets 8 are permanently secured to the posts 1 that

are on one side of the frame and sheave supporting brackets 9 are detachably mounted on the upper ends of the two posts 1 that are on the other side of the frame. As best shown in Fig. 4, these brackets 9 have folded or hook-shaped ends 10 that are hooked over and loosely engage the upper ends of the said posts.

Cable guiding sheaves 11 are loosely journaled in the brackets 8 and 9. On the same post to which the brackets 8 are permanently applied, outwardly extending shaft bearings 12 are rigidly secured. In these bearings 12 is rotatively mounted a windlass shaft 13 provided at one end with an operating crank 14. The shaft 13 also carries a ratchet wheel 15, with which a lock dog 16, on one of the bearings 12, engages to hold said shaft against movement in one direction, when desired. A pair of lifting cables 17 are attached at one end to the shaft 13. These cables, at their extended ends, are anchored to angular lugs secured to the swinging ends of the lifting bars 6, and the said cables are passed over the guide sheaves 11 and under the guide sheaves 7.

When a wagon is to be driven into the frame to thereby position its rack or box to be lifted by the device, the detachable brackets 9 are removed from the coöperating posts and the adjacent ends of the lifting bars 6 are swung laterally out of the path of travel of the said wagon. Then, when the wagon is properly positioned, the lifting bars are swung back into position under the rack or box and the brackets 9 are again applied to their coöperating posts. This being done, the rack or box may be easily lifted by rotation of the windlass shaft 13. When the rack or box is raised to the proper elevation, it may be held by engagement of the lock dog 16 with the ratchet wheel 15 by the said windlass shaft.

The detachable wheel supporting brackets 9, instead of having hooked ends engageable with the upper ends of the posts 1, might be otherwise detachably secured thereto, as for instance, by means of hook ended bolts applied to said posts and engageable with seats in said brackets.

To adjustably limit the downward movements of the lifting bars 6, flexible connections, such as chains 18, are preferably applied to the ends thereof, and these chains are adapted to be adjustably secured in slots 19 formed in the upper ends of the posts 1.

Such connections, while they serve to vari-
ably limit the downward movements of the
bars 6 and to support the same in lowered
positions even when the cables 17 are given
5 slack, will nevertheless permit free upward
movements of the said bars as required in
lifting the rack or wagon box.

In actual practice, the device described
has been found highly efficient for the pur-
10 poses had in view, and it has been found
that a small boy can in a very few moments,
remove a wagon box or rack from its run-
ning gear or replace the same thereon.

What I claim is:

15 1. In a device of the kind described, the
combination with a framework having cor-
ner posts, of a windlass shaft supported by
the corner posts at one side of the frame,
sheave supporting brackets applied to said
20 posts, those on one side thereof being de-
tachably, transversely extended lifting bars
provided with cable guiding sheaves, and
suitably anchored cables passed over said

guide sheaves and attached to said windlass
shaft, substantially as described. 25

2. In a device of the kind described, the
combination with a suitable framework hav-
ing corner posts, of a windlass shaft rota-
tively mounted on one side of said frame-
work, means for locking said windlass shaft 30
against rotation in one direction, sheave
supporting brackets permanently secured
to the posts on the same side of said frame,
cable supporting brackets detachably ap-
plied to the posts on the other side of said 35
frame, loose transversely extended lifting
bars provided with guide sheaves, and suit-
ably anchored cables passed over said guide
sheaves and attached to said windlass shaft,
substantially as described. 40

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

ANDREW W. SORENSON.

Witnesses:

JOHN IVERSEN,

JONAS PETERSEN.