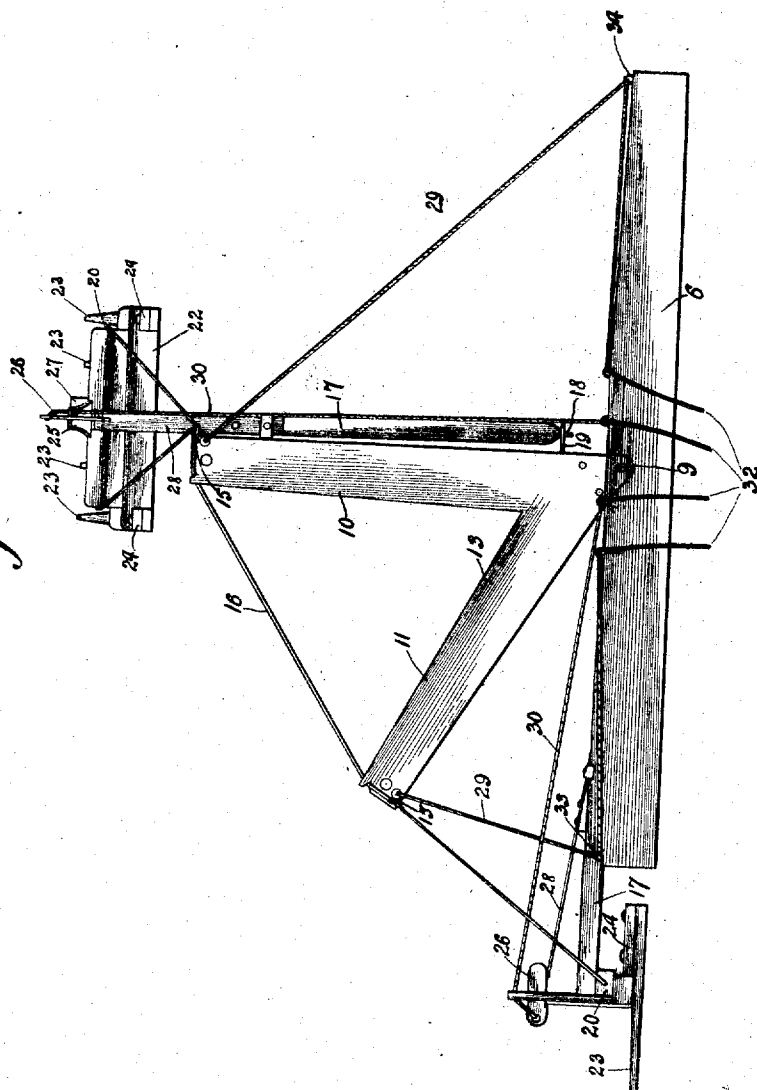


978,315.

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3 SHEETS-SHEET 1.

Fig. 1.



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3 SHEETS-SHEET 2.

Fig. 2.

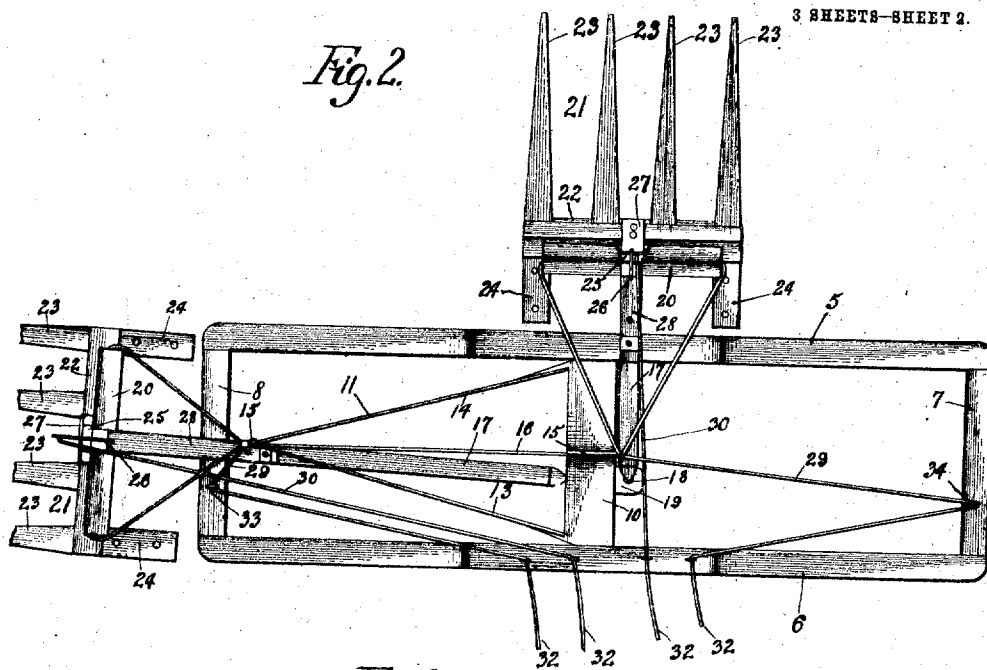
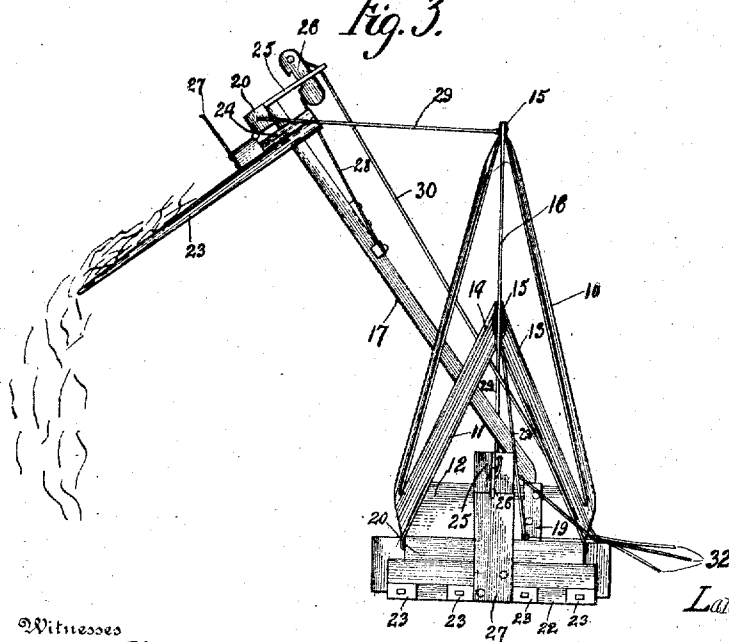


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 4.

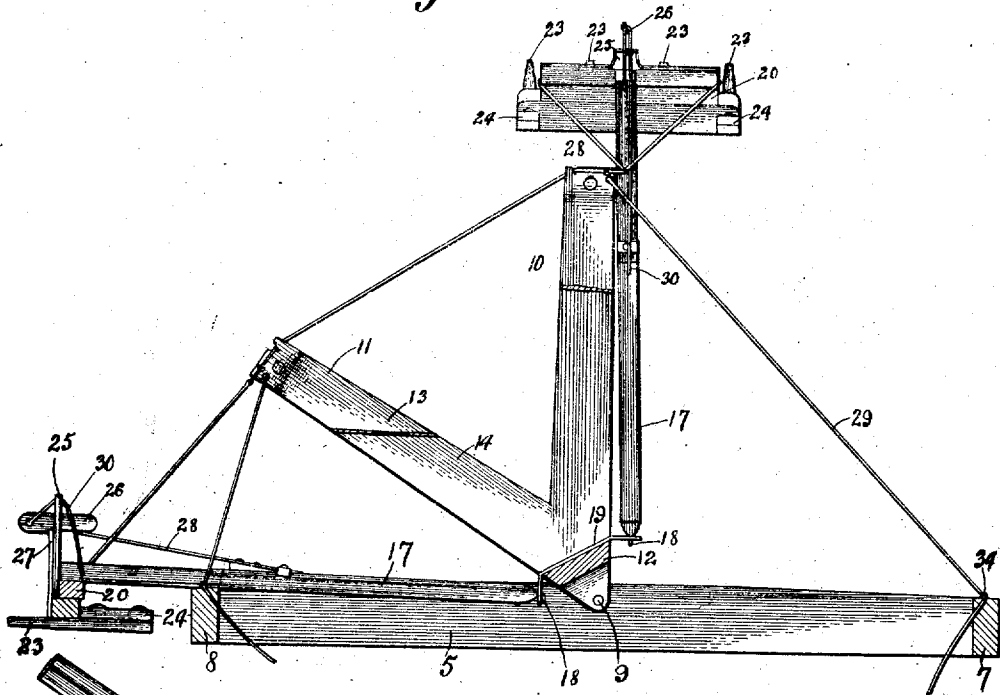
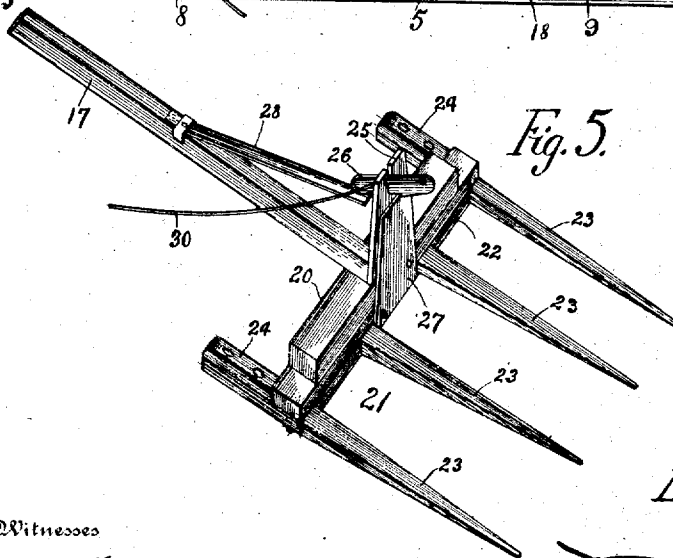


Fig. 5.



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UNITED STATES PATENT OFFICE.

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HAY-STACKER.

978,315.

Specification of Letters Patent.

Patented Dec. 13, 1910.

Application filed April 27, 1909. Serial No. 492,437.

To all whom it may concern:

Be it known that I, LAFAYETTE S. LINNELL, a citizen of the United States, residing at Almena, in the county of Norton, State of Kansas, have invented certain new and useful Improvements in Hay-Stackers; 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.

This invention relates to improvements in hoisting and dumping mechanisms and more particularly to the kind known as hay stackers.

The invention contemplates a structure which comprises a base frame having an oscillating beam combined therewith and a dual fork structure combined with the hoisting beam, means are provided for operating the latter to oscillate so that the fork structures will be alternately raised and depressed, this action permitting the device to perform its stacking function in one-half the time were one fork used.

Another object is the provision of an improved form of trip for the forks.

A further object is the provision of a construction which will permit the fork structures to be turned in the arc of a circle so that hay may be placed on two adjacent stacks without shifting the stacker.

With these and other objects in view as will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings and more particularly pointed out in the appended claims. It being understood that various changes in the form, proportion, size and minor details of the device may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings forming part of the specification: Figure 1 is a side elevation of the device. Fig. 2 is a plan view thereof. Fig. 3 is an end elevation. Fig. 4 is a longitudinal section. Fig. 5 is a detailed perspective of one of the forks.

Similar numerals of reference are employed to designate corresponding parts throughout.

The device consists essentially in a base frame which is substantially rectangular in contour having side sills 5 and 6 the opposite ends of which are connected by the end pieces 7 and 8. In the present construction this frame is such that it may be drawn by the draft animals over the field or it may be provided with wheels when the ground and other circumstances demand. A shaft or trunnion 9 has its opposite ends secured in the opposite side sills 5 and 6 and at substantially their intermediate portion, this shaft or trunnion 9 forms a pivotal support for the hoisting beam. The latter in the present instance is substantially a V shaped structure and comprises the side sections 10 and 11. Each of these sections are substantially V shape in contour and adjacent their pointed ends connected by a cross beam 12. The length of the cross beam is somewhat less than the distance between the sills 5 and 6, so that when the parts are in position as shown in the drawings the distance between the pointed ends and hoisting beams will be substantially the same as the distance between the side sills 5 and 6. The pointed end portions are provided with aligning openings for the reception of the shaft or trunnion 9, thus it will be seen that the hoisting beam may be oscillated on the shaft and the limbs 13 and 14 alternately raised and depressed. The free ends of the limbs 13 and 14 are brought together and rigidly secured as shown at 15 and connection between the opposite limbs is established by means of a brace rod 16 or other suitable means.

The stacker structures consist of elongated arms 17, since each of these stackers are identical in structure a description of one will be sufficient for both. As before stated, each structure consists of an arm 17, the lower end of which terminates in a pin 18. By referring now to the drawings it will be seen that the medial portion of the cross beam 12 is provided with a transverse strip 19 the opposite ends of which extend beyond the opposite longitudinal sides of the cross beam 12 and are turned slightly downward and provided with openings for the loose reception of the pins 18 at the lower ends of the arms as clearly shown in the drawings. Thus it will be seen that the stacker arms are swiveled to the hoisting beam. The upper or opposite terminal of

each of the beams 17 is provided with a transverse joist 20 the opposite ends of which extend equal distances beyond the opposite sides of the arm. This joist forms a support for the fork 21. The latter may be of any well known structure and in the present instance is shown to consist of a transverse body portion 22 from the front side of which extends the prongs 23, the opposite end prongs extend rearwardly and beyond the body portion 22 and are provided with suitable counterweights 24, the function of which is to maintain the fork in a substantially horizontal plane. Extending upwardly from the extreme upper end of the arm 17 is an upright 25 which is provided with a longitudinal opening in which is pivoted the intermediate portion of a keeper 26, and extending upwardly from the medial portion of the body 22 is a tongue 27 the free end of which is adapted to be engaged by the keeper when the latter is in its normal horizontal position. By referring now to the drawings it will be seen that the upper faces of each of the arms 17 is provided with a leaf spring 28 the free end of which bears on the lower edge of the keeper 26 and forces the same upwardly whereby its outer or engaging end is yieldingly held in position to engage the tongue 27.

Connection between the fork mechanism and the limbs 13 and 14 is established by means of a guy wire or cable 29 the intermediate portion of which is suitably secured to the upper ends of the limbs and the free ends anchored or otherwise secured to the opposite ends of the joist 20. A suitable trip cord 30 has one end secured to the outermost end of the keeper 26 from which it is led over the top of the up-right 25 and thence downwardly and through an eye or pulley on the upper end of either of the sills 5 or 6. Operating cords or cables 32 have their upper ends secured to the upper ends of the limbs 13 and 14 and their ends reeved through pulleys 33 and 34 secured to the end pieces 7 and 8 and the side sills 5 and 6. The free ends of the operating elements 32 are connected to the draft animals so that when one fork is lowered and loaded with hay one of the draft animals is driven forward and the other backed which will result in the lowered fork rising to dumping position and the opposite fork being depressed or lowered to loading position. When the first-named fork is in dumping position, by means of the tripping cord 30 the keeper will be disengaged from the tongue 26 and the fork will gravitate to dumping position by virtue of the excess weight on the prongs.

Thus it will be seen that I have provided a structure which is comparatively simple and which is designed to perform its dumping function in a rapid and effective manner.

The swiveled connection between the ears 17 and one of the cross beams 12 will permit the forks to dump on either side of the frame, whereby two stacks may be formed without changing the position of the device.

Having thus described my invention, what is claimed as new, is:—

1. A stacker comprising a beam mounted for oscillation in a vertical plane and forks each having an arm connected at its lower end to the said beam for angular movement and also for turning movement, said arms being disposed at opposite sides of the said beam so that when one fork is raised the other is lowered.

2. A stacker comprising a beam mounted for oscillation in a vertical plane, arms on opposite sides of said beam in the plane of movement thereof and mounted for angular movement with respect to the beam and also for turning movement, forks carried by the respective arms and connections between the said arms and the said beam whereby when one of said arms is raised by the beam the other is lowered.

3. A stacker comprising a beam mounted for oscillation in a vertical plane, arms on opposite sides of said beam in the plane of movement thereof and each having its lower end swivelly connected thereto so that said arms are movable angularly with respect to said beam and are also enabled to be turned, forks at the upper ends of and carried by the said arms, flexible connections between said forks and said beam and means for operating the latter so that when the beam is moved in either direction one of said arms with its fork is raised and the other is lowered.

4. A stacker comprising a base frame a substantially V-shaped beam pivotally connected at its lower end to said base frame and movable angularly in a vertical plane, means for operating said beam, arms having their lower ends swivelly connected to opposite sides of said beam in the plane of movement thereof, forks carried by the said arms flexible connections between said forks and the said beam and means for operating said forks.

5. A stacker comprising a beam mounted for angular movement in a vertical plane, arms also mounted for movement angularly in a vertical plane and disposed on opposite sides of said beam in the plane of movement thereof, means for operating said beam, forks carried by the said arms, each of said forks having a head rigidly fixed to said arm and a tine member pivotally connected to said head, flexible connections between the fork heads and the beam locking means to secure the tine members of the forks to the heads thereof in loading position and means to operate said locking means to cause said forks to discharge their loads.

6. A hay stacker comprising a base frame,
a hoisting beam pivotally combined with
said frame, oppositely arranged arm struc-
tures swiveled on said beam and forks com-
bined with said arms.

on said beams and forks pivoted to said arm
structures.

In testimony whereof, I affix my signa-
ture, in presence of two witnesses.

LAFAYETTE S. LINNELL.

Witnesses:

A. E. KECKLEY,
C. L. KOBES.

7. A hay stacker comprising a base frame,
an oscillating beam combined therewith, op-
positely arranged arm structures swiveled