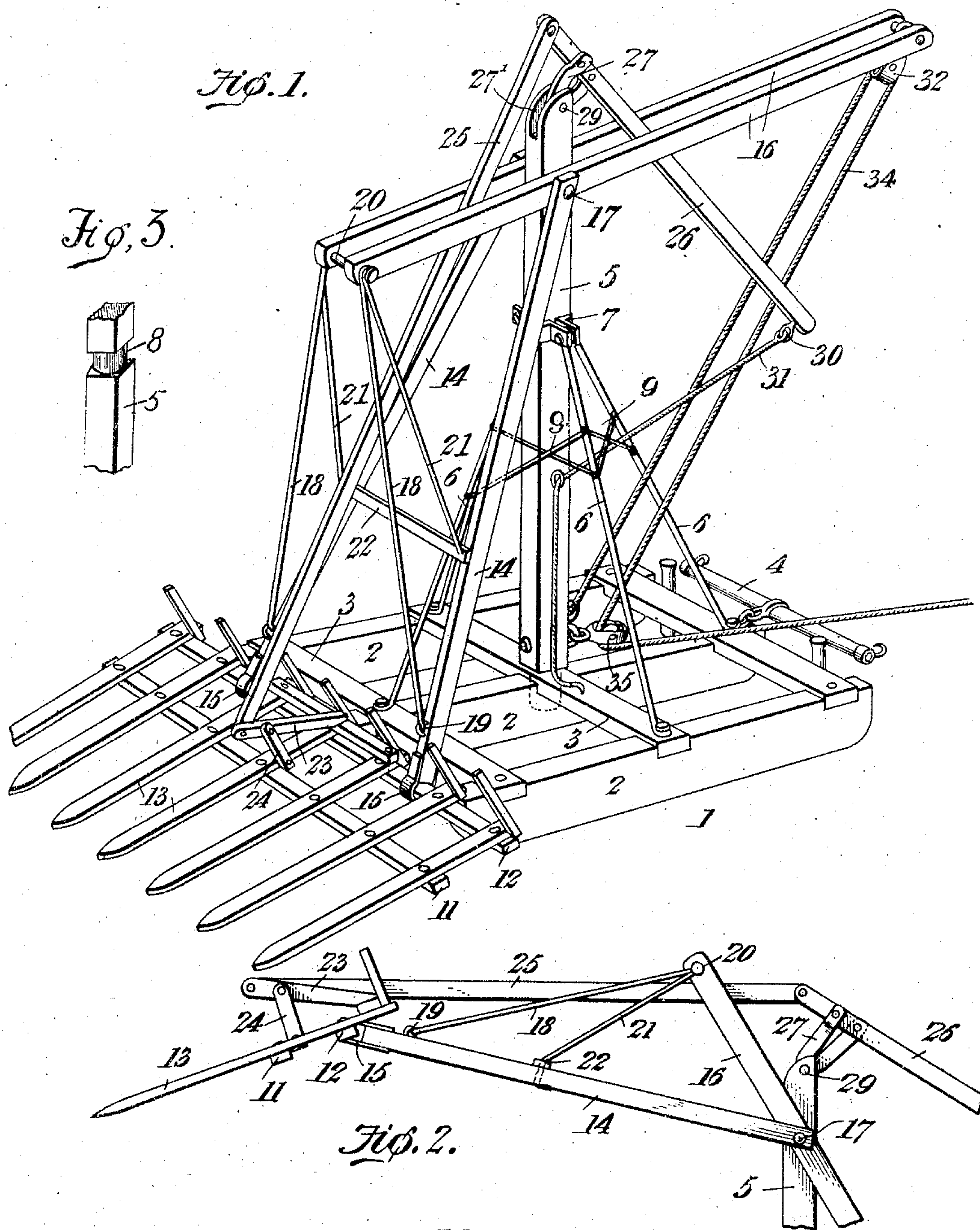


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H. W. SWADLEY.
HAY STACKER.

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UNITED STATES PATENT OFFICE.

HARRISON WELLINGTON SWADLEY, OF CARBONDALE, KANSAS.

HAY-STACKER.

SPECIFICATION forming part of Letters Patent No. 778,431, dated December 27, 1904.

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To all whom it may concern:

Be it known that I, HARRISON WELLINGTON SWADLEY, a citizen of the United States, residing at Carbondale, in the county of Osage and State of Kansas, have invented a new and useful Hay-Stacker, of which the following is a specification.

This invention relates to hay-stackers.

The objects of the invention are to simplify the construction of apparatus of this character by reducing the number of parts employed to a minimum, and to assemble the elements in such manner as to insure the requisite rigidity and strength to resist tendency to breakage from strains and rough handling incident to its use, to insure certainty of operation by preventing any tendency of the operative parts to bind or lock, to minimize the labor incident to the manipulation of the apparatus, and generally to improve apparatus of the class to which the present invention belongs.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a hay-stacker, as will hereinafter be fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, there is illustrated one form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit thereof.

In the drawings, Figure 1 is a view in perspective of the apparatus, exhibiting the fork in its loading position. Fig. 2 is a view in side elevation of the upper portion of the apparatus, exhibiting the fork in its unloading or dumping position. Fig. 3 is a detail view of a portion of the derrick-post.

Referring to the drawings, 1 designates generally the base of the stacker, the same comprising in this instance three runners or sill-pieces 2, connected by cross-beams 3, which are preferably mortised into the upper edges of the runners and are held in position

therein by bolts or the like. The runners are rounded at both ends thus to reduce resistance in being drawn over the ground to the place of use. One of the end cross-pieces is provided with the draft appliance 4, to which a team of horses may be hitched in transporting the stacker from point to point.

Mounted for rotary movement on the center cross-beam is a derrick-post 5, which may be constructed of a solid beam of wood or of four joists spiked or bolted together. The lower end of the post may either be formed into a pintle to engage a socket in the cross-beam, or, as is usual with derrick-posts, the lower end of the post may be furnished with a plate provided with a pintle, and the cross-beam may be provided with a socket to receive the pintle, and as this arrangement is common and well known detailed illustration thereof is deemed unnecessary. By having the post bodily rotatable the ordinary revoluble cap commonly employed is dispensed with, and the operation of the apparatus is rendered easier, while the life of the structure as a whole is increased, inasmuch as the revoluble cap-plates generally employed frequently break or wear out, and thus render the apparatus inoperative. To hold the post in vertical position for rotary movement and also to prevent it from tilting under the weight of the supported mechanism, a plurality of guy-rods 6 are employed, which in this instance are shown as four in number, the lower ends of the rods being firmly connected with the base portion in any preferred manner and their upper ends to a collar 7, mounted in a circumferential seat 8, disposed near the top of the post, the said collar being made in sections to permit of its removal when necessary, as when the machine is taken down. The connection between the upper ends of the guy-rods and the collar may be of any preferred character that will insure stability and prevent any danger of separation or breakage. To brace the guy-rods, cross-wires 9 are employed, which are disposed near the upper portion of the former.

The fork 10 may be of the usual or any preferred construction and in this instance is shown as composed of a pair of cross-bars 11 and 12 and a plurality of fork-fingers 13, se-

cured to the cross-bars. The fork is supported from the post by a pair of arms 14, the lower end of each of which is provided with a yoke 15, which passes around the rear cross-bar 12 and works in a recess therein to hold the fork from lateral movement with relation to the arms. The mechanism for lifting the arms 14 comprises a pair of levers 16, disposed on opposite sides of the post, near the upper end thereof, and held pivotally associated therewith by a bolt 17, said bolt being passed through the upper ends of the arms 14, as clearly shown in Fig. 2. The short ends of the levers 16 project toward the fork, and their outer or free ends are connected with arms 14 through the medium of rods 18, which in this instance are shown as connected with the arms by staples 19; but it is to be understood that this manner of connecting the rods with the arms may be varied without departing from the spirit of the invention. These rods pass around a headed bolt or bar 20, located near the outer ends of the levers 16, to which bolt and bar are also connected the upper ends of a pair of rods 21, the lower ends of which pass through a cross-brace 22 and through the arms 14, the cross-brace serving to hold the arms against spreading when the machine is in operation. It will be seen that upon downward draft being applied to the long ends of the levers 16 a pull will be transmitted to the arms 14 through the rods 18, and this will effect the lifting of the fork, which latter retains its approximate horizontal position until it reaches the point where it is to be dumped by mechanism that will now be described. Secured to the fork in the center and extending at an upward angle thereto is an arm 23, the forward end of which is held against lifting by a tie-bar 24, one end of which is secured to the arm and the other end to one of the fork-fingers. The free end of the arm 23 projects beyond the tie-bar 24 and has connected with it the lower end of the rod 25, said rod being disposed between the levers 16 and connected at its upper end to a fork-releasing lever 26, secured to the upper end of a pair of plates 27, the lower ends of which are disposed within a crotch 27' in the upper end of the post and work upon a fulcrum-pin 29, extending through the derrick-post. The lever 26 projects between the levers 16 and carries at its free end an eye 30, to which is connected a rope 31, by which the lever is operated from the ground.

The outer or longer ends of the levers 16 carry a block 32, through which passes the fork-lifting rope 34, having one end suitably secured in any manner to the post and its other end passed through the block 32 and through a block 35, swiveled in any suitable manner to the post.

The operation of the fork is as follows: The fork being in the position shown in Fig. 1, the hay is supplied thereto in the usual or any

preferred manner, and when the proper amount has been deposited thereon the horse, which is attached to the rope 34, moves away from the structure, and as draft is applied to the rope the fork will be gradually lifted until it assumes the position shown in Fig. 2, the fork during this operation being held from dumping by an operator who draws down upon the rope 31. As soon as the fork comes over the point where the load is to be dumped, which may be determined by moving the structure around, the operator releases the rope 31, whereupon the weight of the load will tilt the fork and effect deposit, whereupon the animal is backed toward the structure and the weight of the part will cause the fork to resume its normal position. It will be understood, of course, that the base will be anchored by stakes in the usual manner, and as this will readily be understood illustration is deemed unnecessary.

It will be seen from the foregoing description that all the parts of this apparatus are constructed with a view to certainty of operation and practical freedom from danger of breakage. In the event of damage to one or more of the parts repairs may be readily effected without the employment of skilled labor for the purpose.

Having thus described my invention, what I claim is—

1. In a hay-stacker, the combination with a base, a derrick-post mounted for bodily rotary movement thereon, a lever fulcrumed near the upper end of the post, a pair of arms having their upper ends pivoted on the fulcrum of the lever, a fork carried by the lower ends of the arms, a connection between one end portion of the lever and the arms, means for elevating the fork, means for maintaining the fork substantially horizontal until the dumping position is reached, and means for releasing the fork to effect dumping.

2. In a hay-stacker, the combination with a bodily-rotatable derrick-post, a lever disposed near the upper end thereof, a pair of arms movable on the fulcrum of the lever, a fork carried by the lower end of the arms and adapted for limited rocking movement, connections between one end of the lever and the arms to cause the lever to raise the latter when the former is depressed, a lever arranged at the upper end of the post, and a bar connecting the lever and the fork, downward draft upon the lever operating to hold the fork in an approximately horizontal plane while being raised to its dumping position.

3. In a hay-stacker, the combination with a base comprising a plurality of runners, of a derrick-post supported for bodily rotary movement upon one of the runners, a collar disposed near the upper end of the post, guy-rods connecting the collar and the base, a fork-lifting lever fulcrumed to the post above the collar, a pair of arms supported on the ful-

crum of the lever, a fork carried by the lower
ends of the arms, a connection between the
arms and one end of the fork-lifting lever, a
fork-releasing lever fulcrumed at the upper
5 end of the post, a bar connecting the fork-re-
leasing lever with the fork, means for depress-
ing the long end of the fork-lifting lever, and
means for holding the fork-releasing lever de-
pressed during the lifting of the fork thus to

maintain the latter in an approximately hori- 10
zontal plane.

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

HARRISON WELLINGTON SWADLEY.

Witnesses:

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