

E. BARNES.
HAY STACKER.

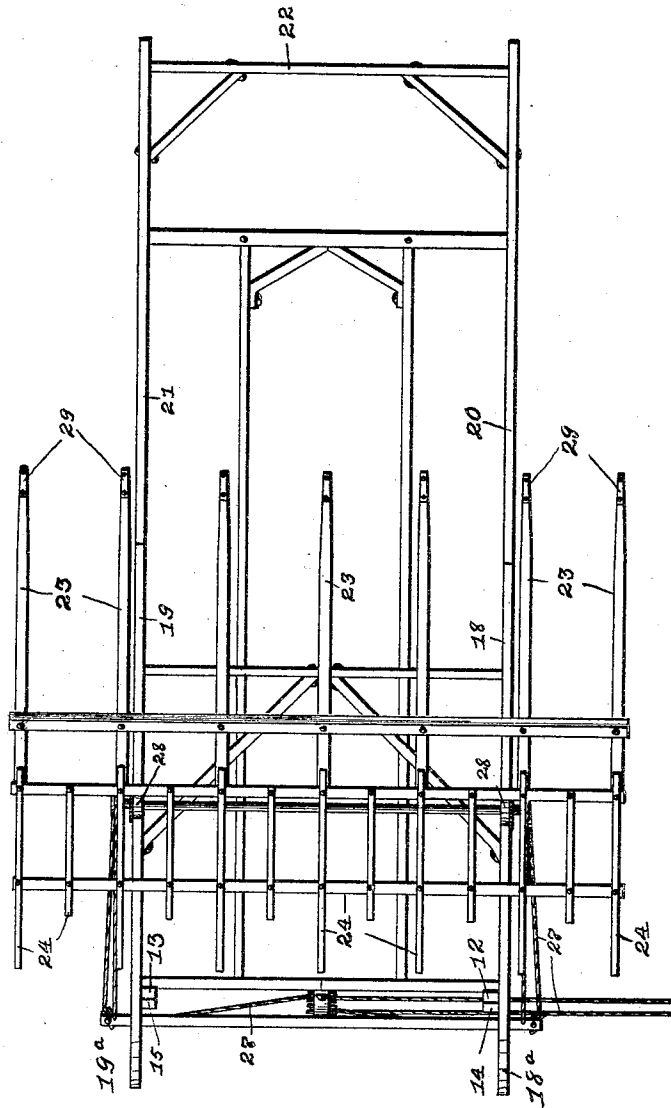
APPLICATION FILED DEC. 17, 1908.

940,657.

Patented Nov. 23, 1909.

3 SHEETS—SHEET 1.

Fig 1



Witnesses.

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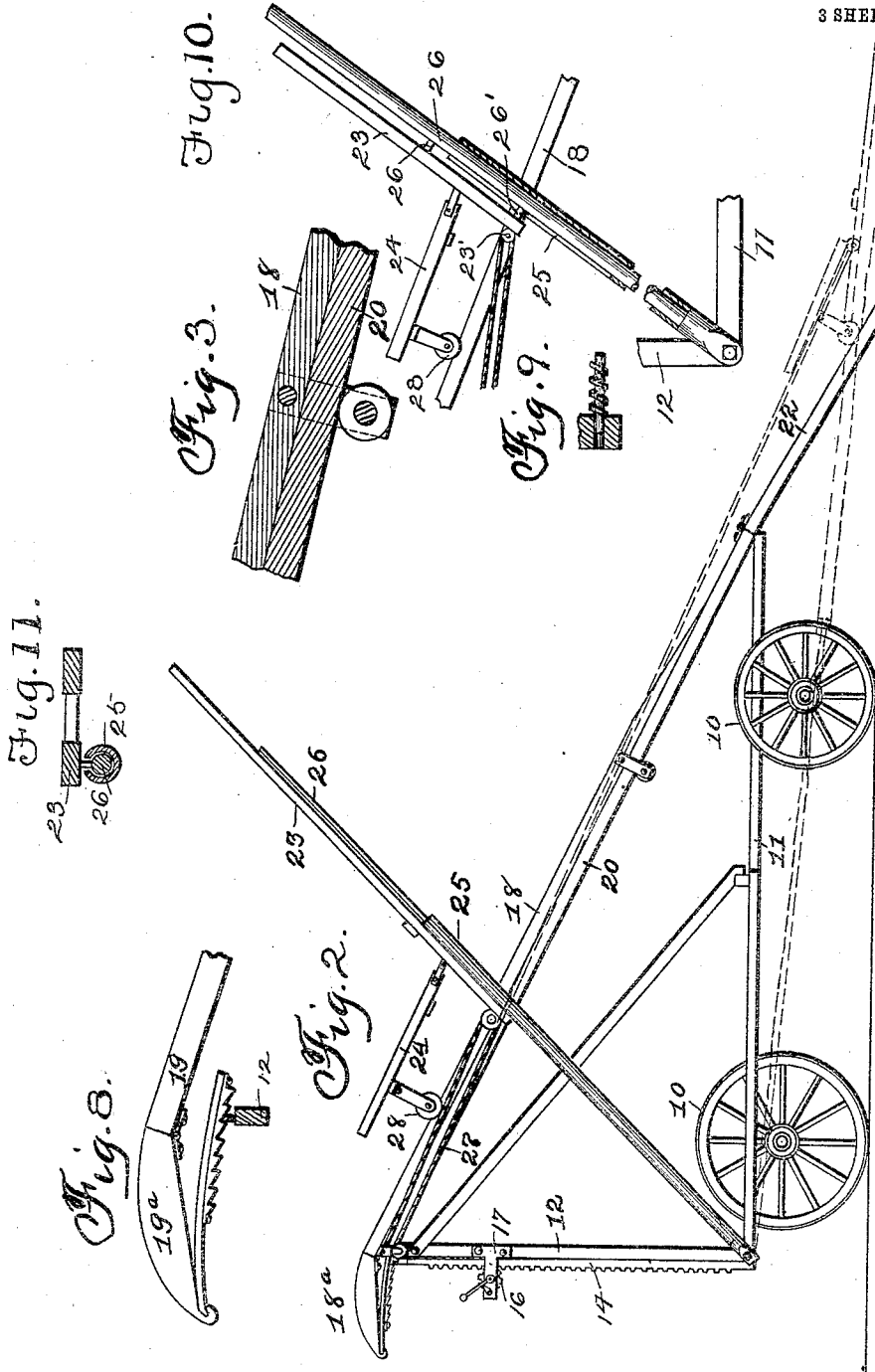
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3 SHEETS-SHEET 2.

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Witnesses.

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UNITED STATES PATENT OFFICE.

EZRA BARNES, OF LOVILLIA, IOWA.

HAY-STACKER.

940,657.

Specification of Letters Patent. **Patented Nov. 23, 1909.**

Application filed December 17, 1908. Serial No. 468,038.

To all whom it may concern:

Be it known that I, EZRA BARNES, a citizen of the United States, residing in Lovilia, county of Monroe, and State of Iowa, have invented a new and useful Improvement in Hay-Stackers, of which the following is a specification.

The object of my invention is to provide a hay-stacker, adapted to be placed on the running gear of a wagon and to operate therefrom, thus obviously making the stacker easily portable from place to place and also capable of being easily shifted from one part of the stack to another.

A further object is to provide such a hay-stacker with an adjustable frame construction so that it may be adjusted from time to time as the stack increases in height.

A further object is to provide such a stacker in a simple, strong, durable and comparatively inexpensive construction.

My invention consists of certain details of construction, hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings in which—

Figure 1 shows a plan view of my device; Fig. 2 shows a side elevation view of the same, the carrier being in a position near the top of the frame, the dotted lines indicating the position it assumes when ready to receive its load; Fig. 3 shows a detail view of the lower bearing, joining adjustable sliding parts of the track I employ; Fig. 4 shows a front elevation view of my device, and Figs. 5, 6, 7, 8, 9, 10 and 11 show detail views of their respective parts.

Referring to the accompanying drawings, the reference numeral 10 is used to indicate the running gear of a wagon and the numeral 11 indicates the base of a frame designed to be placed thereon. Extending upwardly from the forward part of the frame, and on each side thereof, is a standard 12 and 13 respectively, and slidably mounted on the forward side of said standards, are racks 14 and 15 respectively, designed to be engaged by gear wheels 16, mounted in bearings 17, secured to the standards 12 and 13 respectively. The construction of the standards 12 and 13, the racks 14 and 15, the gear wheels 16 and the bearings 17 and their relations to each other, are such that the operation of the gear wheels 16 will cause the racks 14 and 15 respectively, to move vertically upward or downward, as

the case may be, within their bearings on the standards 12 and 13 respectively. The gear wheels 16 are provided with means for rotating them, and the racks are so mounted upon their respective standards that they may be retained in any position thereon desired by the operator. The standards 12 and 13 are of like size and exactly similar to each other, as are also the racks 14 and 15, and loosely secured to the upper extremities of the racks, and extending rearwardly and downwardly therefrom, are strips 18 and 19 respectively, which are designed to operate as companions and to form a track over which the wheels of a carrier may ride.

Projecting forwardly on an upwardly curved plane from the upper extremity of each of the strips 18 and 19 are members, 18^a and 19^a respectively, and these members are secured to the strips, 18 and 19 respectively, by means of hinges which permit of a downward swing of the members from their normal positions. The movement of the members is governed by racks operating on lugs secured to the frame, as clearly shown in Fig. 8, thus obviously making the members adjustable as to their relative positions to the strips. The purpose of these members is to provide for the continuation of the track over the apex of the frame. The strips 18 and 19 are slidably connected with strips 20 and 21 respectively, which are designed as continuations of the track, the break in the track caused by the joining of respective strips being for the purpose of making the track adjustable as to length. The lower ends of the strips 20 and 21 are loosely connected to the rear portion of the base 11 of the frame. The means of connection between the strips 18 and 20 and 19 and 21 respectively, are as shown in Fig. 3, there being a roller underneath the lower strip for the purpose of causing the adjustable means to be easily operated. The upper surface of the strips 18 and 19 are inclined near the lower ends to the lower surface as shown in Fig. 2, for the purpose of obviating an abrupt obstruction in the track.

The numeral 22 indicates a frame loosely secured to the rear portion of the frame mounted on the wagon for the purpose of causing a continuation of the track which will reach from the running gear of the wagon to the ground, or rather from the frame mounted on the running gear of the

wagon to the ground and the carrier is supposed to move upwardly from the ground over the extension frame and over the frame on the wagon until it reaches the summit. It is obvious that the incline of the track may be changed, and the summit thereof elevated as the stack grows higher, at the will of the operator without changing the relative position of the summit of the track from its position immediately above and in a vertical plane with the standards 12 and 13.

The carrier which is employed in this loader comprises two frames 23 and 24, hinged at their lower edges to each other to form a V-shaped trough and consisting of a number of parallel strips secured by cross-bars. Said trough extends over and beyond each side of said loader frame and is mounted partially on wheels 28 which travel on track 18 and partially on a movable bearing, as hereinafter described. Pivotaly secured to the lower forward portion of the truck are two tubular rods or bars 25, one at each corner. Said bars are slotted on their upper sides, as at 25' and carry slidably within their interiors rods or bars 26. Said rods or bars 26 are secured, as by fastenings 26' to the lower sides of the frame 23, one on each side of the inclined members 18. It is evident that as the carrier is elevated or lowered over the track-way members 18, the bar 26 is reciprocated in the tubular rod 25. Frame 23 is provided at its lower end with pulleys 23' which operate, by means of cables 27, as hereinafter set forth to move said carrier upon the incline.

Near that portion of the frame 23 which is adjacent the track, and on each longitudinal side thereof, I have secured a cable 27 which projects forwardly and upwardly therefrom over a pulley 23' mounted on its respective side and at the summit of the frame and thence downwardly and inwardly to a central double pulley at the base of the forward part of said frame where the two cables meet, each passing over its respective wheel of the double pulley and thence passes outwardly where they are connected with a windlass or to any means for operating them. These cables are designed to operate as companions in drawing the carrier up and obviously they are of equal length and operate in unison one with the other, and by the same moving means. The frame 24 is provided on its under surface with two flanged wheels 28 which are designed to engage and operate upon their respective strips forming the track upon which the carrier moves. Each of the strips comprising the frame 23 is provided at its outer extremity with a casting 29, on which are upwardly projecting pointed lugs which are designed for the purpose of retaining, or assisting to retain, the hay on the rack. The various frames which

I have described are each provided with supports and strengthening members as shown.

In practical operation, my device is placed upon the running gear of a wagon, and the frame 22 folds upwardly upon the track thus being out of the way for moving purposes. The wagon is then drawn to the place where the stack is to be made, and the ratchet or gear wheels 16 then operated until the apex or summit of the frame is at the lowest position possible. The frame 22 is then dropped downwardly until its outer end rests upon the ground and the carrier is then allowed to travel downwardly upon the track until it reaches the ground and assumes the position shown in the dotted lines in Fig. 2. When the carrier is lying upon the ground, the frame 24 is at the inclined position shown in the dotted lines in Fig. 2. When the hay is deposited upon the carrier, the propelling means for the cables is then operated, thus obviously, drawing the carrier upwardly on the track, the shafts 26 projecting and moving through the channels in the members 25, and as the carrier moves upwardly the frame 24 gradually assumes a different relative position to the carrier 23 as is clearly shown in Fig. 2. When the conveying cables have drawn the carrier upwardly until their securing points touch the pulleys, the upper limit of movement has been reached, but prior to the time it has reached this limit of movement, the flanged wheels 28 have already passed the summit of the frame and have moved downwardly on the other side thereof thus releasing the support for the back of the hay and permitting it to slide off the carrier upon the stack. The tension upon the cables is then released, and the carrier by its own weight moves downwardly until it again rests upon the ground and is in position to receive a second load. As the stack increases in height, the ratchet or gear wheels 16 are operated upon their respective racks and the summit or apex of the frame on the wagon is thereby raised the track itself lengthening the necessary distance.

The operating cable may be secured to the various parts of my device in any manner desired or may be passed over any number of pulleys desired without changing my invention the only object of the cable being to elevate the carrier upon the track. Any means for retarding and stopping the movement of the carrier, when it reaches the apex of the frame, may also be employed without changing my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States is:

1. A hay stacker, comprising in combination with the running-gear of a wagon, a base portion mounted on said wagon gear, an extensible inclined track, a foldable continuation of said track adapted to reach the

ground, a carrier movable on said track comprising a foldably hinged trough, rods suspended below said trough, and pivoted tubular rods secured to said base and having slots to permit the entrance of said suspended rods therein.

2. A hay stacker, comprising in combination with the running gear of a wagon, a base portion mounted on said wagon gear, an extensible inclined track, a foldable continuation of said track adapted to reach the ground, a carrier movable on said track comprising a foldably hinged trough, rods suspended below said trough, and pivoted tubular rods secured to said base and having slots to permit the entrance of said suspended rods therein, said extensible track

comprising overlapping strips slidably secured together and having beveled ends to form a continuous incline.

3. A hay stacker, comprising in combination with the running-gear of a wagon, a base portion mounted on said wagon gear, an extensible inclined track, a foldable continuation of said track adapted to reach the ground, a carrier movable on said track comprising a foldably hinged trough, means to move said carrier and spread its parts, and a rack and gear for vertically adjusting the front end of said inclined track.

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Witnesses:

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