

(No Model.)

3 Sheets—Sheet 1.

J. T. HARE.
HAY LOADER.

No. 570,753.

Patented Nov. 3, 1896.

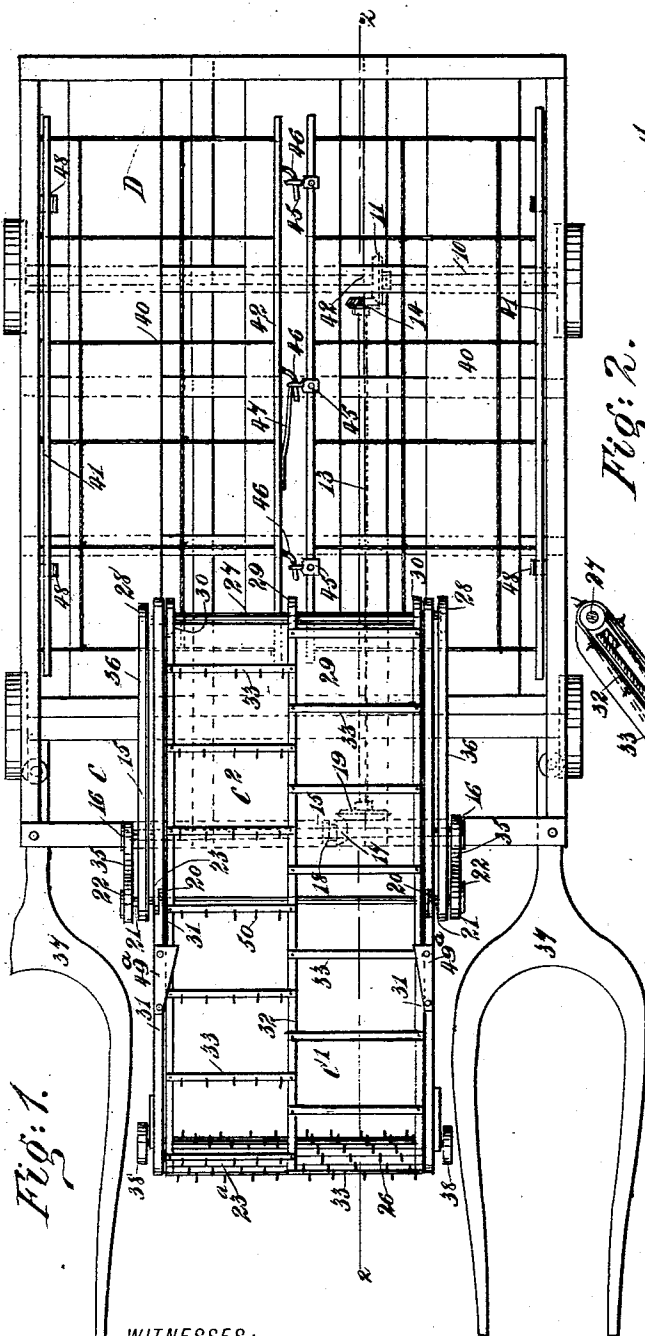


Fig. 1.

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Chas. Nida
Fred. Acker

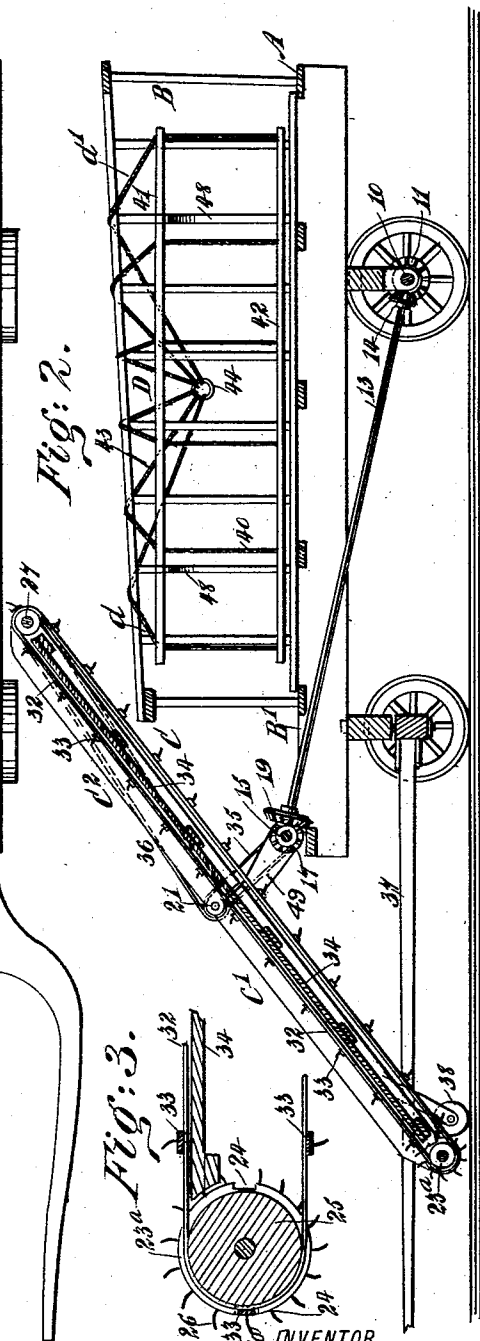
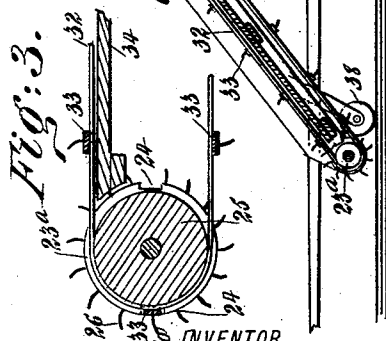


Fig. 2.

Fig. 3.



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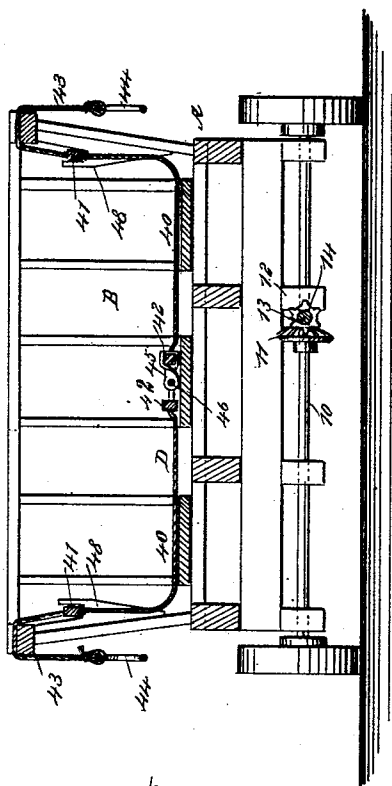


Fig. 4.

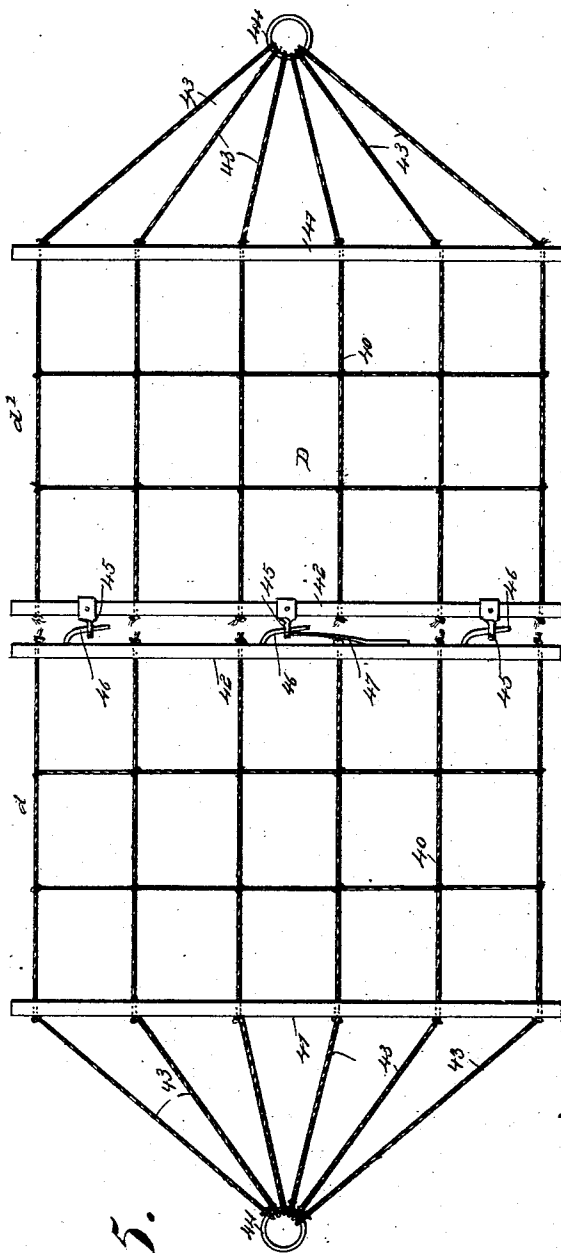


Fig. 5.

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Fig. 6

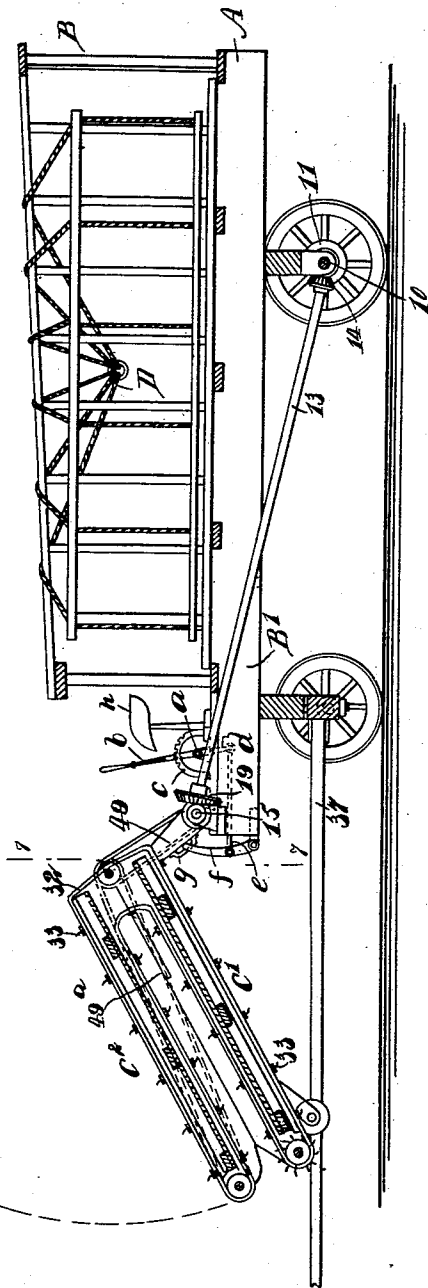
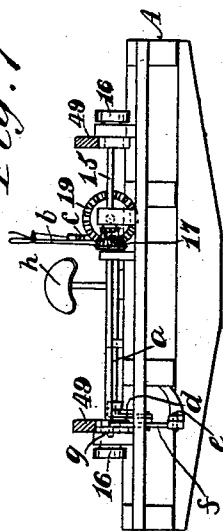


Fig. 7



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UNITED STATES PATENT OFFICE.

JOHN THOMAS HARE, OF FRESNO, CALIFORNIA.

HAY-LOADER.

SPECIFICATION forming part of Letters Patent No. 570,753, dated November 3, 1896.

Application filed November 26, 1895. Serial No. 570,165. (No model.)

To all whom it may concern:

Be it known that I, JOHN THOMAS HARE, of Fresno, in the county of Fresno and State of California, have invented a new and Improved Hay-Loader, of which the following is a full, clear, and exact description.

My invention relates to an improvement in hay-loaders, and the object of the invention is to provide a loading device adapted for attachment to a wagon and to take the hay or straw from the ground and convey it into the basket or upon the body of the wagon, and also to provide a means for driving the elevator of the hay-loader from an axle of the wagon, and also to so locate the elevator, carrier, or conveyer that it will not interfere with the animals employed to draw the vehicle.

Another object of the invention is to construct the elevator or conveyer in such a manner that it may be folded up out of the way when not required for use, or removed entirely from the vehicle, and also to provide a net adapted to be received and held within the basket or body of the vehicle for the reception of the grain or straw, the net being so constructed that when the vehicle reaches the place where the load is to be discharged the load may be lifted bodily from the vehicle by simply raising the net and dumped therefrom wherever desired.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improved loader. Fig. 2 is a section taken longitudinally and vertically through the same substantially on the line 2 2 of Fig. 1. Fig. 3 is a transverse section through the take-up roller or elevator, the section being close to one of the sprocket-wheels. Fig. 4 is a transverse section through the body of the vehicle portion of the loader, taken forward of the rear axle. Fig. 5 is a plan view of the net. Fig. 6 is a longitudinal section of the machine, showing the elevator folded and the device supplied with means for raising and lowering

the elevator; and Fig. 7 is a sectional view on the line 7 7 of Fig. 6.

In carrying out the invention the vehicle A may be constructed similar to the vehicle usually employed for carrying straw or grain from the field to the barn or to the place where it is to be stacked. Preferably, however, the vehicle is provided with a basket-body B, as illustrated, and the body is also preferably provided with an extended front platform B'. The rear wheels of the vehicle are adapted to revolve the rear axle 10, either by being secured directly thereon or through the medium of a pawl and ratchet, which latter when employed are of the usual or well-known type. The rear axle 10 has a beveled gear 11 secured to it in any suitable or approved manner, and in a hanger 12, projected downward from the bottom of the vehicle, the rear end of a driving-shaft 13 is journaled, receiving its motion from a beveled pinion 14, which is secured on the shaft and meshes with the beveled gear 11 on the rear axle.

The shaft 13 is carried upward and forward and is made to closely approach the forward end of the front platform B', at which point a transverse line-shaft 15 is journaled in suitable bearings, being provided at each of its extremities with a pulley 16, and intermediate of the ends of the shaft a beveled pinion 17 is loosely mounted thereon, having a clutch-face for engagement with a clutch 18, splined on the shaft, and when the pinion 17 is in mesh with a beveled gear 19, secured on the forward end of the drive-shaft 13, the pinion will likewise be in engagement with the clutch 18 and the line-shaft 15 will be revolved.

The elevator or conveyer C, as has been heretofore stated, is adapted to be placed in front of the vehicle, and its frame is made in two sections C' and C², connected at the center of said frame by means of a hinge 20, and the pivot-pins 21 of these hinges, as shown in Fig. 1, serve to carry each two pulleys 22 and 23, the pivots being loose in the knuckles of the hinges.

In the bottom portion of the lower section of the elevator or conveyer frame a take-up drum 23^a is transversely located and mounted

to revolve, being provided with longitudinal grooves 24, as shown in Fig. 3, and with a central depressed section, sprocket-wheel, or pulley 25, together with corresponding depressions or pulleys at each of its ends. Between the pulley-sections of the drum the drum is provided with teeth 26, which radiate therefrom and are preferably curved, as is also shown in Fig. 3, and as the drum revolves the teeth are adapted to pick up the straw or grain from the ground and carry it upward.

In the upper end of the upper section C² of the conveyer or elevator frame a transverse shaft 27 is journaled in the side bars of the frame, being provided outside of the frame at each end with a pulley 28, and inside of the frame the shaft 27 is fitted with three pulleys, a central pulley 29 and a pulley 30 near each of its extremities, these three pulleys corresponding to the pulleys formed upon the drum 23^a or on the drum-shaft.

The apron of the elevator comprises two side belts 31 and a central belt 32, together with slats 33, connecting opposing belts. The slats extend from one outside belt to the center belt only, being in length about half the width of the conveyer-frame, and said slats are arranged so that the slats upon one side will be between the slats upon the opposite side of the said frame, as illustrated in Fig. 1. Two plates 49^a are respectively fixed to the upper side portions of the elevator and serve to hold the carrier-belt in place when the elevator is folded, as may be seen in Fig. 6.

The end belts pass over the inner end pulleys 30 of the shaft 27 and the corresponding pulleys on the drum 23^a or the drum-shaft, the central belt 32 passing over the central pulleys on the same parts, while the slats, as the apron revolves, will enter the grooves in the drum and assist in turning the same. The apron is made to pass over a platform or bottom 34, provided for the frame in each section of the elevator, and the apron is driven by passing belts 35 over the outer pulleys 22 at the center of the elevator-frame and over the pulleys 16 on the extremities of the line-shaft 15 and connecting the outer pulleys 28 of the upper elevator-shaft 27 by belts 36 with the inner pulleys 23 of the pivoted shafts of the elevator.

Thills 37 are located one at each side of the elevator, being preferably attached to the forward axle, as shown in Figs. 1 and 2, and the lower end of the elevator or conveyer is held a predetermined distance from the surface of the ground by means of guide-wheels 38, connected with the lower side portions of the frame, as shown also in Figs. 1 and 2.

In connection with the basket or body of the vehicle I preferably employ a net D, made in two sections *d* and *d'*, as shown in Fig. 5. Each section of the net consists of a body or netting of any description, an outer longitudinal bar 41, a parallel inner longitudinal bar 42, to which the body is secured, and a

series of cords or cables 43, attached to the end bars 41, all of the cables or cords being gathered together at their outer extremities and connected by a ring 44 or the equivalent thereof.

The inner bar 42 of one section of the net has eyes 45 secured to it facing the opposing section, and the opposing section has attached to its inner bar hooks or pins 46, adapted to enter the eyes 45 with a sliding movement, and one or more of these pins may be, and preferably are, provided with springs 47, serving to lock them in the eyes after they have been entered in the same.

In the application of the net the central longitudinal bars, after they have been connected, are made to rest on the central portion of the bed of the wagon longitudinally thereof, while the outer bars 41 are received in brackets 48, secured to the inner side face of the basket or bed of the vehicle, as shown in Fig. 4, the concentrated cords at the sides of the net being hung loosely over the sides of the said basket, as is shown in Figs. 2 and 4.

The elevator or conveyer C is provided with brackets 49, secured usually to the side portions of the lower section at or near the top, and these brackets may be loosely mounted on the line-shaft 15 or they may be made entirely removable from the shaft and from the front platform of the vehicle, and each of the slats of the conveyer apron or belt is provided with a series of teeth 50, the said teeth being curved preferably in a downwardly and forwardly direction, or these teeth may be otherwise formed. Thus, in operation, the elevator or conveyer having been placed at an inclination to and in front of the front portion of the vehicle, as shown in Figs. 1 and 2, when the vehicle is drawn forward, the driving mechanism being properly coupled, the toothed drum of the elevator, together with the teeth on the slats of the same, will take up the straw or hay, and the latter will be carried upward on the apron of the elevator and dropped into the body or basket of the wagon and into the net when such a device is used.

When the vehicle reaches the barn or other place where the load is to be disposed of or prior to being driven to that point, the elevator may be broken at its center, turning on its hinge and placed with one section parallel to the other in an upright position on the front platform B' of the vehicle, being at that time entirely out of the way, or, as heretofore stated, the elevator may be entirely removed from the vehicle.

When the machine arrives at the place where the load is to be taken off, it is simply necessary to gather the concentrated side portions of the net over the load and hitch a draft rope or chain to the two rings 44 of the net, which will have been brought together, and lift the net, together with the entire load, out of the vehicle, whereupon by properly manipulating the latch or latches 47, if used,

and sliding the two sections of the net in opposite directions at their bottom the said sections will separate and the entire load will be dropped to the desired place.

I desire it to be understood that a seat will be provided for the driver and that a lever may be placed convenient to the driver and connected with the conveyer in such a manner as to elevate the conveyer sufficient to clear an obstruction. One means for doing this is shown in Fig. 6, and consists in a shaft *a*, journaled in bearings carried by the platform B and having at its inner end a lever *b*, co-operating with a ratchet-bar *c*, fixed on the platform, the shaft also having a downwardly-extending crank-arm *d*, to which a rod *e* is pivotally connected. The rod *e* in turn connects with the lever *f*, which is fulcrumed on the platform B' and has sliding connection with the left-hand arm 49, as shown at *g*. Thus by rocking the lever B the elevator may be raised or lowered at will. A seat *h* is carried by the platform B and located to the right of the lever *b*, so that the operator may hold the reins of the team in his right hand and manipulate the lever *b* with his left.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a hay-loader, a vehicle, an elevator located in front of the same, and constructed in hinged sections, one section being capable of folding on the other and both sections of folding on the vehicle, and driving mechanism for the elevator, and operated from the running-gear of the vehicle, substantially as and for the purpose specified.

2. A hay-loader, comprising a vehicle having a basket-body portion and a forwardly-extending platform, an elevator having two hinged sections, one section being hinged mounted on the platform of the vehicle and the elevator being capable of folding so that its sections will lie parallel and the elevator when folded being also ca-

pable of movement to stand vertically from the platform, and means for moving the elevator, substantially as described.

3. A hay-loader, consisting of a vehicle having a platform, an elevator-section having arms, a driven shaft on the platform of the vehicle to which shaft the arms are pivoted, a second elevator-section hingedly connected to the inner end of the first section, a shaft extending transversely on the elevator and at its hinge, said shaft being geared with the shaft on the platform, a shaft at the outer end of each elevator-section, one of said shafts being connected with the shaft at the hinge of the elevator-sections, and a carrier-belt driven by the shafts at the ends of the elevator-sections, substantially as described.

4. A hay-loader having an elevator, the elevator consisting in a frame having two hinged sections, one of which is pivotally mounted on the hay-loader, a carrier-belt for the elevator, and two plates fixed one at each side portion of one section of the elevator and adjacent to its hinged end, the plates being capable of engaging the carrier-belt and of holding the same in place as the elevator folds, substantially as described.

5. A hay-loader having a vehicle provided with a basket-body portion and a forwardly-extended platform, a longitudinal shaft geared with an axle of the vehicle and projected to the platform, a transverse shaft journaled on the platform and geared with the longitudinal shaft, two arms pivoted to the transverse shaft, two elevator-frame sections pivotally connected with each other and one of which is rigidly connected to the arms, an elevator carried on the sections, and gearing connecting the elevator and the transverse shaft, substantially as described.

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Witnesses:

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DANIEL E. COLLINS.