

(No Model.)

3 Sheets—Sheet 1.

H. L. BOTSFORD.
HAY LOADER.

No. 406,699.

Patented July 9, 1889.

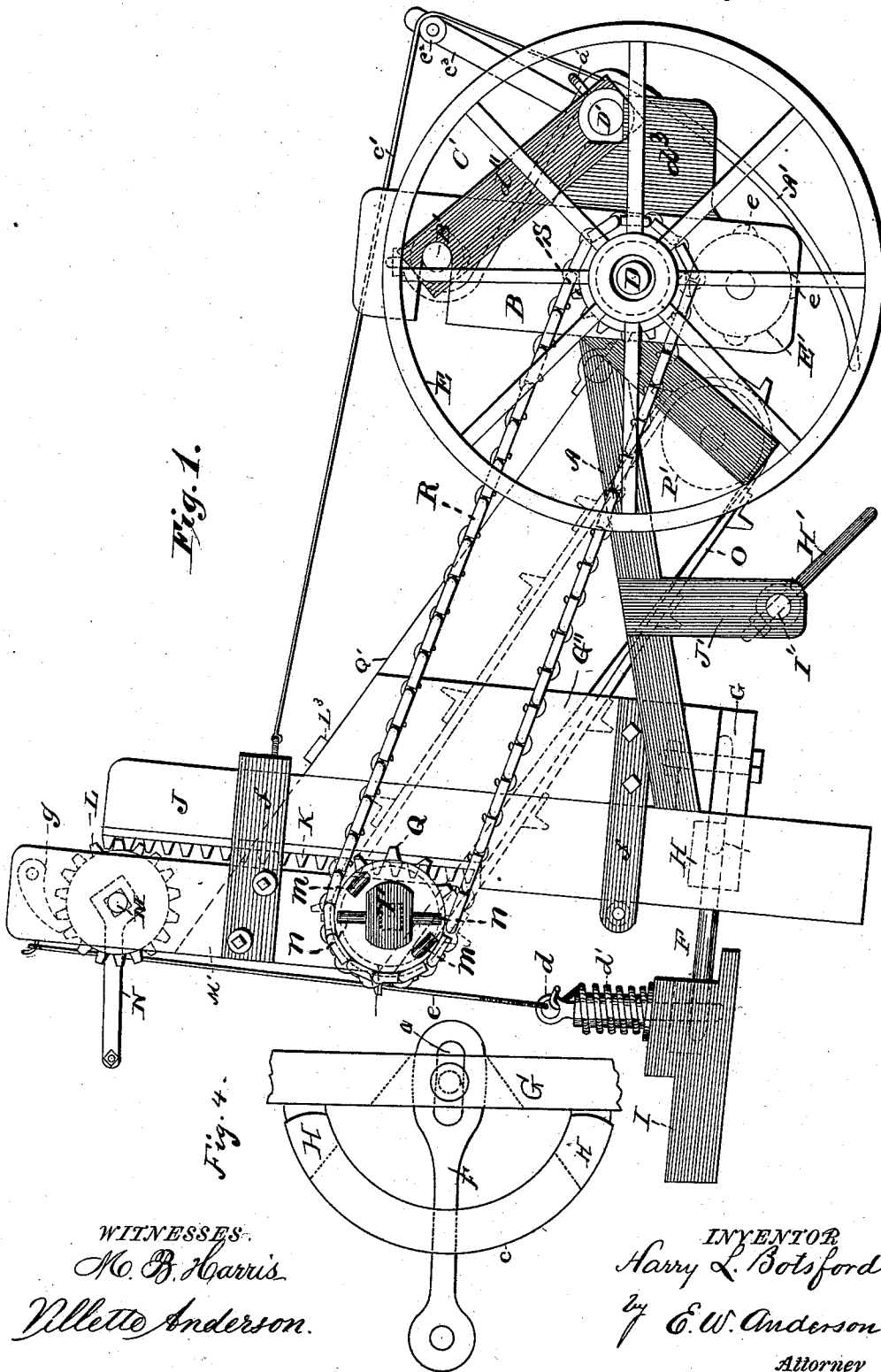


Fig. 1.

Fig. 4.

WITNESSES:
No. B. Harris
Villette Anderson.

INVENTOR
Harry L. Botsford,
by E. W. Anderson,
Attorney

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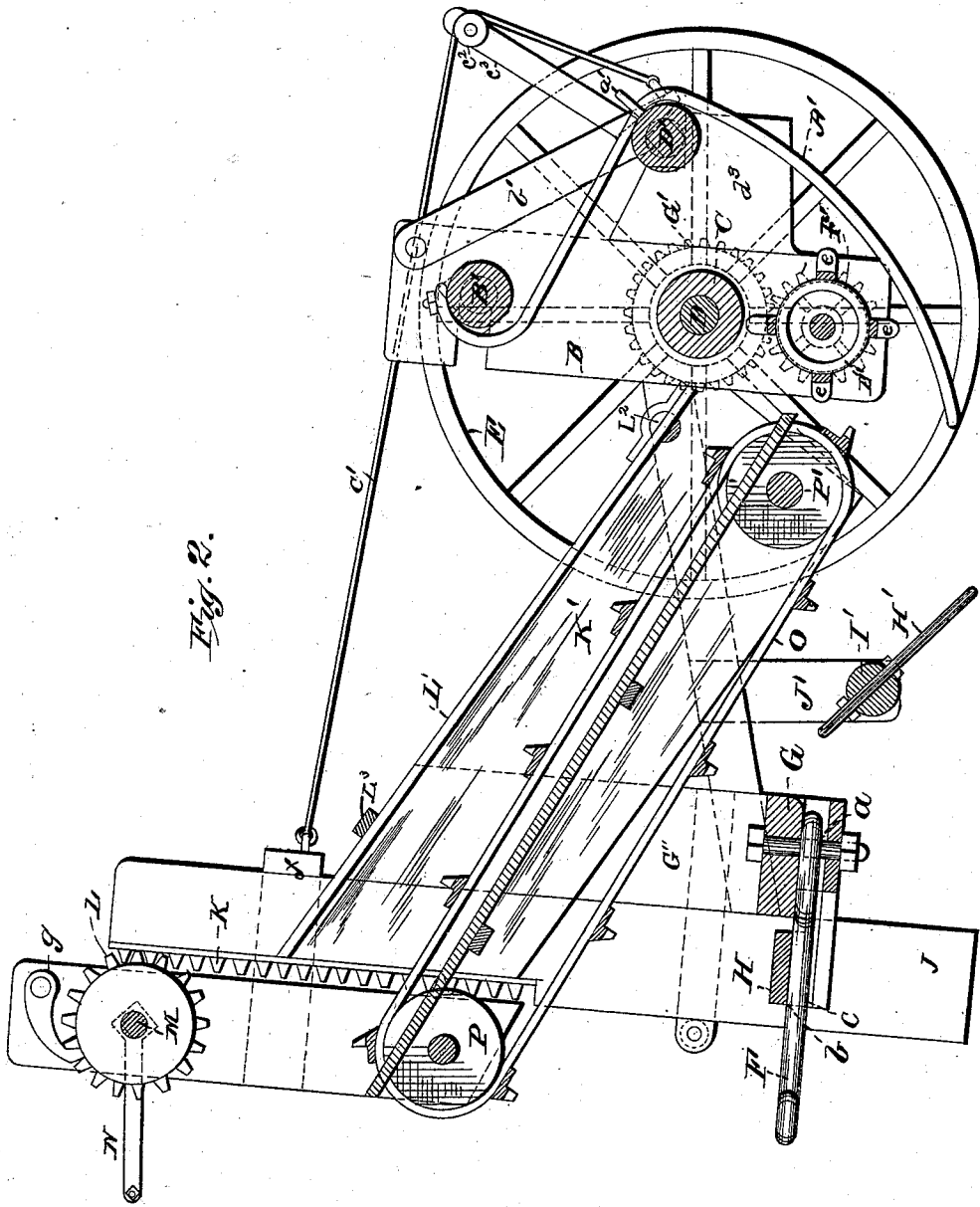


Fig. 2.

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Fig. 3.

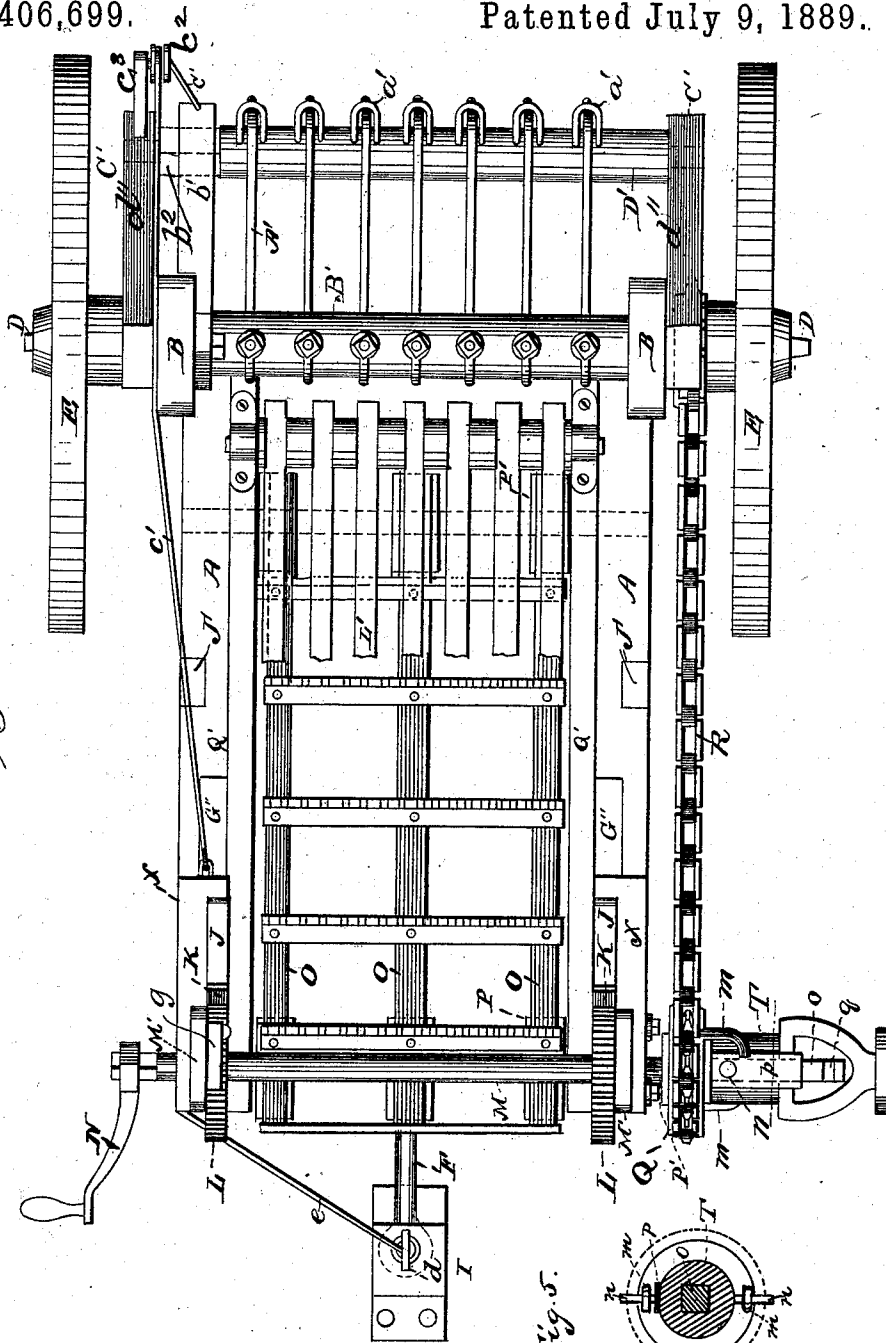
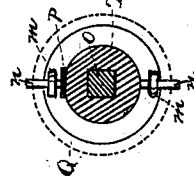


Fig. 5.



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UNITED STATES PATENT OFFICE.

HARRY L. BOTSFORD, OF CLIFTON, DAKOTA TERRITORY.

HAY-LOADER.

SPECIFICATION forming part of Letters Patent No. 406,699, dated July 9, 1889.

Application filed November 27, 1888. Serial No. 291,937. (No model.)

To all whom it may concern:

Be it known that I, HARRY L. BOTSFORD, a citizen of the United States, and a resident of Clifton, in the county of Sully and Territory of Dakota, have invented certain new and useful Improvements in Hay-Loaders; and I do 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is a side elevation of my improved hay-loader. Fig. 2 is a sectional elevation, and Fig. 3 is a plan view of the same. Fig. 4 is an enlarged detail plan view of the coupling-link F and its adjunctive parts. Fig. 5 is a detail view of the block T and wheel Q, together with their adjunctive parts.

This invention relates to improvements in hay-loaders; and it consists in the construction and novel arrangement of parts, as hereinafter set forth, and pointed out in the claims.

The loader is designed to be secured to the rear end of a hay-wagon and to be drawn therewith over the swath or windrow of hay, and the loader is so constructed that the rake may be released to pass over large stones or other obstructions by a man on the load of hay, and extension-legs are provided that may be lowered to the ground by the man on the load when it is desired to support the loader detached from the wagon.

Referring by letter to the drawings, A designates the inclined side bars of the draft or main frame, which are secured at their rear ends to the vertical bearing-strips B, connected transversely by the hollow bar C, through which the driving axle or shaft D has its bearing. The shaft D has the drive-wheels E rigidly secured to its outer ends, and by placing the shaft within the hollow bar C the said shaft cannot interfere with or clog the hay while revolving.

To attach the loader to a wagon, the link F is provided, which is pivotally secured to the cross-bar G of bars G'', depending from the elevator-frame Q', by means of a bolt passing through said cross-bar and the open-

ing a in the link, which is elongated, so that the link may be moved lengthwise should it become necessary while coupling. The shank portion of the coupling-link is normally seated in the notch b in the frame H, which is secured to and projects forward from the cross-bar G; and the arc slot c is formed in said frame, so that the link may be moved laterally while coupling to the coupling-pin d in the block I, which is bolted to the frame-work or rack of the wagon, said coupling-pin being retained in its lower position by an encircling coiled spring d'. A cord e extends from the pin d to any convenient point on the frame of the loader within reach of the person on the wagon, so that the pin may be operated therefrom.

J shows extension-legs adapted to move in the guides f, secured to the loader-frame, and having the racks K engaging with the gears L on the shaft M, having journal-bearings through the extended portion M' of the elevator-frame, as shown. A crank N is secured on one end of the shaft M, by means of which the legs may be lowered to the ground from the load in the wagon when it is desired to disconnect the loader from the wagon, and a dog g, engaging with one of the gears, holds the legs as adjusted either up or down.

O is an endless carrier turning on the pulleys P P', having journal-bearings in the elevator-frame Q'. The journal of the pulley P is extended outward through the frame at one end, as shown, and has loosely mounted upon it the sprocket-wheel Q, which is driven by the chain R, and the sprocket-wheel Q is provided with clutch-arms m, designed to engage with the arms n on the clutch-block T, which has an angular longitudinal opening adapted to fit upon the extended angular portion o of the journal, which is long enough to allow the block to be drawn outward to disengage the arms n and m, thus throwing the carrier out of gear when it is desired to transport the loader from field to field. When drawn outward, the spring-keeper p, secured to the block T, enters the notch q in the angular portion of the journal and prevents the block from being wholly withdrawn.

A' shows the spring rake-teeth secured at

their upper ends to the bar B' of the frame C', which has journal-bearings on the upper portion of the strips B, held therein, it may be, by button-like plugs (not shown) secured to said strips B and entering the unoccupied portions of the said bearings, and the said teeth extend rearwardly through the guide-staples *a'* on the bar D' of the frame C', and thence downward and inward to a contact with the ground. The frame C' is held rigidly in place by the dog *b'*, pivoted at one end to the strip B and engaging at its other end with the bar D', forming the lower end of the frame C', comprising the inclined side bars *d*², secured at their lower or outer ends upon the ends of the shaft D', which ends are in turn supported in recesses in the brackets *d*³, secured to the strips B. The lower or engaging end of the dog *b'* has an angular recess or notch, which receives the corresponding portion *b*² of the shaft D'. When it is desired to release the frame to allow the rake-teeth to ride over an obstruction, the dog *b'* may be released by means of a chain or rope *c'*, which is secured at one end to the dog *b'* and passes over a pulley *c*² on a support or post *c*³, secured to one of the side bars *d*² to a point at the upper end of the loader within reach of a person on the loaded wagon. The staples *a'*, however, allow sufficient play for the teeth to ride over small stones or through small obstructions.

E' is the feeding-roller, having the projections thereon, having journal-bearings in the strips B near the lower ends, and the said feed-roller is revolved in a direction opposite that of the endless carrier by means of the pinion F' on the extended journal meshing with the pinion G' on the shaft D.

H' designates fingers secured to the rock-shaft I', journaled in bearings on the pendent bars or portions J', depending from the side bars. The said fingers normally stand at an angle with their lower ends toward the rake-teeth, and are designed to ride upon the surface of the ground or hay, so that when the hay is raked up by the rake-teeth it will be

piled upon the upper sides of the fingers, and the hay will be forced through the throat K' to the carrier by the revolving feed-roller. These fingers H' may be dispensed with when the loader is operating in long hay or grain; but in short hay, or hay thinly spread upon the ground, it is desirable to use the fingers, as described.

A skeleton guide-board L' is pivoted, as at L², at its lower end within the elevator-frame above the endless carrier, and is designed to prevent the hay thereon from blowing off, its upper portion being suitably supported in position by a cross-bar L³, applied thereto and resting upon the upper edges of the elevator-frame Q'. The object in pivoting the guide-board is so that the hay will not pile up or become choked on the carrier.

Having described my invention, what I claim is—

1. The combination, with the endless carrier, the pulleys, and the driving mechanism, the sprocket-wheel of the driving mechanism being loosely mounted on the extended journal of one of the pulley-shafts, the clutch-arms thereon extending in opposite directions, of the clutch-block having the angular longitudinal opening engaging an angular portion of the extended journal, said angular portion having a notch, the vertical arms thereon, and the spring-keeper, substantially as specified.

2. The combination, with the loader-frame, the side pieces B, wheels E, the shaft D, and the rake-teeth, of the rock-shaft having journaled bearings in the depending portions of the frame and located in front of the rake-teeth, the rearwardly-inclined fingers secured to said rock-shaft, and the feed-roller having the projections and operated by the pinions on the wheel-axle, substantially as set forth.

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

HARRY L. BOTSFORD.

Witnesses:

JULIA A. BROWN,
J. H. GROPENGLIESER.