

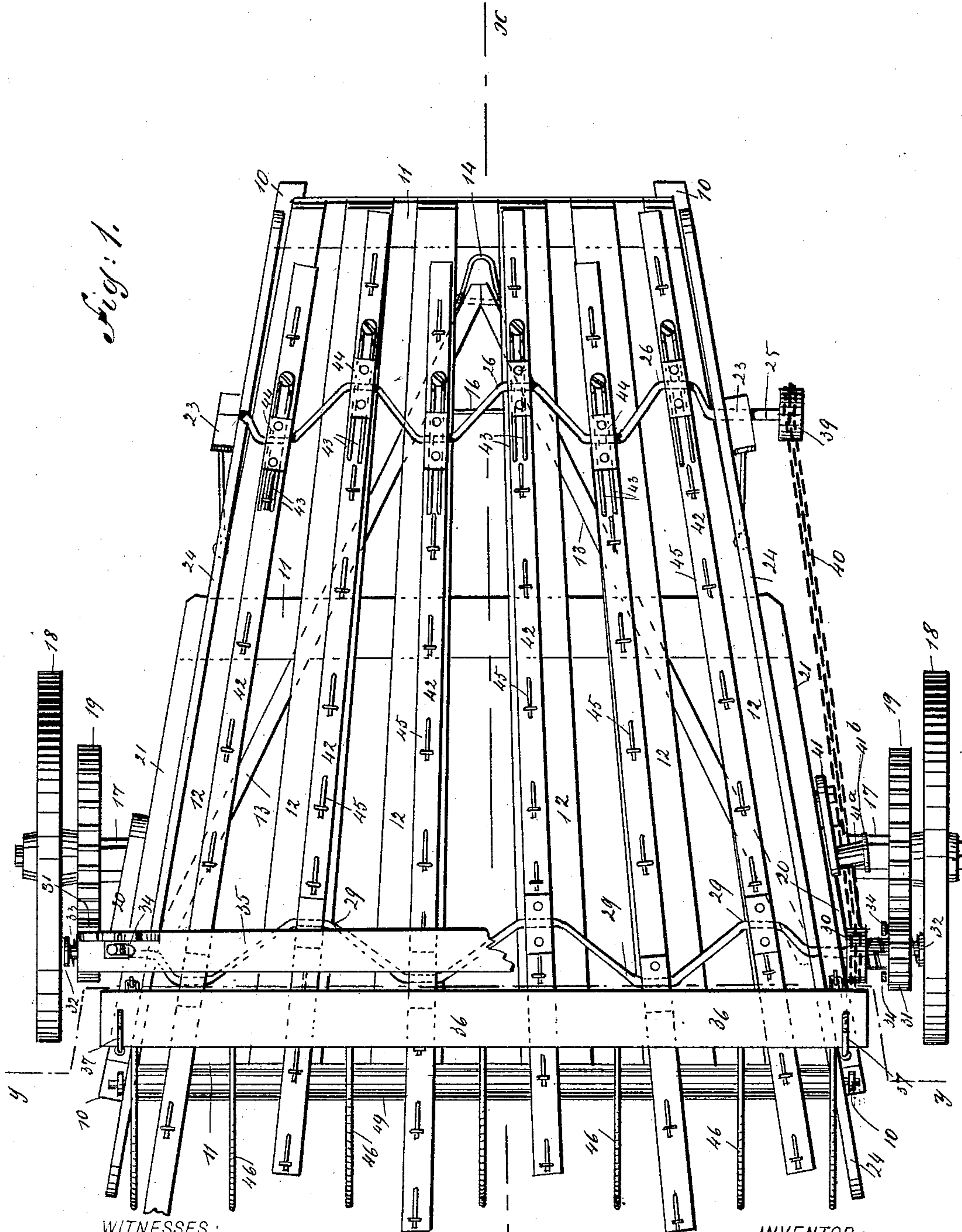
(No Model.)

3 Sheets—Sheet 1.

A. LASACK.
HAY LOADER.

No. 428,844.

Patented May 27, 1890.



WITNESSES:

Chas. Nida.
C. Sedgwick

INVENTOR:

A. Lasack
Munn & Co

BY

ATTORNEYS.

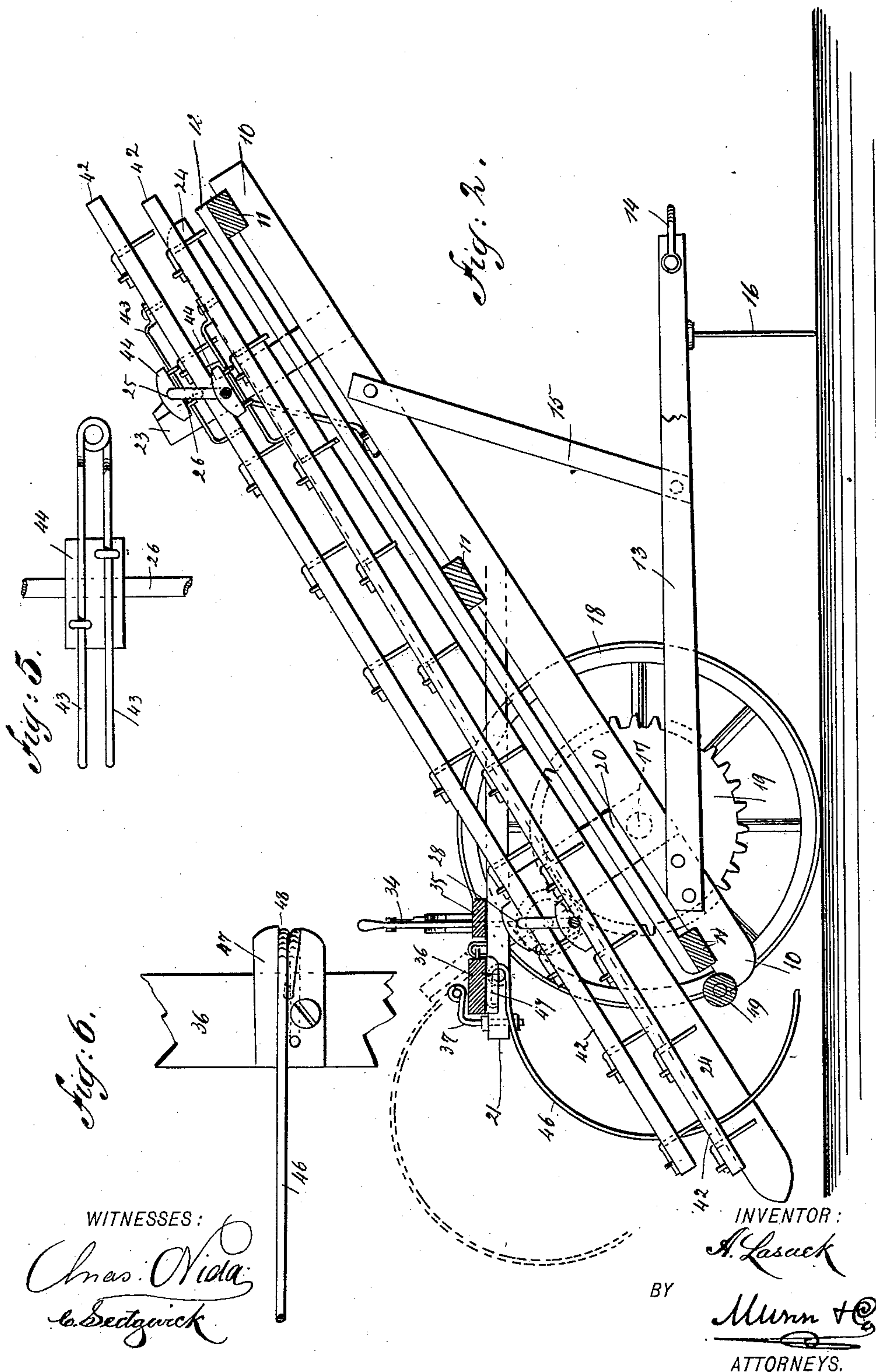
(No Model.)

3 Sheets—Sheet 2.

A. LASACK.
HAY LOADER.

No. 428,844.

Patented May 27, 1890.



(No Model.)

3 Sheets—Sheet 3.

A. LASACK.
HAY LOADER.

No. 428,844.

Patented May 27, 1890.

Fig: 4

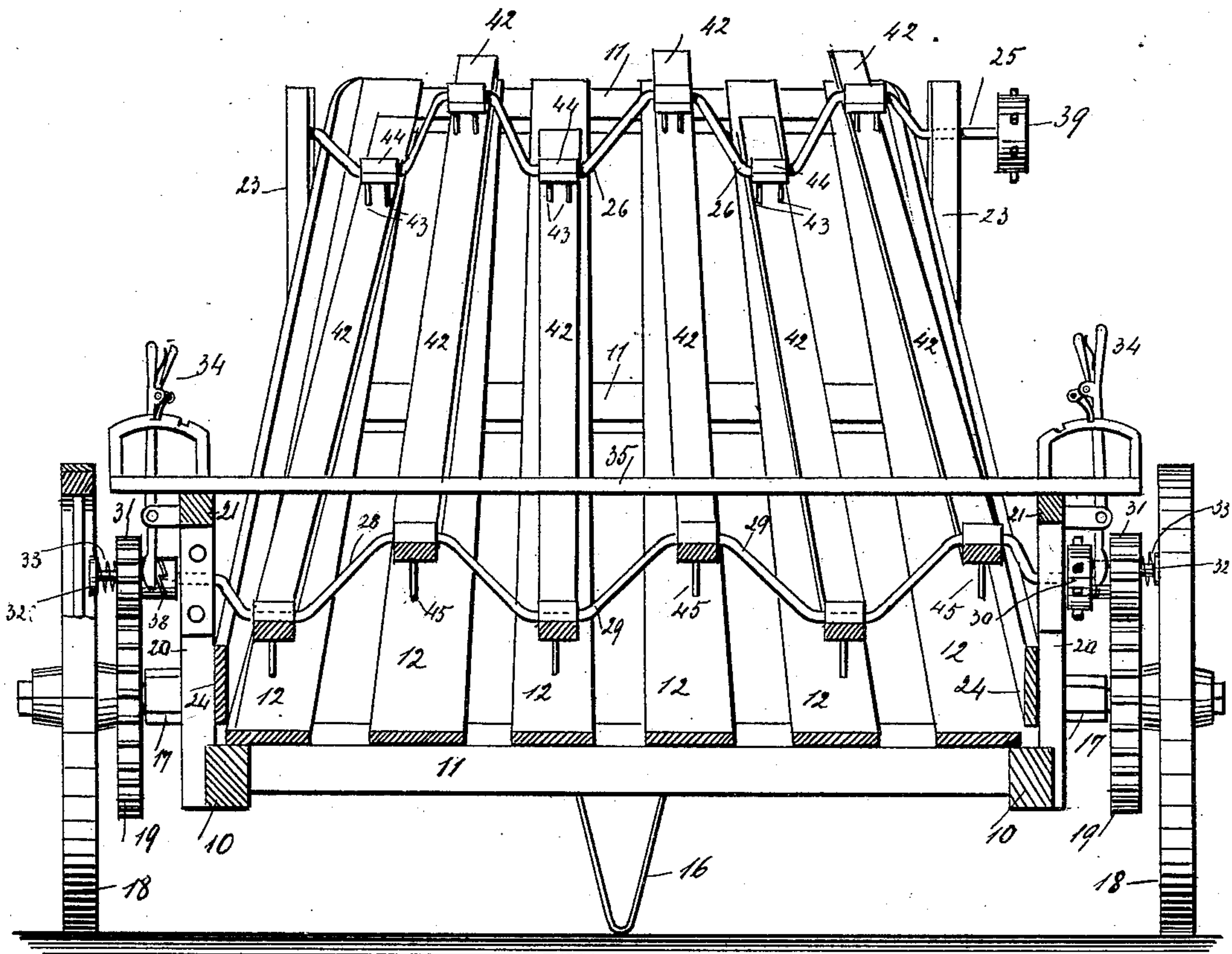
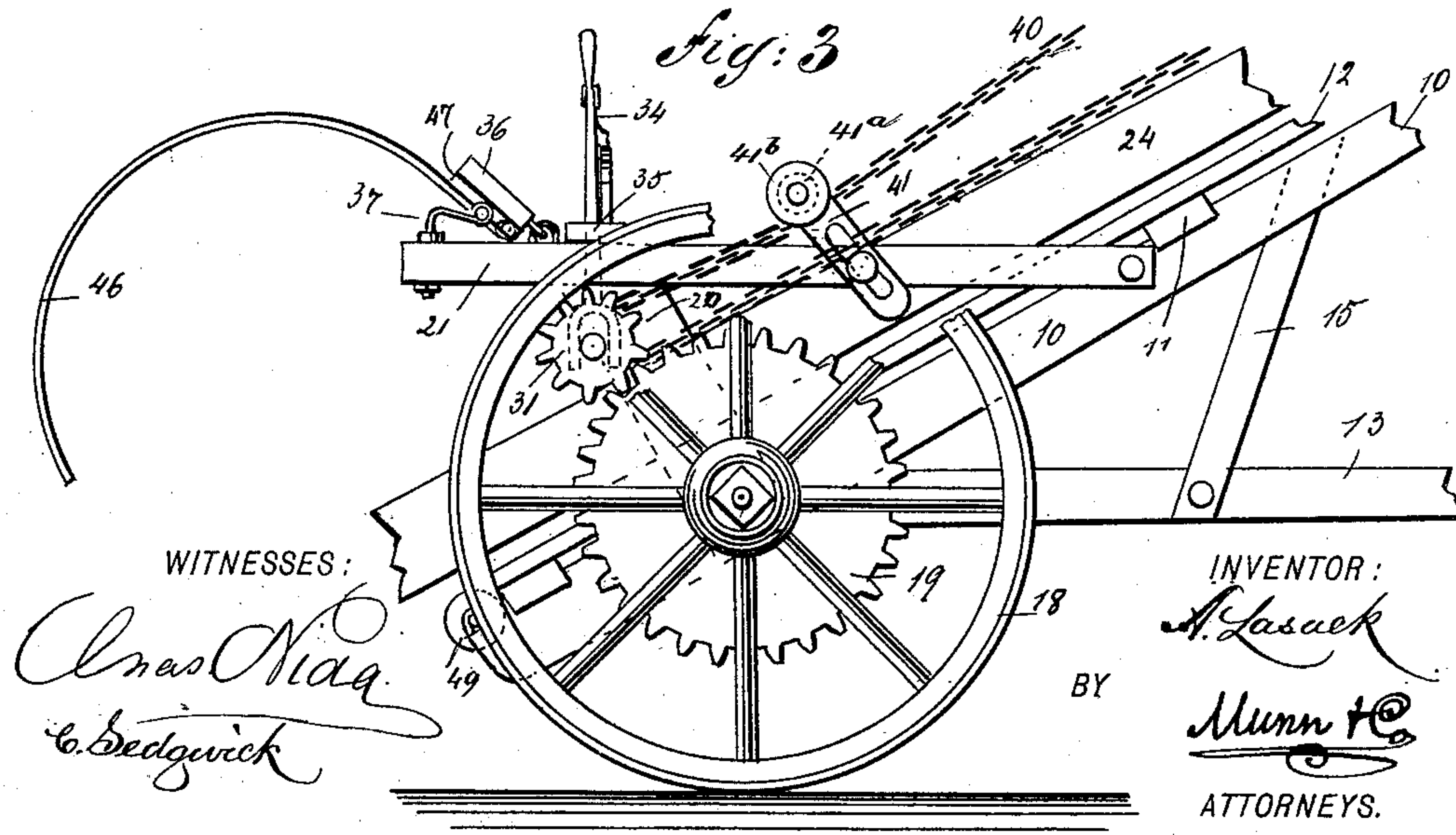


Fig: 3



WITNESSES:

Chas. H. Hagg
C. Sedgwick

INVENTOR:

A. Lasack

BY

Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

ADOLPH LASACK, OF OXFORD JUNCTION, IOWA.

HAY-LOADER.

SPECIFICATION forming part of Letters Patent No. 428,844, dated May 27, 1890.

Application filed September 14, 1889. Serial No. 323,941. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH LASACK, of Oxford Junction, in the county of Jones and State of Iowa, 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 has for its object to provide an implement of simple and durable construction; and a further object of the invention is to improve the construction of the hay-loader for which Letters Patent were granted to myself May 28, 1889, No. 404,096.

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 figures of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the implement, partly broken away. Fig. 2 is a longitudinal section on line *x x* of Fig. 1. Fig. 3 is a detail view showing the belt-tightener. Fig. 4 is a transverse section on line *y y* of Fig. 1. Fig. 5 is a detail view of one of the guide-blocks for the upper crank-shaft, and Fig. 6 is a detail view of one of the tooth-clamps.

The frame of the implement is wider at the base than at the top, and consists of two side pieces 10, connected by suitable cross-bars 11, upon the upper faces of which cross-bars a series of spaced strips 12 are secured, extending longitudinally from top to bottom of the frame, forming the bed thereof. The frame is normally retained in an inclined position or at an angle to the ground over which it is adapted to travel by an essentially V-shaped tongue 13, having its members secured to the inner faces of the side bars of the frame, near the base of the latter, the apex of the tongue, which is horizontally located, being provided with a suitable clevis 14 for attachment to any suitable form of hay-wagon. The tongue 13 is provided with upright braces 15, attached thereto and to the side bars of the frame, and with a suitable rest or leg 16, secured to the bottom of the tongue near its clevised end, whereby when the loader is not in use and the leg rests upon the ground the frame and mechanism carried thereby will be

supported in the inclined position heretofore described.

To each side bar of the frame, near the lower end of the same, standards 20 are secured, and a stud-axle 17 is secured in the lower ends of each of these standards, extending therethrough into the bars 10, and upon each of said axles a drive-wheel 18 is loosely mounted, having attached to or integral with its inner face a spur-wheel 19. A brace-bar 21 is secured to the upper surface of each standard and to the frame side bars at or near their centers, which braces project rearwardly beyond the standards, as illustrated in Fig. 2. Similar standards 23 are secured to the side bars of the frame near their upper ends, and to the inner faces of the said standards 20 and 23 a body-bar 24 is attached, extending from the upper portion of the frame downwardly parallel with the side bars and beyond the base of the frame, as is best shown in Fig. 1, which body-bars are adapted to prevent the hay carried upward upon the bed of the frame from falling out at the sides thereof.

In the upper standards 23 the extremities of a crank-shaft 25 are journaled, provided with a series of crank-arms 26, and in the lower standards are journaled the extremities of another crank-shaft 28, provided with a series of crank-arms 29, corresponding in number to the arms of the upper crank-shaft 25. The extremities of the lower crank-shaft 28 project beyond the standards, and upon one projecting end of said crank-shaft a sprocket-wheel 30 is fixedly secured, having an outer clutch-face upon its hub, and a pinion 31 is loosely mounted upon each extremity of the said shaft, having a clutch-surface upon the inner face of its hub, one pinion being adapted to mesh with the clutch-surface of the sprocket-wheel and the other pinion with the clutch-surface of a disk 38, securely fastened to the left-hand extremity of the crank-shaft, the sprocket-wheel being attached to the right-hand extremity. Each outer end of the shaft is provided with a stop block or nut 32 and a spring 33, intervening the said nut or stop and the outer face of the pinion. Each pinion 31 is adapted to mesh with one of the spur-wheels 19 upon the stud-axles, and when the pinions so mesh with the spur-wheels and the fixed clutch-sections upon the lower crank-

shaft 28 the latter is driven by the rotation of the carrying-wheels 18.

In order to throw the pinions 31 out of contact with the fixed clutch-sections of shaft 28, a shifting-lever 34 is fulcrumed upon arms projected from the lower standards, the lower ends of which levers are bifurcated to span the hubs of the pinions, and when said shifting-levers are drawn inward at the top their lower ends force the pinions outward against the tension of the springs 33, disconnecting the pinions from the fixed clutch-sections of the lower crank-shaft, thereby stopping the revolution of the latter.

Each shifting-lever is provided with the ordinary form of thumb-latch and a rack to receive the same. The shifting-levers are preferably made to project upward through a cross-bar 35, secured to the upper face of the side brace-bars 21, and upon the outer extremities of the said brace-bars 21 a rake-head 36 is attached, the attachment being preferably made by hinging the forward edge of the said rake-head to the said brace-bars, and the under surface of the rake-head at its ends is kept normally in contact with the upper surface of the brace-bars by a locking-arm 37, held to turn in the extremity of each brace-bar and capable of clamping the upper surface of the rake-head. Thus, when desired, the rake-head may be thrown forward to attach the teeth or to detach them, as may be desired, by simply turning the locking-arms to one side.

Upon one outer extremity of the upper crank-shaft 25 a sprocket-wheel 39 is rigidly secured, which sprocket-wheel is connected by a chain belt 40 with the sprocket-wheel upon the lower crank-shaft. Thus when the lower crank-shaft is revolved the upper crank-shaft is rotated also.

In connection with the chain belt 40, I employ a tightener 41, which consists of an angle-arm having a slot in the lower end of its vertical member, the said member being adjustably secured to one of the brace-bars 21 by means of a set-screw, and upon the horizontal member of the arm a friction-roller 41^a is loosely mounted, while upon the extremity of this horizontal member a disk 41^b is secured, as best illustrated in Fig. 1. The belt may be tightened or loosened, as desired, by shifting the angle-arm downward, so that the friction-roller thereon will contact more or less with the upper surface of the belt.

To each crank-arm of each crank-shaft 25 and 28 a bar 42 is attached, the several bars being of sufficient length to extend above the upper shaft and considerably beyond the lower end of the base of the frame. The arms 42 are secured to the crank-arms of the lower shaft 28 by any approved form of journal-box; but the attachment of the said arms to the upper shaft is somewhat peculiar, and consists in securing upon the upper face of each bar, longitudinally of the same, two parallel essentially inverted-U-shaped tracks

43, the journal-boxes 44, through which the crank-arms 26 pass, being provided upon their under faces with eyes, through which the several tracks pass. The track 43 is formed of a piece of wire bent at its center to form an eye (see Fig. 5) for the passage of an attaching-screw, and then bent to form the parallel arms, the lower or free ends of the wire being bent downwardly to form attaching-prongs, as clearly shown in Fig. 2. Thus as the crank-shafts are revolved to raise one bar 42 and depress the next each bar, as the shafts rotate, is rendered capable of a steady lateral movement by reason of the upper journal-box 44 traveling upon the tracks 43.

Each bar 42 is provided with a series of teeth 45, projected longitudinally downward at intervals from the under face thereof, and the downward throw of the bars as the crank-shafts are revolved is sufficient to bring the teeth 45 of the depressed bars in close proximity to the bed of the frame. It will be readily understood that by reason of the mounting of the bars upon the crank-shafts the depressed bars will have an upward longitudinal movement and that the elevated bars will have a downward longitudinal movement.

When all of the crank-arms of the two crank-shafts are in a horizontal position, each bar 42 is in the same plane; but the very moment that the crank-arms of the shafts approach a vertical position each alternate bar is depressed and the others are elevated.

Upon the under side of the rake-head 36 a series of rake-teeth 46 is detachably secured, which teeth curve downward and rearward from the head between the lower ends of the toothed bars 42 to a contact with the ground. Each tooth consists of a piece of suitable spring metal coiled upon itself at or near the upper end, the upper extremity being carried rearward from the coil and downward. A clamping-block 47 is employed in connection with the upper end of each tooth, being provided with a recess 48 in its forward end, in which the coil of the tooth is placed, and a channel in the upper surface to receive the upper rearward extension of the tooth, and also an aperture through which the downwardly-projected upper extremity of the tooth passes. This block 47 is secured to the under face of the head 36 by means of a screw, screws, or equivalent form of fastening device. By these means a fastening for the rake-teeth is obtained which may be readily and conveniently detached from or attached to the rake-head.

When it is desired to elevate the rake-teeth, the clamping-arms holding the rake-head to place may be thrown to one side, the rear edge of the head elevated, and the locking-arms turned to contact with the under surface of the head. This may be effected in any approved manner.

To facilitate the passage of the hay from the rake-teeth to the bed of the loader, a roller 49 is journaled at its extremities in the

body-bars 24, extending transversely of the lower extremity of the loader and in substantially the same plane as the strips 12 of the bed of the same, as shown in Figs. 1, 2, and 3 of the drawings.

In operation, when the pinions of the lower crank-shaft have been thrown in gear with the spur-wheels 19 and the rake-teeth made to contact with the ground, as the loader is drawn forward the rake-teeth gather the hay from the surface, and as one set of bars 42 take the hay from the rake-teeth and carry it to the bed of the frame the other set are elevated and carried downward laterally, to be in turn depressed to transfer the hay from the rake-teeth to the bed, while the hay upon the bed is gradually and constantly carried upward to be delivered over the top of the frame into the vehicle to which the implement is attached.

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

1. In a hay-loader, the combination, with the bed and crank-shafts journaled transversely one near the upper end and the other near the lower end of said bed, of a series of longitudinal rake-bars attached to the crank-arms of said shafts and provided near their upper ends with longitudinal tracks, each formed of a piece of wire bent upon itself to form parallel arms having prongs at their lower ends entering said rake-bars and attaching-eyes at their upper ends, and journal-

boxes attached to the crank-arms of the upper shaft, having eyes through which said tracks pass, substantially as and for the purpose specified.

2. In a hay-loader, the combination, with the rake-head, of a series of teeth each having a coil formed near its upper end and provided with a rearwardly and downwardly extending upper extremity, and blocks secured to the under face of the rake-head, having a recess at their front end to receive the coil of the teeth and an aperture to receive their downwardly-extending upper extremity, substantially as shown and described.

3. In a hay-loader, the combination, with the bed, crank-shafts journaled transversely one near the upper end and the other near the lower end of said bed, and a series of longitudinal toothed bars attached to the crank-arms of said shaft, of spud-axles journaled in the frame of the loader, having drive-wheels and spur-gears secured thereto, pinions loosely mounted upon the projecting ends of the lower crank-shaft, shifting-levers engaging the hubs of said pinions, a sprocket-wheel secured on one extremity of each of said crank-shafts, said pinions and sprocket-wheels having clutch-teeth on their adjacent faces, and a chain belt connecting said sprocket-wheels, substantially as and for the purpose specified.

ADOLPH LASACK.

Witnesses:

N. O. HENDERSON,
S. P. MILES.