

(No Model.)

2 Sheets—Sheet 1.

F. H. AUSTIN.
CORN SHOCK LOADER.

No. 539,785.

Patented May 28, 1895.

Fig. 7.

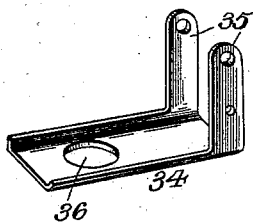
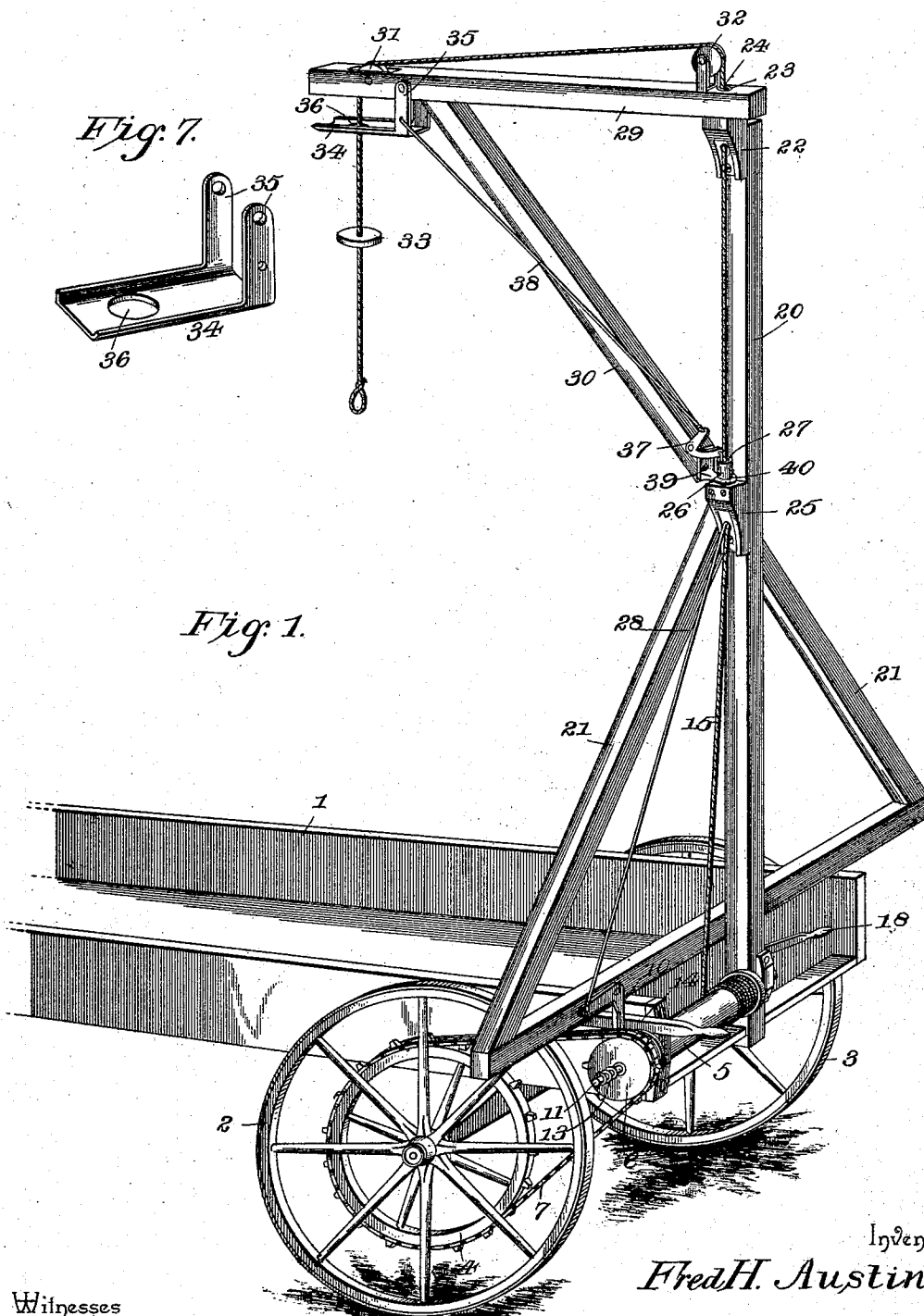


Fig. 1.



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Witnesses

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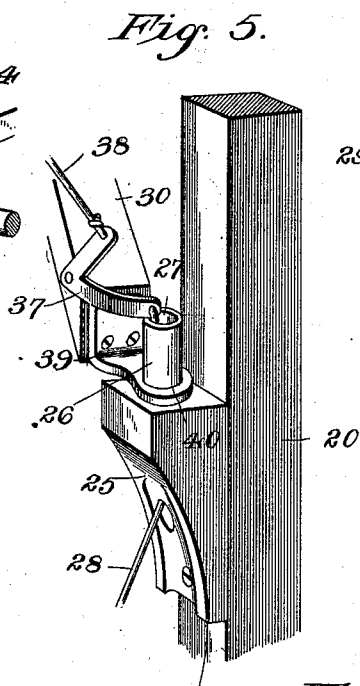
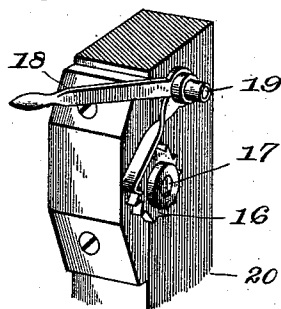
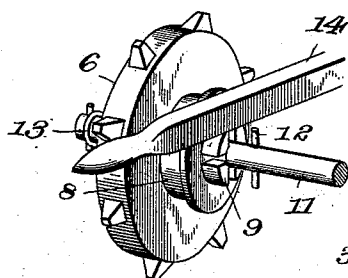
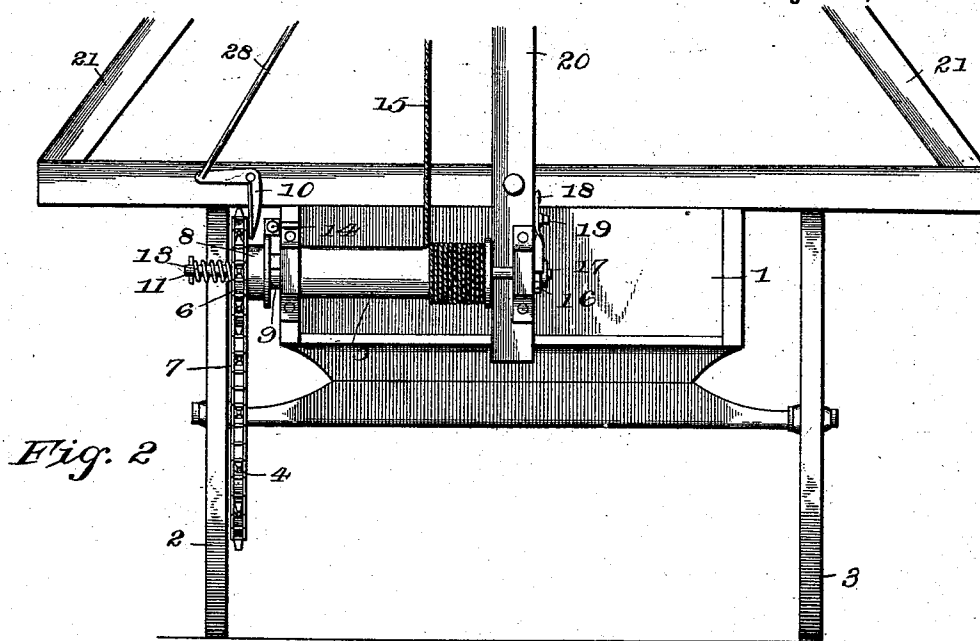
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2 Sheets—Sheet 2.

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32 *Fig. 6.*

Ingvnlör

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UNITED STATES PATENT OFFICE.

FRED H. AUSTIN, OF DELAWARE, IOWA.

CORN-SHOCK LOADER.

SPECIFICATION forming part of Letters Patent No. 539,785, dated May 28, 1895.

Application filed February 28, 1895. Serial No. 540,106. (No model.)

To all whom it may concern:

Be it known that I, FRED H. AUSTIN, a citizen of the United States, residing at Delaware, in the county of Delaware and State of Iowa, have invented a new and useful Corn-Shock Loader, of which the following is a specification.

My invention relates to mechanical appliances for loading hay, straw, grain and fodder into a wagon; and the object of the same is to provide simple and efficient means for elevating the shock, or load, by means of power derived from a supporting wheel of the truck, or wagon, into which the load is to be deposited, and, which, when the load reaches a proper elevation, will be automatically detached from the power, or driving, wheel; the load being held in suspension until the crane is swung over the wagon and the hoisting drum, or windlass, released.

The improvement consists, essentially, of the novel features, and the peculiar construction and combination of the parts which, hereinafter, will be more fully described and claimed, and which are shown in the accompanying drawings, in which—

Figure 1 is a perspective view showing the invention applied to a wagon and the crane swung into such a position as to deposit the shock or load into the wagon. Fig. 2 is an end view of the wagon, showing the attached parts on a larger scale, the upper portion of the mast being broken away. Fig. 3 is a detail view showing the means for holding the pulley, mounted upon the shaft or journal of the windlass, out of operative engagement with the said shaft or journal. Fig. 4 is a detail view of the devices for preventing the unwinding of the hoisting-rope from the windlass after the latter has been detached from its power-actuating mechanism. Fig. 5 is an enlarged detail view of the connections between the mast and the lower end of the crane. Fig. 6 is an enlarged detail view of the connections between the upper end of the mast and the boom. Fig. 7 is a detail view, on a larger scale, of the trip provided at the outer end of the crane or boom.

The wagon 1, to which the hoisting appliances are attached, may be of any desired pattern usually employed for farming and truck purposes; and 2 and 3 indicate the sup-

porting wheels. A sprocket rim, or wheel, 4 is provided on one side of the supporting wheel 2 and revolves therewith. A windlass, or drum, 5 is suitably journaled in bearings provided in the rear of the wagon, and has its journals projected beyond the bearings to receive the power-transmitting and detent devices.

The power-transmitting device, or mechanism, consists of a sprocket wheel 6, having sprocket teeth to receive a sprocket chain 7, which transmits motion from the sprocket rim 4 to the said sprocket wheel 6 in the efficient working of the machine. This sprocket wheel 6 has a lateral extension, which is provided with an annular groove 8, into which the end of an elbow lever 10 extends so as to move the sprocket wheel on its supporting journal 11. A half clutch 9 is provided at the extremity of the grooved extension 8, and is adapted to co-operate with a corresponding half clutch 12 on the journal 11, so as to cause the sprocket wheel 6 and the journal 11 to revolve in unison when the two parts of the clutch are in gear. The half clutch 12 may be of any approved form of construction usually provided in mechanisms when it is required to throw operating parts in and out of gear, but, for simplicity of illustration, it is shown as consisting of a short pin passing transversely through the journal 11; the half clutch 9 being provided by corresponding depressions to receive the projecting end of the said pin. The sprocket wheel 6 is loosely mounted upon the journal 11 so as to rotate freely thereon when not in gear with said journal in the manner set forth. A coil spring 13 is mounted upon the projecting end of the journal 11, and is adapted to exert a pressure against the sprocket wheel 6 so as to hold and maintain the latter in gear with the said journal when the windlass is in working, or operative, condition. A bar 14 is pivoted at its inner end to the side of the wagon and terminates at its outer extremity in a handle, and is constructed to come between the inner end of the sprocket wheel 6 and the opposing side of the wagon so as to hold the pulley out of gear when it is not required to operate the windlass 5 to wind up the hoisting rope 15. When the sprocket wheel 6 is in gear with the journal 11 the free end of the bar 14 rides upon

the periphery of the lateral extension 8, and when the said pulley is out of gear with the journal 11, the said bar drops and occupies a position between the end of the said extension 8 and the opposing side of the wagon, and maintains the pulley in ungeared relation with the said journal.

The detent devices comprise a ratchet wheel 16, which is fixedly mounted upon the opposite journal 17 of the windlass, and an approximately elbow-shaped lever 18, which is mounted upon a journal 19 and has one end bent to engage with the teeth of the ratchet wheel 16, the opposite end portion being formed into a handle which extends within convenient reach to be operated when it is desired to release the windlass and permit the rapid descent of the shock, or load, into the wagon.

The mast, or derrick, 20 is braced against lateral stress by the oppositely-inclined stays 21, and is provided at its upper end with a bracket 22, from which projects vertically a tubular extension 23, the bore of the said tubular extension extending through the bracket to form a passageway 24 for the free operation of the hoisting rope 15. A bracket 25, similar in construction to the bracket 22, is provided midway between the ends of the mast 20, and its tubular extension 26 forms a journal for the lower end of the crane. A passageway 27 extends vertically through the bracket 25 to form a guide for the hoisting rope 15 and for the wire 28, which forms part of the trip mechanism. The crane comprises the boom 29 and the brace 30. The boom 29 is apertured at its inner end to receive the tubular extension 23, on which it swings in its horizontal movements, and is provided at its outer end with a guide pulley 31, over which the hoisting rope 15 passes, and at its inner end with a guide pulley 32 for a similar purpose. The hoisting rope 15 is attached at its lower end to the windlass 5, and is adapted to wind thereon, and its upper portion extends through the passages 27 and 24, thence over guide pulleys 32 and 31, and is provided near its free end with a button, or stop, 33, which is adapted to engage with a trip 34 at the proper time, so as to throw the windlass out of gear, the shock, or load, being attached to the opposite end of the said hoisting rope. The trip 34 is provided at its inner end with parallel extensions 35, which have pivotal connection at their upper end with the boom 29, and has an opening 36 in its outer end for the passage of the hoisting rope 15. An approximately triangular-shaped, or bell-crank, lever 37 is provided at the lower end of the crane, and is connected with the trip 34 by means of a rod, or wire, 38. The wire 28 connects the bell-crank lever 37 with the elbow lever 10, and passes through the opening in the bracket 25 in the manner set forth. A rod, or casting, 39 is let into the lower end of the brace 30, and its outer end is provided with an aperture 40 to receive the tubular extension 26,

upon which it turns as a journal in the swinging movements of the crane.

The operation of the invention may be briefly stated as follows: The shock, or load, to be elevated is attached to the free end of the hoisting rope 15, and the sprocket wheel 6 being in gear with its supporting journal in the manner set forth. As the wagon is drawn forward the windlass 5 is rotated and winds up the hoisting rope 15 and elevates the load. When the stop, or button, 33 makes contact with the trip 34, the latter is actuated, and through the connections hereinbefore specified operates the lever 10 and unships, or ungears, the sprocket wheel 6 from its supporting journal. At this instant the bar 14 gravitates and holds the sprocket wheel 6 out of engagement, or in ungeared relation, with its supporting journal, thereby permitting a free rotation of the said pulley without producing movement of the windlass. It must be remembered that the bent end of the lever 18 is at all times in engagement with the ratchet wheel. Hence when the windlass is disengaged from its actuating mechanism, the said detent mechanism will come into play and prevent a reverse movement of the windlass and a consequent unwinding of the hoisting rope 15. When the next shock, or load, is reached, the wagon is brought to a stop, the crane swung over the wagon into the position substantially shown in Fig. 1, and the detent mechanism released, when the shock, or load, will descend into the wagon. The hoisting rope is now hitched to another load, and the bar 14 moved upward so as to permit the spring 13 to regain itself and gear the pulley 6, when the hoisting mechanism is in position for a repetition of the operation just described.

Where reference is made in the foregoing description, and the subjoined claims to the sprocket wheel 6, it is to be understood that this term is to be construed in a generic sense to designate a gear wheel for performing like functions.

Having thus described the invention, what is claimed as new is—

1. Means for loading hay, straw, or fodder into a wagon, consisting of a mast provided with a swinging crane, a windlass, a hoisting rope adapted to wind upon the windlass and have the load attached to its free end, a detent mechanism to prevent the unwinding of the hoisting rope and hold the load in suspension, a sprocket wheel mounted upon a journal of the windlass and normally geared to revolve therewith, a spring acting upon the said pulley to hold it in geared relation, means for actuating the said sprocket wheel from a supporting wheel of the wagon, a trip provided at the outer end of the crane and actuated by a suitable stop on the hoisting rope when the load has reached a proper elevation, and operatively connected with the said sprocket wheel to ungear the latter from its supporting journal, and a bar adapted to fall across the path of the said sprocket wheel and

hold the latter in ungeared relation with its supporting journal, substantially as described for the purpose set forth.

2. In a mechanism for loading hay, straw, 5 or fodder into a wagon, the combination of a crane, a windlass, a hoisting rope to be attached at one end to the load and wind upon the windlass at its opposite end, a detent mechanism to prevent the unwinding of the 10 hoisting rope from the windlass, a sprocket wheel loosely mounted upon a journal of the windlass, and provided on one side with an annularly-grooved extension, means for driving the sprocket wheel from a supporting 15 wheel of the wagon a bell-crank lever having one end projecting into the said annular groove, a trip provided at the outer end of the crane and actuated by a stop on the hoisting rope, and operatively connected with the said 20 bell-crank lever, a spring mounted upon the projecting end of the journal and exerting a lateral pressure against the end of the sprocket wheel, corresponding half clutches on the sprocket wheel and its supporting journal, 25 and a pivoted bar projecting across the path of the sprocket wheel, and adapted to hold the latter in ungeared relation when moved outward against the tension of the aforesaid spring, substantially as described for the purpose 30 specified.

3. In combination, a mast provided at its upper end and near a middle point with brackets having tubular extensions and vertical passages, a crane mounted upon the said tubular 35 extensions and adapted to swing thereon, a hoisting rope provided with a stop at its

outer end, and passing through the vertical passages in the crane-supporting brackets, a windlass for the lower end of the hoisting rope to wind upon, a detent mechanism provided 40 for one journal of the windlass, a sprocket wheel loosely mounted upon the opposite journal of the said windlass, and provided with a half clutch to correspond with a similar half clutch on the journal, a spring mounted upon 45 the journal and extending a lateral pressure on the end of the pulley, means for positively driving the sprocket wheel from a supporting wheel of the wagon, an elbow lever having one end engaging with an annularly-grooved extension of the sprocket wheel, an elbow lever 50 located at the inner lower end of the crane, a wire, or similar connection, operating through the vertical passage of the lower crane-supporting bracket and connecting the said elbow 55 and bell-crank levers, a trip at the outer end of the crane and adapted to be actuated by the stop on the hoisting rope, and operatively connected with the said bell-crank lever, and a bar pivoted at one end and adapted to fall 60 across the path of the pulley when the latter is moved outward against the tension of its actuating spring to hold the said sprocket wheel in ungeared relation, substantially as described for the purpose set forth. 65

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

FRED H. AUSTIN.

Witnesses:

W. I. MILLEN,
H. G. MILLEN.