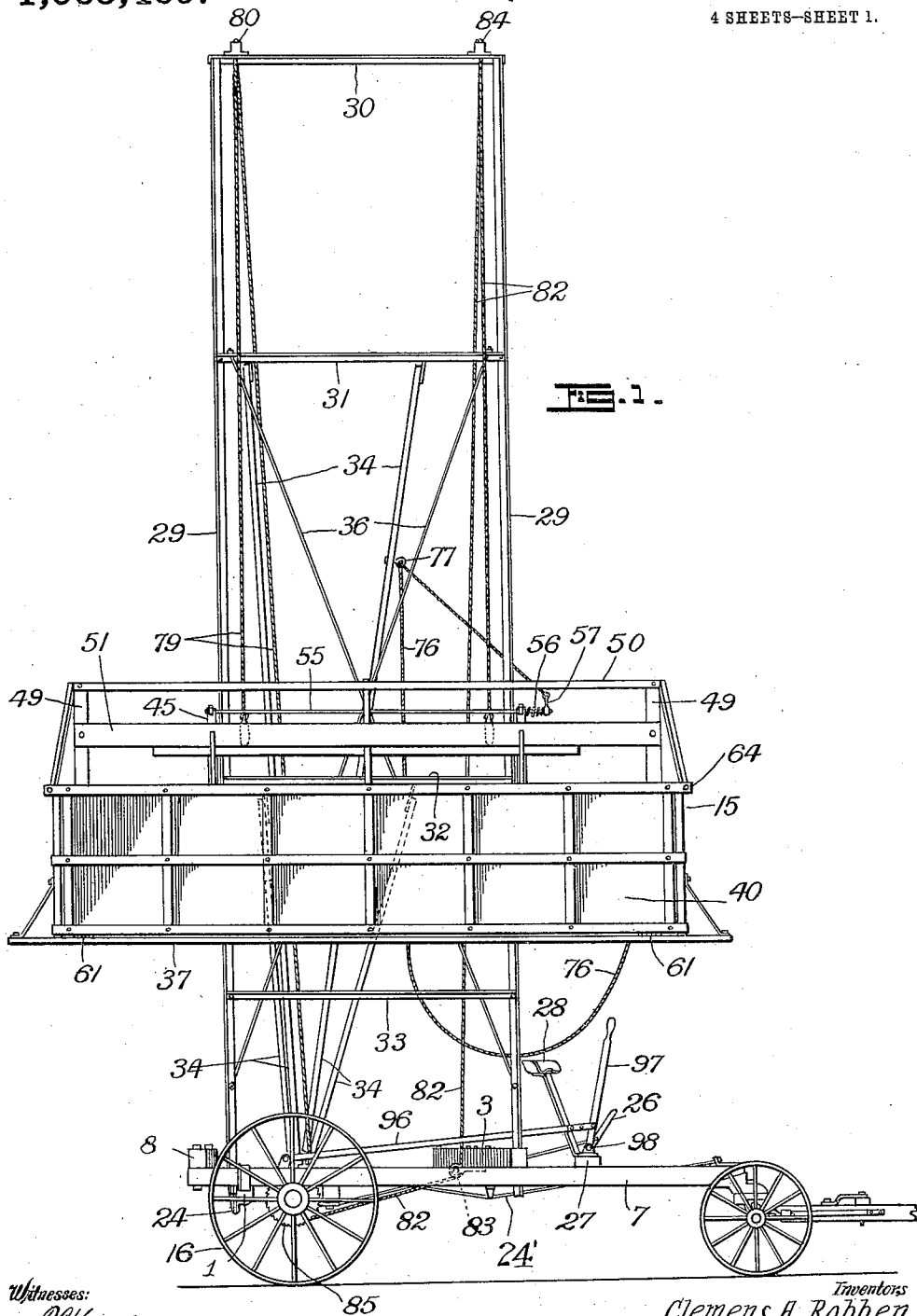


C. A. & H. H. ROBBER.
 COMBINED GRAIN BARGE AND STACKER.
 APPLICATION FILED MAY 1, 1912.

1,065,469.

Patented June 24, 1913.

4 SHEETS—SHEET 1.



Witnesses:

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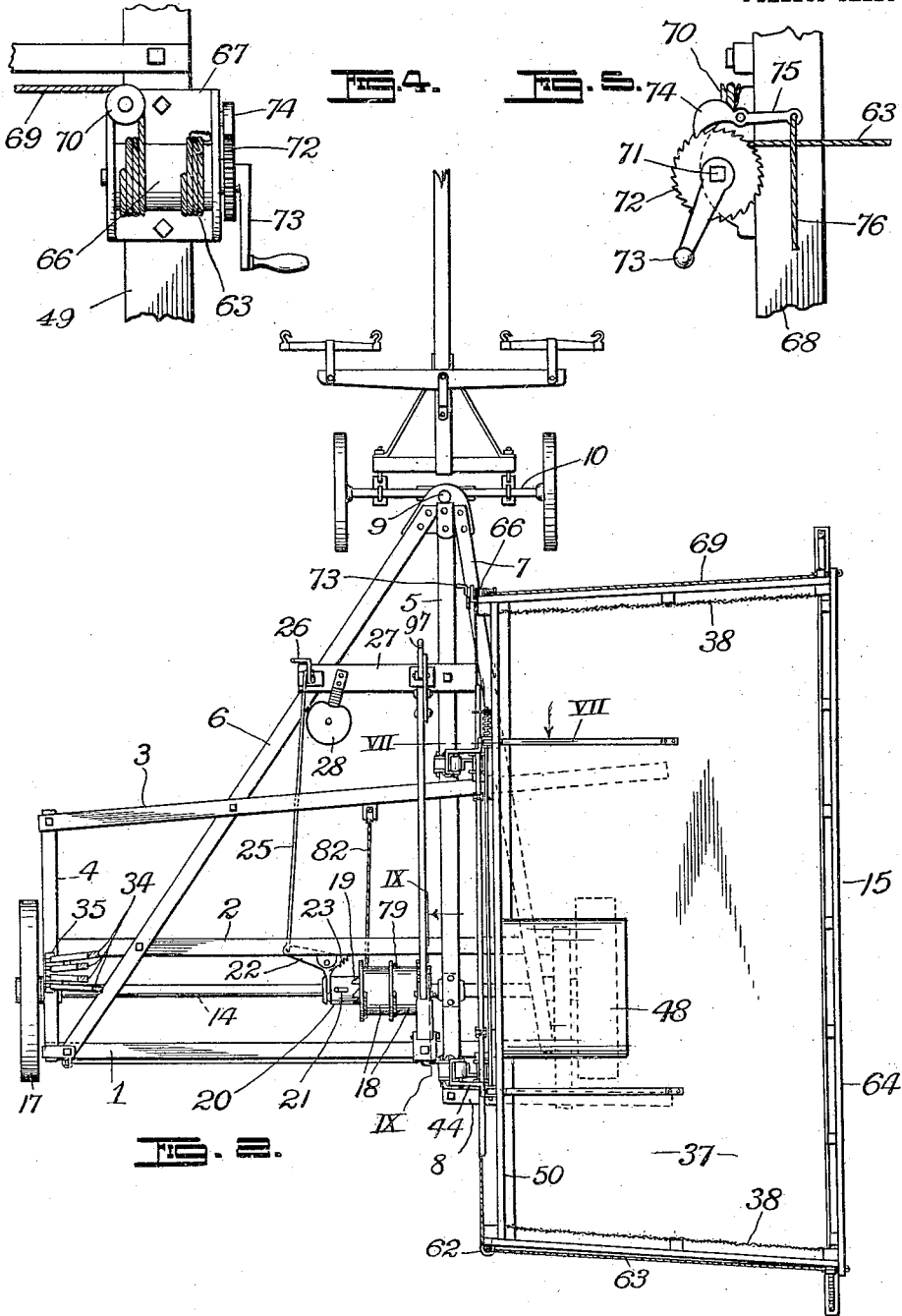
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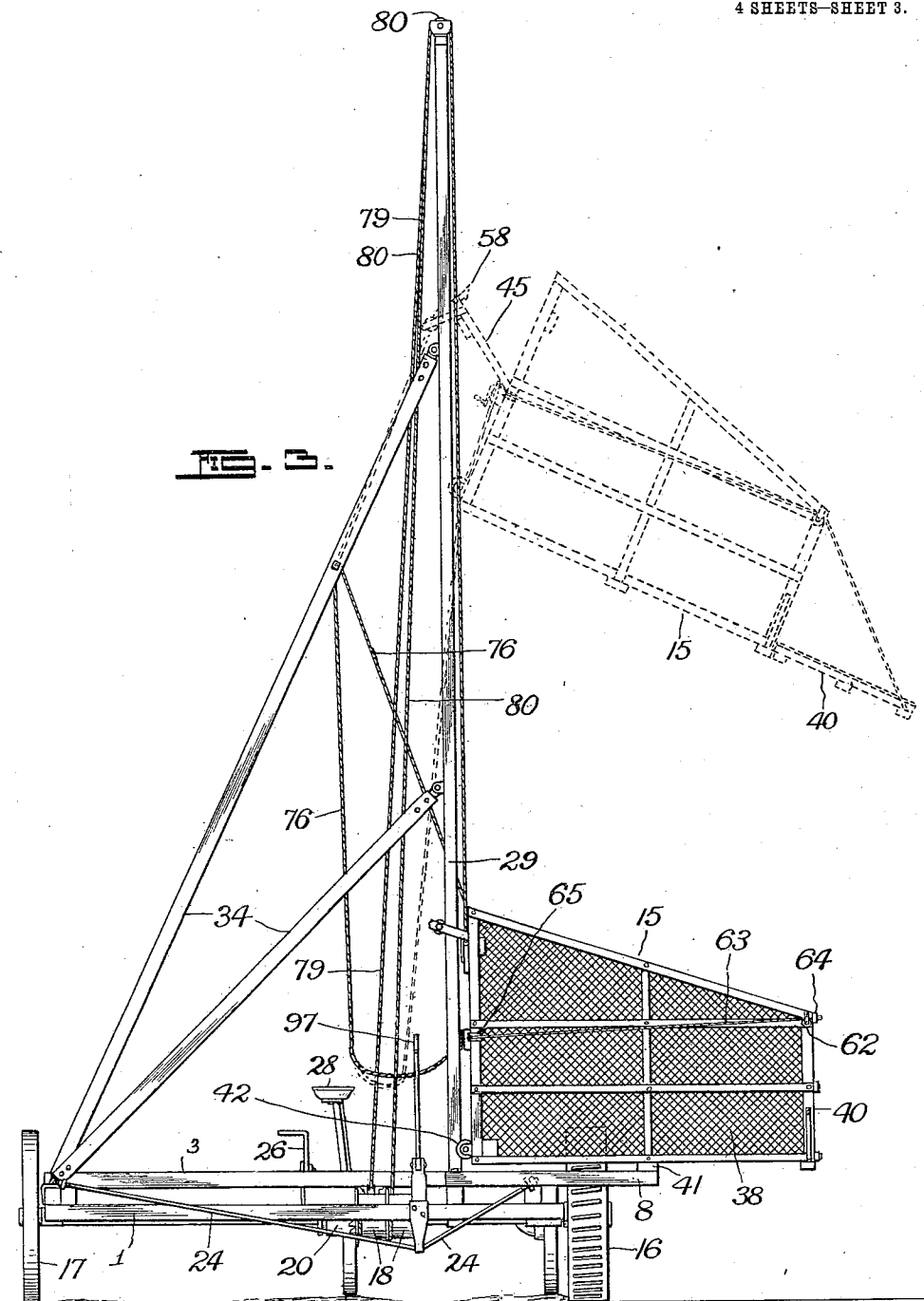
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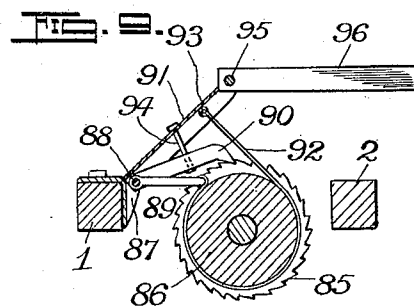
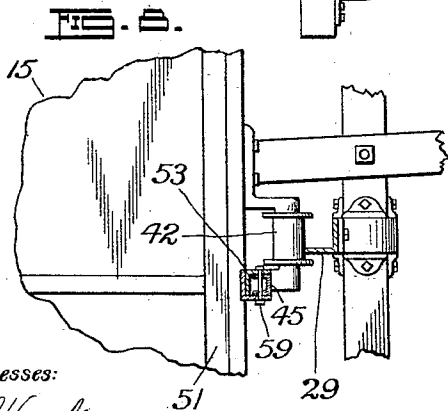
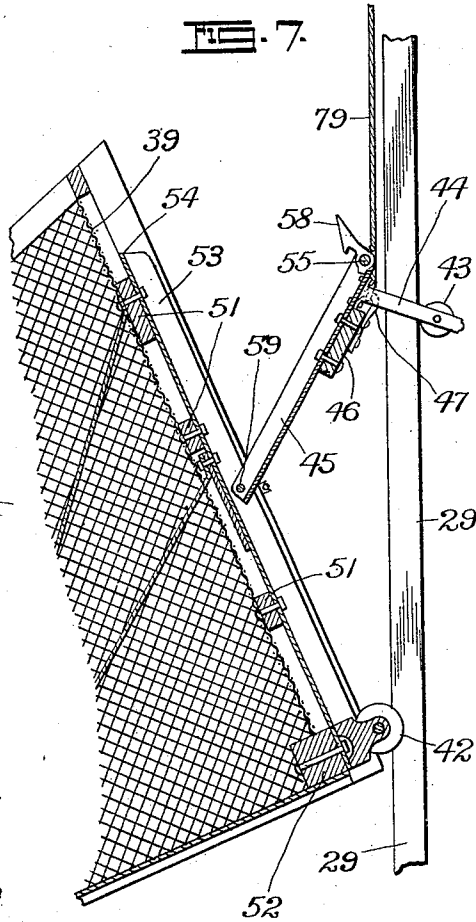
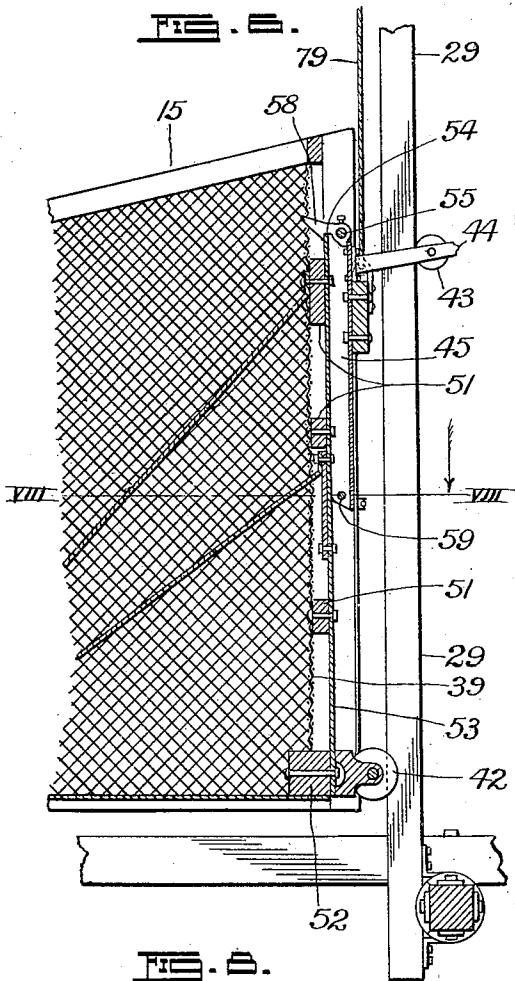
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

CLEMENS A. ROBBERN AND HERMAN H. ROBBERN, OF NORTON, KANSAS; SAID HERMAN H. ROBBERN ASSIGNOR TO SAID CLEMENS A. ROBBERN.

COMBINED GRAIN BARGE AND STACKER.

1,065,469.

Specification of Letters Patent.

Patented June 24, 1913.

Application filed May 1, 1912. Serial No. 694,441.

To all whom it may concern:

Be it known that we, CLEMENS A. ROBBERN and HERMAN H. ROBBERN, citizens of the United States, residing at Norton, in the county of Norton and State of Kansas, have invented certain new and useful Improvements in Combined Grain Barges and Stackers, of which the following is a specification.

Our invention relates to improvements in combined grain barges and stackers, and has for its object to provide an apparatus in which are combined efficient means for conveying grain from a header to stacks, and means for stacking the grain.

In order that our invention may be fully understood, reference will now be made to the accompanying drawings, in which:

Figure 1 is a side elevation of the machine with the barge in partly raised position. Fig. 2 is a plan view, some of the braces being broken away to expose other parts. Fig. 3 is an end elevation showing the barge in loading position, also showing by dotted lines the barge in discharging position. Figs. 4 and 5 are detail views of winding gear of the barge gate, shown in Fig. 2. Fig. 6 is a vertical section of the inner end of the barge showing one dumping latch, etc. Fig. 7 is a similar view showing the barge at or near discharging position after being released by said latch, the section being on line VII—VII of Fig. 2. Fig. 8 is a horizontal sectional view taken on line VIII—VIII of Fig. 6. Fig. 9 is a detail view of a ratchet, pawl and brake, sectioned on line IX—IX of Fig. 2.

In carrying out the invention we employ a truck frame consisting of transverse bars 1, 2 and 3, longitudinal bars 4 and 5, and two forwardly-converging bars 6 and 7. It also comprises a barge-supporting beam 8, bolted to bar 5, while an extension of bar 3 supports the barge at a point forward of the beam 8.

The forward point of the truck frame 5—6—7 is mounted by a kingbolt 9 on an axle 10, provided with suitable animal draft gear as shown. The said frame is rearwardly supported by the rear axle 14, which projects under the barge (15) and has keyed thereon the bull-wheel 16. On its opposite end is an ordinary carrying wheel 17. The extreme rear transverse frame bar 1, is reinforced by a truss 24, most clearly shown on

Fig. 3. There is also a longitudinal truss 24', Fig. 1. Loose on this axle is a cable drum 18, on one end of which is a clutch member 19. The companion clutch member 20 is slidably-mounted but has the slot-and-pin connection 21. Clutch member 20 is normally held in engagement with clutch member 19 by means of a bell-crank lever 22 and a retractile spring 23, which spring is suitably connected to said lever and to a hook or eye on the frame bar 2. Connected to lever 22 is a forwardly-extending connecting rod 25, connected to a hand lever 26, fulcrumed on a board or plate 27 mounted on bars 5 and 6. The driver's seat, 28, is also mounted on said plate.

Mounted on the frame hereinbefore described and at one side thereof, are two vertical standards 29, which serve as guides for the elevator, or barge 15, as we term that portion of the apparatus. Said standards are tied together at intervals by horizontal bars 30, 31, 32, 33, and are stayed in position by several braces 34, whose lower ends are preferably brought together at a point on bar 4 and secured by lugs 35 thereon. Said braces are, preferably, fastened to certain of the cross bars 31, 32, as sufficiently shown on Fig. 1. The vertical structure is further reinforced by crossed tierods 36, 37.

The barge carrier or elevator, designated 15, as a whole, comprises a box having a bottom 37, wire mesh end 38, an inner wall 39 of wire mesh, and an outer side wall 40 in the form of a hinged drop gate, preferably constructed of sheet metal with a wooden frame. The bottom of the barge is made with an arched portion 48 in order to attain a lower position without interference with the bull-wheel. The frame of the barge may be of any suitable construction and materials. The inner wall 39 is made higher than the gate 40. When the barge is in its load-receiving position it rests upon a bar 41, mounted on the frame extensions 3 and 8.

The barge is provided with standard-engaging flanged rollers 42, 43; the lower roller 42 being mounted near the bottom and engaging the outer faces of the standards. The upper rollers 43 are mounted on hook-shaped brackets 44 (Fig. 2) secured, respectively, to two links 45 (Fig. 7) and engage the inner faces of said standards. By this means, said links are slid-

ably connected with said standards. Rigidly connecting said links is a transverse bar 46, which is provided with loops 47, to which the elevating cables 79 are attached. Preferably, the links 45 are made from channel bars, and the standards 29 from angle bars, as shown. The inner wall of the barge is provided with a rigid frame which is composed of the corner posts 49, the top rail 50, cross-pieces 51, and the wooden sill 52. Bolted on the backs of members 51, 52 are a pair of upright angle bars 53, whose upper ends are extended above bar 51, as seen at 54. The lower ends of the respective links 45 are pivotally-connected to said bars 53 by pins 59. The links 45 are arranged to fold within said bars. Extending horizontally through holes in the upper ends of links 45, is a rock-shaft 55 (Fig. 1) having an extension on which are a torsion spring 56 and a short lever arm 57. Fixedly mounted on shaft 55 within the flanges of each link 45 is a latch 58, adapted to engage the lips 54 of bars 53 on the barge. The spring 56 holds the latches normally in operative position. When the latches engage the lip 54, the barge will, of course, be held thereby from tipping, and in the position shown on Fig. 6, as far as angular position is concerned.

Referring to Fig. 1, it will be seen that the barge gate 40 is mounted at its lower edge on hinges 61 by which it is connected with the bottom of the barge. Referring to Fig. 3, on one end of the barge adjacent the top of the gate, is a small pulley 62. A cable 63 is attached to the gate rail 64, passes over pulley 62, thence along the end of the barge, over a pulley 65, thence forwardly (see Fig. 2) to the front end of the barge, where said cable is secured to a drum 66 (see Fig. 4). Said drum is journaled in a housing 67, fixed upon post 49. A companion cable 69 is secured to drum 66, passes over a pulley 70 to change its direction, and runs along the front wall of the barge to the top rail 64 of the gate, to which it is secured. Drum 66 has a shaft 71 on which are keyed a ratchet 72 and a crank 73. A gravity pawl 74 is pivoted on the housing and engages the ratchet. Connected to an arm 75 on this pawl is a trip cord 76, which hangs in a loop as seen in Fig. 1, within reach of the operator, and passes up through an eye 77 on brace 34, thence directly to the lever arm 57 on rockshaft 55, governing the latches 58. By means of the cord 76 the operator will be able to trip the gate pawl 74 and the barge latches 58, either simultaneously or in succession according to his manipulation of the cord.

The mechanism for elevating and lowering the barge comprises the clutch and drum 18, already described, and the following elements: A cable 79 (Fig. 1) passes up-

wardly from the drum 18, over a pulley 80 on the top cross-piece 30, thence down to the cross-piece 46 of the suspension links 45, being secured to a loop 47. From the said drum 18, a second cable 82 passes forward, under a pulley 83, upward to a pulley 84 on top cross-piece 30, thence downward to a similar loop 47 on said cross-piece 46. The drum 18 has fixed thereon a ratchet 85 (Fig. 9) and projecting therefrom, a brake drum 86. A fulcrum lug 87, fixed on frame bar 1, supports a pivot 88 on which are mounted a brake member 89, a holding pawl 90, and a lever 91. Connected to member 89 is a brake strap 92, which embraces the drum 86 and is connected to lever 91 at 93. The pawl 90 engages the ratchet 85 and is operatively connected with lever 91 by a bolt 94. Said lever is connected at 95 with a rod 96 which passes forwardly to a hand-lever 97, fulcrumed at 98. It is obvious that when the rod 96 is forced backward, the lever 91 will disengage the pawl 90 and at the same time tighten the strap 92 about the drum, and the reverse movement will have the opposite effect. The standards 29 may be rigidly-mounted at their bases, or if preferable, they may be tiltably-mounted, as shown and described in our application Serial Number 662,529, for improvements in combined hay-rakes and stackers.

The operation of the entire machine is substantially as follows: Draft animals being hitched to the trees shown on Fig. 2, the barge 15 is lowered to the position shown on Fig. 3, and a load of grain is placed therein from a header. When the machine is started for the stack, the operator moves the clutch lever 26 with his foot to open the clutch 19—20, so as to relieve the team of extra strain at starting. When the machine is under way the said lever is released, the clutch is closed by spring 23, and the drum 18 is rotated by the axle 14, winding the cables 79, and 82 thereon. Said cables elevate the barge by means of the links 45 to the desired height, at which the operator throws out the clutch, stopping the ascent, the drum, cables, and barge now being held by the pawl 90. When the barge has been brought into position relative to the stack being formed, cord 76 is pulled to trip the gravity pawl 74, which releases both gate cables 63 and 69, and the pressure of the grain opens the gate 40. Another pull on cord 76 in a different direction trips latches 58 and permits the barge to tilt to the angle shown by dotted lines Fig. 3. The load then falls upon the stack and the pawl 74 reengages the ratchet 72. The operator then closes the gate by the crank 73, the gate being then held closed by the pawl and ratchet. To lower the barge, the operator moves the lever 97 backward, thereby tensioning the

brake strap 92 and disengaging pawl 90. The barge descends by gravity, unwinding the cables, and its speed being controlled by the pressure exerted on the brake lever.

5 When the bottom of the barge strikes the supporting piece 41 (Fig. 3) it will right itself by its own weight and the lips 54 of bars 53 will pass under the yielding latches 58 and be reengaged thereby, as shown on Fig. 6.

10 Having thus described our invention what we claim and desire to secure by Letters Patent, is:

1. In a machine of the character described, a frame, a bull-wheel, an axle rotated thereby, a drum loosely-mounted on said axle, means to lock said drum with said axle at will, means to prevent accidental backward rotation of the drum, cables fixed to said drum and adapted to wind thereon, a pair of standards mounted on the frame, pulleys at top of said standards over which said cables run, a barge mounted to travel along the standards, and means to control the descent of the barge.

2. In a machine of the character described, a frame, a bull-wheel, an axle rotated thereby, a drum loosely-mounted on said axle, a clutch-member carried by said drum, a clutch-member splined on said axle, a ratchet on said drum, a pawl for said ratchet, means at a distance for disengaging said pawl, a lever for operating the clutch in one direction, a spring to operate the clutch in the other direction, a vertically traveling barge, vertical guides for said barge, pulleys near the tops of said guides, cables connected to said drum, passing over said pulleys and secured to said barge, and means to control the descent of the barge.

3. In a machine of the character described, a pair of vertical guides, a barge provided with rollers engaging said guides, the uppermost rollers being connected with the barge by means of links, latches mounted on said links, projections on the barge adapted to be engaged by said latches, and means operable at a distance for disengaging said latches to permit the barge to tilt.

4. In a machine of the character described, a pair of vertical guides, a barge provided with rollers engaging said guides, the uppermost rollers being connected with

the barge by means of links, a rockable shaft mounted on said links, latches fixedly- 55 mounted on said shaft, projections on the barge adapted for engagement by said latches, an arm on said shaft, and a cord fastened to said arm whereby said latches may be moved by actuation of the cord. 60

5. In a machine of the character described, a barge, vertical bars rigidly secured to the barge, upwardly-extending links pivoted at their lower ends to said bars, rollers carried by said links, rollers on the barge, vertical guides engaged by all of said rollers, latches mounted on said links and adapted to engage the upper ends of said bars, and means operable at a distance for disengaging said latches. 70

6. In a machine of the character described, a barge, suspending links pivotally-connected thereto, a cross-bar connecting said links, and a plurality of elevating and lowering cables fastened to said cross-piece. 75

7. In a machine of the character described, a barge having fixed latch pieces thereon, suspending links pivoted on the barge, a cross-bar connecting said links, elevating cables fastened to said bar, latches pivotally-mounted on said links and adapted to engage said latch pieces to hold the barge upright, means for disengaging the latches, rollers carried by said links, lower rollers on the barge, and vertical guides engaged by all said rollers. 85

8. In a machine of the character described, the combination of a hoisting drum having ratchet teeth and a brake drum thereon, cables fastened to the drum, a pawl normally engaging said ratchet, a brake strap adapted to engage said drum, a lever fulcrumed near the pivot of the pawl, connections between said lever and the brake-strap and between said lever and the pawl, whereby movement of said lever will simultaneously release the pawl and apply the brake. 95

In testimony whereof we affix our signatures in the presence of two witnesses.

CLEMENS A. ROBBEN.
HERMAN H. ROBBEN.

Witnesses:

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CHAS. W. CAMPBELL.