M. H. Madsen.

HAY HANDLING MECHANISM.

APPLICATION FILED AUG. 16, 1905.

Fig. 1

Fig. 2

Fig. 3

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HAY-HANDLING MECHANISM.


Application filed August 16, 1905. Serial No. 374,495.

To all whom it may concern:

Be it known that I, MADS H. MADSEN, a citizen of the United States of America, and a resident of Kimballton, Audubon county, Iowa, have invented a new and useful Hay-Handling Mechanism, of which the following is a specification.

The object of this invention is to provide means for receiving a portion of hay from an elevator and carrier and tipping said hay to one side or the other of the carrier-track, thereby delivering said hay laterally of the median line of the mow or stack.

Further objects of my invention will appear throughout the description of the construction and operation of the device.

My invention consists in the construction, arrangement, and combination of elements hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawings, in which—

Figure 1 is a side elevation of the device. Fig. 2 is a plan of the device, and Fig 3 is a front elevation. Dotted lines illustrate various positions assumed by parts of the device.

In the construction of the device, as shown, the numeral 10 designates a carrier mounted for longitudinal adjustment and occasional travel on a track 11. A curved supporting-arm 12 is suspended from the carrier 10 by means of an eye 13 on said arm engaging a hook 13 on the carrier. A cross-head 14 or clamp 14 is mounted on and intermediate of the ends of the supporting-arm 12, and braces 15 16 are fixed at their forward ends to the ends of said cross-head and extend rearward and upward therefrom in diverging planes. The rear upper ends of the braces 15 16 are connected by a cross-bar 17, and brace-rods 18 19 are fixed at their rear ends to the rear ends of the braces and extend forward therefrom in converging planes and terminate in a ring or eye 20, adapted to engage and be supported by a hook 21 on the upper end portion of the supporting-arm. Cords 22 23 are fixed at their upper ends to the ends of the cross-bar 17 and depend therefrom in converging planes and are attached to a ring 24, from which ring an operating-cord 25 depends.

There is no movement or articulation between the braces 15 16, cross-head 14, and supporting-arm 12. A spindle 26 is formed on the forward lower end portion of the supporting-arm 12, and a box 26a is mounted for oscillation thereon. Shafts 27 28 extend laterally from the box 26a and are journaled at their outer ends in brackets 30, one only of which is shown in Fig. 1, and a U-shaped frame 31 is mounted on said brackets. The closed end portion of the U-shaped frame 31 is rearmost and is above and adapted to engage at times with the supporting-arm 12.

Pulleys or sheaves 32 32 are fixed to and depend from the side arms of the frame 31, and cords 33 34 are fixed to the ends of the cross-head 14, extend through the sheaves, and depend therefrom. Eyes 35 36 are mounted on and depend from the extremities of the arms of the U-shaped frame 31, and the cords 33 34 may at times be extended from the sheaves 32 through said eyes, either straight or crossed, and depend therefrom. The latter arrangement of the cords is indicated when it is desired that the man on the wagon operate the tipping of the device.

The rope (not shown) employed to pull the hay fork or grapple and its load extends through the lower portion of the carrier 10, and a sheave 37 is mounted in said carrier to receive, support, and lessen the friction of the weight of said rope.

In practical use the device is positioned at the desired point in the length of the track 11 by manual operation of the cord 25, whereby the supporting-arm may be tilted to release the normal engagement of the braces 15 16 and cross-bar 17 with the roof of the haybarn. Then the U-shaped frame occupies an inclined plane, tilted forward to the point from whence a fork or grapple (not shown) must approach with a portion of hay.

The portion of hay is elevated and conveyed in any desired manner until it rides on the frame 31 and supporting-arm 12. Then the portion of hay is released from the elevating and conveying means and rests momentarily on the frame 31 and supporting-arm, having by impact therewith leveled the frame into the position shown by dotted lines in Fig. 1. Thereupon an operator applies draft to one or the other of the cords 33 or 34, and in so doing tilts the frame 31 laterally and deposits the portion of hay thereon to one side or the other of the median line of the mow or stack defined by the track 11. The elevating and conveying means is then withdrawn and reloaded, and the frame automatically assumes its normal inclined position. As the mow is filled and the stack completed the supporting-arm 12 and its carrier 10 are moved forward by manipulation of the cord 25.

The frame 31 is leveled or tilted in respect
of its movement of oscillation laterally by manipulation of one or the other of the cords 33 34.

The movement of lateral oscillation of the frame 31 is determined by an interlocking device connecting the box 28 and spindle 26, such as stud and slot. In the drawings I show a stud 38 on the spindle engaging in a slot 39 in the box; but such construction may be altered as desired. The longitudinal tilting of the frame 31 is determined by nuts 40 on the ropes 33 34, which engage and will not pass through the pulleys 32.

I claim as my invention—

1. Hay-handling mechanism, comprising a carrier, a supporting-arm depending from and flexibly connected to said carrier, means for bracing said supporting-arm, and a receiving-frame mounted for oscillation on said arm.

2. Hay-handling mechanism, comprising a supporting-truck, a carrier thereon, a curved arm depending from said carrier, means for bracing said arm, means for tilting said arm and bracing means, and a receiving-frame mounted for oscillation on said arm.

3. Hay-handling mechanism, comprising a carrier, a curved supporting-arm depending from said carrier, a receiving-frame, brackets depending from said frame, shafts journaled in said brackets, a box carrying said shafts and journaled on said supporting-arm, and means for tilting said frame relative to the supporting-arm.

4. Hay-handling mechanism, comprising a carrier, a curved supporting-arm depending from said carrier, a U-shaped receiving-frame, brackets depending from said frame, shafts journaled in said brackets, a box carrying said shafts and journaled on said supporting-arm, a cross-head on said arm, 40 sheaves on said frame, and cords fixed to said cross-heads and rove through said sheaves.

5. Hay-handling mechanism, comprising a carrier, a curved supporting-arm depending from said carrier, a box journaled on the extremity of said arm and formed with a slot, a pin on the arm extending through said slot whereby the oscillation of the box on the arm is limited, a carrying-frame mounted for oscillation on said box, a cross-head on said arm, sheaves on said frame, ropes fixed to said cross-head and rove through said sheaves, whereby the frame may be tilted, and means for tilting and moving the arm.

6. Hay-handling mechanism, comprising a carrier, an arm depending therefrom, a frame journaled on the arm for oscillation longitudinally and laterally, braces on the arm, ropes adapted to oscillate the frame, and ropes on the braces adapted to oscillate the arm.

Signed by me at Des Moines, Iowa, this 10th day of August, 1905.

MADS H. MADSEN.

Witnesses:

J. M. GREGERSON,

S. C. SWEET.