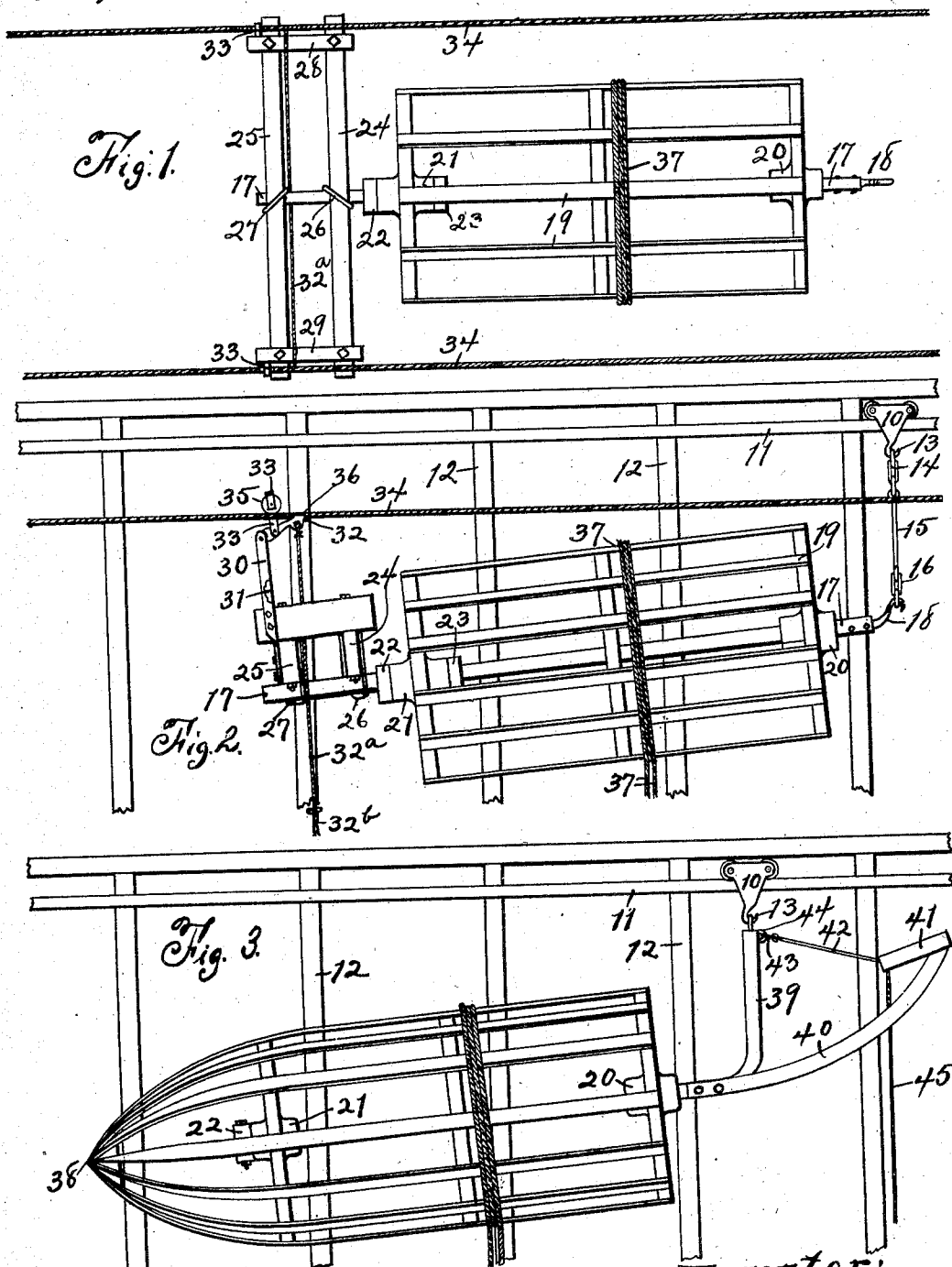


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HAY HANDLING MECHANISM.
APPLICATION FILED SEPT. 16, 1909.

981,094.

Patented Jan. 10, 1911.



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UNITED STATES PATENT OFFICE.

MADS H. MADSEN, OF KIMBALLTON, IOWA.

HAY-HANDLING MECHANISM.

981,094.

Specification of Letters Patent.

Patented Jan. 10, 1911.

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To all whom it may concern:

Be it known that I, MADS H. MADSEN, a citizen of the United States of America, and 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 an improved mechanism for receiving and dumping laterally quantities of hay delivered to this mechanism by a hay carrier.

A further object of this invention is to provide improved means for automatically dumping a hay-handling mechanism after the hay is deposited thereon by a hay carrier.

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

Figure 1 is a plan of my improved mechanism. Fig. 2 is a side elevation of the same. Fig. 3 is a side elevation showing a modified form of the device.

In the construction and mounting of the device as shown the numeral 10 designates a carrier adapted for travel on a track 11 longitudinally of a hay barn 12. A hook 13 is formed on the carrier 10 below the track 11 and rings 14 are suspended from said hook. A rod 15 is suspended from the lowermost ring 14 and rings 16 are suspended from the rod. A supporting bar or axle 17 is provided and preferably is composed of a piece of metal pipe. A hook 18 is attached to one end of the axle 17 and engages the lowermost ring 16. One or the other or any number of rings 14, 16 may be supplied to determine, adjust and control the altitude of the axle 17 relative to the carrier 10. A drum or slat roller 19 is provided and is mounted for rotation on bearings 20, 21 on the axle 17. A collar 22 is formed on or attached to the axle 17 at the end opposite to the hook 18 and adjacent to the bearing 21, and a collar 23 is attached to or formed on the axle 17 adjacent to the inner side of said bearing, the purpose of the collars 22, 23 being to prevent longitudinal movement of the bearing 21 and drum 19 along the axle 17. Cross-bars 24, 25 are provided and preferably are made of wood. The cross-bars 24, 25 are arranged

transversely of and above the forward end portion of the axle 17, the latter being in approximately horizontal position. The cross-bars 24, 25 are fixed and secured to the forward end portion of the axle 17 by means of clamps 26, 27. Braces 28, 29 are fixed to and extend transversely of end portions of the cross-bars 24, 25 and serve to rigidly connect said cross-bars. Uprights 30, 31 are fixed to and rise from the braces 28, 29 and a brake-arm 32 is pivoted to the upper extremity of each upright 30, 31. A yoke 33 is pivoted to each brake arm 32 and rises therefrom. The upper end portion of each yoke 33 extends over a cable 34 and is provided with a roller or pulley 35 engaging said cable and riding thereon. Two of the cables 34 are employed, one on each side of the barn or mow, and they are located at approximately the same altitude and at a lower altitude than the track 11. Each brake arm 32 is fulcrumed on a yoke 33 and the weight of the drum acting through the uprights 30, causes a brake shoe 36 on each brake arm 32 to engage one of the cables 34 at the rear of the pulley 35. A rope 32^a is attached at each end to a brake arm 32 and depends therefrom beneath the axle 17, and a hand rope 32^b depends from the center of said rope. A rope 37 is wound twice or more around the drum 19 and depends at its ends from each side of said drum within reach of the operator. The ends of the rope 37 may be fastened together beneath the drum. In this way draft on the rope 37 at either side of the drum will cause said drum to revolve in that direction, unwinding the rope at the end on which draft is applied and winding it on the drum from the other end to the same extent.

In the practical use of this device the drum is placed in the desired position for storing of hay by downward and forward or rearward draft on the hand rope 32^b, such downward draft acting through the ropes 32^a and brake arms 32 to overcome tension of the brake shoes 36 against the cables 34 and the forward or rearward draft causing the device to travel along the track 11 and cables 34 in the corresponding direction. When the drum is in the desired position hay is deposited thereon by a hay fork (not shown) arranged for travel above said drum. The drum may be balanced and the hay retained thereon if desired by manu-

ally holding the ends of the rope 37; but if the hay is deposited centrally of the width of the drum such balancing usually is not necessary. If the load is deposited to one side of the center of said drum the impact will usually cause the drum to revolve to that side and throw the hay laterally from the drum. This automatic revolving may be restrained by holding both ends of the rope 37, or it may be given an impetus by a sharp pull of one end of said rope, thus causing the hay to be thrown to some distance laterally from the drum. This operation saves carrying the hay a considerable distance laterally from the path of travel of the hay fork. After a load of hay has been dumped in the manner described the drum need not be re-positioned for the next load, which can be deposited thereon without further draft on the rope 37 and thrown to the opposite side of the mow from the preceding load, and successive loads can be thrown to opposite sides by alternate draft on the ends of said rope.

In the modified construction shown in Fig. 3 the slats or staves of the drum or roller 19 are extended forward beyond the bearing 21 and converge to a point at 38. In this construction the drum is supported wholly from the rear in the following manner: A supporting arm 39 is suspended from the carrier 10 by means of an eye on said arm engaging the hook 13 on the carrier. The supporting arm 39 is curved forward near the bottom thereof and rigidly connected to the rear end of the shaft or axle 17. Braces 40, one of which is shown in Fig. 3, are fixed at their forward ends to the lower end of the supporting arm 39 and extend rearward and upward therefrom in diverging planes. The upper ends of the braces 40, are connected by a cross-bar 41, and brace-rods 42 are fixed at their rear ends to the rear ends of the braces 40 and extend forward therefrom in converging planes and terminate in a ring or eye 43 adapted to engage and be supported by a hook 44 on the upper end portion of the supporting arm 39. A rope 45 is fixed at its upper end to the cross-bar 41 and depends therefrom. In practical use of the construction as shown in Fig. 3 the device is positioned at the desired point in the length of the track 11 by manual operation of the rope 45 whereby the supporting arm 39 may be tilted to release the normal engagement of the braces 40 and cross-bar 41 with the roof of the hay barn. Then the

operation is the same as that described above.

I claim as my invention—

1. A hay handling mechanism, comprising a carrier adapted for travel on a track, a shaft, flexible means for connecting one end of said shaft to said carrier, cross-bars fixed to the opposite end of said shaft, hangers on the ends of said cross-bars, cables supporting said hangers, and a drum mounted for rotary movement on said shaft.

2. A hay handling mechanism, comprising a carrier adapted for travel on a track, an axle or shaft, flexible means for connecting said axle or shaft to said carrier, cross-bars, braces between said cross-bars, hangers on the ends of said cross-bars, yokes on said hangers, pulleys in said yokes, cables supporting said pulleys, and a drum or roller mounted for rotary movement on said axle or shaft.

3. A hay handling mechanism, comprising a carrier, an axle or shaft attached at one end to said carrier, cross-bars clamped to the other end of said axle or shaft, braces on said cross-bars, hangers on the ends of said cross-bars, cables supporting said hangers, braking levers on said hangers adapted to engage said cables, and a drum or roller mounted for lateral rotary movement on said axle or shaft.

4. A hay handling mechanism, comprising a carrier, a shaft connected at one end to said carrier, cross-bars, clamps connecting the central portions of the cross-bars to the opposite end of the shaft, braces on the ends of said cross-bars, uprights rising from said braces, braking levers pivoted at upper ends of said uprights, yokes on said braking levers, pulleys in said yokes, cables engaging and supporting said pulleys, shoes on said levers engaging said cables, a drum or roller mounted for rotary movement on said shaft, and means for oscillating said drum.

5. In a hay handling mechanism, a carrier adapted for travel on a track, a shaft, connections between said carrier and one end of said shaft, means for moving said carrier on said track, a drum or roller on said shaft, and means for oscillating said drum or roller on said shaft.

Signed by me at Kimballton, Iowa, this 2nd day of September, 1909.

MADS H. MADSEN.

Witnesses:

P. J. BERTENSEN,
ALMA MADSEN.