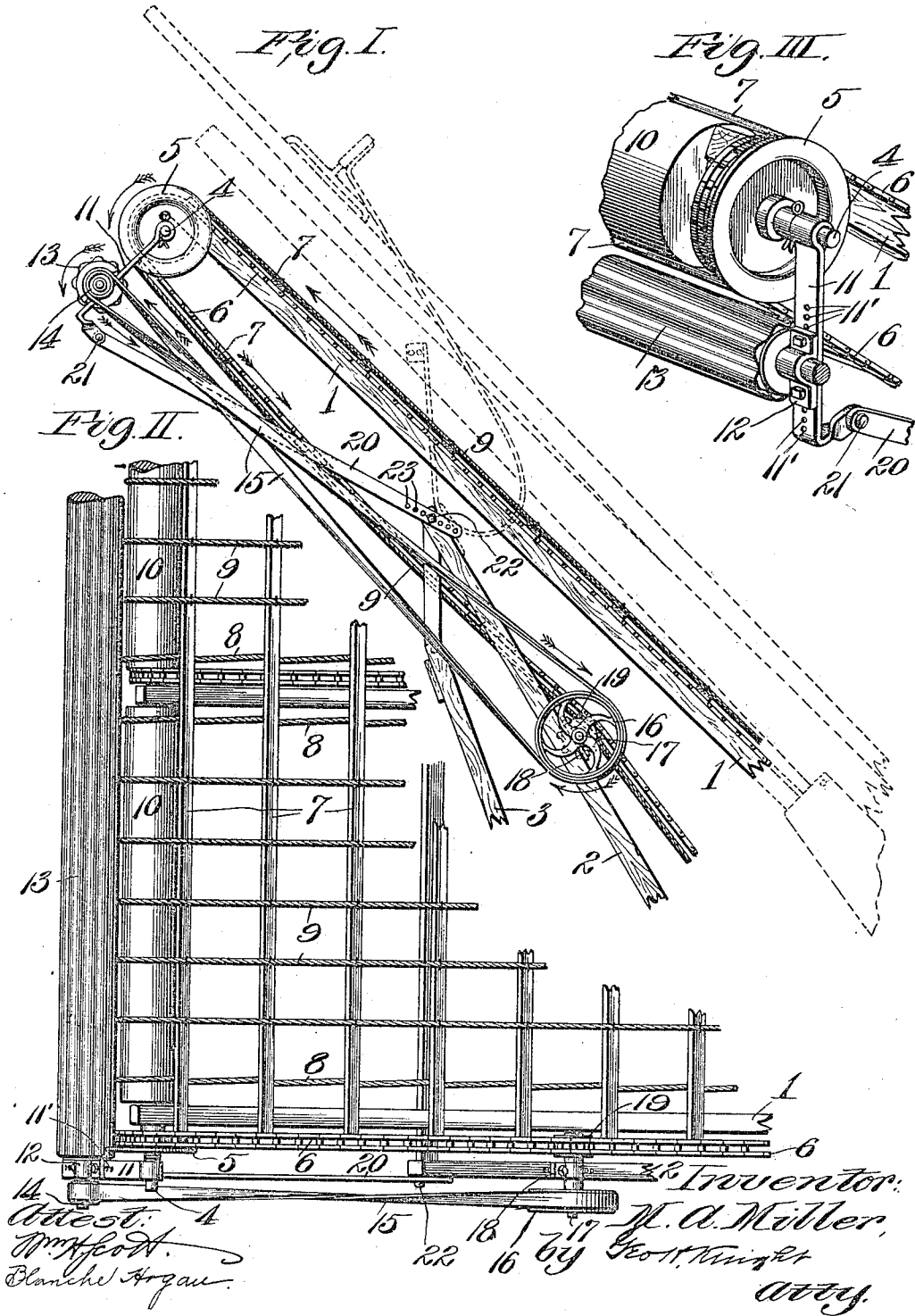


No. 839,497.

PATENTED DEC. 25, 1906.

M. A. MILLER,  
HAY LOADER.

APPLICATION FILED JULY 10, 1906.



# UNITED STATES PATENT OFFICE.

MARCELL A. MILLER, OF BELLEVILLE, ILLINOIS.

## HAY-LOADER.

No. 839,497.

Specification of Letters Patent.

Patented Dec. 25, 1906.

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*To all whom it may concern:*

Be it known that I, MARCELL A. MILLER, a citizen of the United States of America, residing in Belleville, in the county of St. Clair and State of Illinois, have invented certain new and useful Improvements in Hay-Loaders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an improvement in the elevating mechanism of hay-loaders; and it has for its object to provide means whereby the hay being loaded onto a wagon is delivered by the elevator without any tendency to become choked or caught in the elevator and also means whereby the hay is thrown outwardly from the upper or delivery end of the elevator instead of being permitted to be dragged downwardly beneath said delivery end or off the wagon.

Figure I is a side elevation of a hay-loader elevator constructed in accordance with my invention with the compressor utilized in conjunction with hay-loaders of the character to which my invention appertains shown in dotted lines. Fig. II is an enlarged top or plan view of a portion of the delivery end of the elevator. Fig. III is an enlarged perspective view of one of the upper corners of the elevator.

1 designates the frame of the elevator, and 2 and 3 are braces located beneath said frame. These parts may be of any common construction, as no invention is herein claimed for them by themselves considered.

4 designates a shaft journaled in suitable boxes attached to the rear end of the elevator-frame. This shaft has mounted upon it idler-wheels 5, which receive endless chains 6, which are driven in any suitable manner common to a hay-loader. The endless chains constitute driving members for the elevator of the hay-loader, and these chains have attached to them carrier-slats 7, which move with the chains and serve to carry the hay above the elevator-frame.

8 represents outer carrier-ropes attached to the carrier-slats at their inner sides and extending throughout the elevator.

9 represents intermediate carrier-ropes extending throughout the elevator and attached to the carrier-slats at their outer sides.

10 designates a roller mounted upon the shaft 4 at the upper or delivery end of the

elevator and around which the elevator carrier-ropes 8 and 9 and the slats 7 operate.

11 designates one of a pair of hangers suspended from the shaft 4, that supports the idler-wheels 5 and roller 10. These hangers are supplied with bearing-boxes 12. 13 is a corrugated roller journaled in said bearing-boxes and sustained thereby in a position beneath the roller 10. One of the spindles of the roller 13 has fixed to it a belt-pulley 14, which receives and is driven by a belt 15. The belt 15 leads to a pulley 16. This last-named pulley is fixed to a shaft 17, that is journaled in a suitable box 18, supported by the brace 2.

19 is a sprocket-wheel fixed to the shaft 17, and so positioned that it is engaged by one of the endless driving-chains 6, which travels thereover.

It will be seen that during the operation of the elevator mechanism the drive-chain just referred to acts to impart rotation to the sprocket-wheel and the pulley 16, with a result that motion is transmitted from said pulley through the belt 15 to the corrugated roller 13, the said belt being crossed, as illustrated, to cause the corrugated roller to be rotated in a direction corresponding to that in which the carrier members of the elevator operate. The hangers 11, which support the corrugated roller 13, are provided with a plurality of bolt-holes 11' to permit of the corrugated roller being raised or lowered relative to the surmounting roller 10, according to necessity in the operation of the loader.

20 is one of a pair of stay-bars, each of which is attached at one end at 21 to the corrugated-roller-supporting hanger to which it applies. The other end of each stay-bar is adjustably secured to the brace 2 by a set-bolt 22, the stay-bars being provided with a plurality of bolt-holes 23 in order that the stay-bars may be shifted and the corrugated roller moved either forwardly or outwardly beneath the roller 10, as may be desired.

In the practical use of my machine the elevator-carrier slats 7 and the ropes 8 and 9 act to elevate the hay delivered to them and discharge it over the delivery end of the elevator in the usual manner. While this operation is taking place the intermediate carrier-ropes, which are secured to the slats at their outer sides, serve to support the hay, and as a consequence the hay is prevented from becoming caught between the slats and the ropes as they pass around the upper end

of the elevator, as it would be caught if the ropes were secured to the slats at their inner sides when the ropes and slats are moving around the upper end of the elevator and traversing the roller 10. During the operation of the hay-loader there is constant tendency of a part of the hay delivered from the elevator to fall directly from the delivery end of the elevator or to be dragged downwardly with the carrier members of the elevator on their return course. Any hay that thus descends is caught by the rotatable corrugated roller 13 and thrown outwardly from the elevator onto the wagon being loaded.

Another advantage secured by the roller 10 to which I wish to call attention is that the roller serves to hold the carrier-ropes of the elevator in a stretched condition as they pass over the delivery end of the elevator, so that the hay resting thereon may not become caught beneath the ropes to be dragged downwardly instead of being delivered onto the wagon which it is intended to load. In the absence of this roller the ropes would be permitted to sag and form loops at the delivery end of the elevator in which the hay would catch to be carried backward on the return movement of the carrier members. The roller 10 also serves to throw the hay toward the wagon that is being loaded. I wish also to call attention to another advantage of the sprocket-wheel 19 on which the driving-chain 6 travels. This sprocket-wheel serves to support the driving-chain in a manner to prevent its catching the hay and dragging it downward while the chain is moving on its return course and also maintains the chain in an uplifted position, so that it will not wear against parts of the loader beneath it with which it would otherwise come in contact.

While I have described various parts of my hay-loader at one side of the loader only, it is obvious that the parts may be duplicated at the other side of the loader without departing from my invention.

I am aware that it is not new to mount a roller beneath the delivery end of a harvester-elevator so that said roller will be turned due to the impact of the grain thereagainst, and I do not claim this *per se* as my invention. In so far as I am aware, however, no provision has ever been made for driving a roller so that it will have the utility of the roller 13 in my improvement—namely, the throwing of the material discharged thereonto from the elevator in a rearward direction in order that it will not be caught and dragged in a forward direction beneath the elevator. My experience in the use of the roller referred to in efforts to gain the end recited has demonstrated that an idly-mounted roller will not

satisfactorily throw the material discharged from the elevator in a rearward direction as it falls onto the roller and that it is absolutely necessary to provide means for positively driving said roller with rapid rotation to cause it to have the desired utility in this connection.

I claim—

1. In a hay-loader, the combination of a frame, carrier means supported by said frame, a roller located beneath the delivery end of said frame, and means for driving said roller, substantially as set forth.

2. In a hay-loader, the combination of a frame, carrier means supported by said frame, a corrugated roller located beneath the delivery end of said frame, and means for driving said roller, substantially as set forth.

3. In a hay-loader, the combination of a frame, carrier means supported by said frame, an endless chain for driving said carrier means, a roller located beneath the delivery end of said frame, and means operated by said endless chain for driving said roller, substantially as set forth.

4. In a hay-loader, the combination of a frame, carrier means supported by said frame, a shaft supported at the delivery end of said frame, a pair of hangers supported by said shaft, a roller journaled in said hangers, and means for driving said roller, substantially as set forth.

5. In a hay-loader, the combination of a frame, carrier means supported by said frame, a shaft supported at the delivery end of said frame, hangers supported by said shaft, bearing-boxes adjustably fitted to said hangers a roller mounted in said bearing-boxes, and means for driving said roller, substantially as set forth.

6. In a hay-loader, the combination of a frame, carrier means supported by said frame, a pair of hangers supported at the delivery end of said frame, a roller supported by said hangers, adjustable stay-bars connected to said hangers, and means for driving said roller, substantially as set forth.

7. In a hay-loader, the combination of an elevator, including carrier means, a pair of hangers movably supported at the delivery end of said elevator, a roller supported by said hangers, independent of the carrier means and means for adjusting said hangers to vary the position of said roller beneath the delivery end of said elevator, substantially as set forth.

M. A. MILLER.

In presence of—  
BLANCHE HOGAN.  
H. G. COOK.