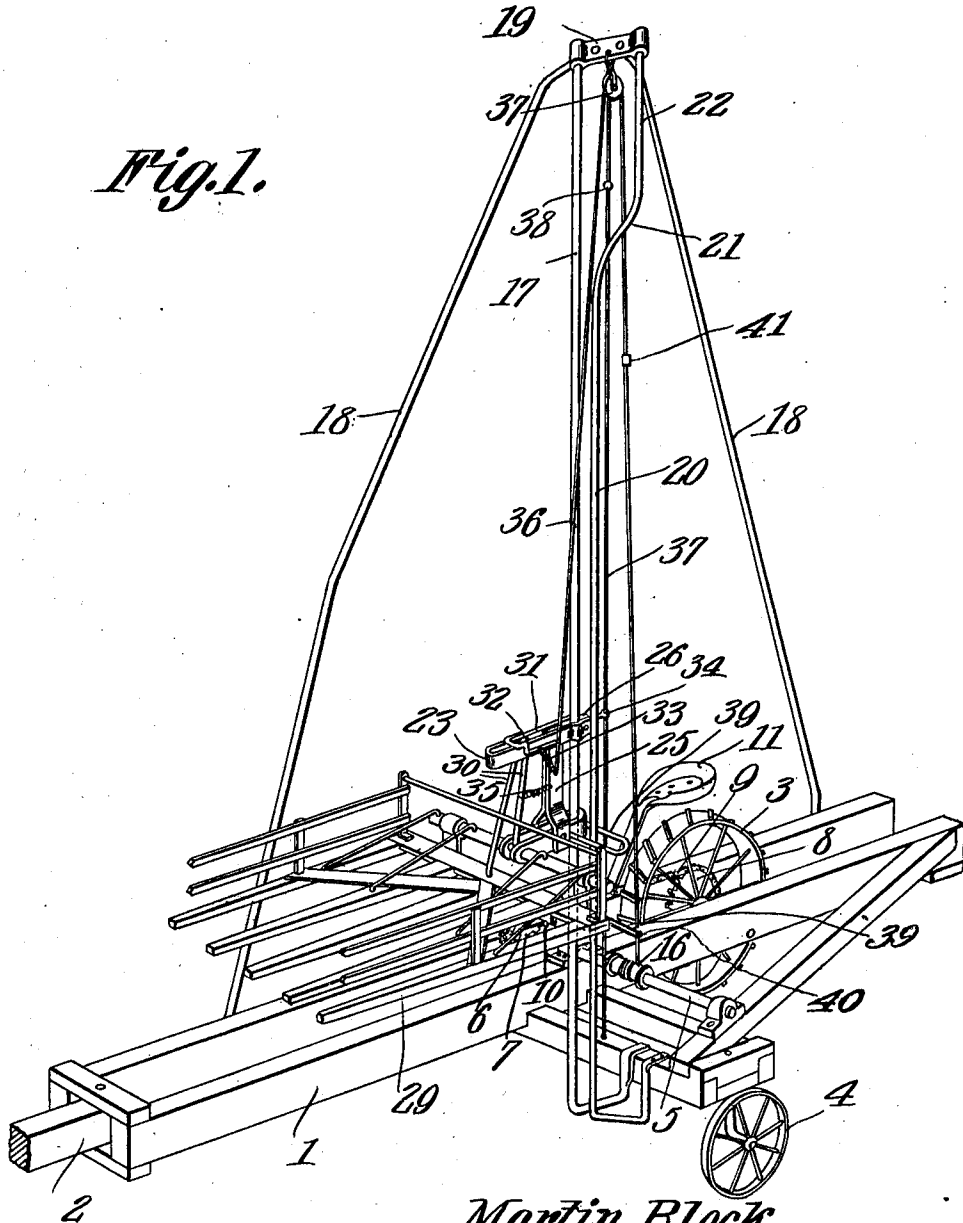


M. & R. BLOCK.
SHOCK LOADER.
APPLICATION FILED DEC. 3, 1910.

988,433.

Patented Apr. 4, 1911.
3 SHEETS-SHEET 1.

Fig. 1.



Witnesses

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L. Wilson

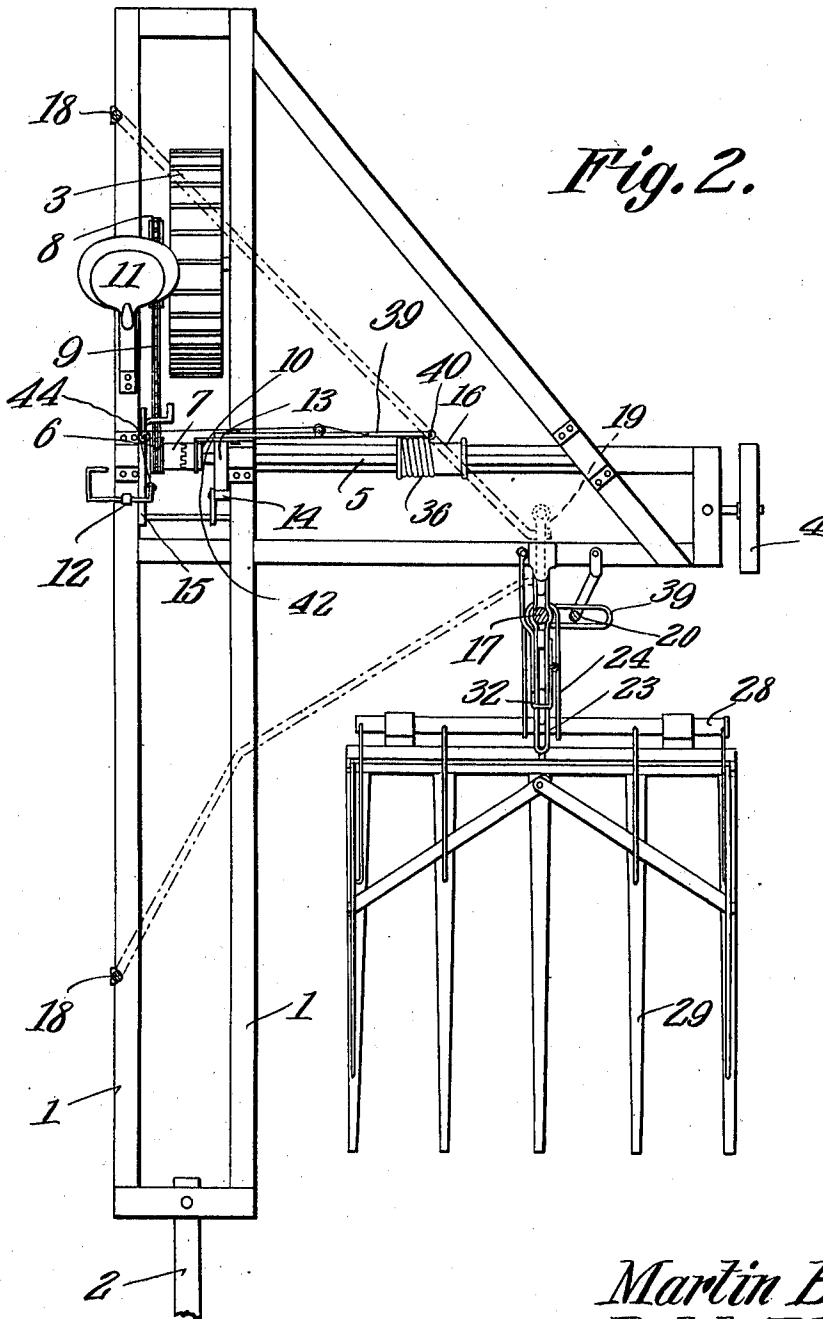
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Witnesses

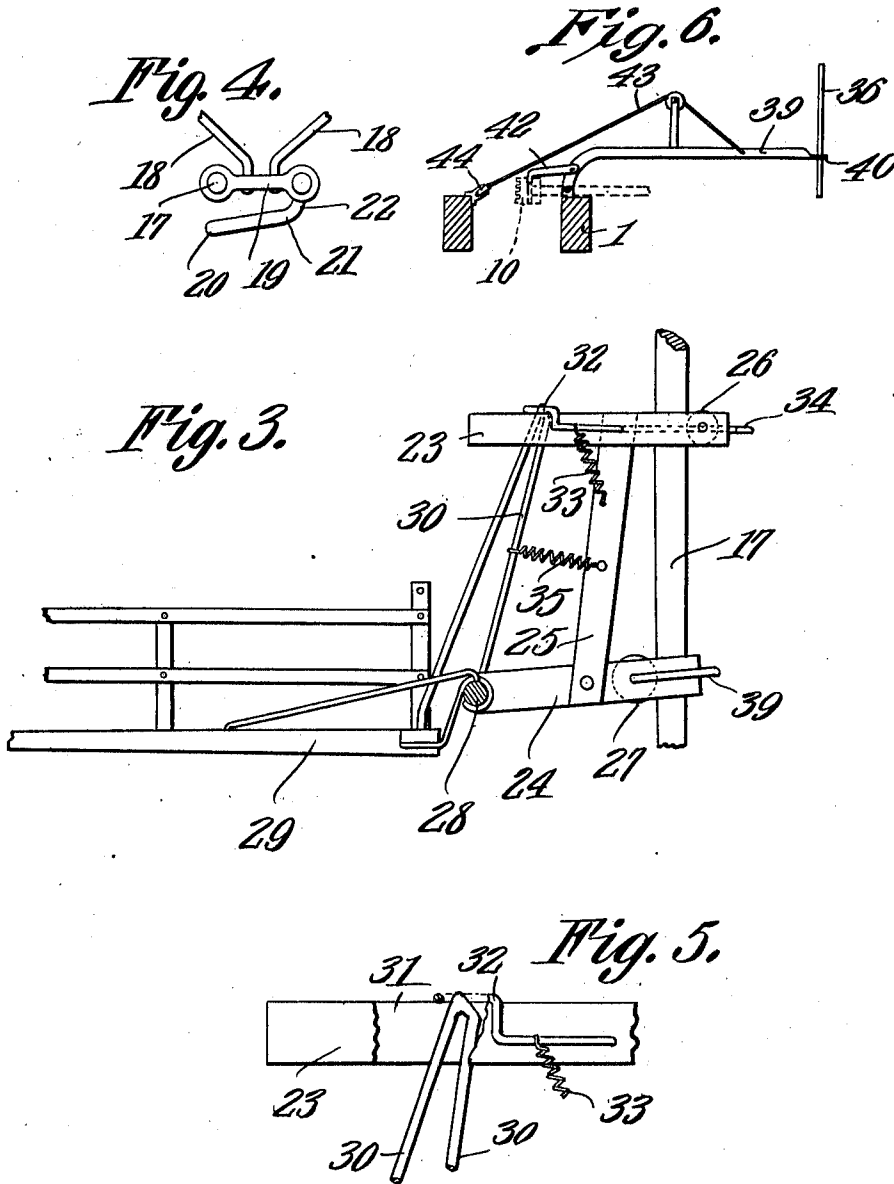
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3 SHEETS-SHEET 3.



Witnesses
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UNITED STATES PATENT OFFICE.

MARTIN BLOCK AND RALPH BLOCK, OF COZAD, NEBRASKA.

SHOCK-LOADER.

988,433.

Specification of Letters Patent.

Patented Apr. 4, 1911.

Application filed December 3, 1910. Serial No. 595,460.

To all whom it may concern:

Be it known that we, MARTIN BLOCK and RALPH BLOCK, citizens of the United States, residing at Cozad, in the county of Dawson, State of Nebraska, have invented a new and useful Shock-Loader, of which the following is a specification.

This invention has relation to shock loaders and consists in the novel construction and arrangement of its parts as hereinafter shown, described and claimed.

The object of the invention is to provide a shock loader which consists of a wheel mounted frame having a vertical mast mounted thereon with a cradle which is adapted to move along the mast and which, when approaching the upper end of the mast is turned as it arrives at dumping position. After the cradle arrives at the upper portion of the mast, means is provided for automatically dumping the same and also means is provided for permitting the said cradle to gravitate to its normal or load-receiving position.

In the accompanying drawings,—Figure 1 is a perspective view of the shock loader. Fig. 2 is a top plan view of the same. Fig. 3 is a detailed side elevation of a portion of the cradle. Fig. 4 is an enlarged plan view of the top of the mast and adjacent parts. Fig. 5 is a detail view of a latch mechanism used upon the loader.

The shock loader consists of a frame 1 having a tongue 2 attached to its forward end. The rear portion of the frame is supported upon a traction wheel 3 and the outer portion of the said frame is mounted upon a supporting wheel 4. A shaft 5 is journaled upon the frame 1 and a sprocket wheel 6 is journaled upon the said shaft. The said sprocket wheel is provided with a clutch hub 7. A sprocket wheel 8 is mounted upon the axle of the traction wheel 3 and a sprocket chain 9 passes around the sprocket wheels 6 and 8. A clutch member 10 is slidably mounted upon the shaft 5 and is constrained to rotate in unison with the same. An operator's seat 11 is mounted upon the frame 1. A lever mechanism 12 is mounted on the frame 1 and is within reach of one occupying the seat 11. A friction disk 13 is fixed to the shaft 5 and a shoe 14 is arranged to operate upon the periphery of the said disk. A lever mechanism 15 is mounted upon the frame 1 and is operatively connected with the said shoe 14 and

is within reach of one occupying the seat 11. A drum 16 is fixed to the shaft 5.

A vertical mast 17 is mounted upon the frame 1 and is held in upright position by means of guys 18 which are connected at their upper ends with the top of said mast and at their lower ends with the frame 1. A head plate 19 is mounted upon the top of the mast 17. A guide rod 20 is secured at its lower end to the frame 1 and the lower and major portion of the said guide rod extends vertically in parallel relation with the mast 17 but at a point near the upper end of said mast. The said guide rod is bent laterally as at 21 but the upper end extremity 22 of the said rod 20 is also parallel with the upper portion of the mast 17. The occupant of the seat 11 then manipulates the lever mechanism 12 whereby the clutch member 10 is moved into engagement with the clutch hub 7 of the sprocket wheel 6. This fixes the said sprocket wheel with relation to the shaft 5 and as the sprocket wheel 6 is rotated with the chain 9 and the sprocket wheel 8 upon the axle of the traction wheel 3, rotary movement is transmitted to the said shaft 5. The shaft 5 in turn rotates the drum 16 and the cable 36 is wound thereon. This moves the said cable longitudinally and the arms 23 and 24 are elevated along the mast 17. While the wheels 26 and 27 are in contact with the lower portion of the mast 27, the tines 29 are held approximately parallel to the line of draft by means of a yoke 39 attached to the arm 24 and which receives the guide rod 20. When however the said yoke arrives at the curved portion 21 of said guide rod the yoke together with the tines 29 are swung around so that the said tines when the yoke 39 engages the upper portion 22 of the guide rod 21 are at a right angle to the line of draft of the load. Again when the said tines 29 approach the head plate 19 the eye 34 of the catch 32 comes in contact with the stop 28 as the said catch is swung against the tension of the spring 33 so that the upper end of the arm 30 is liberated and under the weight of the load carried by the tines 29, the said tines swing down upon the shaft 28 as an axis and the material carried upon the tines is permitted to fall at the side of the loader or into the body of a wagon which may be traveling at the side of the body. As soon as the tines 29 have deposited the load, the tension of the spring 32 comes into

play and draws the arm 30 back toward the arm 25, whereby the upper end of the arm 30 moves under the catch 32 and lifts the same against the tension of the spring 32 and when the upper end of the arm 30 is behind the forward end of the said catch, the said spring 33 draws the catch down in advance of the arm 30 and holds the tines 29 approximately in horizontal position. Prior to this last operation however, the operator has manipulated the lever mechanism 12 whereby the clutch member 10 is moved out of engagement with the clutch hub 7 of the chain 6 and consequently the winding of the cable 36 upon the drum 16 is ceased. He now desires to lower the cradle and he may readily do this by controlling the lever mechanism 15 with his foot whereby friction is established between the shoe 14 and the disk 13 so that the cradle of which the tines 28 form component parts may be permitted to gradually gravitate to its load-receiving position.

Therefore it will be seen that a shock loading device of simple structure is provided and that the said loader may be readily operated by a single operator to lift a shock from the surface of the ground and to load the same upon the body of a wagon or other receptacle traveling at each side of the roadway.

A frame extending through the centers of the lower portion of the mast 17 and the lower portion of the guide rod 20 is at a right angle to the line of draft or the direction in which the frame 1 moves when it is passing over a field and a frame extending through the center of the upper portion of the mast 17 and the upper portion 22 of the guide 20 is in a plane at a right angle to the frame passing through the lower portion of the said shock. Approximately horizontal bars 23 and 24 are slidably mounted upon the mast 17 and the upper bar 23 is provided with a journaled wheel 26 which bears against the rear side of the said mast, while the lower bar 24 is provided with a journaled wheel 27 which bears against the forward side of the mast. Bars 23 and 24 are connected together by means of a bar 25. A cradle is pivotally connected with the bar 24 and the said cradle consists of a shaft 28 which is journaled to the said bar and upon which is mounted a series of tines 29. An arm 30 extends upwardly from the shaft 28 and is slidably received in a slot 31 provided in the arm 23. A latch 32 is pivotally mounted upon the arm 23 and its forward end is normally held in a lowered position against the upper edge of the said arm 23 by means of a spring 33 one end of which is attached to the said latch and the other end of which is attached to the bar 25. The rear end of the latch 32 projects behind the rear end of the arm 23 and is provided with

an eye 34. A spring 35 is connected at one end with the bar 25 and at its other end to the arm 30 and the said spring 35 is under tension with a tendency to hold the arm 30 toward the bar 25. One end of a cable 36 is connected with the bar 23 and the intermediate portion of the said cable is trained over the sheave of a block 37 which is attached to the head plate 19. From the said block 37 the said cable 36 descends and is wound upon the periphery of the drum 16 mounted upon the shaft 5. A cable 37 is attached at its lower end to the frame 1 and at its upper end to the head plate 19 and in the vicinity of the said head plate is provided with a stop 38 which is located in the path of movement of the eyes 34 provided at the end of the catch 32. The said cable 37 passes through the said eye 34 of the said catch and the stop 38 is of greater diameter than the opening through the said eye.

A lever 39 is fulcrumed upon the frame 1 and is provided with an eye 40 which receives the cable 36. A stop 41 is fixed to the cable 36 and at times is adapted to engage the eye 40 and swing the lever 39. A link 42 operatively connects the said lever with the clutch member 10 and is adapted to slide the said clutch member along the shaft 5 when the lever 39 is swung. A cable 43 is connected at one end with the lever 39 and at its other end is connected with the lever 12 and is trained around suitable pulleys 44 mounted upon the frame 1. The foot lever 12 together with the cable 43 are used for returning the lever 39 and its attachments to their normal positions after they have been operated by the stop 41 carried by the cable 36.

In operation the loader is drawn along a field and the cradle of which the tines 29 are component parts is in its lowermost position. As the said cradle approaches a shock the tines pass under the same and at this time the operator moves the lever 12 whereby the cable 43 swings the lever 39 so that the link 42 moves the clutch member 10 into engagement with the clutch hub 7 of the sprocket wheel 6. Thus rotary movement is transmitted from the traction wheel 3 to the shaft 5 and the drum 16 is rotated. By reason of the rotation of the drum 16 the cable 36 is wound thereon and the cradle of which the tines 29 form component parts is elevated. When the cradle arrives at the curved portion 21 of the rod 20 the said cradle is turned so that the tines are disposed approximately at right angles to their positions in which they are when they receive the load. The stop 41 strikes the eye 40 upon the lever 39 and swings the said lever so that the link 42 automatically moves the clutch member 10 out of engagement with the clutch hub 7 when the cradle

arrives at the uppermost position indicated. At the same time the stop 38 strikes the eye 34 upon the catch 32 and the said catch is swung so that the bar 30 is liberated and the tines 29 may swing in a downward direction and deposit the load at the side of the apparatus. In the mean time the operator controls the lever 15 with his foot whereby the brake shoe 14 is held in contact with the periphery of the disk 13 and thus the cradle is held in its uppermost position and by gradually releasing the stress upon the lever 15 the said cradle may be permitted to gravitate to its load receiving position.

After the cradle is relieved of the load in the manner above indicated the tension of the spring 35 comes into play and swings the arm 30 back and under the end of the catch 32. The tension of the spring 33 draws the said catch down in advance of the arm 30 and thus the parts are returned to load receiving position.

Having described the invention what is claimed is:—

1. A loader comprising a wheel-mounted frame, a mast mounted upon the frame, a guide rod also mounted upon the frame and having its lower portion out of alinement with its upper portion, a cradle arranged to move along the mast, a yoke carried by the cradle which receives the guide rod, means for elevating the cradle and manually operable means for permitting the said cradle to gravitate gradually to load-receiving position.

2. A loader comprising a wheel-mounted

frame, a mast mounted upon the frame, a cradle mounted for movement along the mast, means for turning the cradle in the vicinity of the upper end of the mast, means for raising the cradle, an arm attached to the cradle, a guide arm receiving the first mentioned arm, a catch pivotally mounted upon the guide arm, and a cable arranged adjacent the mast and having a stop, said catch having an eye which receives the said cable and which is adapted to engage the stop as the cradle approaches the upper end of the mast.

3. A loader comprising a wheel-mounted frame, a mast located upon the frame, a pivoted cradle arranged to move along the mast, means for turning the cradle as it approaches the upper end of the mast, a guide arm forming a portion of the support of the cradle, means for raising said guide arm, an arm attached to the cradle and located in the guide of said arm, a catch pivotally mounted upon the guide arm and adapted to engage the arm upon the cradle, said catch having an eye, and a vertically disposed cable having a stop the said cable passing through the eye of said catch.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

MARTIN BLOCK.
RALPH BLOCK.

Witnesses:

H. L. AINLAY,
B. R. KELLY.