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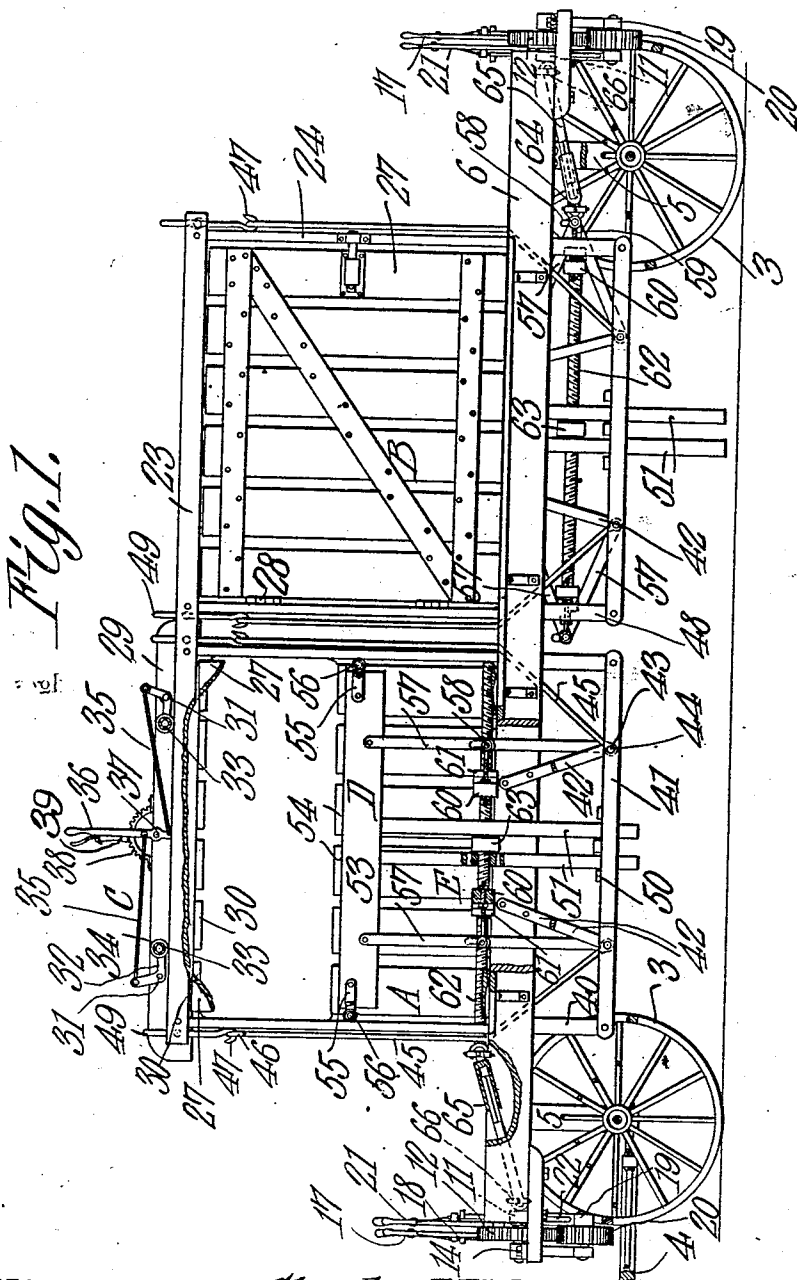
C. K. MILLER.

PATENTED FEB. 4, 1908.

MACHINE FOR BALING BROOM CORN.

APPLICATION FILED APR. 12, 1907.

3 SHEETS-SHEET 1.



WITNESSES:

E. J. Blawie
Herbert D. Lawson

Charles K. Miller,

INVENTOR.

By *C. A. Snow & Co.*
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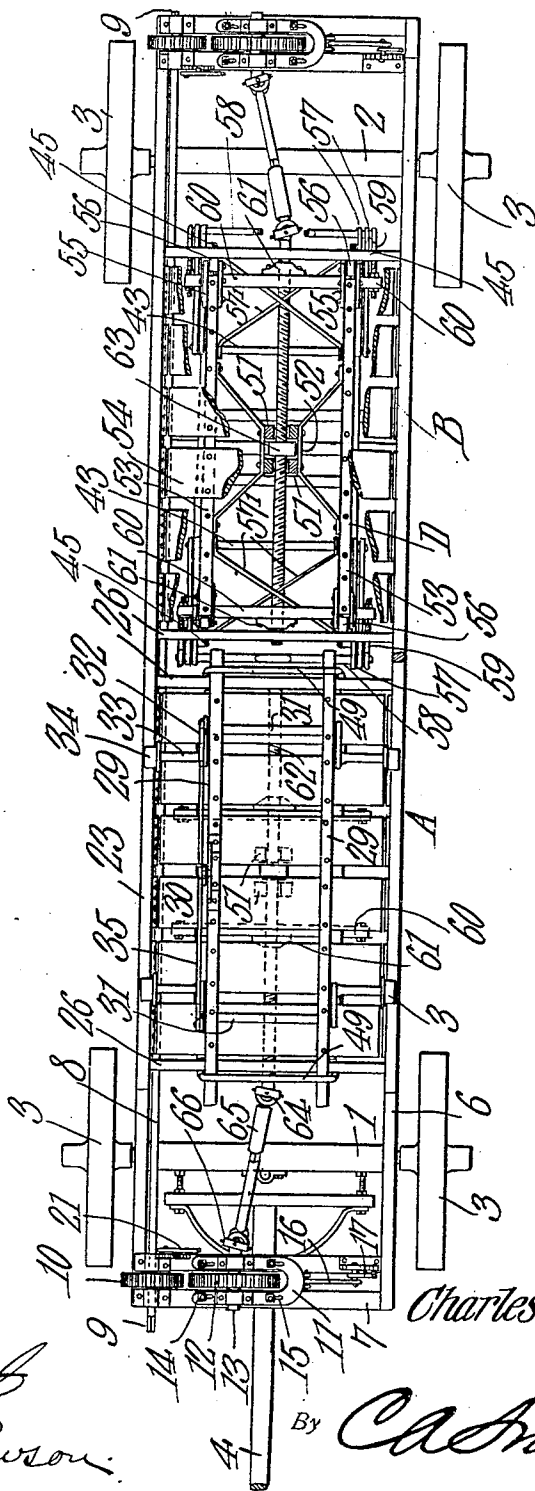
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Fig. 2.



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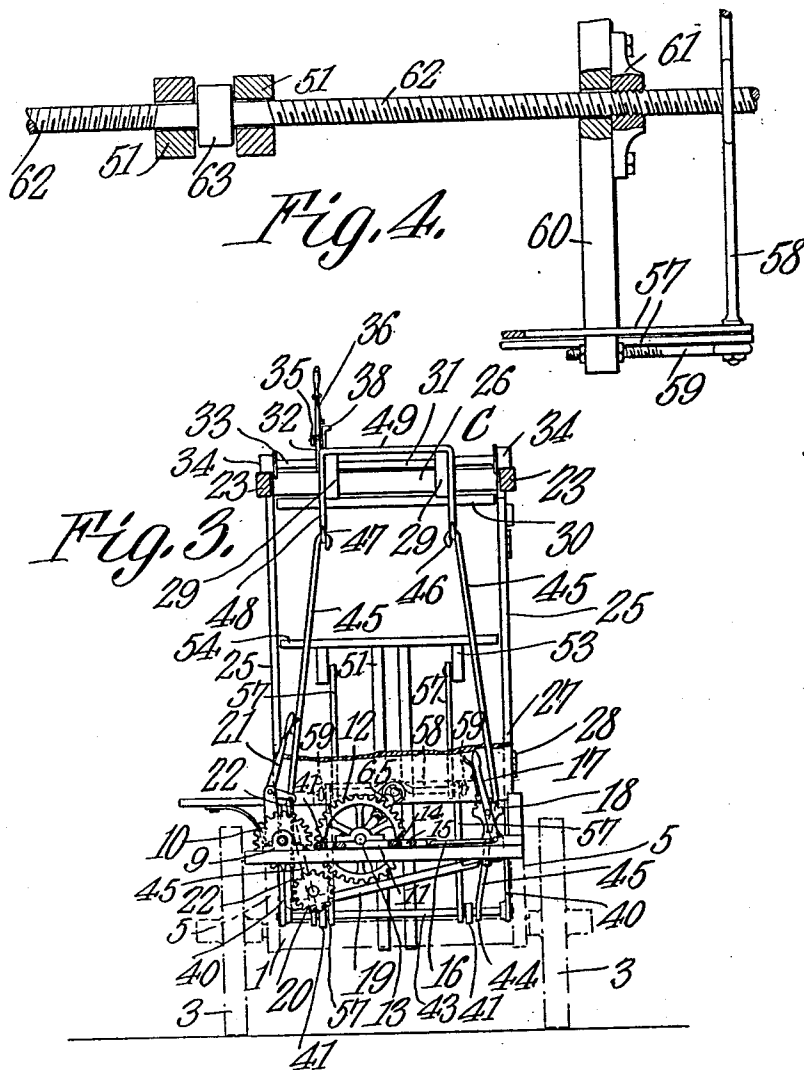
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UNITED STATES PATENT OFFICE.

CHARLES K. MILLER, OF SEILING, OKLAHOMA.

MACHINE FOR BALING BROOM-CORN.

No. 877,939.

Specification of Letters Patent.

Patented Feb. 4, 1908.

Application filed April 12, 1907. Serial No. 367,776.

To all whom it may concern:

Be it known that I, CHARLES K. MILLER, a citizen of the United States, residing at Seiling, in the county of Dewey and State of Oklahoma, have invented a new and useful Machine for Baling Broom-Corn, of which the following is a specification.

This invention relates to machines for baling broom corn and is designed more particularly for use in connection with a machine for combing broom corn such as described and claimed by me in an application filed in the United States Patent Office on April 10, 1906 Serial No. 311,013.

The object of the invention is to provide a baling machine designed to be coupled with a combing machine of the character stated and which will quickly and efficiently bale the corn as fast as it is combed.

A still further object is to provide a baling machine having two baling compartments, one of which is designed to be filled while the baling operation is taking place in the other compartment.

A still further object is to provide a head or closure common to the two compartments and which is designed to be readily shifted from one compartment to the other so as to enable the baling operation to take place in either compartment.

A still further object is to provide a single form of plunger or follower within each baling compartment, said follower being actuated by means of novel mechanism provided for that purpose.

A still further object is to provide means whereby the follower can be actuated in either direction through a power shaft which constantly rotates in one direction, the power transmitting mechanism being constantly under the control of the operator.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a side elevation of the machine, one portion thereof being shown in section; Fig. 2 is a plan view of the machine, the follower in one of the compartments being broken away to show its actuating mechanism; Fig. 3 is an end elevation of the machine; Fig. 4 is an enlarged view partly in section and partly in plan of a

portion of one of the cross heads and the feed screw.

Referring to the figures by characters of reference, 1 and 2 designate the front and rear bolsters respectively of the machine which are carried by the traction wheels 3. A tongue 4 is connected to the front bolster in any preferred manner so as to enable the machine to be readily drawn from place to place. The bolsters have supports 5 extending upward from the ends thereof and on which are mounted the side beams 6 of the frame. These beams are connected at their front and rear ends by cross beams 7. A power shaft 8 extends along one side of the machine and has angular ends 9 whereby it can be coupled to the driving mechanism, not shown, and to the mechanism of the combing machine hereinbefore referred to. Secured to this shaft 8 near each of its ends is a drive gear 10 and mounted upon the cross beam 7 at each end of the frame is a slide 11 carrying a gear 12 which is suitably secured to a shaft 13 journaled upon the slide. The slide may be retained in proper position in any suitable manner as by means of guide bolts 14 extending through slots 15 and a link 16 connects the slide with a lever 17 having suitable means, such as a rack 18, whereby the lever can be locked in any position to which it may be adjusted. Obviously by shifting this lever in one direction the driven gear 12 can be moved into mesh with the driving gear 10 and by shifting the slide in the opposite direction said gears can be disengaged. A lever 19 is pivotally mounted upon and suspended from one of the cross beams 7 at each end of the machine and this lever carries an idler gear 20. A bell crank lever 21 is journaled at each end of the frame and is connected by a rod 22 with lever 19 so that by swinging the lever 21 in one direction the lever 19 will be raised and gear 20 brought into mesh with the two gears 10 and 12, and when the lever 21 is moved in the opposite direction the gear 20 will be shifted downward out of mesh with the gears 10 and 12. It is to be understood that the shaft 8 is designed to rotate continuously in one direction and therefore the mechanism herein described and which is located at both ends of the machine can be readily shifted into or out of operative relation with said shaft. By shifting gear 12 directly into mesh with its gear 10 the same can be caused to rotate in one direction and by shifting the idler

between and into mesh with the gears 10 and 12 the gear 12 can be caused to rotate in the opposite direction.

Guide rails 23 are supported above the beams 6 and parallel therewith by means of standards 24 and the space between these guide rails and the side beams is closed by means of heavy slats 25 constituting the side walls of the two baling compartments A and B of the machine. The adjoining ends of the baling compartments are also closed by means of end walls 26, said walls being spaced apart. One side of each of the compartments is constructed to form a door 27 which is hinged as shown at 28 and designed to be locked in closed position in any preferred manner. The rails 23 constitute supports for a closure C made up of longitudinal beams 29 having cross slats 30 secured to the bottom faces thereof. Journaled within the longitudinal beams 29 near the ends thereof are shafts 31 having bell cranks 32 rigidly connected to the ends thereof. The lowermost arm of each bell crank has a stud 33 extending laterally therefrom and carrying a flanged roller 34 designed to travel upon one of the rails 23. The forwardly extending arms of one bell crank on each shaft have rods 35 pivotally connected to them and the inner ends of these rods are pivoted to a manipulating lever 36 at opposite sides of its fulcrum 37. This lever is designed to be locked in any position to which it may be adjusted by means of a rack 38 mounted on one of the beams 29, there being a spring pressed plunger 39 upon the lever for engaging the rack. The ends of the beams 29 are designed to project beyond the end walls of the compressing compartment above which the cover is placed. It is obvious that by swinging the lever 36 in one direction the rollers 34 will be swung downward so as to lift the closure out of contact with the side rails whereupon the same can be pushed along the rails 23 into position above either of the baling compartments A and B. By reversing the movement of the lever 36 the closure can be lowered into desired position.

Hangers 40 extend downward from the side beams 6 adjacent the ends of each baling compartment and these hangers support rails 41 which are also held against movement by diagonal braces 42 connected to the side beams 6. Rods 43 connect the rails 41 of each pair and the end portions of these rods engage eyes 44 formed in the ends of holding rods 45. Each of these holding rods extends at an incline to one corner of the baling compartment, thence upward along one end wall thereof and terminates in a hook 46. The hooks of the two rods at each end of each baling compartment engage hooks 47 upon the depending portions 48 of a yoke 49 which is designed to embrace the projecting ends of the longitudinal beams 29.

It is apparent that when these yokes are in position on the beams and in engagement with the rods 45 it becomes impossible for the closure to be pushed upward out of position during the compressing operation.

Guide strips 50 are secured upon the rails 41 and extend transversely of the machine and slidably mounted between these guide strips are preferably four parallel stems 51 which are secured in any preferred manner to the center of a follower D. As shown particularly in Fig. 2 these stems are secured to straps 52, the ends of which extend outwardly and are bolted or otherwise fastened to side beams 53 on which are secured transversely extending slats 54. These slats and the beams 53 constitute the head of the follower which is designed to move vertically within the baling compartment. Brackets 55 are located at the ends of the beams 53 and carry anti-friction rollers 56 designed to travel upon the end walls of the baling compartment.

Each follower D is provided with actuating mechanism E and the mechanism of the two followers are designed to be independently actuated. As shown in the drawings each follower is connected by means of toggle links 57 with the rods 44 and the pivotally connected ends of these links are mounted on cross rods 58 from which extend eye bolts 59 which engage the ends of cross heads 60. The toggles are provided with diagonally disposed cross braces 57' whereby they are rigidly held against lateral movement when subjected to pressure. Each cross head is provided at its center with a feed block 61 having a screw threaded passage designed to receive and support a feed screw 62. This feed screw has a collar 63 at the center thereof which rotates between the stems 51 and those portions of the screw at opposite sides of this collar are provided with right and left threads respectively so that when the screw is turned in one direction the cross heads 60 and the feed blocks carried thereby will be simultaneously moved in opposite directions so as to either extend or fold the toggles. The eye bolts 59 are provided so as to enable the toggles to fold without the cross heads 60 interfering therewith. This is apparent by referring to Fig. 1. The outer end of each feed screw is connected by a universal joint 64 with a telescopic shaft 65 which is in turn connected by a universal joint 66 with one of the shafts 13.

In using this machine for baling broom corn the closure C is shifted into position above one of the compartments, for example, compartment B, and the gear 20 is shifted into mesh with gears 10 and 12 so that motion will be transmitted through the telescopic shaft 65 to the feed screw within the compartment A. This feed screw will cause the cross heads to move away from each

other simultaneously and the follower D will be drawn downward. It is of course apparent that the feed screw will move downward with the middle joints of the toggles as shown at the right of Fig. 1. After the follower has been brought into lowered position the rotation of the screw 62 is stopped by shifting the idler 20 out of mesh with gears 10 and 12. The broom corn to be baled is then placed within the compartment A above the follower after which the closure C is moved along the rails 23 into position above the compartment A and yokes 49 are placed over the ends of beams 29 and into engagement with the rods 45. The gear 12 is then shifted into mesh with gear 10 and will cause the feed screw 62 to slowly rotate in the opposite direction so that the cross heads 60 will be drawn toward each other and gradually extend the toggles so that the follower D will be pressed upward against the broom corn in the path thereof. While this compressing operation is taking place the follower D in the compressing compartment B can be lowered in the manner hereinbefore described and broom corn placed upon the follower and within the compartment. After the baling operation in compartment A has been completed and the bale has been properly tied the closure can be moved in position above the compartment B and secured by means of yokes 49 and rods 45, whereupon the mechanism at the other end of the machine can be set in motion to move the follower upward within compartment B. While the compressing operation is taking place in this compartment the door of compartment A can be opened and the bale removed after which follower D in said compartment A can be lowered as hereinbefore described and said compartment again filled. It will be seen therefore that while material is being placed in one compartment another compartment can be filled and therefore no time is lost in carrying out the baling operation. By providing the telescopic shafts 65 and the universal joints 64 and 66 power can be transmitted to the feed screws from the shafts 13 at all times during the vertical movement of said screws.

What is claimed is:

1. The combination with separate baling compartments, and independently operated compressing means therein; of rails extending above said compartments, a wheel supported closure mounted to travel upon the rails, and means for shifting the wheels to raise or lower the closure.
2. The combination with separate baling compartments, and independently operated compressing means therein; of rails extending above said compartments, a wheel supported closure mounted to travel upon the rails, means for raising or lowering the closure in relation to the compartments, and

means for locking the closure in position above either compartment.

3. The combination with separate baling compartments, and independently operated compressing means therein; of rails extending above the compartments, a closure, rock shafts journaled upon the closure, arms extending therefrom, rollers carried by the arms and movable upon the rails, and means for simultaneously actuating the shaft to shift the rollers toward or from the rails, said closure being movable along the rails into position above either compartment.

4. The combination with separate baling compartments, and a closure movable into position above either compartment; of a compressing follower within each compartment, a continuously revoluble power shaft, and independent means for transmitting motion from said shaft to either follower to shift the follower in either direction.

5. The combination with a baling compartment and a follower therein; of toggles connected to and disposed to actuate the follower, an oppositely threaded feed screw supported by and disposed to actuate the toggles, a relatively fixed drive shaft, and telescopic means for transmitting motion from said shaft to the feed screw to adjust the toggles, said means being positively connected to the shaft and feed screw.

6. The combination with a baling compartment and a follower therein; of toggles connected to and disposed to actuate the follower, a feed screw, cross heads disposed to be simultaneously actuated thereby, connections between the cross heads and toggles, a drive shaft, means for transmitting motion from the drive shaft to the feed screw independently of said screw, and means independent of the drive shaft for reversing the movement of the screw.

7. The combination with a baling compartment and a follower therein; of toggles connected to and disposed to actuate the follower, cross heads connected to and supported by the toggles, a feed screw supported by and engaging the cross heads, a drive shaft, a driven gear, a telescopic shaft, universal connections between said shaft and the gear and feed screw, and means for transmitting motion from the drive shaft to the telescopic shaft.

8. The combination with a baling compartment; of a follower therein, stems extending therefrom, guides for said stems, rails supporting the guides, toggle connections between the rails and follower, an oppositely threaded feed screw supported by and disposed to actuate the toggle, and a collar upon said screw and movably mounted between the stems.

9. In a baling machine the combination with separate baling compartments and rails extending above and constituting por-

