

D. A. STEWART.

SHEAF LOADER.

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1,047,326.

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2 SHEETS—SHEET 1.

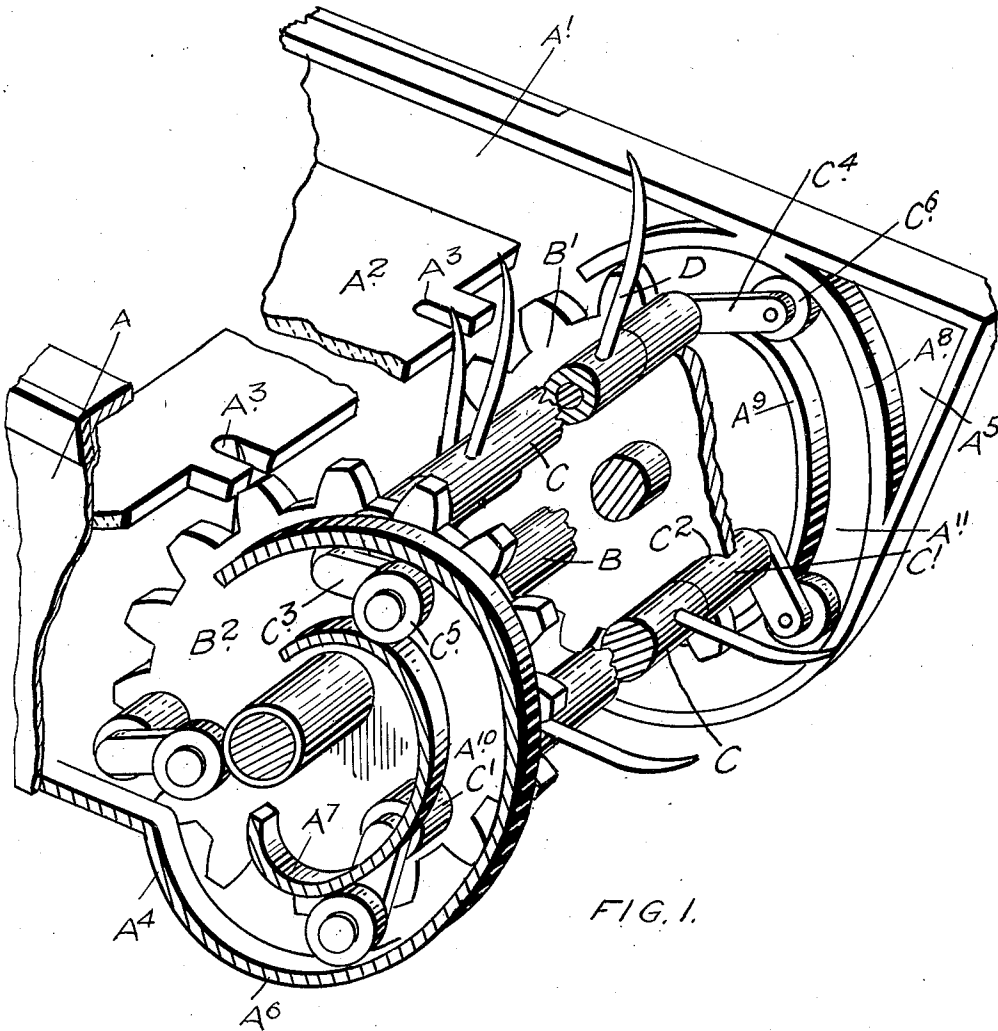


FIG. 1.

WITNESSES.

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SHEAF-LOADER.

1,047,326.

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To all whom it may concern:

Be it known that I, DAVID ALBERT STEWART, of the city of Winnipeg, in the Province of Manitoba, Canada, have invented certain new and useful Improvements in Sheaf-Loaders, of which the following is the specification.

My invention relates to improvements in sheaf loaders and the object of the present invention is to improve the construction of the "pick-up" or that portion of the machine whereby the sheaves are moved up off the ground onto the inclined elevating deck so that the sheaves will be delivered by the prongs onto the deck radially and without any liability of the prongs getting entangled in the sheaves and the consequent stoppage or breaking of the "pick-up" incident thereto by reason of the prongs drawing down at an angle and choking instead of straight down and drawing out easily from the sheaf and it consists essentially of a pair of side-boards having an inclined deck supported therebetween and having notches in its lower end, a suitable driving shaft journaled in the side-boards, disks or gears mounted upon the cross shaft to each side in proximity to the side-boards and secured to the shaft, rocking rods journaled in the gears at each end and cranks connected to the rocking rods, the crank at one end being set slightly in advance of the crank at the other end cam-ways formed on the inside of the side-boards, rollers journaled on the crank arms and co-acting with the cam-ways and prongs extending from the rocking rods as hereinafter more particularly explained by the following specification.

Figure 1, is a perspective view of my "pick-up" mechanism intermediately broken away and showing the side-board broken away at one side to more clearly exhibit the construction of my invention. Fig. 2, is a sectional elevation through Fig. 1, showing the form of cam-way located at one side of the pick-up device. Fig. 3, is a similar view to Fig. 2, showing the form of cam-way located at the opposite side of my pick-up device with the location of the other cam-way and co-acting parts shown in Fig. 2 indicated by dotted lines.

In the drawings like letters of reference indicate corresponding parts in each figure.

A and A' are the side-boards.

A² is the inclined deck extending from side-board to side-board and having notches

A³ formed in the lower edge thereof. The lower end of each side-board is provided with an enlargement A⁴ and A⁵ respectively. The enlargement A⁴ is provided with an exterior rib A⁶ and an interior cam rib A⁷. The enlargement A⁵ is provided with an exterior cam-rib A⁸ and an interior cam-rib A⁹. The cam ribs A⁶ and A⁷ form a cam way A¹⁰ and the cam ribs A⁸ and A⁹ form a cam-way A¹¹.

B is a shaft journaled at each end in suitable bearings located in the side-boards A and A'.

B' and B² are gears or disks mounted upon the shaft B in proximity to each end thereof and to the side-boards A and A'. The gears B' and B² are rigidly secured to the shaft B.

C are a series of rocking rods journaled at each end in suitable bearing sleeves C' held within orifices C² formed in the gear B' and B². The rocking rods C are provided at one end with crank arms C³ and at the opposite end with crank arms C⁴ located slightly in advance of the crank arm C³ as indicated in full lines in Fig. 1 by dotted lines in Fig. 3. The arms C³ and C⁴ carrying the rollers C⁵ and C⁶ are set at a slight angle one to the other so that when the prongs D ascend into the upper position carrying the sheaf the rollers C⁵ and C⁶ will bear respectively against the outer face of the cam rib A⁷ and the inner surface of the cam rib A⁸ as shown clearly by the full and dotted lines in Fig. 3 of the drawings. By this means the prong D carrying the sheaf upward is held rigid and yet will travel up between the cam ribs smoothly and evenly. The crank arms C³ are provided with rollers C⁵ journaled in proximity to the end of the arms and extending into the cam-way A¹⁰ so as to co-act with the cam ribs A⁶ and A⁷. The crank arms C⁴ are provided with rollers C⁶ journaled in proximity to each of the arms C⁴ and extending into the cam-way A¹¹ between the ribs A⁸ and A⁹ so as to co-act therewith.

D are a series of prongs which extend from each of the rocking ribs C as indicated. When prong D is being drawn downwardly out of the sheaf and past or through the end of the deck A² pulley C⁵ will pass the center or a line drawn through the center of B and C therefore in order to keep prong D in its right position at this point it is necessary to have cam A¹¹ as shown in Fig. 3 with arm C⁴ at a different angle.

The angle of the arm C^4 in Fig. 3 from a line drawn through the center of B and C, would be about an angle of 65 or 70 degrees at the same time prong D was lifting the load, which would be hard to operate if both arms C^3 and C^4 were at that angle.

Having described the principal parts involved in my invention I will briefly describe the operation of the same. It will be understood that the shaft C is revolved by suitable means thereby rotating the disks or gears B' and B^2 carrying the rocking shafts around with them. It will be seen as each rocking shaft is carried upwardly the roller C^5 engages the rib A^7 so as to carry the prong D from the position 2 gradually into position substantially at right angles with the deck A^2 . During this operation the prongs grip the sheaf taking it upwardly with them. As the prong ascends so as to pass over the center of the shaft B the rollers C^6 at the opposite end of the rocking shaft come into engagement with the exterior cam rib A^8 thereby holding the prong in a rigid position. As the rocking shaft is carried around to the opposite side of the shaft B the roller C^6 engages the interior cam rib A^9 . The roller C^6 remains in engagement with the rib A^9 as the rocking shaft descends thereby holding the prong in a position at right angles to the deck A^2 during such descent and also as it passes through the notch A^3 thereby drawing the prong directly and easily out of the sheaf. The sheaf is thus left on the deck A^2 to be removed by any desired mechanism. As the rock shaft further descends the roller is thrown over the rock shaft by the cam rib A^9 so as to bring the prong 1 into the position shown at 2.

It will be seen from this description that I have devised a device for picking up sheaves whereby the prongs are drawn out from the sheaf at right angles to the body thereof as the sheaf is deposited on the deck thereby preventing the prongs sticking or clogging in the sheaf as they are withdrawn which would be the case if the prongs were drawn out from the sheaf at any other angle than at an angle substantially at right angles to the body.

What I claim as my invention is—

1. A pick-up device for sheaf loaders comprising side-boards, a deck extending between the side-boards, a suitably driven shaft journaled in the side-boards at each end, disk members secured to the shaft in proximity to the side-boards, a rock shaft journaled in the disks and having prongs extending therefrom, a crank arm extending from each end of the rock shaft and one set slightly in advance of the other rollers journaled in the

end of each crank, and cam-ways so formed on the inside of each side-board into which the rollers extend as to draw the prongs out of the moving grain as it passes by the end of the deck, as and for the purpose specified.

2. A pick-up device for sheaf loaders comprising side-boards, a deck extending between the side-boards, a suitably driven shaft journaled in the side-boards at each end, disk members secured to the shaft in proximity to the side-boards, a rock shaft journaled in the disks and having prongs extending therefrom, a crank arm extending from each end of the rock shaft and one set slightly in advance of the other, rollers journaled in the end of each crank, and cam-ways so formed on the inside of each side-board into which the rollers extend as to draw the prongs laterally out of the moving grain as they pass by the end of the deck, as and for the purpose specified.

3. A pick-up device for sheaf loaders comprising side-boards, a deck extending between the side-boards, a suitably driven shaft journaled in the side-boards at each end, disk members secured to the shaft in proximity to the side-boards, a rock shaft journaled in the disks and having prongs extending therefrom, a crank arm extending from each end of the rock shaft and one set slightly in advance of the other rollers journaled in the end of each crank, and cam-ways so formed on the inside of each side-board into which the rollers extend so that the prongs are swung into a radial position with the center of the shaft and rigidly held in such position as they pass upwardly over the center of the shaft, as and for the purpose specified.

4. A pick-up device for sheaf loaders comprising side-boards, a deck extending between the side-boards, a suitably driven shaft journaled in the side-boards, a rock shaft journaled in the disks and having prongs extending therefrom, a crank arm extending from each end of the rock shaft and one set slightly in advance of the other, rollers journaled in the end of each crank, and cam-ways so formed on the inside of each side-board into which the rollers extend as to draw the prongs out of the moving grain as it passes by the end of the deck, so that the prongs are swung into a radial position with the center of the shaft and rigidly held in such position as it passes upwardly over the center of the shaft, as and for the purpose specified.

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Witnesses:

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