April 19, 1932. E. SATKOWSKI ET AL 1,854,349

MANURE LOADING MACHINE

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FIG. 1.

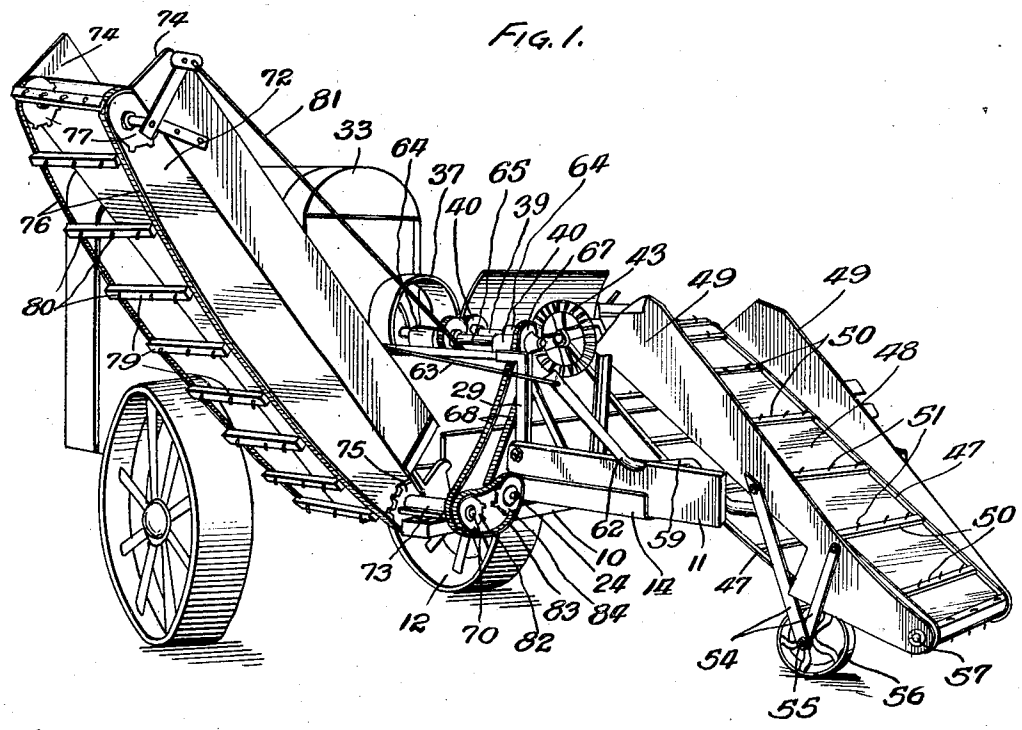
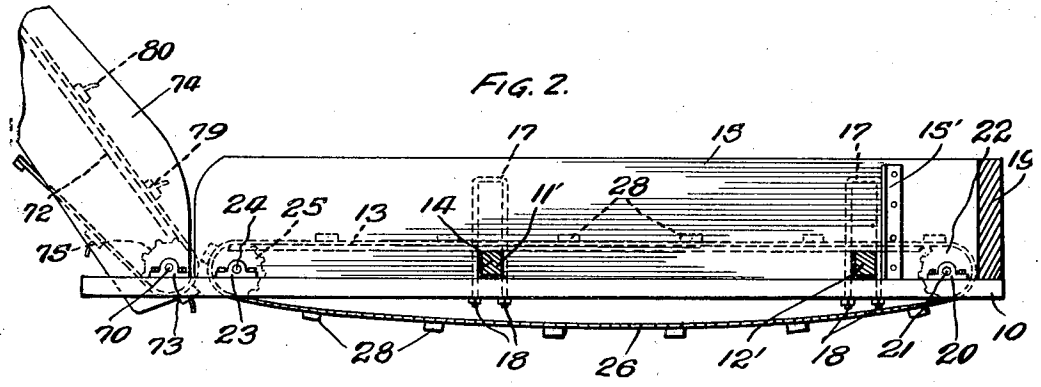


FIG. 2.



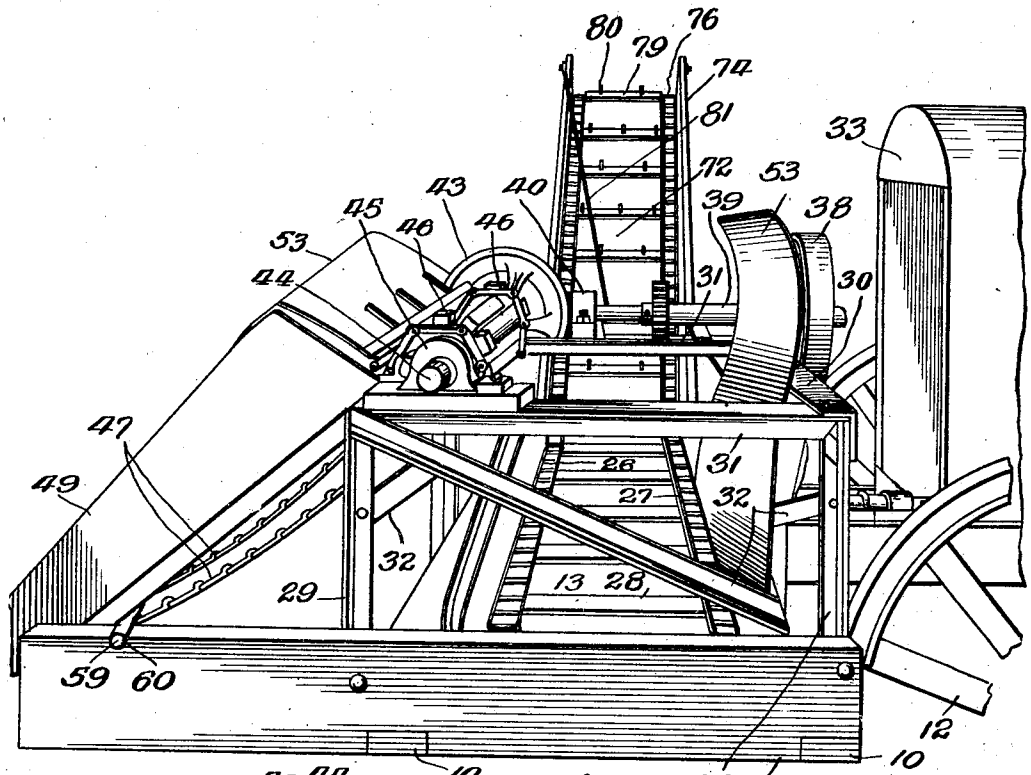
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FIG. 3.



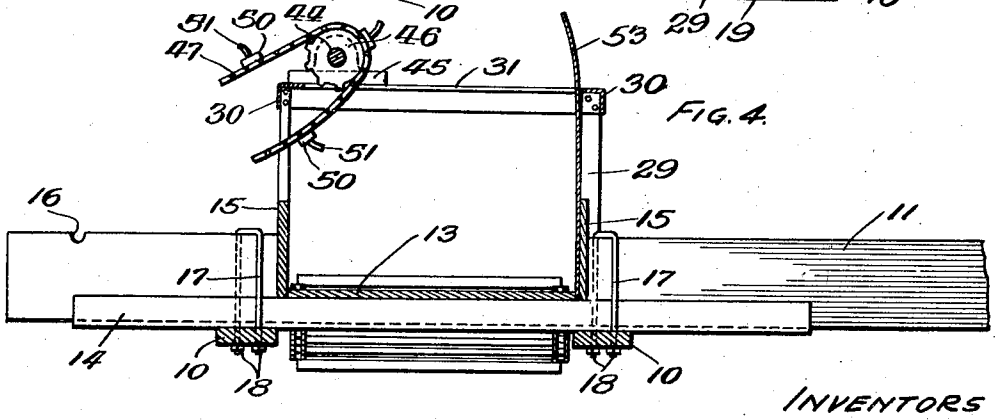


FIG. 4.

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FIG. 5.

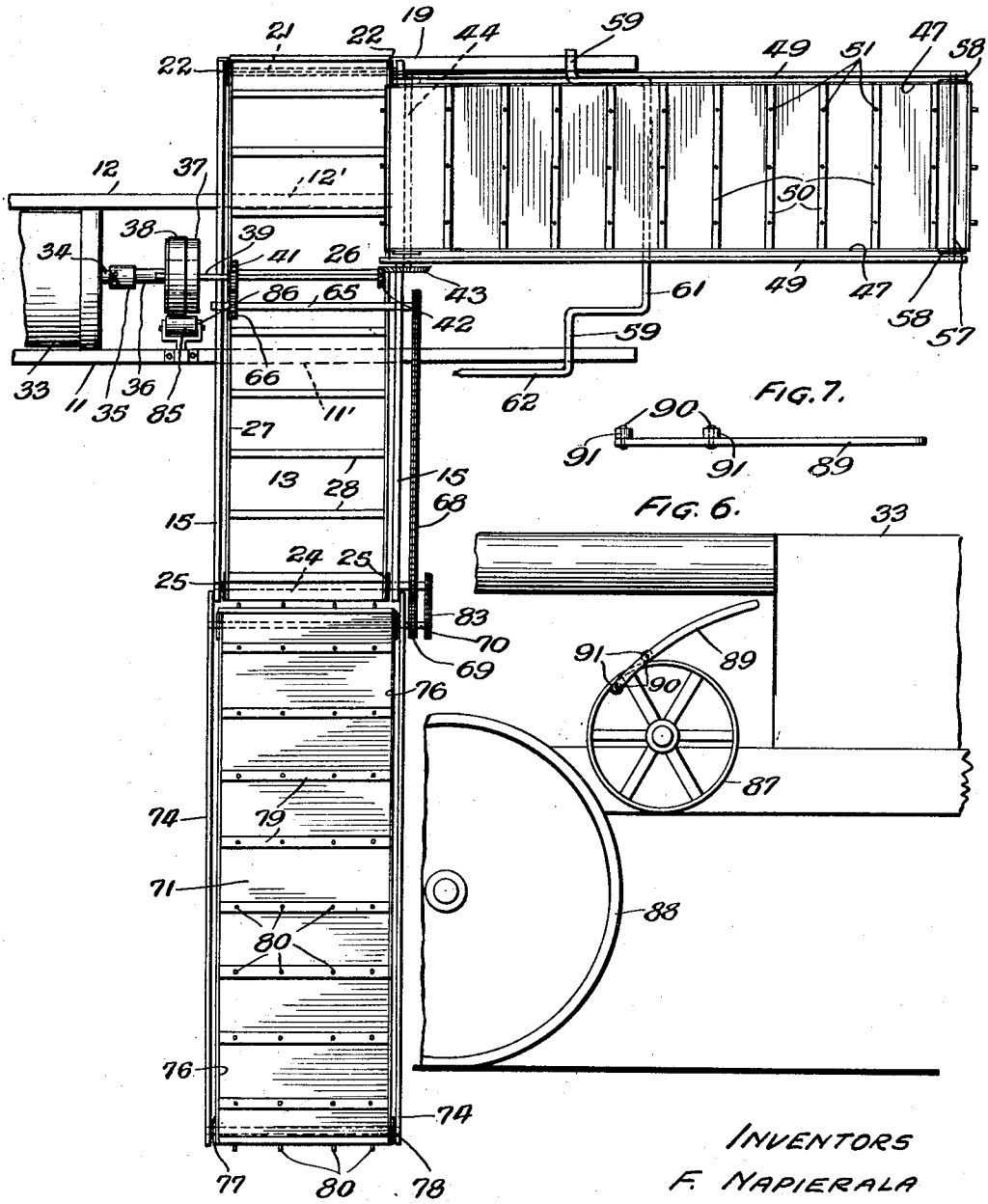


FIG. 7.

FIG. 6.

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UNITED STATES PATENT OFFICE

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MANURE LOADING MACHINE

Application filed October 6, 1930. Serial No. 486,631.

The present invention relates to manure loading machines and has for its object the provision of a transportable manure loader.

Another object of the present invention is the provision of a manure loading machine which may be attachable to the tractor for the purpose of transporting.

A still further object of the present invention is the provision of a manure loading device constituting a plurality of manure carrying platforms, of which one platform may be stationary, and the other angularly shifting with respect to said stationary platform.

A still further object of the present invention is the provision of an improved manure loading machine which may be simple and durable in construction and efficient in operation.

With the above general objects in view and others that will appear as the nature of the invention is better understood the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claims.

In the drawings forming a part of this application and in which like designating characters refer to corresponding parts throughout the several views,

Fig. 1 is a perspective elevational view of the machine;

Fig. 2 is a side view of the stationary platform with an adjustable elevating platform partly broken away;

Fig. 3 is an elevational perspective view of the machine from another angle;

Fig. 4 is a transverse cross-sectional view through the stationary platform along one of the supporting bars thereof;

Fig. 5 is a top plan view of the machine;

Fig. 6 is a side view of the front end of the tractor, illustrating a means for cranking the motor; and

Fig. 7 is a cranking tool.

Referring in detail to the present drawings there is shown a pair of planks 10 upon which a pair of parallel bars 11 and 12 are positioned. Portions of said bars 11 and 12 are reduced as at 11′ and 12′ to receive thereupon board or platform 13. For the purpose of strengthening said bars 11 and 12 at their reduced portions 11′ and 12′, respectively, angle plates 14 are placed beneath said bars, said plates by one of their wings directly resting upon said planks 10, as clearly seen on Fig. 4.

Side boards 15 are positioned upon the reduced portions 11′ and 12′ of bars 11 and 12, respectively, said side boards 15 having suitable recesses for accommodating said reduced portions 11′ and 12′ of said bars, and are suitably attached to the adjacent body portion of said bars by means of angle irons 15′. Said side boards 15 in conjunction with platform 13 will form a trough upon which the manure is carried.

Bar 12 may terminate with the outer side board 15, while bar 11 is longer and at its outer end is provided with a transverse groove 16 for the purpose which will be hereinafter described. Both of said bars 11 and 12 are rigidly affixed to planks 10 by means of U-shaped bolts 17 and nuts 18.

At one end of platform 13 the same has end wall 19 attached thereto which may be affixed to the ends of side boards 15 and planks 10. Said end wall 19 by one of its ends reaches as far as the end of bar 11, as seen on Fig. 5, for the purpose which will be hereinafter stated.

Resting upon the ends of said planks 10 adjacent the end wall 19 are bearings 20 supporting shaft 21. Positioned upon said shaft 21 and adjacent the inner faces of planks 10 are sprocket wheels 22 which are rigidly affixed to said shaft 21. The opposite ends of planks 10 carry similar bearings 23 and shaft 24 upon which similar sprocket wheels 25 are rigidly affixed. Said sprocket wheels 22 and 25 adjacent each of the planks 10 carry an endless chain 26. A similar endless sprocket chain 27 is carried by the two sprocket wheels 22 and 25 adjacent the other plank 10. Both of said chains 26 and 27 are connected by a plurality of carrying rods 28. Thus when shafts 21 and 24 are revolving, portions of chains 26 and 27 travel upon platform 13 while the other portions thereof travel be-

neath thereof, as seen on Fig. 2. Platform 13 does not extend fully to end wall 19, but terminates a head of sprocket wheels 22 and shaft 21 for providing clearance between the end of said platform 13 and end wall 19, for permitting movement of endless chains 26 and 27 and carrying rods 28.

Adjacent the end near the end wall 19 the stationary platform, including platform 13 and side boards 15, has a frame-work arranged thereon, including four upright standards 29 which rest upon planks 10 and are rigidly affixed to side boards 15, bar 11 and end wall 19. A pair of horizontal frame members 30, disposed above side boards 15 are affixed at the upper ends of said standards 29. A pair of horizontal frame members 31 which are transversely disposed with respect to the platform aforesaid, are likewise attached to the ends of standards 29 and connect with frame members 30. A plurality of either horizontal or cross braces 32 connect the several 29, or said standards with side boards 15, for strengthening the construction of said frame.

Bars 11 and 12 extend beyond one side of the platform for receiving therebetween the front end of tractor 33 and are rigidly mounted thereupon. Thus the entire device is carried and supported by tractor 33. The power for operating the several platforms in the device is derived from the tractor through the medium of crank receiving shaft 34, which, by means of coupler 35 connects with shaft 36. Said shaft 36 terminates in a pulley, not shown, above which another pulley 37 is disposed. Both said pulleys are connected by belt 38. Pulley 37 is rigidly set upon the adjacent end of shaft 39, which is positioned above the frame, and more particularly above and in alinement with one of the transverse frame members 31, said shaft 39 being supported thereupon by one or more bearings 40. Said shaft 39 near its end adjacent pulley 27 is provided with a gear wheel 41 for the purpose which will be hereinafter described. The opposite end terminates in a bevel gear 42, which meshes with a larger bevel gear 43 rigidly carried by one end of shaft 44. Said shaft 44 rests upon bearing or bearings 45 which may be positioned either upon the horizontal frame members 31 or 30, as seen on Fig. 3. Rigidly affixed upon said shaft 44 and disposed adjacent each end thereof, or more specifically adjacent bearing 45 and bevel gear 43 is a pair of sprocket wheels 46 adapted to receive thereupon a pair of sprocket chains 47.

The manure gathering and elevating platform includes platform proper 48 which is in any suitable manner supported at its upper end by the adjacent horizontal frame member 30, and further includes side walls 49 which are in any suitable manner attached to platform 48. The two sprocket chains 47 are connected by transverse carrying rods 50 which are transversely disposed in relation with platform 48, said rods 50 being provided with prongs 51 which are adapted to facilitate digging into the pile of manure and assist in bringing the same upon platform 40 to be carried by rods 50 and elevated into platform 13.

Said last described platform may be also provided at its upper end with hood 52, which is removed from the device as shown on Fig. 1 and fully shown on Fig. 3, which hood at its end is spaced away from platform 48 and from carrying rods 50, by means of which arrangement the carried manure may be evenly spread upon platform 48 as the same is elevated and also for the purpose of preventing the manure from flying about as it passes over shaft 44, due to its inertia.

Oppositely of the upper end of platform 48 and at the side of stationary platform 13 adjacent tractor 33, plate 53, extending above frame, including horizontal members 30 and 31 thereof is provided, for preventing the manure from falling beyond platform 13. The manure thrown off with a comparative force from platform 48 would otherwise fall beyond platform 13, hence the purpose of said plate 53.

The lower end of platform 48 is supported by a carriage including bars 54, shaft 55 and wheels 56 upon said shaft. Said carriage not only supports the platform but facilitates its traveling upon the ground when tractor 33 is in motion.

The front end of platform, which is generally referred to by numeral 48, further includes shaft 57, provided with sprocket wheels 58 over which sprocket chains 47 are adapted to travel, the ends of said shaft 57 being freely set within side walls 49, as clearly seen on Fig. 1.

For elevating platform 48 shaft 59 is provided which is adapted to rest within groove 16 of bar 11 and within a similar groove 60 made in the end wall 19. Said shaft 59 is provided with a crank or U-shaped portion 61 which is disposed below platform 48, and in its operative position is adapted to contact and bear against the adjacent lower edges of side walls 49 for elevating the lower end of platform 48 from the ground, for the purpose of regulating the position of the lower end of elevating platform 48 with respect to the pile of the manure and also for the purpose of facilitating carrying of the entire device upon tractor 33 when the device is not in use. Shaft 59, including its U-shaped portion 61 is operated by means of lever 62 upwardly projecting from the end of shaft 59, adjacent and beyond bar 11, as seen on Fig. 5. The upper end of said lever 62 is adapted to receive rod or cord 63 passing over and above platform 13 and reaching to the operator sitting upon tractor 33. By

pulling upon said rod or cord 63 shaft 59 will be revolved in consequence whereof the U-shaped portion 61 thereof will be elevated and will be brought in contact with the lower edges of side walls 31 for the purpose of angularly shifting platform 38 upon shaft 44.

Disposed within bearings 64 which are positioned upon horizontal bars 30 of the frame and remaining in parallel relation with shaft 39 is another shaft 65 having rigidly affixed thereto gear 66 meshing with gear 41 of shaft 39. The opposite end of said shaft 65 extends beyond platform 13, and the adjacent side wall 15 thereof and terminates in a sprocket wheel 67 for receiving thereupon sprocket chain 68 which is adapted to pass over sprocket wheel 69 upon shaft 70 which is positioned at the lower end of angularly shifting platform generally indicated by 71 upon Figure 5 including its bottom wall 72 shown on Fig. 1. Said shaft 70 is adapted to rest within bearing 73 positioned upon the adjacent end of planks 10, as shown on Fig. 1. Said platform 71 is further provided with side walls 74.

Said shaft 70, adjacent the inner faces of walls 74 carries sprocket wheels 75 which are rigidly affixed to said shaft 70, for passing thereupon a pair of sprocket chains 76, which, at the upper end of platform 71 are passed over sprocket wheels 77 upon shaft 78, which is set by its ends within side walls 74, as seen on Fig. 5. Said chains 76 are connected by transverse rods 79 for upwardly carrying manure which travels upon platform 13 and is picked therefrom by said rods 79 to be elevated to a loading wagon which may be brought beneath the upper end of said platform 71. Said rods 79 are provided with prongs 80 for facilitating picking manure from platform 13 upon platform 71.

To angularly shift platform 71 cord 81 attached to the upper end of platform 71 is provided. On pulling said cord 81 and attaching the same in any suitable manner to frame work aforesaid the platform will be brought to a more elevated position and conversely on releasing said cord 81 platform will be brought down, depending upon the height of the loading wagon.

Shaft 70, adjacent sprocket chains 68 and sprocket wheel 69 extends farther beyond said sprocket wheel 69 and has at its end rigidly attached thereto a similar sprocket wheel 82 for receiving thereupon sprocket chain 83 which passes over a similar sprocket wheel 84 rigidly positioned upon shaft 24, as seen on Figs. 1 and 5. By means of said sprocket wheels 82 and 84 and sprocket chain 83 rotation of shaft 70 is transmitted to shaft 24 in the same direction for the purpose of operating chains 27 and rods 28 upon stationary platform 13.

Belt 38 passes over pulley 37 and another pulley upon shaft 36 and is in loose condition. For keeping the same in stretched position idler pulley 85 within bearing 86 is provided. Said bearing 86 is hingedly supported upon bar 11. Thus when it becomes necessary to disconnect the transmission of power from tractor 33 to the three platforms, idler pulley 85 is removed from its contact with the side or belt 38.

Since the crank receiving shaft 34 is in engagement with shaft 36 through the medium of coupler 35, to start the motor in tractor 33 pulley wheel 87 is brought in motion. Said pulley wheel 87 remains adjacent the real wheel 88 of the tractor and is usually found in tractors of standard construction for the purpose of transmitting the power from the tractor to the many farming machines. In order to start the tractor through the medium of said pulley 87 a proper tool is provided which consists of bar 89 carrying near one of its ends a pair of spaced lugs 90 which have around them frictional rings 91. In order to start the tractor through the medium of pulley wheel 87 the rim of said wheel is engaged by said lugs 90, the outer lug engaging the inner periphery of the rim and the other lug engaging the outer periphery of said wheel 87, as shown on Fig. 6. On exerting manual pressure upon the other end of said bar 89 wheel 87 will be brought into rotary motion, which motion will be imparted to engine of the tractor for starting the same.

While there is described herein a preferred embodiment of the present invention it is nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

What we claim as new is:

1. In a loading machine, a framework including a pair of spaced parallel planks, a pair of spaced parallel bars supported by said planks and arranged transversely thereof, corresponding ends of said bars projecting beyond one of said planks and adapted to be rigidly secured to the front end of a tractor, said bars having aligned cut out portions, a stationary conveyor received by said cut out portions of the bars and supported by the latter, a second conveyor pivotally mounted on corresponding ends of said planks and arranged in end to end relation with the stationary conveyor, an additional inclined conveyor located in advance of the stationary conveyor and pivoted at its upper end, a power operated shaft journaled above the stationary conveyor, and means actuated from said shaft to simultaneously operate said conveyors.

2. In a loading machine, a framework including a pair of spaced parallel planks, a pair of spaced parallel bars supported edgewise on said planks and arranged transversely thereof, corresponding ends of said bars

projecting beyond said planks to support the machine from the opposite sides of a tractor and in advance of the latter, said bars having aligned cut away portions, a stationary conveyor received by the cut away portions and supported by said bars, a second inclined conveyor pivotally mounted on corresponding ends of the planks and arranged in end to end relation with the stationary conveyor, a super-frame structure rising above the stationary conveyor, an additional inclined conveyor disposed in advance of the stationary conveyor and pivoted at its upper end on the super-frame structure, a power operated shaft journaled on said structure above the stationary conveyor, and means actuated from said shaft to simultaneously operate the conveyors.

3. In a loading machine, a framework including spaced parallel planks, a pair of spaced parallel bars supported edgewise on said planks and arranged transversely thereof, corresponding ends of said bars projecting beyond said planks to support the machine from the opposite sides of a tractor in advance of the latter, said bars having aligned cut away portions, a stationary conveyor received by the cut away portions and supported by said bars, a second inclined conveyor pivotally mounted on corresponding ends of the planks and arranged in end to end relation with the stationary conveyor, a super-frame structure rising above the stationary conveyor, an additional inclined conveyor disposed in advance of the stationary conveyor and pivoted at its upper end on said super-structure, means for simultaneously operating said conveyors, an end wall at the outer end of the stationary conveyor and projecting beyond the latter along one side of the last mentioned conveyor, one of said bars being extended along the opposite side of the conveyor, said end wall and bar having bearing notches in the upper edges thereof, and a rock shaft supported in said notches and including a crank-like portion arranged beneath said conveyor.

In testimony whereof we affix our signatures.

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