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F. J. NEEFE.
LOADING APPARATUS.
APPLICATION FILED FEB. 1, 1910.

Patented Mar. 7, 1911.

3 SHEETS—SHEET 1.

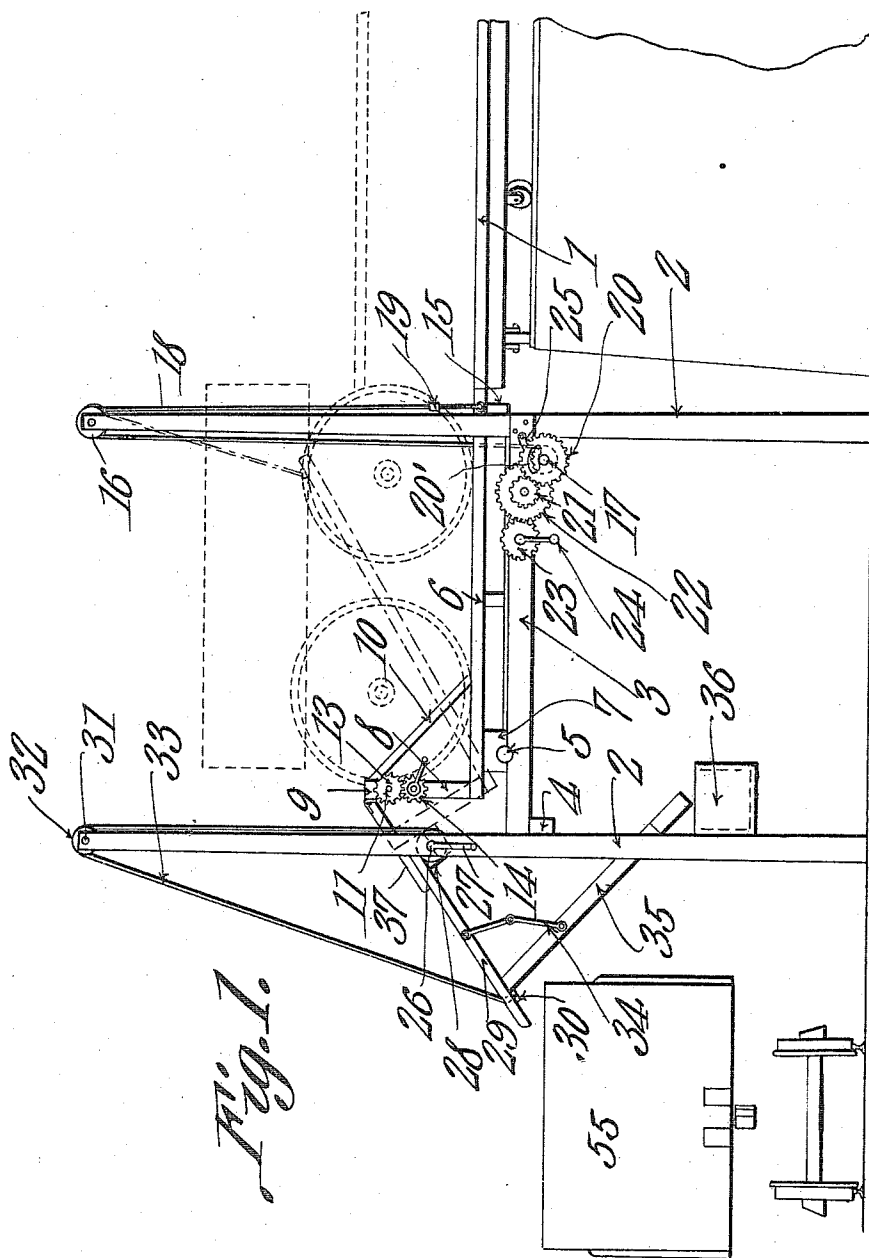


Fig. 1.

Witnesses

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By

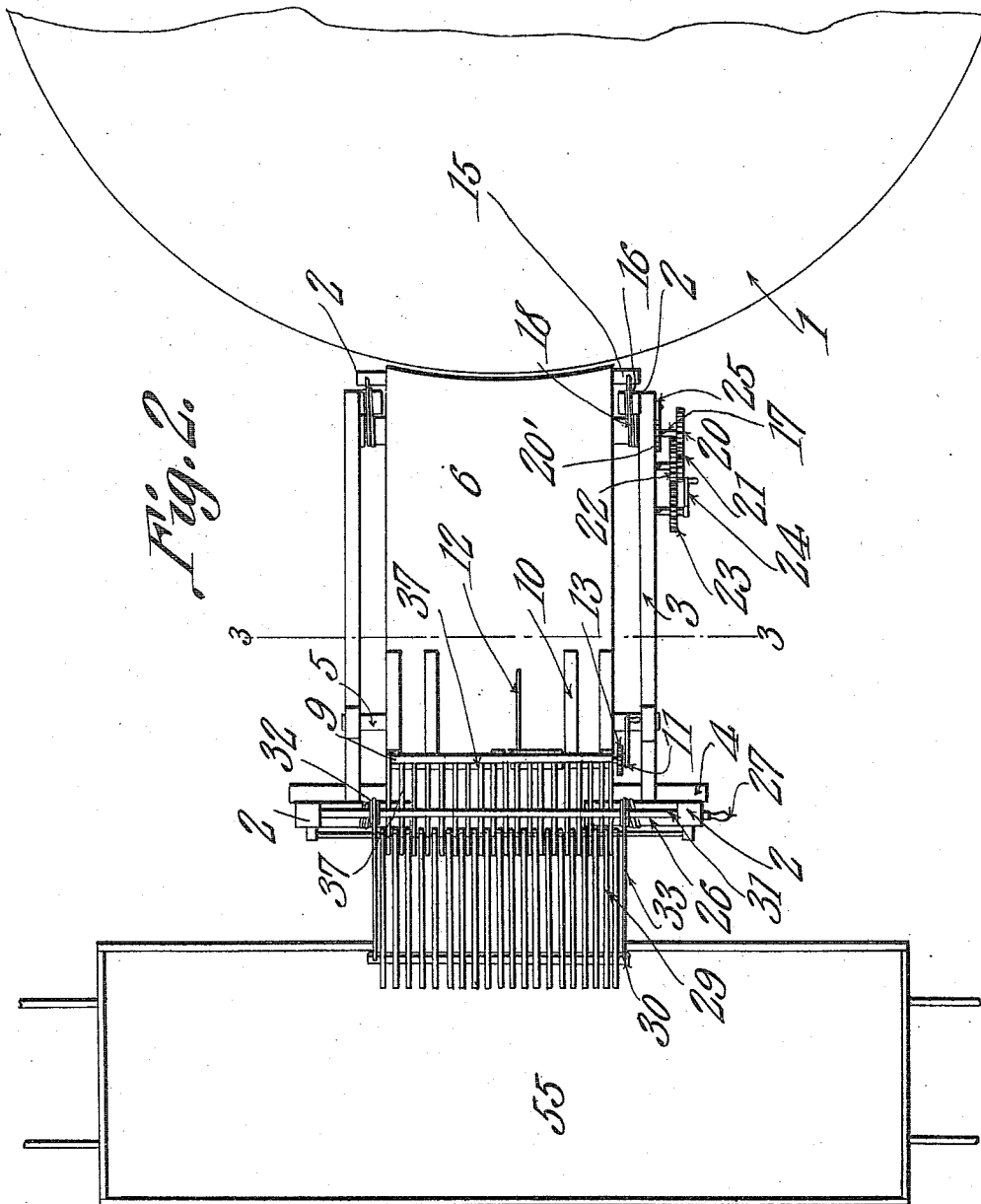
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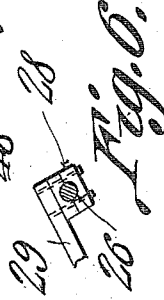
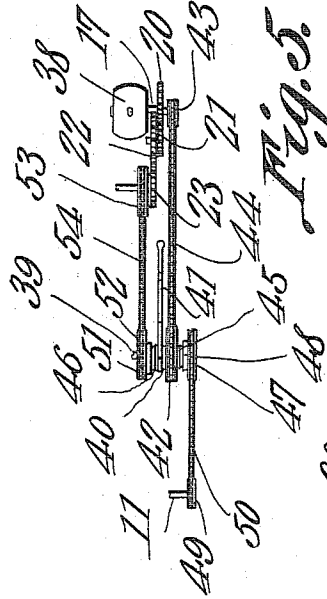
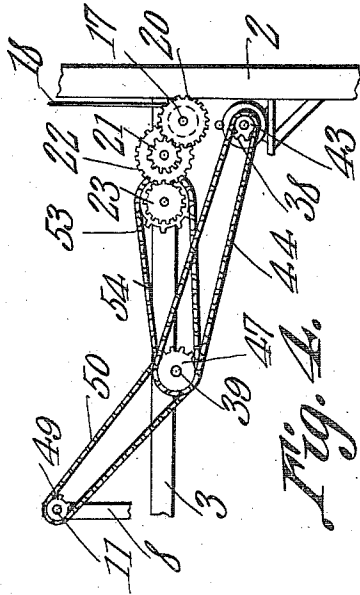
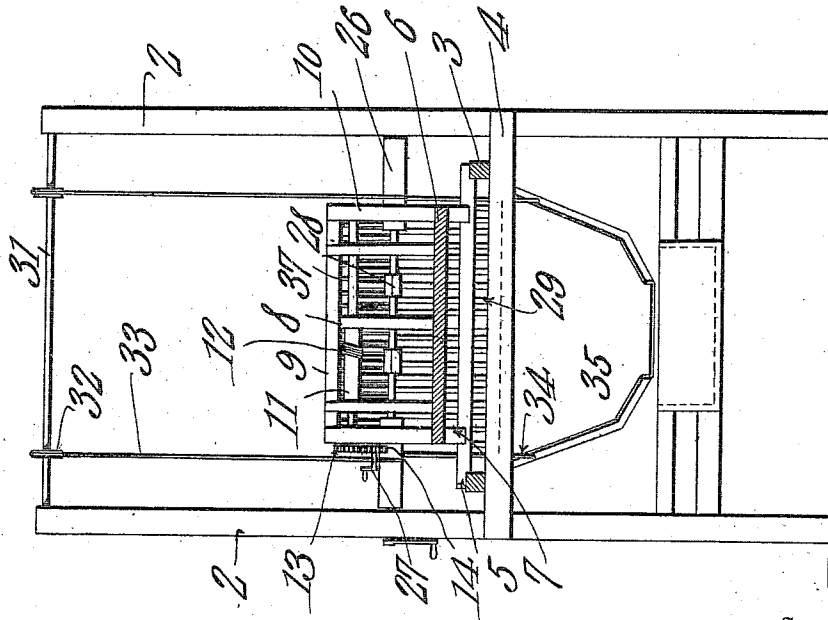


Fig. 3.



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UNITED STATES PATENT OFFICE.

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LOADING APPARATUS.

985,923.

Specification of Letters Patent.

Patented Mar. 7, 1911.

Application filed February 1, 1910. Serial No. 541,328.

To all whom it may concern:

Be it known that I, FRANK J. NEEFE, a citizen of the United States, residing at Cottage Grove, in the county of Dane and State of Wisconsin, have invented a new and useful Loading Apparatus, of which the following is a specification.

This invention relates to a loading apparatus especially designed to be used for handling beets, potatoes and the like, and it consists in the novel construction and arrangement of its parts as hereinafter shown and described.

The object of the invention is to provide a simple and durable apparatus by the use of which the contents of a wagon body may be easily and quickly transferred to the body of a car or other receptacle.

With the above object in view the apparatus includes a turn table upon which the loaded wagon is adapted to be drawn. A frame resembling a bedstead is located adjacent the said turn table and a tiltable bed is mounted upon the bed frame. Means is provided for tilting the said bed and means is provided for drawing the wagon from the said table (after the latter has been properly turned) upon the said bed. A sifting chute is pivotally attached to that end of the frame which is opposite the end thereof adjacent the said table, and means is provided upon the bed frame for raising and lowering the said chute, an apron is pivotally attached to the said chute and when the chute is lowered said apron is in position to direct the siftings to a receptacle provided below the frame. A sifting chute is attached to that end of the bed which is remote from the end thereof adjacent the said table and the outer portion of the last said chute lies over the upper portion of the first said chute.

In the accompanying drawings,—Figure 1 is a side elevation of the apparatus. Fig. 2 is a top plan view of the same. Fig. 3 is a transverse sectional view of the same. Fig. 4 is a side elevation of a power means for operating the apparatus. Fig. 5 is a top plan view of the same. Fig. 6 is a detail view of a block and supporting shaft used in the apparatus.

The apparatus includes a turn table 1 which may be of any suitable structure and mounted in any desired manner and which is of sufficient size to permit a wagon to be drawn thereon.

A frame is located adjacent the said turn

table and the said frame consists of uprights 2 (four in number) which are connected together by side beams 3 and end beams 4. The beams 3 and 4 are horizontal or approximately so. A shaft 5 is mounted upon the side beams 3 at their end portions remote from the turn table 1 and serves as a trunnion for a bed to be described. The bed 6 is provided upon its under side with a recessed block 7 or series of blocks and the recesses of the said block or blocks receive the upper portion of the shaft 5 whereby the said block or blocks serve as trunnion bearings for the said shaft 5. Normally the bed 6 occupies a horizontal position with its upper surface approximately in the same horizontal plane as the upper surface of the turn table 1 and the end of the said bed is normally in close proximity to the edge of the said turn table 1.

Uprights 8 are mounted upon that end of the bed 6 remote from the turn table 1 and a cross beam 9 is attached to the upper end of each of the uprights 8. Braces 10 extend from the cross beam 9 to the intermediate portion of the bed and firmly brace the uprights 8 and the said cross beam 9 against the strains to which they are subjected as will be explained presently. A shaft 11 is journaled in the upper portions of the uprights 8 and a cable or cables 12 is arranged to wind upon the said shaft 11. Any suitable means may be provided for winding the cable or cables 12 upon the shaft 11 and the means as shown in Fig. 1 consists of a gear wheel 13 fixed to one end of said shaft and meshing with a gear wheel 14 journaled at the side of one of the uprights 8. A crank handle may be applied to the shaft of the gear wheel 14 and thus it will be seen that means is provided for manually rotating the said shaft 11. Those ends of the cable or cables other than the ends thereof which wind upon the shaft 11 may be connected with the running gear of a wagon which is upon the turn table 1 for the purpose of drawing the said wagon upon the bed 6.

Means is provided for tilting the bed 6 upon the trunnion 5. The said means consists of a cross beam 15 which is attached to the under side of the bed 6 in the vicinity of the turn table 1 and which is provided with end portions which project beyond the side edges of the said bed. Sheaves 16 are journaled for rotation at the upper end of the uprights or posts 2 adjacent the turn

table 1 and a shaft 17 is journaled to the side beams 3 of the frame of the apparatus. Cables 18 are connected at one end to the projecting end portions of the cross beam 15 and pass over the beam 16 and at their other end portions are adapted to wind upon the shaft 17. The cables 18 are provided at points between their ends with turn buckles 19 whereby the slack in the said cables may be so adjusted as to have the portions of both cables between the shaft 17 and the beam 15 of sufficient length to cause the said cables to operate in union and under equal strain in lifting or tilting the bed 6.

Any suitable means may be provided for rotating the shaft 17 to wind the cables 18 thereon and the means as illustrated in Fig. 1 of the drawings consists of a gear wheel 20 fixed to the end of the said shaft 17 and meshing with the gear wheel 21 which is journaled upon one of the side beams 3 and arranged to rotate with a gear wheel 22. The gear wheel 22 meshes with a gear wheel 23 also journaled upon the said side beam 3 and a crank handle 24 may be applied to the shaft of the gear wheel 23 for rotating the same. Thus it will be seen that by rotating the gear wheel 23 rotary movement will be transmitted through the train of gears described to the shaft 17 and thus manual means is provided to rotate the said shaft. A pawl 25 is pivoted upon the frame of the apparatus adjacent the gear wheel 20' and may be lowered into engagement with the teeth of the said gear wheels to hold the said wheels and the shaft 17 temporarily against turning and the cables 18 from unwinding from about the periphery of the said shaft 17. It is of course understood that as the cables 18 are wound upon the shaft 17 that end of the bed 6 which is adjacent the turn table 1 is tilted or raised upon the shaft 5 as an axis.

A shaft 26 is journaled upon the uprights or posts 2 remote from the turn table 1 and is provided at one end with a crank handle 27. Bearing blocks 28 are mounted upon the intermediate portion of the shaft 26 and the upper end of a sifting chute 29 is attached to the upper sides of the said bearing blocks 28. A cross beam 30 is attached to the under side of the lower or free end portion of the sifting chute 29 and the ends of the said cross beam 30 project beyond the side edges of the said chute. A shaft 31 is located at the upper end portions of the posts or uprights 2 remote from the turn table 1 and journaled sheaves 32 are mounted upon the said shaft 31. Cables 33 are arranged to wind one end portion upon the shaft 26 and pass over the sheaves 32 and at their other ends are attached to the projecting end portions of the cross beam 30 at the free end of the sifting chute 29. Thus it will be seen that by turning the shaft 26

manually and winding the cables 33 thereon that the free end portion of the chute 29 may be raised and by unwinding the cables 33 from the said shaft 26, the free end of the said sifting chute 29 may be lowered. Arms 34 are pivotally connected to the side edges of the sifting chute 29 and an apron 35 is pivotally supported at the lower end of the said arm 34. The apron 40 is connected to the arm 34 at points between the ends of the said apron and consequently when the sifting chute 29 is lowered into an inclined position, the apron 35 will be under the said sifting chute 29 thus inclined in an opposite direction with its upper edge bearing against the lower side of the said sifting chute 29. A receptacle 36 is located under the frame of the apparatus and below the delivery end of the apron 35 and is adapted to receive tare which may sit through the chute 29 when the commodity is passed over the same as will hereinafter be explained. A sifting chute 37 is hingedly attached at one end to the side of the first beam 9 and the free end portion of the said sifting chute 37 normally lies over the upper end portion of the sifting chute 29.

In some instances it may be desirable to provide power means for rotating the shafts 11 and 17 instead of using the manual appliances above described. When such is the case a motor 38 is provided and is located at any convenient point. A shaft 39 is mounted upon one of the side beams 3 of the frame of the apparatus and a clutch member 40 is slidably mounted upon the said shaft 39. An operating lever 41 engages the said clutch member 40 in the usual manner and is adapted to move the same along the shaft as the said lever is swung. A sprocket wheel 42 forms a component part of the clutch device of which the part 40 is a member and a sprocket wheel 43 is mounted upon the shaft of the motor 38. A sprocket chain 44 passes around the sprocket wheels 42 and 43 and is adapted to transmit rotary movement from the shaft of the motor 38 to the clutch member 40. The clutch member 40 is provided at its ends with friction surfaces 45 and 46. A sprocket wheel 47 is journaled upon the shaft 39 and is provided with a friction surface 48 located adjacent the friction surface 45 of the clutch member 40. A sprocket wheel 49 is mounted upon the shaft 11 in lieu of the gear wheel 13 above described and a sprocket chain 50 passes around the sprocket wheels 47 and 49.

A sprocket wheel 51 is journaled upon the shaft 39 and is provided with a friction surface 52 located adjacent the friction surface 46 of the clutch member 40. A sprocket wheel 53 is arranged to rotate in unison with the gear wheel 23 (above described) and a sprocket chain 54 passes around the sprocket wheels 51 and 53. Thus it will be seen that

when the lever 41 is swung so that the friction surface 47 of the clutch member 40 is brought into engagement with the friction surface 48 of the gear wheel 47 that rotary movement is transmitted to the shaft of the motor 38 through the intervening parts described to the shaft 11 and the cable or cables 12 are wound thereon. Thence by swinging the lever 41 so that the friction surfaces 46 of the clutch member 40 is brought in contact with the friction surface 52 of the sprocket wheel 51 rotary movement is transmitted from the shaft of the motor 38 through the intervening parts described to the wheel 23 and to the train of gears described to the shaft 17 and thus the cables 18 may be wound upon the said shaft. It is to be understood that the specific arrangement of the parts above described for transmitting movement from an engine to the several shafts need not be followed in detail for it is obvious that many other arrangements may be provided whereby motion may be transmitted from a motor to the said shafts.

In operation a loaded wagon is drawn upon the turntable 1. The said table is then turned so that the rear end of the wagon body is at the end of the bed 6. The cable or cables 12 are then connected with the running gear of the wagon and by the means above described the said cables are wound upon the shaft 11 whereby the wagon is drawn from the turn table upon the head 6. When the wagon is in proper position upon the said bed the rear wheels of the running gear will be between the adjacent braces 10 for the cross beam 9 and the upper portions of the peripheries of the said wheels will be against the said cross beam 9. The shaft 17 is then rotated as heretofore described and the cables 18 are wound upon the said shaft whereby the free end portion of the bed 6 is lifted in an upward direction about the trunnion 5 as an axis. Prior to this however, it must be understood that a car or other receptacle 55 is brought in position below the delivery end of the sifting chute 29 and the said chute is lowered into an inclined position. As the free end portion of the bed 6 rises the free end portion of the sifting chute 37 lies over the upper edge of the sifting chute 29 and when the wagon assumes a proper incline the contents thereof will roll by gravity over the sifting chute 37

and down the sifting chute 29 into the car or receptacle 55. During the passage of the material over the chutes 37 and 29 the dirt and other objectionable matter sifts through the said chutes and falls upon the apron 35 and from the said apron passes into the receptacle 36 and may be weighed as tare to be deducted from the weight of the material originally contained in the wagon body. After the wagon body has been emptied of its contents the operation above described is reversed until the running gear is left to an approximately horizontal position and may be passed from the bed 6 upon the turntable 1 and then may be removed from the said table by any appropriate means.

The advantage gained by providing the pivoted bed 6 with a chute 37 which bridges the space between the table and the chute 29 is that after the chute 29 is adjusted the bed 6 may be tilted so that material may pass from the wagon body along the chute 37 and over the chute 29 without changing the delivery end of the chute 29 with relation to the receptacle 55.

Having thus described the invention what I claim as new and desire to secure by Letters Patent is:—

1. A loading apparatus comprising a frame, a tiltable bed mounted upon the frame, a traction means mounted upon the bed, and a chute mounted upon the frame.

2. A loading apparatus comprising a frame, a tiltable bed mounted upon the frame, a traction means located upon the bed, a chute attached to the frame, and a chute hingedly connected with the bed and overlying the upper portion of the first said chute.

3. A loading apparatus comprising a frame, a tiltable bed mounted upon the frame, a traction means mounted upon the bed, a pivoted sifting chute attached to the frame, a sifting chute hingedly connected with the head and overlying the upper portion of the said chute, and an apron pivotally connected with the intermediate portion of the first said sifting chute.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FRANK J. NEEFE.

Witnesses:

R. N. NELSON,
HANS SPERLE.