No. 734,292. PATENTED JULY 21, 1903.

D. BARNES.

GRAIN LOADER.

APPLICATION FILED JAN. 22, 1903.

NO MODEL.

Fig. 1.

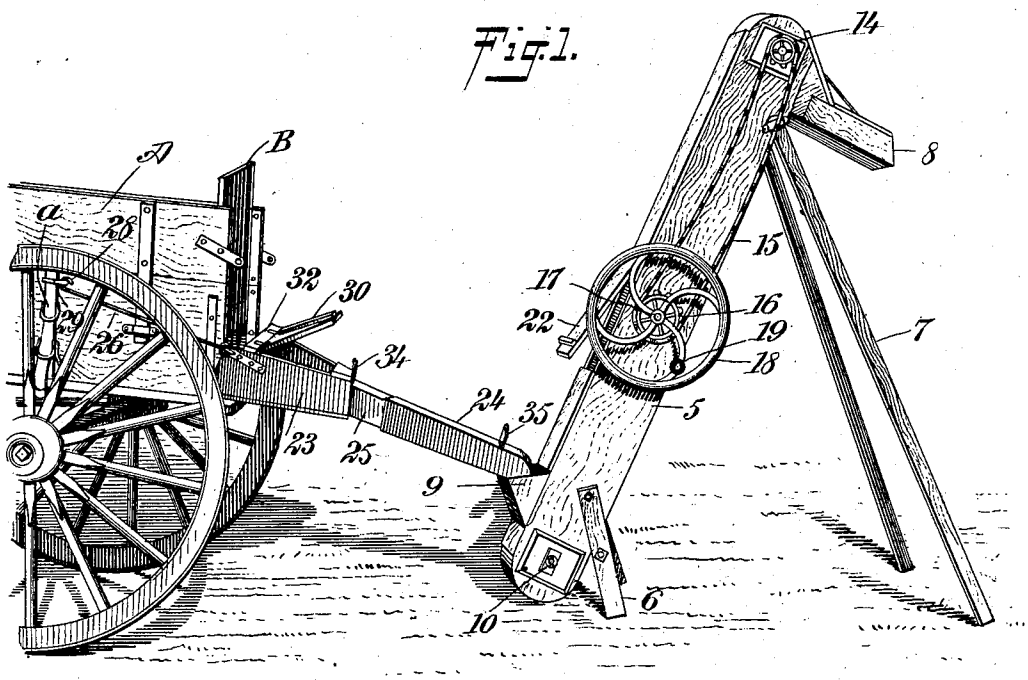

Fig. 3.

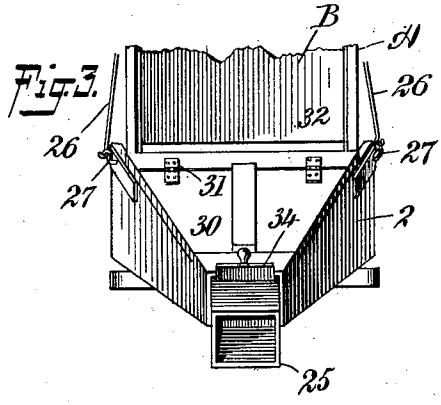

Fig. 2.

Fig. 4.

WITNESSES:

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No. 734,292. Patented July 21, 1903.

UNITED STATES PATENT OFFICE.

DAVID BARNES, OF AXTELL, KANSAS.

GRAIN-LOADER.

SPECIFICATION forming part of Letters Patent No. 734,292, dated July 21, 1903.

Application filed January 22, 1903. Serial No. 140,099. (No model.)

To all whom it may concern:

Be it known that I, DAVID BARNES, a citizen of the United States, and a resident of Axtell, in the county of Marshall and State of Kansas, have invented a new and Improved Grain-Loader, of which the following is a full, clear, and exact description.

This invention relates to improvements in grain-loaders adapted to readily transfer grain from a vehicle to a storage-granary or from a bin to a vehicle or other point of delivery.

In this improvement I employ a simple, cheap, and efficient apparatus, which is readily portable and capable of operation by a single attendant.

The device is equipped with means to cut off the discharge of grain from the vehicle should the team start to pull the vehicle away from an elevator during the loading process, thus saving the loss of grain. Means are also provided to regulate the quantity of grain flowing to the elevator, and provision is made for ready access to an end-gate of the vehicle for lifting the same subsequent to the application of a part of the loading apparatus.

Further objects and advantages of the invention will appear in the course of the subjoined description, and the novelty will be defined by the annexed claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view illustrating the application of my improved loader to an ordinary farm-vehicle, the same being especially adapted for transferring grain from the said vehicle into a storage bin or granary. Fig. 2 is a vertical sectional elevation through parts of the improved grain-loader. Fig. 3 is a view, partly in end elevation, of an ordinary wagon-box, showing a part of my improvement applied thereto; and Fig. 4 is a detail view, in side elevation, showing a part of a storage-bin in section and illustrating a means whereby grain may be transferred from said bin to the elevator of the loading mechanism.

In carrying my invention into practice I employ a portable elevator having a casing 5 of suitable dimensions and construction. This casing is designed to be placed in an inclined position, and it is supported in its operative position by a pair of short legs 6 and another pair of long legs 7. The short legs are secured to the lower portion of the elevator-casing in any suitable way; but I prefer to loosely connect the upper ends of the longer legs 7 to the upper part of said casing. The loose connection between the legs and the upper part of the casing may be secured by any suitable means. The casing is provided at its upper delivery end with an inclined spout 8, while at the lower receiving end of the casing is secured a hopper 9. The hopper is on one side of the casing, while the spout 8 is on the opposite side of said casing. In suitable bearings at the lower or foot end of the casing is journaled an idle shaft 10, having one or more rollers 11. At the upper part of the casing over the spout 8 is journaled an elevator-driving shaft 12, having within the casing a roller or rollers 13, one end of said shaft 12 extending through the casing and provided with a sprocket-wheel 14. This sprocket-wheel is engaged by an endless sprocket-chain 15, that extends downwardly to a driving sprocket-wheel 16, mounted on a shaft 17 at a point intermediate of the length of the casing. Said shaft is equipped with a hand-wheel 18, provided with a crank 19, and by rotating the crank-wheel the sprocket-gear 16 is turned for the purpose of propelling the chain and the sprocket-gear 14, thus driving the shaft 12. The rollers 11 13 of the shafts 10 12 support an endless elevator-apron 20 within the casing, said apron being equipped with an endless series of buckets 21, of any suitable construction. The upper or front side of the inclined elevator-casing is provided with a hinged door 22, adapted to be folded into flush relation with the permanent parts of the casing, said door being intended to be opened by hand for the purpose of inspecting the elevator or the interior of the casing.

In using my improved elevator in connection with a wagon I employ a chute adapted to be connected detachably with relation to the elevator for the purpose of transferring grain by gravity from the wagon-body to said elevator. The chute, as shown by Figs. 1, 2, and 3, consists of members 23 24 25. The

member 23 of the chute is of the flaring form (shown more particularly by Figs. 1 and 3)—that is to say, the chute tapers longitudinally and has a wide or enlarged mouth and a contracted delivery end. The flared member 23 of the chute slightly exceeds the width of the wagon-body A, on which it is to be used, and it is adapted to rest on the rear cross-bar of said wagon-body at a point adjacent to the end-gate B. This flared member of the chute is held in place by stay-rods 26, having loose connection at 27 with the enlarged end of the chute and provided at their forward ends with the hooks 28, adapted to engage with the loops 29 on the wagon-body standards *a*, as shown more clearly by Fig. 1. This flared member of the chute is furthermore provided with a door or lid 30, which is hinged at 31 to a cross-bar 32 at the upper front side of the flared chute member. The member 23 is fitted to the wagon-body A when the gate B is in a closed position, and the stay-rods 26 are engaged with the loops 29 to hold this member 23 in place. The gate B cannot be opened readily unless it is pried upwardly by a bar adapted to be inserted beneath said gate in a way well understood by those skilled in the art; but the application of the chute member 23 to the body A when the gate B is closed prevents ready access to said gate. To overcome this objection, I have provided the chute 23 with the hinged door 30, which after the chute member 23 shall have been applied may be raised to the position shown by Fig. 1, in order to insert a bar or lever through the chute member 23 and below the lower edge of the gate B, thus allowing the gate to be conveniently raised after the chute shall have been adjusted.

The chute member 25 is fitted in the contracted delivery end of the flared member 23, or it may be secured permanently in place thereon. This member 25 is provided with a guideway 33, in which is fitted a gate 34, the latter adapted to close the passage through the chute and to stop the flow of grain should the team become restive and start to pull the wagon away from the elevator, whereby the gate 34 serves to prevent the loss of grain.

The chute member 24 fits removably to the member 25 and is adapted to rest upon the hopper 9 of the elevator-casing. This chute member is also provided with a gate 35, which may be of the slidable pattern and fitted in the guideway 36, said gate 35 serving to regulate the quantity of grain passing through the chute to the elevator.

To use my loader for transferring grain from a wagon to a bin or granary, the elevator is supported in proper position by the legs 6 and 7, the chute member 23 is coupled to the wagon-body A, and the chute members 25 and 24 are adjusted between the member 23 and the hopper 9. The door 30 is opened and the end-gate B is raised, thus permitting the grain to flow by gravity from the wagon-body through the chute into the hopper 9. The attendant turns the wheel 18 by means of the crank 19, and thus imparts movement to the endless elevator by which the grain is carried from the loading-point adjacent to the hopper 9 up to the spout 8, from whence the grain passes into the bin or granary.

In Fig. 4 of the drawings I have illustrated a means for delivering the contents of a granary into the elevator, one wall of the granary being indicated at C and having a suitable opening *c*. A spout 37 is fitted removably to this opening *c*, and it is equipped with a gate or cut-off 38. The elevator may be adjusted adjacent to the bin or granary C for the spout 37 to extend over the hopper 9, and by opening the gate 38 the contents of the granary may pass through the spout 37 into the hopper 9 and thence to the elevator. By operating the hand-crank of this elevator the endless buckets are driven to carry the grain up to any suitable point of discharge—as, for instance, into the body of a suitable vehicle.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A grain-loader comprising an elevator having a laterally-extending hopper at its lower portion, a sectional chute having its members fitted separably one to the other, one member of said chute being flared and provided with means for connecting it detachably to a vehicle, and the other member resting on said hopper of the elevator to be supported thereby, and separate valves in the respective members of the chute.

2. A grain-loader comprising an elevator, and a sectional chute, one member of the chute having means for detachably connecting it to a vehicle, both members of the chute having suitable regulating valves or gates.

3. In a grain-loader, a flared chute-section provided in its upper side with a door which is hinged near the upper end of said chute, and means attached to the upper chute member for fastening it to a vehicle, combined with another chute member detachably fitted to the flared member, and suitable valves in the chute members.

4. In a grain-loader, a chute consisting of a flared member having a hinged door in its upper side, hooks attached to said flared member and adapted to fasten it to a vehicle-body, a chute member attached to the flared member and provided with a cut-off gate, and another chute member fitted removably to the valved member and also provided with a regulating-valve.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DAVID BARNES.

Witnesses:
J. H. DITTEMORE,
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