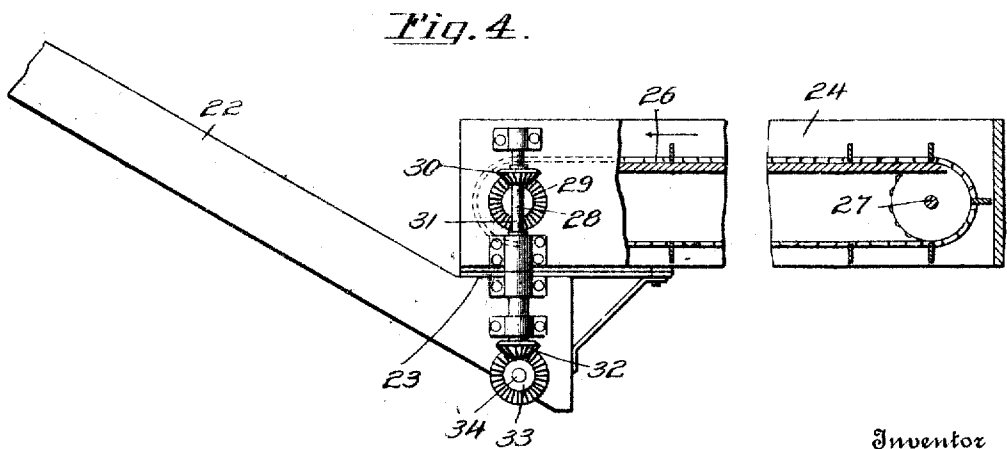
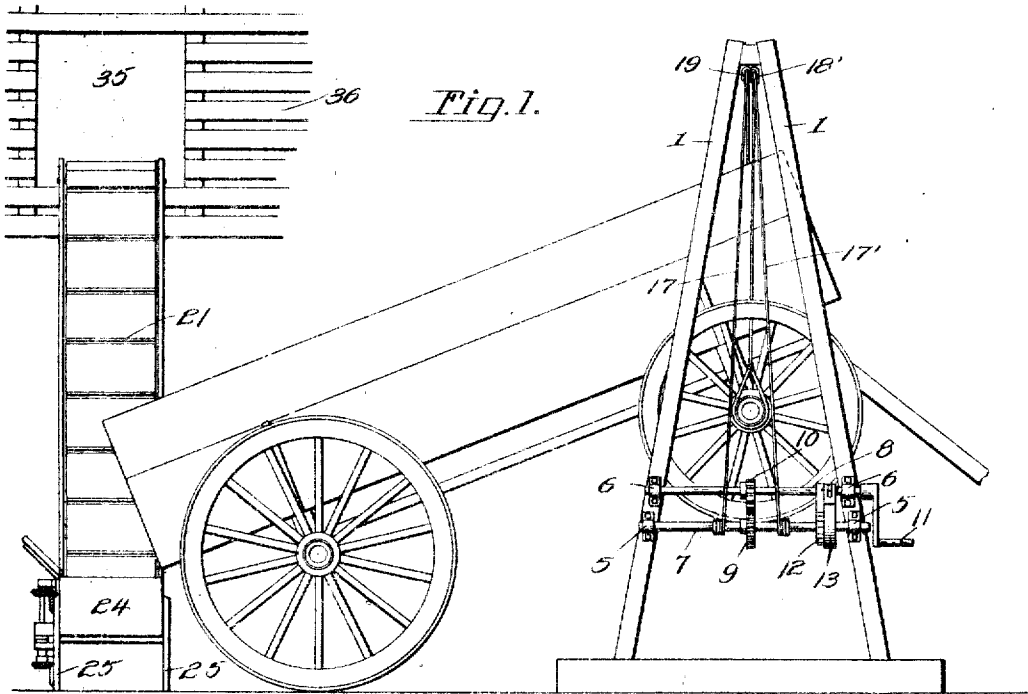


E. S. AELING.
UNLOADING DEVICE.
APPLICATION FILED MAR. 9, 1911.

995,937.

Patented June 20, 1911.

2 SHEETS—SHEET 1.



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Fig. 2.

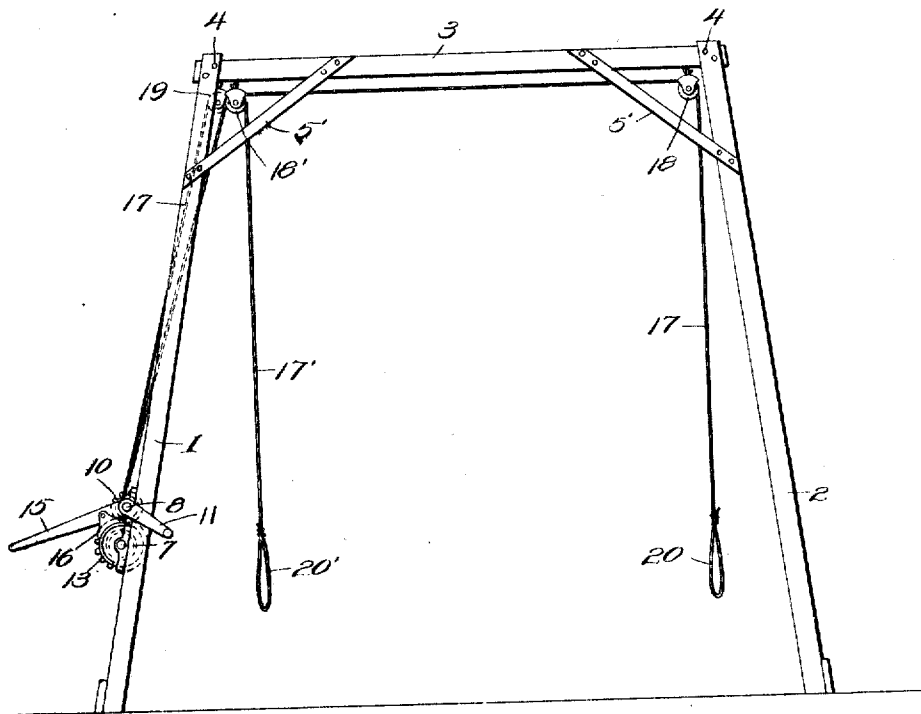
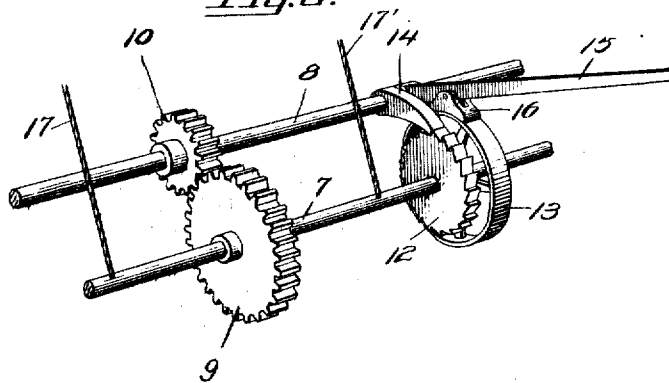


Fig. 3.



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UNLOADING DEVICE.

995,937.

Specification of Letters Patent. Patented June 20, 1911.

Application filed March 9, 1911. Serial No. 613,249.

To all whom it may concern:

Be it known that I, EDWARD S. AELING, a citizen of the United States of America, residing at Ringsted, in the county of Emmet and State of Iowa, have invented new and useful Improvements in Unloading Devices, of which the following is a specification.

This invention relates to devices for unloading corn, grain and the like, and it has particular reference to that class of unloading devices in which means are provided for tipping or tilting the front part of a wagon in an upward direction to permit the contents to gravitate over the tail end of the wagon body, together with receiving and elevating means to dispose of the material thus discharged from the wagon.

The present invention has for its object to provide a simple and improved device for tilting the wagon which contains the material to be unloaded.

A further object of the invention is to provide simple and improved receiving and elevating mechanism.

A further object of the invention is to construct an unloading device of the character described which shall possess superior advantages in point of simplicity, durability and general efficiency.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claim.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the claim may be resorted to when desired.

In the drawings,—Figure 1 is a side elevation showing the invention in position for operation. Fig. 2 is a front view in elevation of the wagon tilting device. Fig. 3 is a perspective detail view of the actuating mechanism of the wagon tilting device. Fig. 4 is an end view in elevation and partly in section of the grain elevating mechanism.

Corresponding parts in the several figures are denoted by like characters of reference.

A frame structure is provided comprising legs or uprights 1 and 2 which are arranged

in pairs converging upwardly, as shown in Fig. 1, and tilted in the direction of each other, as shown in Fig. 2, the upper ends of said legs or uprights being connected with a cap piece 3 by means of bolts 4 and brace members 5, whereby a simple and very durable and effective frame structure is provided and the same being made of such dimensions as to enable a loaded wagon to be driven between the uprights 1 and 2 beneath the cap piece 3. The uprights 1, 1 at one end of the frame structure are provided with bearings or boxes 5 and 6 wherein two shafts 7 and 8 are supported for rotation, one above the other, the lower shaft 7 being provided with a spur wheel 9 meshing with a pinion 10 upon the shaft 8; the spur wheel may thus be rotated by the expenditure of comparatively light power applied to the shaft 8 by means of a crank 11 at one end of the latter. The shaft 7 also carries a ratchet wheel 12 and a brake wheel 13, the former being engaged by a pawl 14 pivoted upon the shaft 8. Said shaft also affords a fulcrum for a lever 15 carrying a brake shoe 16 which is adapted to engage the periphery of the brake wheel 13, so that, by simple manipulation of the hand lever 15, the rotation of the shaft 7 may be checked. Suitably connected with opposite ends of the shaft 7 at opposite sides of the spur wheel 9 are the ends of flexible hoisting elements, such as ropes or cables 17, 17' which are partly wound upon said shaft and which are guided over pulleys 18, 18' at opposite ends of the cap beam 3, the hoisting element 17 being guided over an additional guide pulley 19. The free ends of the hoisting elements 17, 17' are provided with terminal loops 20, 20', as clearly shown in Fig. 2 of the drawings.

A grain elevating mechanism is provided, the same comprising an endless carrier 21 mounted for operation in an inclined trough or casing 22, the lower end of which is provided with a shoulder or offset 23 supporting one end of a hopper 24, the opposite end of which is provided with legs 25 resting upon the ground. The hopper 24 also contains an endless carrier 26, the ends of which are supported upon shafts 27, 28, the latter of which has been shown as being equipped with a bevel gear 29 meshing with a bevel pinion 30 upon the upper end of a shaft 31, the other end of which carries a bevel pinion 32 meshing with a bevel gear 33 upon

a shaft 34 which supports the lower end of the carrier 21 in the trough or casing 22. The hopper casing 24 is pivotally supported upon the upright shaft 31 and is, therefore, capable of being moved to various positions with reference to the trough or casing 22. The shaft 34 constitutes the driving shaft which may receive motion by means of a tumbling rod or in any other well known manner from a suitably located source of power.

It will be readily understood that under the construction hereinbefore described, the hopper casing 24 may be swung to a position approximately at right angles to the trough or casing 22 or the inclined carrier 21, thus enabling a loaded vehicle to be driven beneath the cap beam 3 of the frame structure including the uprights 1 and 2 which is located at a suitable distance, slightly exceeding the length of a wagon, from the inclined trough or casing 22, which is supported in any suitable manner in such a way as to discharge through an aperture 35 into a corn crib or other receptacle 36. After the wagon has been driven into position, the loops 20, 20' at the ends of the hoisting elements 17, 17' are adjusted upon the hubs of the front wheels of the wagon, and the latter may now be rotated by the shafts 7, 8 by means of the crank 11 be tilted, as shown in Fig. 1, to such a position that its contents will be discharged into the hopper casing 24 which has been previously swung or moved into receiving position beneath the tail gate of a wagon, and said tail gate being obviously manipulated and opened in such a manner as to permit the contents of the wagon box to escape gradually. The wagon may be retained in the tilted position shown in Fig. 1 by means of the brake mechanism including the lever 15 which may be actuated manually, and it will be understood that by releasing the pressure upon said lever, the wagon may be gradually restored by gravity to its normal position. As the contents of the wagon is being discharged into the hopper casing 24, motion is imparted to the shaft 34, thus actuating the carriers 21 and 26 and causing the material discharged from the wagon to be conveyed from the hopper casing 24 into the casing 22 of the endless carrier 21, whereby the material will be elevated and discharged into the corn crib or other receptacle.

It is obvious that in the practical construction of this device, the proportions may be

suitably changed so as to enable the material to be lifted to any desired elevation. It is also desired to be understood that any suitable means may be employed for transmitting motion between the endless carrier 21 and the carrier 26 in the hopper casing. The latter casing may be readily swung to an out-of-the-way position while the wagon which is to be unloaded is driven into position beneath the tilting device, after which said hopper casing may be quickly moved into position to receive the material that is being discharged from the wagon when the latter is tilted.

The construction of the parts constituting this invention are such that the wagon tilting device, as well as the receiving and elevating mechanism, may be readily moved from one place to another, so that when one crib has been filled, there need be little or no delay in transferring the device to another crib or receptacle. The construction is extremely simple and inexpensive, and the device has been found to be thoroughly efficient for the purpose for which it is provided.

Having thus described the invention, what is claimed as new, is:—

In a device of the character described, a frame structure including pairs of uprights suitably spaced apart to permit a wagon to be driven therebetween, a cap beam supported by said pairs of uprights, shafts supported one above the other upon one pair of uprights at one end of the cap beam, guiding means upon the cap beam, hoisting elements connected with and wound upon the lower shaft and guided over the guiding means, said hoisting elements being provided with terminal loops at their free pendant ends, a crank upon the upper shaft whereby said shaft may be rotated, a pinion upon said upper shaft, a spur wheel upon the lower shaft meshing with said pinion, a ratchet wheel and a brake wheel upon the lower shaft, a pawl pivoted upon the upper shaft in engagement with the ratchet wheel, and a lever fulcrumed upon the upper shaft and carrying a brake shoe engaging the brake wheel upon the lower shaft.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD S. AELING.

Witnesses:

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J. E. HANSEN.