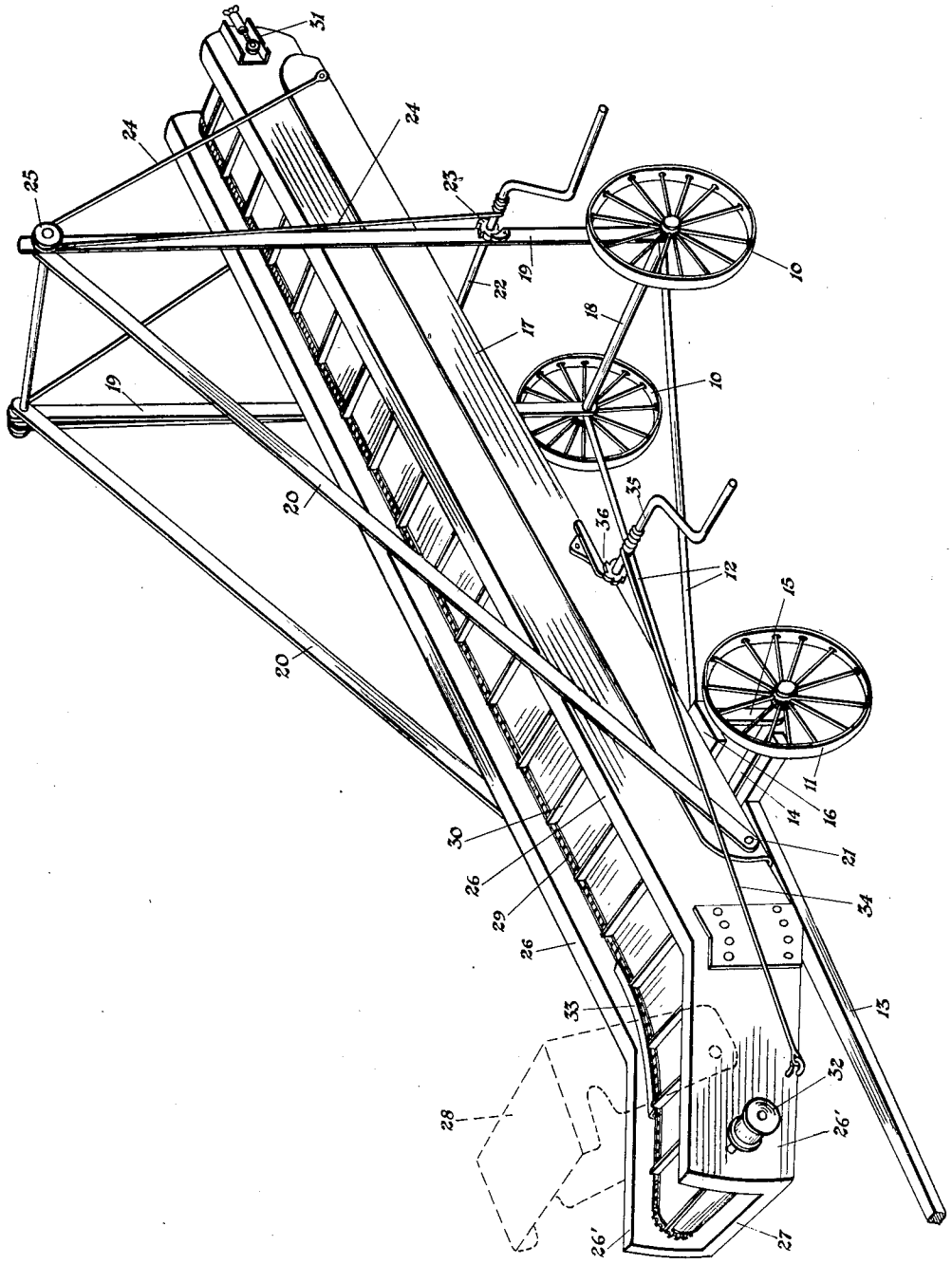
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PORTABLE ADJUSTABLE GRAIN ELEVATOR

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PORTABLE ADJUSTABLE GRAIN ELEVATOR

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2 Claims. (Cl. 198—126)

My invention relates to portable adjustable grain elevators, its primary object being the simplification of the grain elevator to thereby reduce its cost of manufacture and sale.

Another object of the invention is the provision of a grain elevator and a carriage support with detachable connections therebetween whereby the elevator may be used either with or without the support.

Another of my objects is the provision of an elevator having a shoe in novel relation to the elevator.

It is my object to provide an elevator which will readily slip under the rear end portion of a grain wagon in a manner such that the grain may flow out through the end gate of the wagon and onto the elevator.

Another of my objects is the provision of a sliding relationship between the elevator and its support so that the shoe may slide under the rear end portion of the grain wagon and also so that the elevator may be adjusted so that its delivery end will be in the desired position.

One of the important objects of my invention is the provision of a grain elevator in which the hinged shoe and other unnecessary mechanism are eliminated, the structure being not only simplified but so designed as to carry out all of the functions of the more complicated elevators.

Another of my objects is the provision of a simple but novel form of device for adjusting the inclination of the elevator.

Having in view these objects and others which will be pointed out in the following description, I will now refer to the drawing, in which

The figure is a view in perespective of my grain elevator and its support.

The truck support includes a pair of rear wheels 10 and a pair of front wheels 11, each pair having an axle and the axles of the two pairs being connected by forwardly converging braces 12. Secured to the front axle is a tongue 13.

Journaled on the front axle 14 is a pair of standards 15 having a transverse bar 16 uniting the standards 15 at their upper extremities. The transverse bar 16 serves as a support for the elevator support 17. The elevator support 17 is adjustable in inclination, this adjustment being about the front axle 14 with the standards 15 as a radius.

The rear axle 18 also has a pair of standards 19 secured thereon, the standards 19 extending to some distance above the axle 18. The standards 19 are braced to the elevator support 17 by means of braces 20 which have a pivotal relation at 21 with the angle irons in the elevator support 17. Journaled in the standards 19 is a crank shaft 22 having a pawl and ratchet device 23. The cable 24 is secured to the elevator support 17 at its delivery or upper end. From thence it passes over the pulley 25 and is connected to the shaft 22 to be wound thereon or unwound therefrom. It will be readily apparent that the winding of the cable 24 on the shaft 22 will elevate the upper end portion of the elevator support and that the unwinding of the cable will lower the elevator support, the movement taking place about the front axle 14.

The elevator itself consists of two side members 26 which serve as side walls, these being connected at their lower edges by a floor which may be either solid or of open construction. The side walls 26 and the floor terminate in extensions 26' and 27 respectively which constitute the shoe of the elevator. The elevator is slidably mounted in the elevator support 17 both for the purpose of bringing the shoe into the desired position under the wagon when the grain is to be unloaded from the wagon onto the elevator and also to bring the delivery end of the elevator into the desired position. The movement is manually controlled through the mechanism shown in Figure 1. The cables 34 are secured to a shaft 35 which is journaled to the under sides of the angle iron beams 17. The shaft 35 is a crank shaft and it is further provided with a ratchet 36 for preventing accidental unwinding. The shoe is so designed that when the delivery end of the elevator is at the maximum height, the shoe will be substantially horizontal. The shoe is further provided with a hinged cover shown in dotted lines at 28. This cover when it is in its closed position presents an open top for the admission of the grain from the grain wagon. It provides an end wall for the shoe and also raised side walls to prevent the spilling of the grain. The elevator is of the endless belt type including a pair of chains 29 and a belt with conveyor flights 30. This belt passes over upper and lower pulleys which are journaled in the side members 26 and 26' respectively. At the upper extremity there is a belt tightener 31 of any desired type, the belt tightener 31 being secured to the side members 26. The lower pulley is provided with a belt pulley 32 for the application of power to drive the elevator. The chains 29 are guided

over the angular portion by means of guides 33 which are secured to the side walls 26 and 26' at their junction.

In use, the elevator is set up as shown in Figure 1. The shoe is raised by means of the winding cable and the grain wagon is brought up alongside the shoe. The elevator is then lowered so as to bring the shoe directly underneath the rear extremity of the grain wagon whereupon the end gate is opened to permit the grain to flow out onto the elevator. The application of power through the belt pulley 32 then carries the grain upwardly, the elevator being so adjusted angularly that it will deliver the grain into a bin or other receptacle.

While the elevator is designed initially and primarily for use on farms as a grain elevator, it is obvious that its usefulness extends into other fields. Even on the farm the elevator is adapted for numerous uses other than that of elevating grain. In excavations the elevator may be used for conveying the soil from the excavation. The elevator may be employed either for dumping the soil at the mouth of the excavation or it may be employed for loading the soil onto the wagons which carry it away.

Referring to Figure 1, it will be seen that the elevator consists of two separable parts: the elevator per se and the supporting structure for the elevator. These parts are not merely separable but the separable connections are of the utmost simplicity. If the cables 34 are disconnected from the elevator frame, the entire elevator and its frame may be removed bodily from the support. This elevator will then be a complete operative structure. The connection of the cables 34 is such that the cables may be readily released without danger of accidental release. When the elevator structure is removed from its wheel support, it may be mounted on saw horses or any other convenient supports and adapted for any suitable use. For example, if it is desired to remove soil from a basement through a basement window, it is only necessary to install the elevator in the basement on suitable supports and to throw the soil onto the elevator so that the elevator will carry the soil out through the basement window. Numerous other uses will become immediately apparent to the farmer or other possessor of the implement and they need not here be described in detail.

Having thus described my invention in such full, clear, and exact terms that its construction and operation will be readily understood by others skilled in the art to which it pertains, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A portable elevator including a truck having front and rear axles, a pair of supporting wheels journaled on each of said axles, a pair of relatively short standards on said front axle, a transverse bar joining said standards at their upper extremities, a pair of relatively long standards on said rear axle, an elevator support resting on said transverse bar, a transverse winding drum on said rear standards, pulleys at the upper extremities of said rear standards, cables on said winding drum, said cables passing over said pulleys and being detachably secured to said elevator support at the upper extremity thereof for the angular adjustment of said elevator support about said front axle as a pivot, an upwardly and rearwardly inclined elevator slidably mounted on said elevator support, a second transverse winding drum on said elevator support, and a cable detachably secured to said elevator at the forward or lower extremity thereof, said cable being connected to said winding drum for the slidable adjustment of said elevator on said elevator support.

2. A portable elevator including an upwardly and rearwardly inclined elevator frame having a substantially horizontal shoe rigidly and integrally secured thereto at its lower extremity, an endless elevator in said frame, a pulley drive in the shoe portion of said frame, an upwardly and rearwardly inclined elevator support, a transverse winding drum on said elevator support, a cable secured to said winding drum and detachably connected to said shoe for the slidable adjustment of said elevator in said support, a transverse bar having a pivotal connection at the forward extremity of said truck and adapted to support the forward portion of said elevator support, a pair of standards at the rear end portion of said truck and straddling said elevator support, pulleys at the upper extremities of said standards, winding drums on said standards at points below said elevator support, and cables secured to said winding drums and trained over said pulleys and adapted for detachable connection with said elevator support at the upper extremity thereof.

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