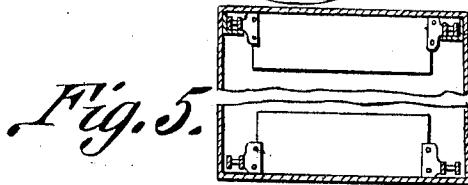
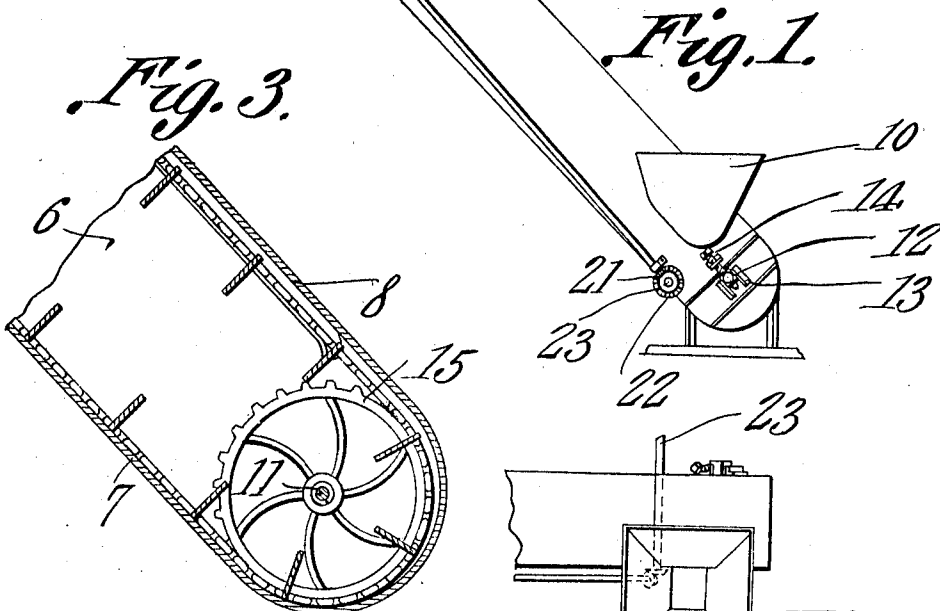
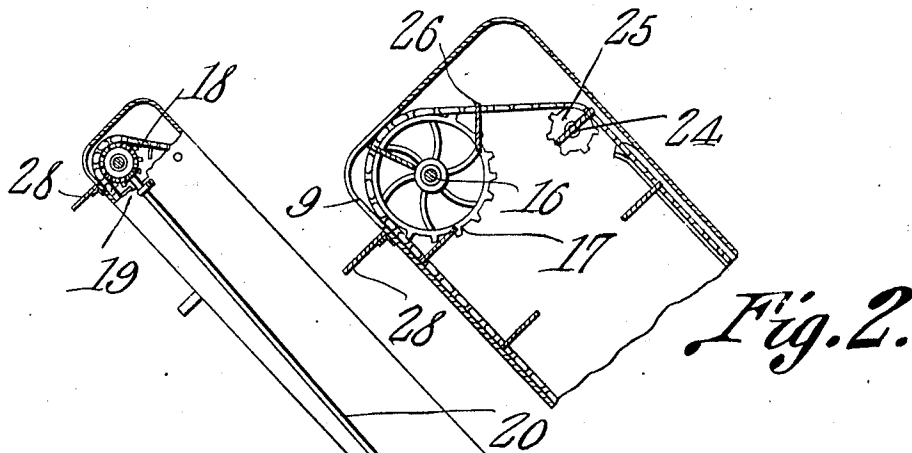


W. A. CALDWELL.  
 PORTABLE GRAIN ELEVATOR.  
 APPLICATION FILED FEB. 4, 1910.

970,464.

Patented Sept. 20, 1910.



Witnesses  
*E. A. Smith*  
*J. G. Smith*

Inventor  
*Wesley A. Caldwell.*  
 By *C. A. Snow & Co.*  
 Attorneys

# UNITED STATES PATENT OFFICE.

WELSEY AZARIAH CALDWELL, OF BRADFORD, ILLINOIS.

## PORTABLE GRAIN-ELEVATOR.

970,464.

Specification of Letters Patent. Patented Sept. 20, 1910.

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*To all whom it may concern:*

Be it known that I, WELSEY A. CALDWELL, a citizen of the United States, residing at Bradford, in the county of Stark and State of Illinois, have invented a new and useful Portable Grain-Elevator, of which the following is a specification.

It is the object of the present invention to provide an improved portable grain elevator of compact form and highly efficient in operation.

One object of the invention is to provide novel power transmission means for applying power to the upper shaft of the elevator instead of to the lower shaft, as is usually done.

Aside from the feature mentioned above, the elevator of the present invention embodies certain novel structural features which will presently be made clear.

In the accompanying drawings,—Figure 1 is a view in side elevation of an elevator embodying the present invention. Fig. 2 is a vertical sectional view through the upper end thereof. Fig. 3 is a similar view through the lower end. Fig. 4 is a top plan view of the lower end portion of the elevator, and Fig. 5 is a transverse sectional view through the elevator taken at a point intermediate of the ends of the same.

In the drawings, the conveyer mechanism of the elevator is illustrated as housed within a casing which embodies side walls 6, a bottom wall 7, and a top wall 8, the bottom and top walls, at the lower end of the casing, merging to afford a closed lower end. The conveyer casing is, of course, arranged in inclined position when in use, and the lower corner of the casing at its upper end is left open, as at 9, for the discharge of grain, as will be presently more specifically described. Grain is to be introduced into the conveyer casing by way of a suitably formed hopper 10 which is arranged at the lower end of the said casing at one side thereof and opens through the said side. Grain discharged into the casing is, of course, to be conveyed to the upper end thereof and finally discharged through the opening 9 into the car being loaded.

A shaft 11 is journaled at its ends in suitable bearings 12 which are mounted for sliding adjustment in guides 13 upon the side walls of the casing at the lower end thereof, these bearings being adjustable through the medium of adjusting screws 14 for a pur-

pose which will presently be explained. Sprocket gears 15 are fixed upon this shaft 11 adjacent the ends thereof and immediately inward of the side walls of the casing, and a shaft 16 is journaled at its ends in suitable bearings in said side walls of the casing at the upper ends thereof, and also has fixed upon it sprocket gears 17 located in a manner similar to the gears 15.

It will be observed that the lower end wall of the conveyer casing is curved in the arc of a circle concentric to the sprocket gears 15 in nearly the same arc so that grain fed into the casing at this end will not collect or accumulate, but will be properly engaged by the conveyer flights when in movement.

It will be observed from inspection of Fig. 1 of the drawings that one of the gears 17 is formed with a bevel gear portion 18, and meshing with this said gear portion is a bevel pinion 19 fixed at the upper end of a shaft 20 which is mounted in suitable bearings upon one side wall of the casing and exterior to the casing. At the lower end of the said shaft 20 there is fixed a tubular pinion 21 meshing with a similar pinion 22 upon the adjacent end of a power shaft 23, this shaft being journaled transversely beneath the casing at the lower end thereof and being adapted to be driven from any suitable source of power supply; also it is contemplated that this shaft shall have connection with a wagon raising device which is not here shown, as it forms no part of the present invention.

Journaled upon stub shafts 24 upon the inner faces of the side walls of the conveyer casing at the upper end thereof are small idler sprocket gears 25 and chains are trained over the several gears, 15, 17, and 25 at each side of the casing and are connected by ordinary conveyer flights 26 which travel over the bottom wall or floor of the casing and move the grain thereover, as will be readily understood. To support the upper stretch of the chains, suitable angle iron tracks 27 are mounted upon the inner faces of the side walls of the casing and support the said chains.

From the foregoing description of the invention, it will be readily understood that grain is to be fed into the conveyer casing through the hopper 10 and that as the lower stretch of the conveyer travels upwardly over the floor of the casing, grain will be collected and carried upwardly by the flights

26 and discharged through the opening 9 at the lower edge of which opening there is arranged a depending board or apron 28 which forwardly deflects the discharged grain.

What is claimed is:

In an elevator of the class described, a casing comprising side walls, a bottom wall, and a top wall, the said casing being open at the lower corner of its upper end, a shaft journaled in the casing directly above the opening, sprocket gears fixed upon the shaft one immediately inwardly of each side wall of the casing, idle sprocket gears mounted upon the inner sides of the said side walls, one above each of the first mentioned gears, a shaft journaled in the casing at the lower end thereof, sprocket gears fixed upon the last mentioned shaft one immediately in-

wardly of each side wall of the casing, sprocket chains trained over the gears at each side of the casing, the said chains being completely housed by said casing, conveyer flights connecting the said chains, and a hopper opening through one side wall of the conveyer casing and arranged to discharge material into the casing between the upper and lower stretches of the chains, and means for imparting rotative movement to the first mentioned shaft.

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

WELSEY AZARIAH CALDWELL.

Witnesses:

J. H. WALKER,

J. W. KIRKWOOD.