

No. 649,103.

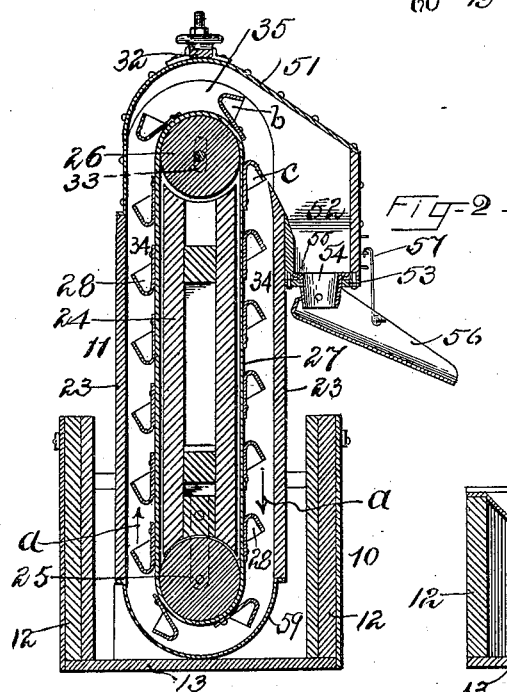
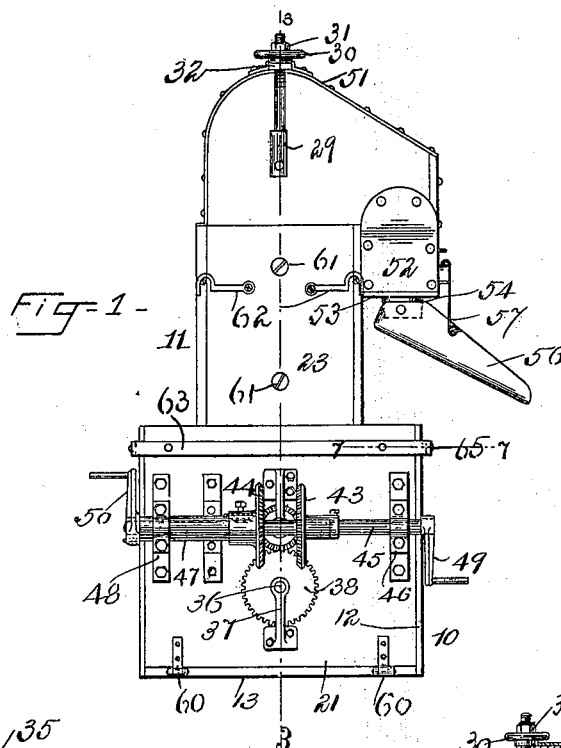
**Patented May 8, 1900.**

**W. H. GLEASON.**  
**PORTABLE GRAIN ELEVATOR.**

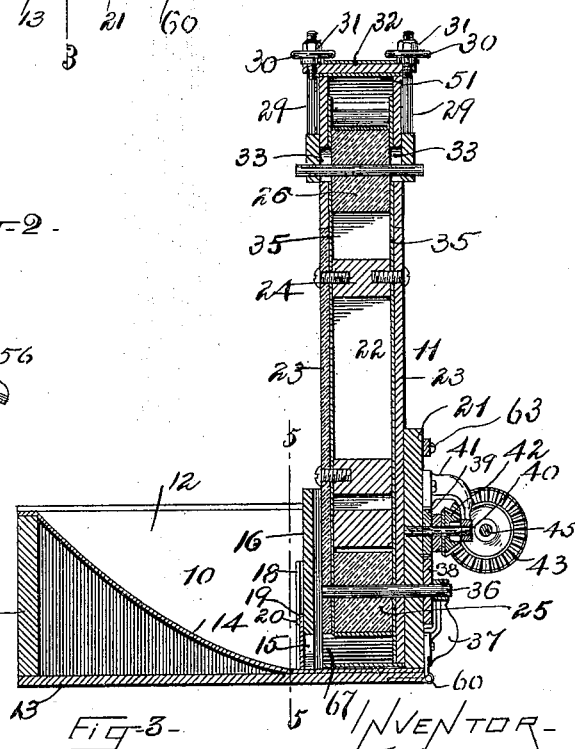
(Application filed Jan. 11, 1900.)

(No Model.)

**2 Sheets—Sheet 1.**



WITNESSES  
Arthur A. Coburn.  
Louis W. Jones



5 01 / INVENTOR -  
Warren H. Gleason -  
by his Attorney  
Charles S. Gushing.

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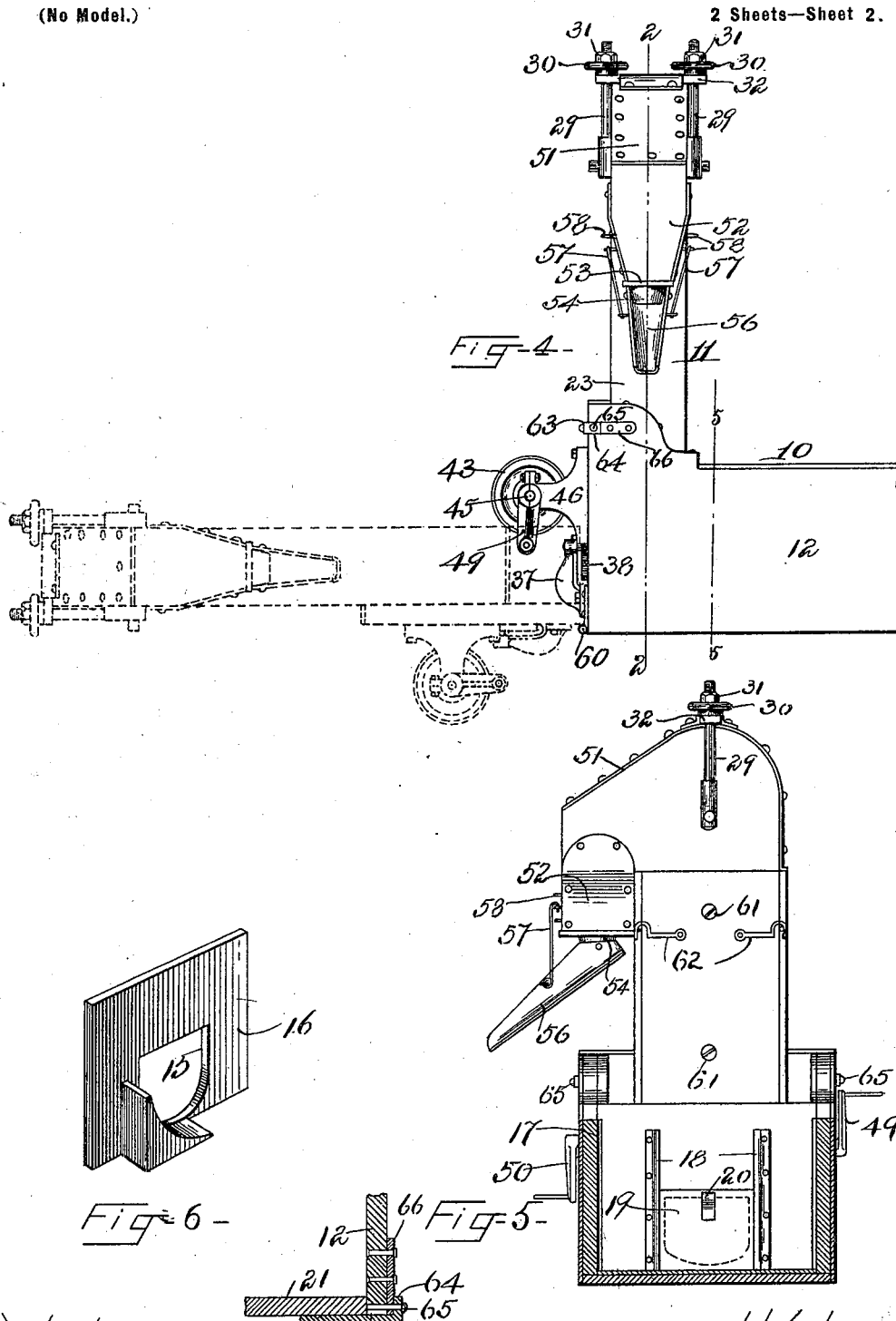
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Charles S. Fording.

# UNITED STATES PATENT OFFICE.

WARREN H. GLEASON, OF CHELSEA, MASSACHUSETTS.

## PORTABLE GRAIN-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 649,103, dated May 8, 1900.

Application filed January 11, 1900. Serial No. 1,156. (No model.)

*To all whom it may concern:*

Be it known that I, WARREN H. GLEASON, a citizen of the United States, residing at Chelsea, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Portable Grain-Elevators, of which the following is a specification.

The object of this invention is to produce a portable grain-elevator which may be operated by hand or power, which may be easily transported from one place to another, and so constructed as to be easily repaired or adjusted.

With my improved portable elevator the grain is elevated from the cart in which it is carried to a granary or car with much less labor and loss of time and material than with the method of shoveling.

The invention consists in certain arrangements and combinations of parts, as set forth in the following specification and particularly pointed out in the claims thereof.

In the drawings, Figure 1 is a front elevation of my improved portable grain-elevator. Fig. 2 is a vertical sectional elevation taken on line 2 2, Fig. 4, looking toward the right in said figure. Fig. 3 is a vertical sectional elevation taken on line 3 3, Fig. 1, looking toward the right in said figure. Fig. 4 is a side elevation taken from the right of Fig. 1, the grain-elevating tower being shown lowered to a horizontal position in dotted lines. Fig. 5 is a vertical sectional elevation through the grain-bin, taken on line 5 5, Fig. 3, looking toward the right in said figure, the tower being shown in elevation. Fig. 6 is a detail perspective of the slide-partition which separates the grain-bin from the buckets. Fig. 7 is a detail plan section taken on line 7 7, Fig. 1, showing the means whereby the grain-elevating tower is locked in a vertical position to the grain-bin.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 10 is a receptacle or bin for the grain which is to be elevated, and 11 is a tower to which is attached the grain-elevating mechanism. The bin 10 is open at the top, has three fixed vertical sides 12 12 12, a bottom 13, and an inclined false bottom 14, which directs the grain toward an opening 15 in the vertical slide-partition 16. Said partition is

arranged to be moved in ways 17 upon the sides 12 12 of the bin 10, so that it may be entirely removed from said bin, and thus the latter may be easily swept and cleansed. Upon the slide-partition 16 are fastened ways 18, which guide the slide 19, said slide having a handle 20, whereby it may be lifted, the function of said slide being to open and close the opening 15 in the partition 16 and allow the grain to flow from the bin into the lower portion of the tower 11 or prevent it from so doing. The tower 11 consists of a vertical supporting-plate 21, to which is attached the framework 22, consisting of side pieces 23 23 and a central supporting-frame 24, all framed and joined together in a strong and substantial manner. In the lower end of the tower 11 is a pulley 25 and in the upper end another pulley 26, said pulleys being connected to each other by an endless belt 27, to which are attached buckets 28. The upper pulley 26 is fast to a shaft which turns in bearings in hangers 29, said hangers being screw-threaded at the upper ends thereof and supported by hand-wheels 30 30 and set-nuts 31 31 screwed thereon and resting upon a cross-piece 32, supported upon the framework of the tower. By screwing up on the hand-wheels 30 it is evident that the pulley 26 will be raised and the belt 27 tightened, and vice versa, the side pieces 23 being slotted at 33 to admit this adjustment of the pulley 26. The belt 27 and the buckets 28 attached thereto move in a space 34 between the side pieces 23 and the central supporting-frame 24, said space being inclosed at each side by side plates 35. The lower pulley 25 is fast to a rotatory shaft 36, said shaft turning in bearings in the side frames 23, supporting-plate 21, and bracket 37. The shaft 36 is rotated by a spur-gear 38 fast thereto and meshing a spur-gear 39, fast to the shaft 40, said shaft turning in bearings in the supporting-plate 21 and bracket 41, and having a bevel-gear 42 fast thereto, by which it is rotated, said bevel-gear meshing a pair of bevel-gears 43 44. The bevel-gear 43 is fast to a shaft 45, having one bearing in a bracket 46, fast to the plate 21, the other end of the shaft finding a bearing in the sleeve 47, to which sleeve the bevel-gear 44 is fastened, said sleeve turning in bearings in the brackets 48, fast to the

plate 21. The crank-handle 49 is fast to the shaft 45 and the crank-handle 50 to the sleeve 47, so that by turning said handles in opposite directions the pulley 25 will be rotated 5 through the train of gearing hereinbefore described, the two handles rendering it possible and convenient for two men to work at the same time, although it is evident that one may operate the mechanism if desired.

10 The top of the tower 11 is inclosed by a plate 51, and the grain is delivered from the buckets 28 into a chute 52, having a plate 53 fast to the lower end thereof, in which a tunnel 44 is supported by means of a flange 55, 15 so that said tunnel may turn thereon in a horizontal plane. A spout 56 is pivoted to the tunnel 54 and may be locked at different angles by means of the hook stay-rods 57 and staples 58 at different heights upon the chute 52.

20 At the lower end of the tower 11 is a semi-cylindrical plate 59, which incloses the buckets as they pass around the under side of the lower pulley, into which the grain flows from 25 the bin 10, through the opening 67, before being taken by the buckets.

In order to make the interior of the tower easy of access, so that the belting and buckets therein may be adjusted, repaired, or 30 cleansed, I provide hinges 60 60, one plate of each hinge being fast to the bottom 13 of the bin 10, the other to the plate 21 of the tower 11, so that the tower may be turned from a vertical to a horizontal position, Fig. 4, upon 35 said hinges. The side piece 23 is made removable by means of screws 61 and hooks 62, so that when the tower is in a horizontal position the side piece at that time on the upper side can be removed, also the side plate 40 35, and the belting and buckets repaired or cleansed with ease and despatch.

In order to lock the tower 11 to the bin 10 when said tower is in a vertical position, I 45 provide a metal clamp 63, fast to the plate 21, the ends thereof bent at right angles to form ears 64, having holes therein through which pins 65 are introduced, and engaging corresponding holes in the plates 66, fast to said bin, and thus locking the tower to the bin.

50 It will be observed that the buckets 28 are fastened to the belt 27 by rivets through the back of said buckets and said belt and that the buckets are arranged at such a distance from each other that when a bucket *b* is dumping its contents the bucket *c* next preceding 55 or below said bucket will close the opening 34 between the side piece 23 and supporting-frame 24 and help to guide any of the grain emptied from bucket *b* into the chute 52.

60 The operation of the device as a whole is as follows: The elevator is placed upon the ground and (supposing the bin 10 to be filled with grain) the slide 19 raised. The grain flows into the semicylindrical-shaped plate 65 59, the buckets are put in motion in the direction of the arrows *a* by turning the crank-

handles 49 and 50, the grain is carried up by the buckets over the pulley 26 and dumped into the chute 52, thence flowing through the tunnel 54 and out of the spout 56, and is discharged into a car or granary, as desired. 70

In order to repair the belting or buckets, the pins 65 65 are removed, the tower lowered to the position shown in dotted lines, Fig. 4, by tipping the same upon the hinges 60. The 75 upper side piece 23 and side plate 35 are removed by removing the screws 61 and unfastening the hooks 62, and the buckets and belt then being exposed are easily repaired or cleansed, as may be desired. 80

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

1. In a portable grain-elevator, a series of buckets attached to an endless belt, mechanism for imparting motion to said buckets, a tower upon which said buckets and operating mechanism are supported, said tower consisting of a framework attached to a vertical supporting-plate 21, a grain-bin 10, and hinges 90 connecting said plate and grain-bin.

2. In a portable grain-elevator, a series of buckets attached to an endless belt, mechanism for imparting motion to said buckets, a tower upon which said buckets and operating 95 mechanism are supported, said tower consisting of a framework attached to a vertical supporting-plate 21, a grain-bin 10, hinges connecting said plate and grain-bin, a clamp 63 fast to the plate 21, and means for securing 100 said clamp to said grain-bin substantially as described.

3. In a portable grain-elevator, a series of buckets attached to an endless belt, a pair of pulleys over which said belt runs, a tower 105 supporting said pulleys and belt, consisting of a framework attached to a vertical supporting-plate 21, a grain-bin 10, hinges connecting said plate and grain-bin, a shaft 45 supported in bearings upon said supporting-plate, means for rotating said shaft and a bevel-gear 43 fast to said shaft; a pulley-shaft 36, a gear 38 fast thereto and intermediate gearing connecting said gears 43 and 38 substantially as described. 115

4. In a portable grain-elevator, a series of buckets attached to an endless belt, a pair of pulleys over which said belt runs, a tower supporting said pulleys and belt, consisting of a framework attached to a vertical supporting-plate 21, a grain-bin 10, hinges connecting said plate and grain-bin, a shaft 45 supported in bearings upon said supporting-plate, means for rotating said shaft, and a bevel-gear 43 fast to said shaft; a sleeve 47 125 supported in bearings upon said supporting-plate and encircling said shaft, means for rotating said sleeve and a bevel-gear 44 fast thereto; a pulley-shaft 36, a gear 38 fast thereto and intermediate gearing connecting said 130 gears 43, 44 and 38 substantially as described.

5. In a portable grain-elevator, a series of

5 buckets attached to an endless belt, mechanism for imparting motion to said buckets, a tower upon which said buckets and operating mechanism are supported, said tower consisting of a framework attached to a vertical supporting-plate 21, a grain-bin 10, hinges connecting said plate and grain-bin; a slide-partition 16 arranged to move in ways upon said grain-bin, an opening 15 in said slide-parti-

tion and a slide 19 thereon substantially as is described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WARREN H. GLEASON.

Witnesses:

CHARLES S. GOODING,  
LOUIS A. JONES.