

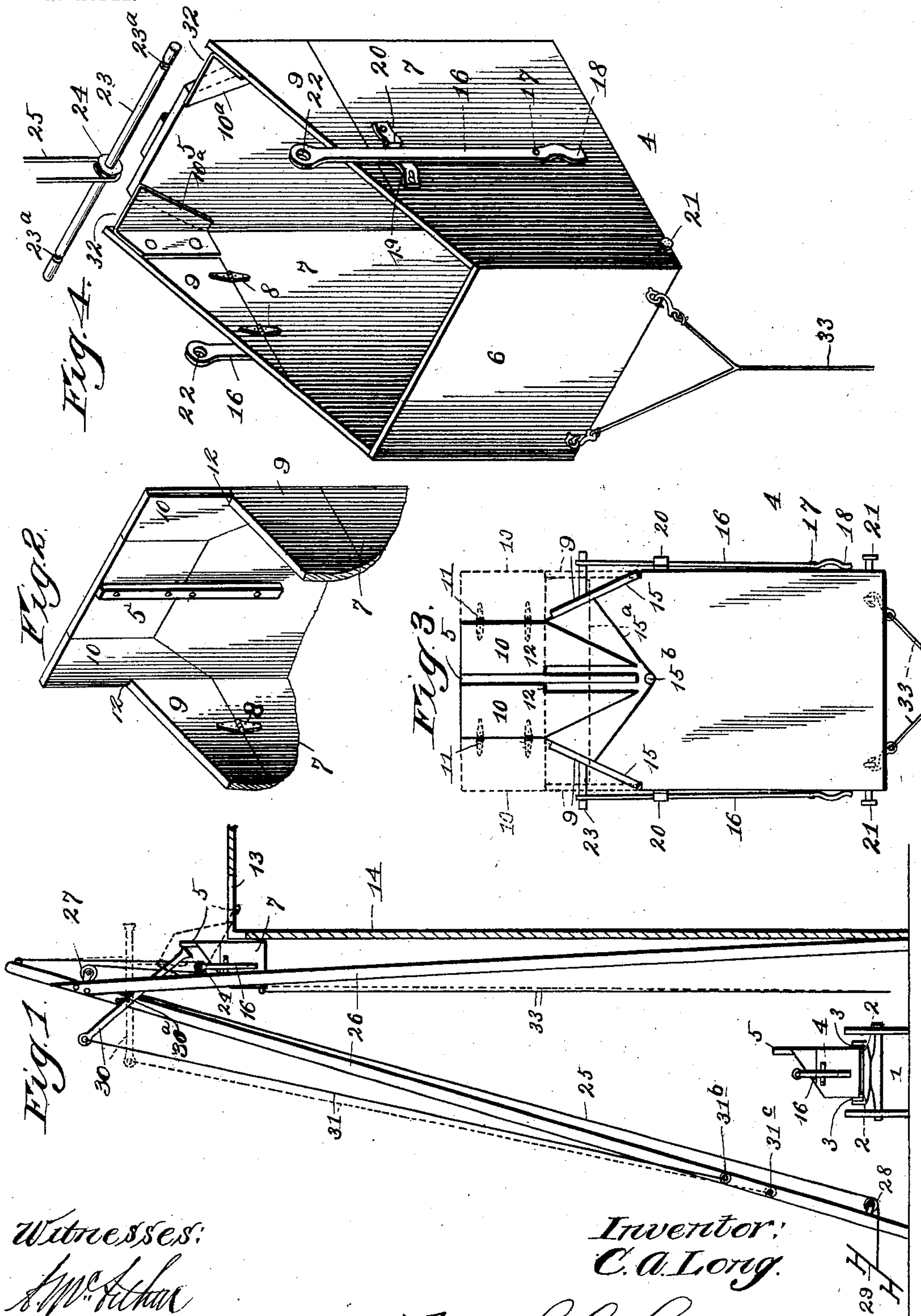
No. 745,362.

PATENTED DEC. 1, 1903.

C. A. LONG.
LOADING OR UNLOADING APPARATUS.

APPLICATION FILED OCT. 24, 1902.

NO MODEL.



Witnesses:

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UNITED STATES PATENT OFFICE.

CALVIN A. LONG, OF SOLDIER, KANSAS.

LOADING OR UNLOADING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 745,362, dated December 1, 1903.

Application filed October 24, 1902. Serial No. 128,687. (No model.)

To all whom it may concern:

Be it known that I, CALVIN A. LONG, a citizen of the United States, residing at Soldier, in the county of Jackson and State of Kansas, have invented certain new and useful Improvements in Loading and Unloading Apparatus, of which the following is a specification.

My invention relates to improvements in a loading and unloading apparatus; and my object is to facilitate the handling of grain from the field to the bin or other place of storage.

In carrying out my invention I employ a sectional wagon-bed consisting of three or four boxes of peculiar construction, which I place upon the running-gear of a wagon instead of the usual wagon-bed. These boxes are hauled into the field, filled with corn or other grain, and then hauled back to the place of storage, where they are elevated by a suitable hoisting apparatus to an opening in the bin and automatically dumped.

In order that my invention may be fully understood, reference will now be made to the accompanying drawings, in which—

Figure 1 represents a side elevation of my apparatus in position for unloading. Fig. 2 is a broken detail perspective view of the upper portion of a grain-box, forming part of my invention. Fig. 3 is a front elevation of the grain-box, representing the operation of the wings hinged to the upper portion thereof. Fig. 4 is a perspective view of a modified form of the grain-box.

In the drawings, 1 indicates the running-gear of a wagon, from which the bed has been removed and a couple of longitudinal timbers 2 and side boards 3 have been substituted therefor to provide a platform for the reception of a suitable number of boxes 4. Said boxes are of convenient size for handling and are rectangular in horizontal section in order that they may be set closely together upon timbers 2. The dumping end 5 of each box is higher than the opposite end 6, and the upper edges of sides 7 slope downwardly from end 5 to the top of the opposite end 6 to make the box scoop-shaped, so that in dumping the grain will not be spilled from the sides thereof. The upper forward portions of sides 7 are secured by

hinges 8 to form wings 9, which are held in a vertical position when the box is being filled by flaps 10, secured by hinges 11 to the narrow upper portion of end 5. Said flaps are provided with shoulders 12, adapted to frictionally engage the upper edges of the wings 9 to prevent their folding while the wagon is passing over rough ground in the field. This construction is for the purpose of contracting the dumping end of the box after the latter has been filled in the field, so it may fit a small opening 13 in bin 14 by folding the flaps back against the front end of the box and securing the wings down against the slanting portions 15 of said front end by means of a cable 15^a, secured at its opposite ends to said wings and adapted to be hooked over a pin 15^b, secured in the end 5 of the box.

The sides 7 of the box are provided with arms 16, pivotally secured at their lower portions by bolts 17 to the lower central portions of the sides of the box, and their lower ends are formed into curved springs 18, which frictionally engage the sides of the box to assist in holding the arms in a vertical position. The spring ends 18 are assisted in their function by springs 19, secured to the upper central portions of sides 7 and provided with shoulders 20, which contact with the arms and avoid any possibility of the box dumping backwardly while being elevated to the opening in the bin.

The box is prevented from turning completely over when dumping by stops 21, secured to the lower rear portions of sides 7.

The upper ends of the arms have openings 22 to receive a cross-rod 23, provided with annular grooves 23^a near its opposite terminals, adapted to reliably engage the upper portions of openings 22.

24 indicates a sheave-wheel journaled upon the central portion of the cross-rod to receive a hoisting-cable 25, which is secured at its upper end to a derrick 26, operates over pulleys 27 28, secured, respectively, to the upper and lower portions of the derrick, and is fastened at its lower end to a doubletree 29, to which a team may be hitched to hoist the box.

The upper portion of the derrick is provided with a lever 30, having its long end hang by gravity in the path of the front side

of the box and rest upon a pin 30^a. Its rear end is provided with a cable 31, which hangs down within easy reach of a person standing upon the ground and is provided with a ring 5 31^a, adapted to engage either of pins 31^b or 31^c for securing the lever in the positions shown by full and dotted lines in Fig. 1.

Fig. 4 represents a modified form of box with the extension on the dumping end of the box carrying flaps 10 removed and a pair of flanges 10^a substituted for said flaps to prevent the grain from spilling out of openings 32 between the front portions of the wings and the slanting portions 15 on the dumping end of the box.

In practice after the boxes have been filled with grain in the field they are hauled back beneath the derrick adjacent to the bin, as shown in Fig. 1. The dumping end of the box is then contracted to fit the small opening in the bin by folding flaps 10 back against the front end of the box and securing the wings down upon the slanting portions 15 by hooking the cable 15^a over pin 15^b. Cross-rod 23 is then inserted in the openings of arms 16 on one of the boxes and elevated by the team. When the box has attained the height shown in Fig. 1, its upper front portion contacts with the long end of lever 30, and as it continues to rise the lever swinging on its fulcrum overcomes the resistance of springs 18 19 and tilts the box over the opening in the bin. The lower end of the box is then elevated to the position shown by dotted lines, Fig. 1, so that all the grain therein will be discharged into the bin. After the grain has been discharged from the box the long end of the lever is raised out of the way by hooking ring 31^a over pin 31^c, and the box is 40 righted by pulling down on cable 33, detachably secured to the rear side of the box, which latter is then lowered by backing the team. After the box has been let down into the wagon the above operation is repeated until 45 all the boxes have been emptied.

From the above description it is apparent that I have produced a simple, cheap, and effective apparatus whereby grain in large quantities may be handled expediently and 50 at a small cost.

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

1. In an apparatus of the character described, a scoop-shaped box, arms pivotally secured to the opposite sides of the box, springs formed integral with the lower ends of the arms, and stops secured to the lower portion of said sides to limit the tipping of the box, substantially as described. 55 60

2. In an apparatus of the character described, a suitably-shaped box, arms pivotally secured to the lower opposite sides of the box, springs formed integral with the lower portions of the arms, springs secured to the upper sides of the box and shoulders on the front portions of the springs adapted to contact with the pivoted arms to prevent the box from tipping backwardly, substantially as described. 65 70

3. In an apparatus of the character described, a scoop-shaped box, wings hinged to the sides thereof, and arms pivotally secured to said sides, substantially as described. 75

4. In an apparatus of the character described, a scoop-shaped box, wings hinged to the sides thereof, and flaps hinged to the front portion of the box and adapted to hold the wings in an upright position, substantially as described. 80

5. In an apparatus of the character described, a suitable box having a narrow upper front portion, slanting portions extending from the narrow portion to the opposite sides of the box, wings hinged to the opposite sides and adapted to fold down against the slanting portions, and means for securing said wings against the slanting portions, substantially as described. 85 90

6. In an apparatus of the character described, a suitable box, arms pivotally secured thereto and provided with openings in their upper portions, a cross-rod adapted to be detachably secured in said openings, a cable operatively secured to the cross-rod, a derrick provided with sheave-wheels over which said cable operates in hoisting the box, and means for tipping the box when in an elevated position, substantially as described. 95 100

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

CALVIN A. LONG.

Witnesses:

J. W. FLEMING,
BEN L. MICKEL.