(No Model.) 2 Sheets—Sheet 1.

G. S. FOSTER.

APPARATUS AND BUILDING FOR UNLOADING AND STORING GRAIN.

No. 602,502. Patented Apr. 19, 1898.

Fig. 1.

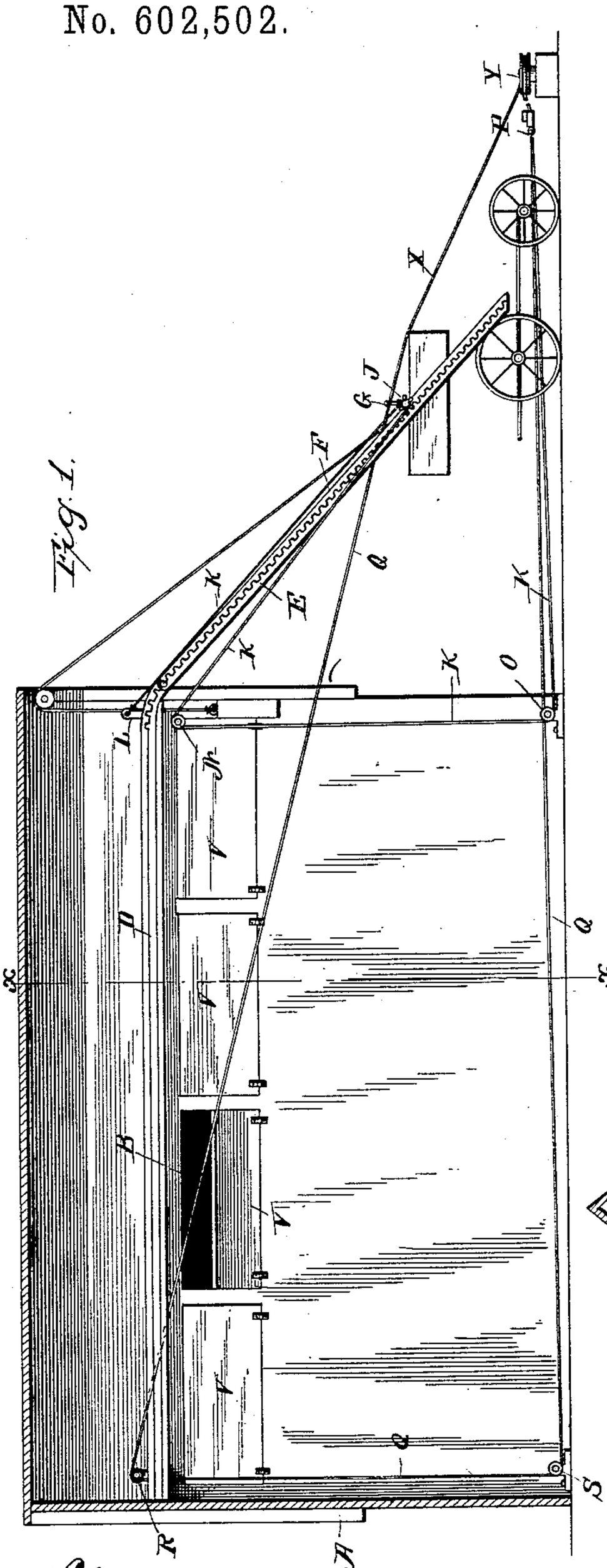


Fig. 3.

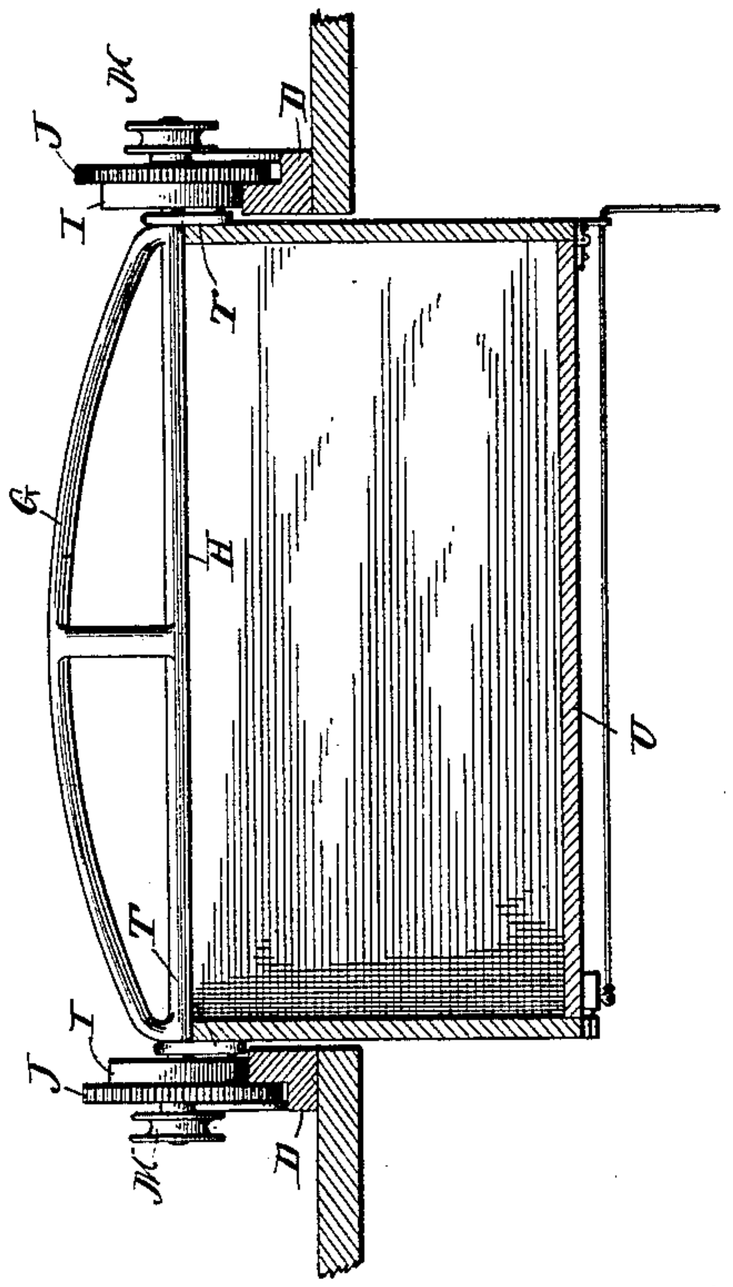
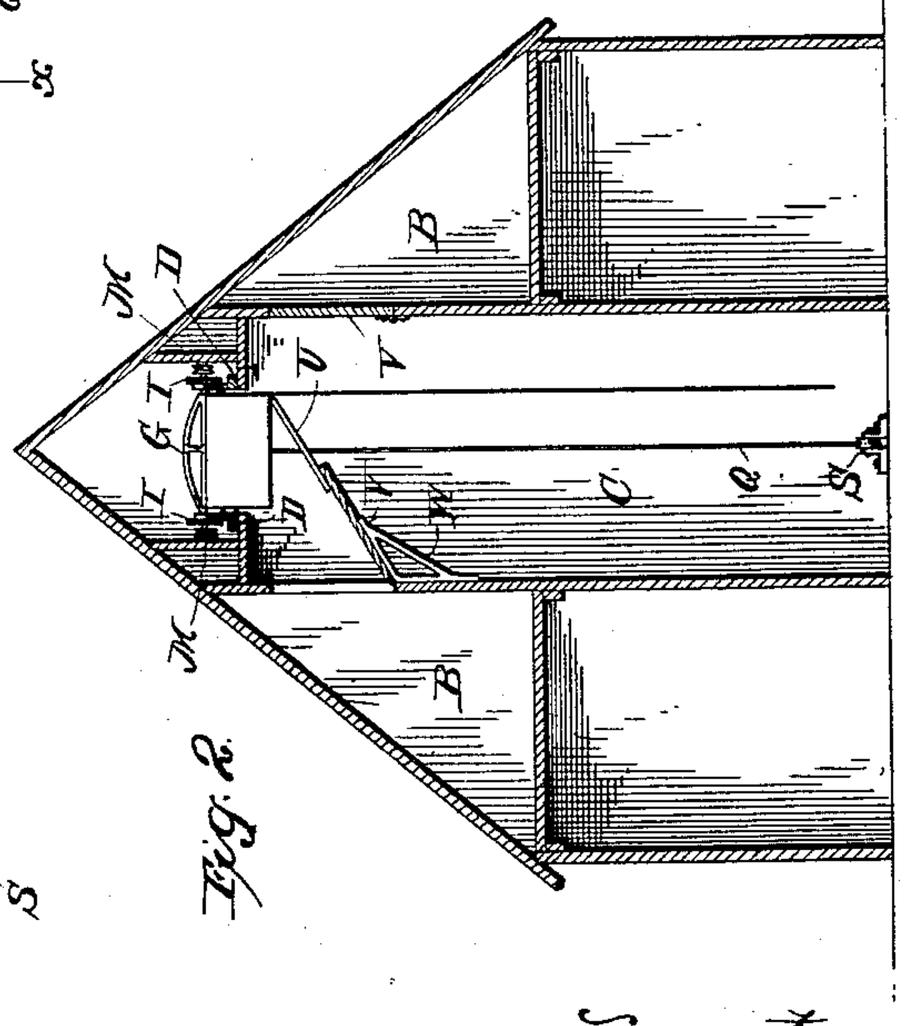


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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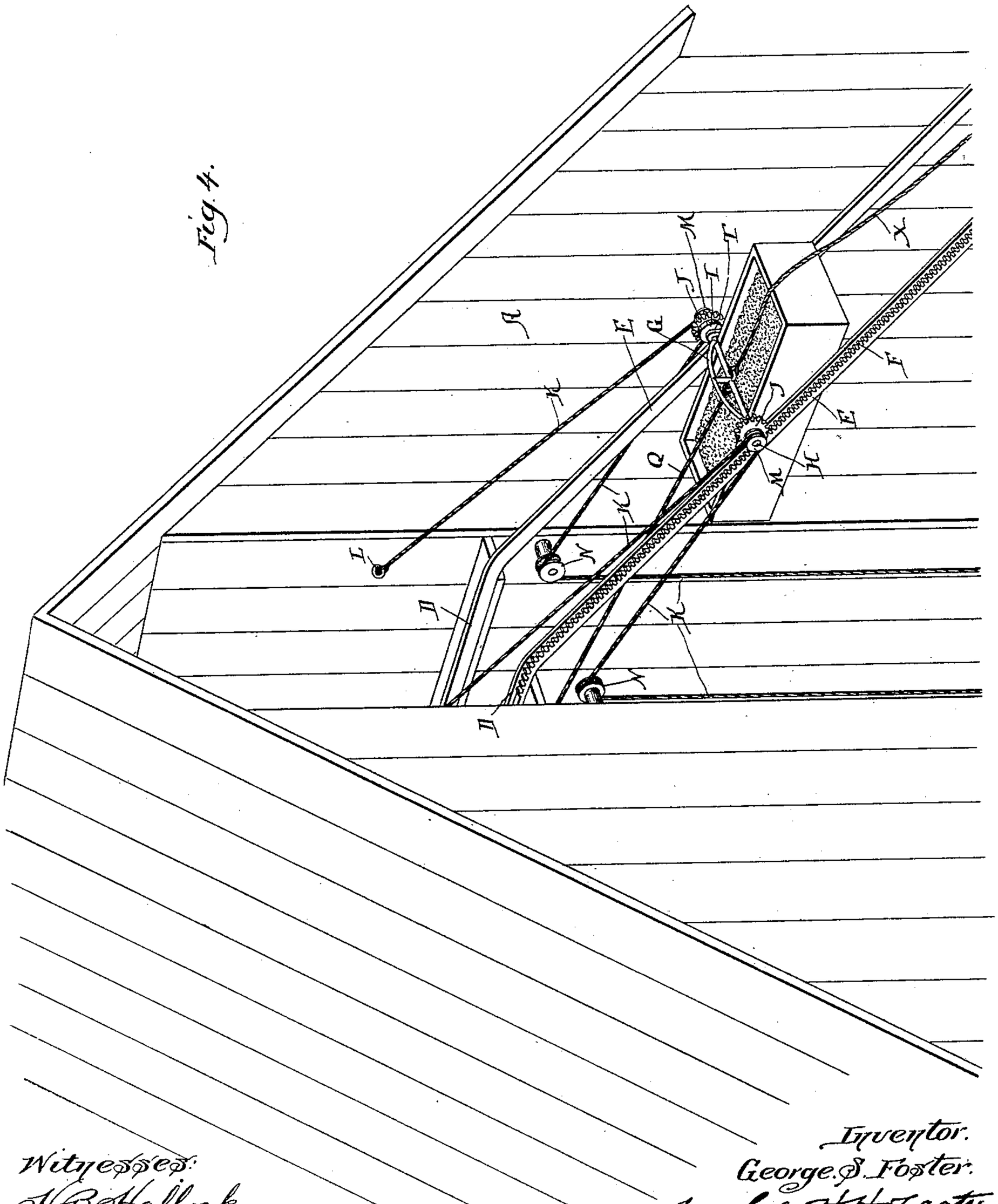
Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE S. FOSTER, OF BUDA, ILLINOIS.

APPARATUS AND BUILDING FOR UNLOADING AND STORING GRAIN.

SPECIFICATION forming part of Letters Patent No. 602,502, dated April 19, 1898.

Application filed June 22, 1897. Serial No. 641,820. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. FOSTER, a citizen of the United States, residing at Buda, in the county of Bureau and State of Illinois, have invented a certain new and useful Improvement in Apparatus and Buildings for Unloading and Storing Grain, of which the following is a specification.

My invention relates to a new and useful improvement in apparatus and buildings for unloading and storing grain, such as corn or wheat, and has for its object to provide simple and effective means for removing a box or body from a wagon without unloading the same, elevating it up an incline, conveying it to the proper location within the building, and dumping the entire contents within a bin suitably arranged by means of a properly-constructed chute; and a further object of the invention is to return the body of the wagon after thus unloading to the running-gear thereof and to bring about these operations by the team which has previously drawn the wagon.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth, and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a sectional elevation of a building having my improvements applied thereto, illustrating a wagon in position with its body just removed therefrom; Fig. 2, a section at the line *x x* of Fig. 1, including the body of the wagon and truck for conveying the same; Fig. 3, an enlarged section of the conveyer-truck, showing the wagon-body suspended therefrom. Fig. 4 is a perspective view of my improved apparatus, showing manner of arranging the ropes.

In carrying out my invention as here embodied, A represents a building, which may be of any size, having arranged therein bins B upon each side of the central passage-ways C, and these bins in turn may lead to other compartments therebeneath, so that after the grain has once been elevated and conveyed within the bins it may be by gravity reloaded upon other vehicles or used as desired. Within the upper portion of the central passage-way C is located a track D, composed of two rails, each of which is provided with a double flange, as clearly shown in cross-section in Fig. 3. From the outer end of this track runs an inclined track E, which extends downward within a short distance of the ground, so that the wagon may be drawn thereunder, as indicated by the diagram to the right of Fig. 1, and the rails of this inclined track are likewise double-flanged, the lower flanges being provided with gear-teeth F, while the upper flanges are smooth, for the purpose hereinafter set forth.

G represents a truck which is properly braced to sustain the weight it is intended to carry, and the axle H of this truck projects beyond the sides thereof and has journaled thereon the double-flanged wheels I. The smaller sections of these wheels are adapted to run upon the elevated or smooth flange of the rails, while the larger sections thereof have gear-teeth J formed thereon adapted to mesh with the teeth F of the inclined tracks, so that when the truck is traveling up and down the incline the wheels will not only rest upon the rails, but will also mesh with the gear-teeth thereof, and when the truck passes onto the horizontal track D the teeth of the wheels will pass out of engagement with the teeth of the rails and thereafter the wheels will only run upon the elevated flanges of said rails.

Ropes K (but one of which is here shown) have their upper ends attached to the posts L and leading downward pass around the grooved pulleys M, which are journaled upon the outer ends of the axle H, and these ropes again pass upward and over the pulleys N, and then downward around the pulleys O, and finally outward, where they are provided with a suitable eye or hook P for convenient attachment to the traces or whiffletree of a team, the object of which will be presently explained.

A rope Q is attached to the truck and passes rearward over the pulley R, and downward and around the pulley S, and finally outward, where it may be provided with suitable means for attachment to the traces of a team, so that when the wagon is to be unloaded it is driven beneath the lower end of the inclined tracks, the body thereof attached to the truck by means of suitable hook T, and the team hitched to the outer ends of the ropes K and Q and driven directly from the building, which will so draw upon these ropes as to first elevate the wagon-body from the running-gear thereof up the inclined track until reaching the horizontal tracks, after which the rope Q alone will draw upon the truck until it has reached the desired position for unloading, when the team will be stopped. Now it is only necessary to dump the contents of the body therefrom, and this is accomplished and facilitated by means of the bottom U thereof being hinged at one or both sides of the body and held by suitable latches against swinging downwardly until it is desired, and when so desired may be accomplished by a suitable guide-rope leading from the latch mechanism to the operator.

The incline or chute V may be provided for each of the bins after the manner of a swinging door, and may be swung outward and supported by a suitable bracket W, so that when the bottom of the wagon-body is swung downward it will come in contact therewith, as shown in Fig. 2, thus permitting the grain to fall from the body to the chute and from thence to the bin. It is then only necessary to draw the truck forward until reaching the inclined track, after which it will pass to the running-gear of the wagon and be replaced thereon for further use, and this may be accomplished by attaching a rope X to the truck and leading it outward around the pulley Y, so that when the team has reached its outward limit and has to start backward toward the building it may be hitched to this last-named rope, which by its guidance around the pulley Y will return the wagon-body to its running-gear as well as restore the several ropes to their normal positions. The rope K, when completing the elevation of the body, extends from the post L to the pulley N in a straight line and across the travel of the grooved pulleys M, so that when the truck is drawn backward after the body is unloaded these pulleys will again come in contact with the ropes K, and drawing loops therein will descend the inclined track, as will be readily understood.

I have here shown the chute V of a door form, so that it may be swung outward into proper position for receiving the grain from the body of the wagon, in which case a similar chute will be provided for each of the bins or sections thereof; but it is obvious that instead of these chutes a single sliding chute may be provided which may travel with the truck and be brought to the position at which it is desired to dump the grain, or one continuous stationary chute may be provided, which would always be in place.

From this description it will be seen that a wagon may be driven in proper relative position to the inclined tracks, and the same team which was utilized for this operation may be again utilized for the unloading of the wagon, which may be accomplished in a very short time and the body returned to the wagon, after which it will be ready for further hauling. This is of great advantage when a large quantity of corn or like material is to be handled, and is of further advantage by avoiding waste by spilling in constantly transferring from one receptacle to another, and also that advantage of storing the grain at the upper portion of a building, from whence it may be conveyed by gravity to any portion thereof or withdrawn therefrom for other use.

Having thus fully described my invention, what I claim as new and useful is—

1. A building for storing grain having horizontal tracks arranged centrally and longitudinally thereof, a wagon-body mounted on a truck traveling on said track, said body having a hinged bottom, bins arranged on each side of the track, doors opening outwardly from said bins and forming a chute with the bottom of the wagon, as and for the purpose set forth.

2. In combination, a building, horizontal tracks arranged therein, inclined tracks leading therefrom, the rails of said inclined track being double-flanged, one of the flanges being provided with gear-teeth, a truck carrying double-flanged wheels to run upon said rails, one of the flanges of each wheel being provided with gear-teeth which mesh with the teeth of the rail, grooved pulleys carried by the truck, and ropes secured to the building and arranged to pass around said pulleys, as and for the purpose set forth.

3. In combination, a building, horizontal tracks arranged therein, inclined tracks leading therefrom, a truck adapted to travel upon said tracks, two grooved pulleys carried by the truck, a dumping-bottom adapted to be attached to the truck, ropes arranged to pass around the grooved pulleys, a rope attached to the truck, and means for attaching said ropes to a team, whereby the body may be elevated and conveyed to the desired point, as shown and described.

4. In combination with a building of the character described, horizontal tracks arranged therein, inclined tracks leading to the first-named tracks, the last-named tracks having gear-teeth formed upon one flange thereof, a truck adapted to travel upon the tracks, gear-teeth formed with the truck-wheels and adapted to mesh with the teeth of the inclined track, a dumping-body adapted to be attached to the truck, grooved pulleys carried by the truck, two ropes so arranged as to pass around

said grooved pulleys and elevate the truck up the inclined track, and a rope leading from the truck over the pulleys, all of said ropes being adapted for attachment to the team whereby the body may be handled, substantially as and for the purpose set forth.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

GEORGE S. FOSTER.

Witnesses:
W. T. AKIN,
S. H. FOSTER, Jr.