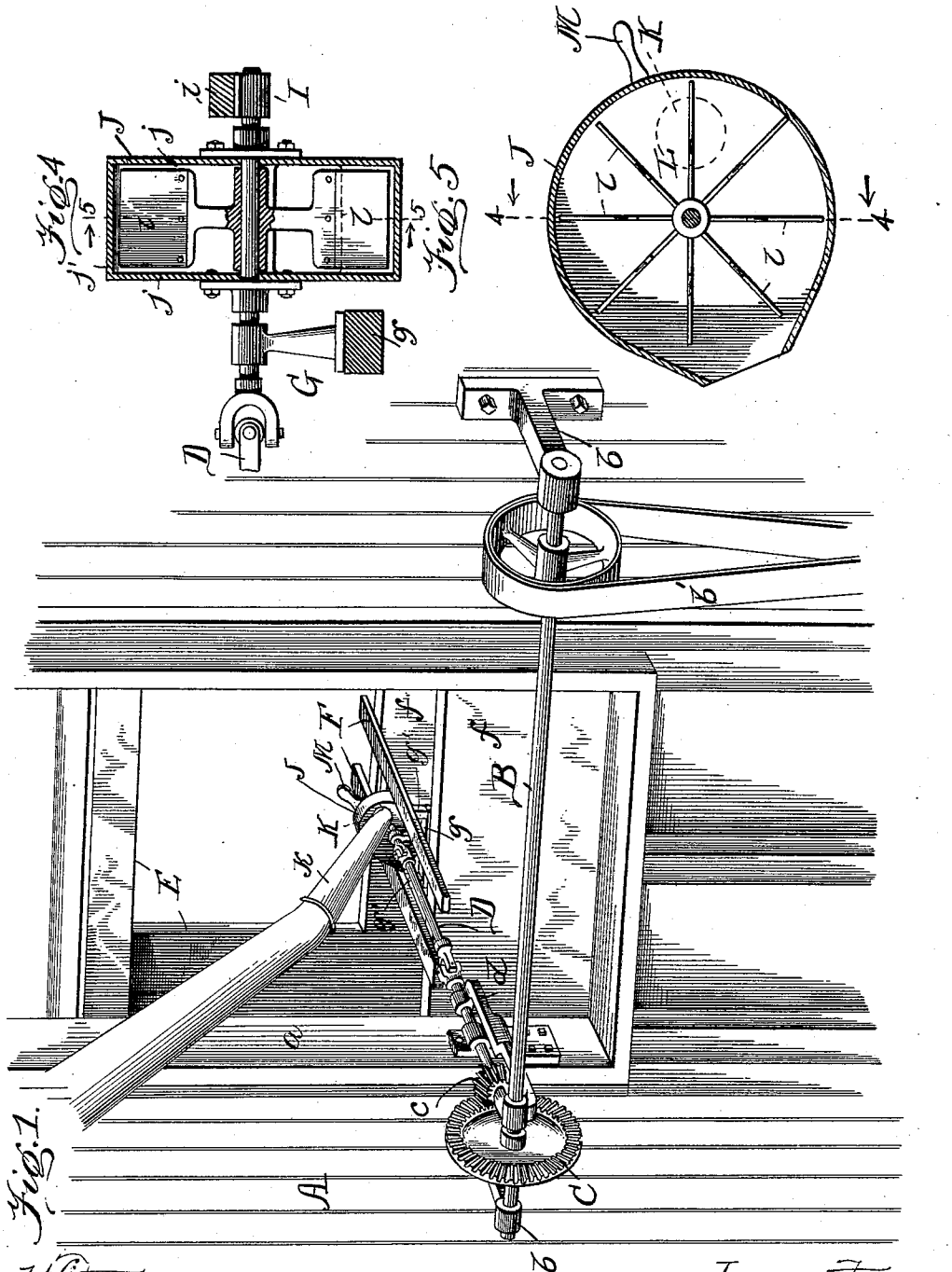
No. 614,891. Patented Nov. 29, 1898.

E. H. REYNOLDS.

CAR LOADER.

(Application filed Jan. 8, 1898.)

(No Model.) 4 Sheets—Sheet 1.



Witnesses:
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Wm. O. Belt

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(No Model.) 4 Sheets—Sheet 2.

Fig. 2.

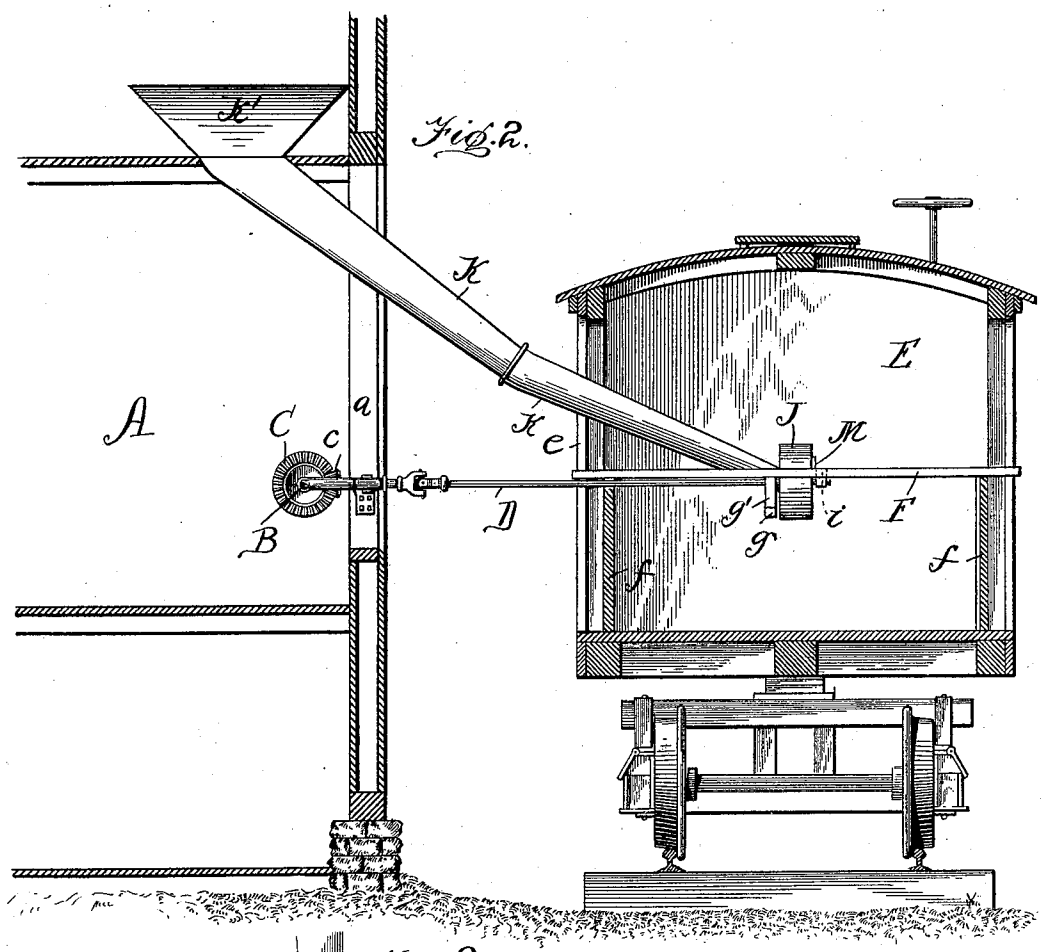
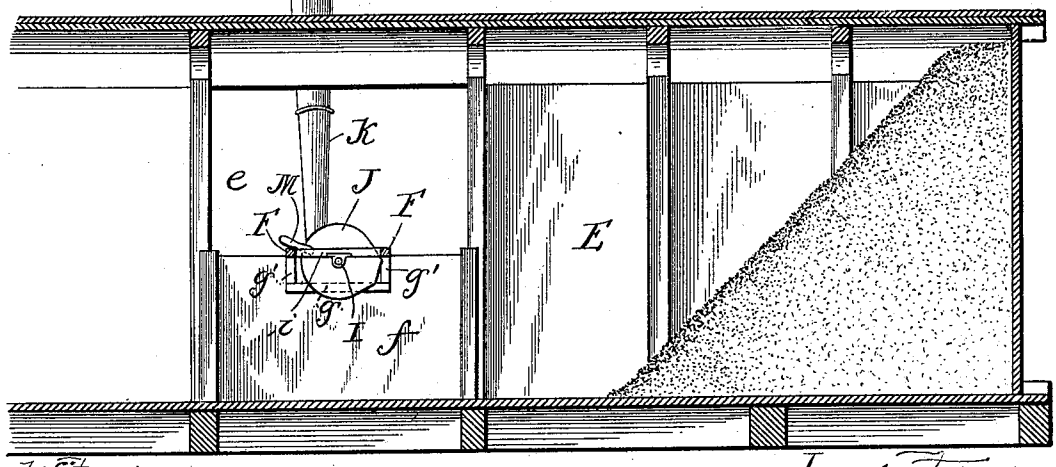


Fig. 3.



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(No Model.) 4 Sheets—Sheet 3.

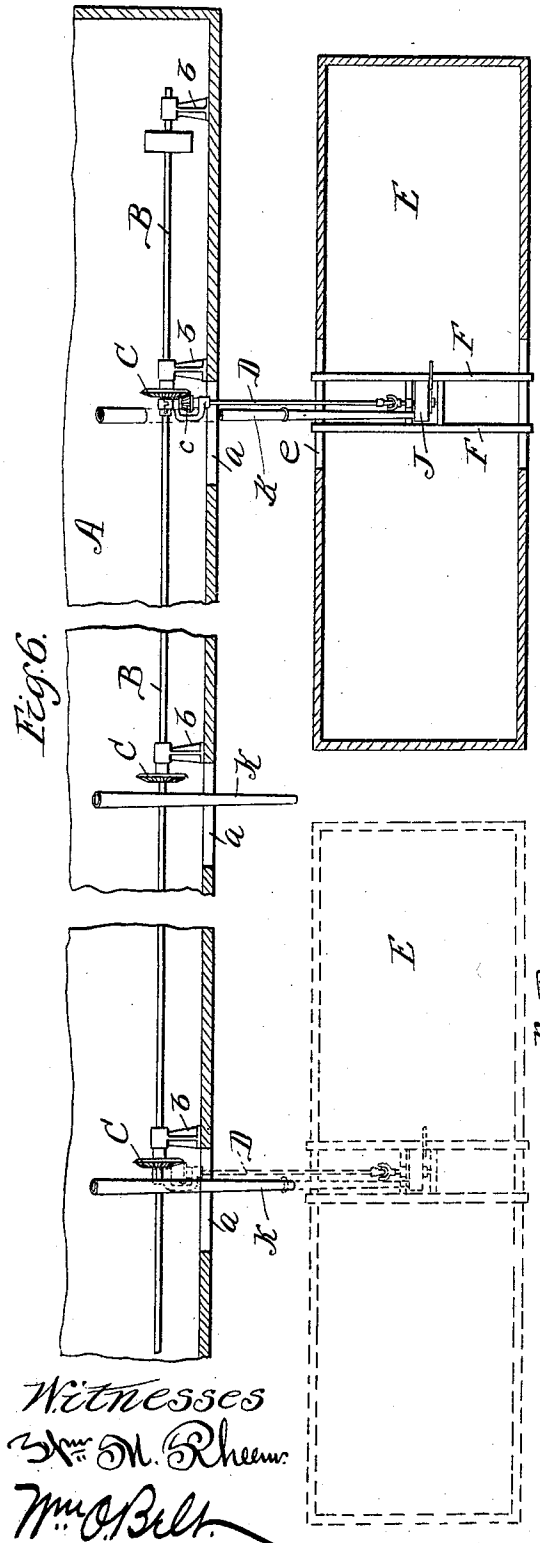


Fig. 6.

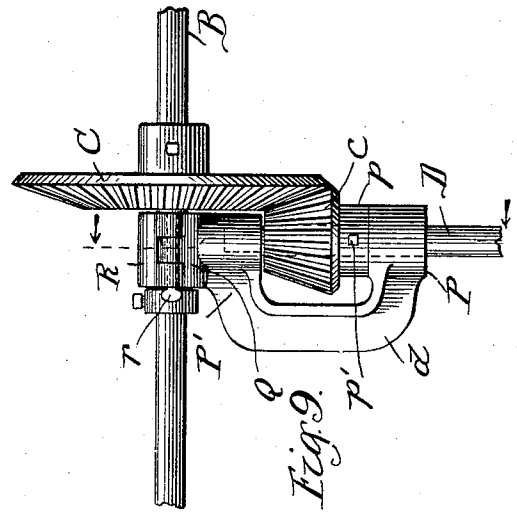


Fig. 9.

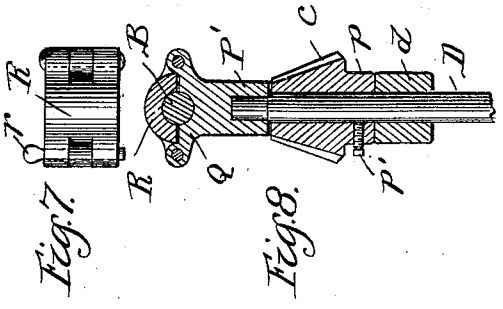


Fig. 7.

Fig. 8.

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No. 614,891. Patented Nov. 29, 1898.

E. H. REYNOLDS.

CAR LOADER.

(Application filed Jan. 8, 1898.)

(No Model.) 4 Sheets—Sheet 4.

Fig. 10.

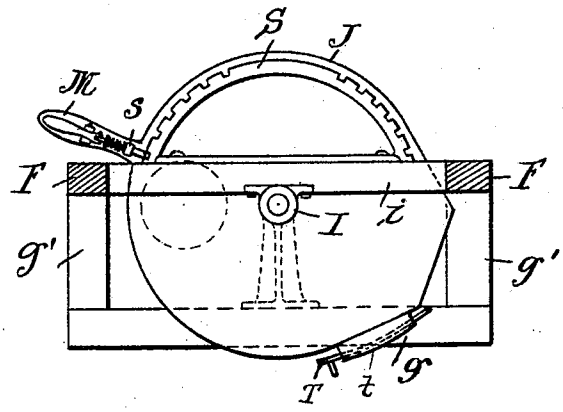


Fig. 11.

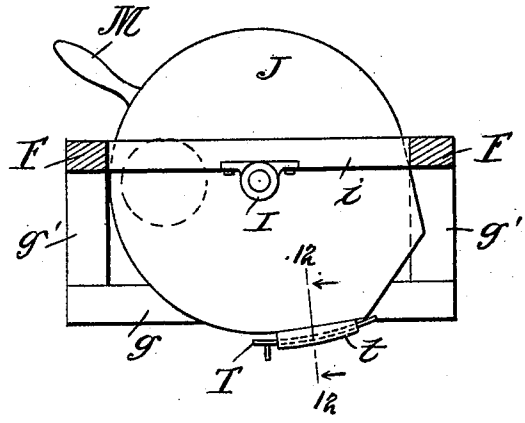
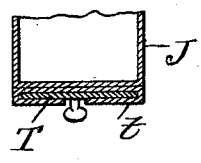


Fig. 12.



Witnesses.

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Wm. O. Belt.

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UNITED STATES PATENT OFFICE.

EARL HAUSTIN REYNOLDS, OF STERLING, ILLINOIS.

CAR-LOADER.

SPECIFICATION forming part of Letters Patent No. 614,891, dated November 29, 1898.

Application filed January 8, 1898. Serial No. 666,019. (No model.)

To all whom it may concern:

Be it known that I, EARL HAUSTIN REYNOLDS, a citizen of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Car-Loaders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to certain new and useful improvements in car-loaders, and while it is particularly adapted for loading grain into cars, vessels, and other storage-places it may also be used for loading other materials, such as coal, sand, &c.

The object of the invention is to provide a simple apparatus which can be easily and readily adjusted and arranged in position for distributing grain or other material to the ends or distant parts of cars or other storage-places to load the same, thereby avoiding the necessity for shoveling the grain or otherwise handling the same to provide an even distribution.

Another object of the invention is to provide means which can be easily and quickly adjusted or manipulated to distribute grain or other material to any desired part of a car or other storage-place, so as to fill up a car, for example, at the ends before filling the middle or pile the material in a desired predetermined place; and a further object is to provide simple and effective means for directing the distribution of the material discharged from the loader and holding the same in stationary position while the operation continues.

My invention also has certain other objects in view which will be fully and clearly pointed out hereinafter in connection with the detailed description of the invention as illustrated in the accompanying drawings, in which—

Figure 1 is a view taken from the inside of an elevator or other storage-place and looking through a door or window therein into a car, showing the position of the apparatus and its operative parts and connections in one application of the invention. Fig. 2 is a cross-sectional view through a portion of the elevator and the car and showing the invention in side elevation. Fig. 3 is a longitudinal sectional view through the car, illustrating the manner in which the grain may be distributed by the apparatus at one end of the car. Fig. 4 is a sectional view on the line 4 4 of Fig. 5. Fig. 5 is a sectional view on the line 5 5 of Fig. 4. Fig. 6 is a top plan view, partly in section, showing the invention as it may be applied to an elevator for the purpose of loading a number of cars simultaneously. Figs. 7, 8, and 9 are detail views of the connections between the driving-shaft and the loader and show the manner and means of detachably connecting the parts to said shaft. Fig. 10 illustrates the means for adjusting and holding the loader in operative position. Fig. 11 illustrates a device for controlling the discharge of grain from the loader. Fig. 12 is a sectional view on the line 12 12 of Fig. 11.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates an elevator or some other storage-place of a similar character, which is provided with a door or window or simply an opening *a*. A driving-shaft B is mounted in bearings in the brackets *b*, secured within the elevator, and this shaft is driven by a belt *b'* or some other convenient and suitable source of power. This driving-shaft carries a beveled gear C, which meshes with a beveled pinion *c* on a driven shaft D, said shaft D being supported in a bracket *d*, which may be secured to the elevator at some suitable point, as shown in Fig. 1, or supported on the driving-shaft, as shown in Fig. 9. The bracket *d* is arranged to support the shaft D whether it is fastened to the elevator or simply secured on the driving-shaft; but it will be understood that the manner and means for supporting and securing the two shafts may be varied without departing from the invention.

In order that the device may be readily disconnected from the driving-shaft and moved from one place to another as required, I prefer to employ the construction illustrated in Figs. 7, 8, and 9 for securing the driving-shaft to the driven shaft and supporting the latter. In this connection the bracket *d* is

substantially U shape and the driven shaft D passes through an opening in one arm P and is stepped in a socket in the other arm P', the bevel-pinion *c* being provided with an extension *p* in the form of a collar, through which a set-screw *p'* passes to secure the pinion to the shaft.

The forward end of the bracket is provided with a half-bearing to receive the driving-shaft, and a plate R is hinged at one end to the end of the bracket and is secured at its other end to said bracket by a pin *r* or other device. The plate R may be secured to the bracket in many other ways than that described, so that it can be readily unfastened to permit the driven shaft to be removed from the driving-shaft. The plate has a half-bearing in the form shown corresponding with the half-bearing on the bracket to receive the driving-shaft. As the driven shaft may be adjusted vertically when thus fastened to the driving-shaft it is unnecessary to provide the double knuckle shown in Fig. 1.

By making the driven shaft readily detachable from the driving-shaft the device may be moved from one window or door of the elevator to another with but very little trouble, and this also renders it unnecessary to have a loader at each elevator door or window.

I have illustrated my apparatus as constructed and arranged for the purpose of loading a railway-car with grain from an elevator as being the most general application and embodiment of the invention, although it is by no means restricted to this single application. The car E is arranged adjacent to the elevator, so that the driven shaft will project through the car-door *e*, at one side thereof, and into the car. Supporting-bars F are arranged upon and across the grain-doors *f* of the car, and the end of the driven shaft is journaled in bearings in the bracket G, supported on the cross-piece *g*, and in the bracket I, secured on the under side of the cross-piece *i*, carried by the supporting-bars. The cross-piece *g* is connected to the supporting-bars by means of uprights *g'*, which extend downward from the supporting-bars to leave sufficient room for the spout *k* to enter the side of the horizontally-disposed cylindric casing J. This casing is loosely mounted on the driven shaft between the brackets G and I, the ends *j* and periphery *j'* of the casing being closed with the exception of an inlet-opening K in one end to receive the grain-spout *k*, which delivers grain therein from a hopper *k'*, and a discharge-opening *i'* in the periphery. A distributing device, preferably in the form of a spider L, is rigidly and vertically mounted on the driven shaft within the casing, and each arm of the spider is provided with a blade *l*.

In order that the casing may be adjusted and held in a desired position, I provide a curved rack-bar S, Fig. 10, secured on the cross-piece *i*, with which a spring-controlled detent *s* on the handle M of the casing engages. To adjust the casing, the detent is withdrawn from engagement with the rack-bar and the casing moved into the proper position, after which the detent is again engaged with the rack-bar to hold the casing in its adjusted position. The casing may also be provided with an adjustable plate T, Figs. 11 and 12, which operates in a bracket *t* on the periphery of the casing, adjacent to the discharge-opening therein. This plate is preferably bent to correspond with the arc of the periphery of the casing, and it can be adjusted forward or backward to project into the discharge-opening for the purpose of directing the material as it is discharged in a desired direction.

The adjustable plate T may be used instead of the adjusting and holding devices, or they may both be used together, as shown in Fig. 10.

This being the general construction of the apparatus, the operation thereof may be described briefly as follows: The car having been arranged in its proper position with relation to the elevator and the position of the discharge-spout *k* leading therefrom and the casing having been located in its proper position within the car and supported on the rods F and the driven and driving shafts being connected, the driving-shaft is actuated and the grain flowing down through the spout and into the casing is distributed by the blades on the spider to one or the other end of the car in the desired manner, according to the position in which the casing is arranged. To fill one end of a car, the casing is adjusted by means of a handle M, so that the discharge-opening will be directed toward that end of the car while the inlet-opening in the side of the casing is located on the opposite side of the driven shaft. In this position the grain will be discharged into the casing above and to one side of the driven shaft and will fall down through the spider and be cast or thrown by the blades through the discharge-opening and to the end of the car, to the top thereof, if desired. This end of the car having been filled, or the desired quantity of grain having been discharged into this end of the car, the direction of movement of the driving-shaft is changed, the casing is shifted so that the discharge-opening will be directed toward the other end of the car, and the operation is continued to fill up the other end of the car. The desired amount of grain having been discharged into both ends of the car, it is then leveled off, so that the weight of the grain may be evenly disposed, for it will be understood that the apparatus may be operated to fill up the ends of the car without filling up the middle of the car beneath the casing and around the same, because the casing has only one discharge-opening and the grain will fall in the direction to which it is impelled by the blades on the spider. The casing may be adjusted so that the material will be discharged at the top and end of the car, if desired, and it is obvious that by manipulating the adjust-

ing and holding devices the material may be discharged into any place and in any manner desired. The driven shaft permits the casing to be adjusted in different positions without requiring a complete readjustment of all the parts of the apparatus, and this is particularly important in view of the difference in the construction of cars and many other different circumstances which may make it necessary to have an apparatus which can be employed under different conditions. The cross-piece *g* is arranged lower than the cross-piece *i*, so that sufficient room will be provided for the spout *k* to enter the inlet-opening K without engaging said cross-piece.

I am aware that changes in the form and proportion of parts and details of construction of my invention may be made without departing from the spirit or sacrificing the advantages thereof, and the apparatus may be used for distributing other materials than grain and into other places than in railway-cars.

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

1. The combination with suitable driving mechanism, of a distributing device adapted to be operated by said driving mechanism and a horizontally-disposed cylindric casing inclosing said distributing device and having closed ends, but provided with an inlet-opening and a discharge-opening, substantially as and for the purpose described.

2. The combination with a driven shaft and means for driving the same, of a distributing device mounted on said shaft, and a horizontally-disposed cylindric casing inclosing the distributing device and having closed ends and provided with an inlet-opening in one end and a discharge-opening in its periphery, substantially as and for the purpose described.

3. The combination with a driven shaft and means for driving the same, of a distributing device and a horizontally-disposed cylindric casing inclosing the distributing device and having closed ends, but provided with an inlet-opening in one end and a discharge-opening in its periphery, said casing being adapted to be shifted from side to side to bring the discharge-opening on one side or the other of the driven shaft and means for shifting the casing, substantially as and for the purpose described.

4. The combination with suitable driving mechanism of a distributing device adapted to be operated by said driving mechanism, a horizontally-disposed cylindric casing inclosing said distributing device and having closed ends but provided with an inlet-opening in one end and a discharge-opening in its periphery, said casing being adapted to be shifted from side to side, and means for adjusting and holding said casing in its adjusted position, substantially as described.

5. The combination with suitable driving mechanism, of a distributing device adapted to be operated by said driving mechanism, a cylindric casing inclosing said distributing device and having closed ends, but provided with an inlet-opening and a discharge-opening, said casing being adapted to be shifted from side to side to adjust the discharge-opening, and a rack-and-detent mechanism for holding the casing in operative position, substantially as described.

6. The combination with suitable driving mechanism, of a distributing device adapted to be operated by said mechanism, a cylindric casing inclosing said distributing device and having closed ends, but provided with an inlet-opening and a discharge-opening, a rack-bar and a spring-controlled detent carried by the casing and adapted to be operated to engage the rack-bar to hold the casing in position after it has been adjusted, substantially as described.

7. The combination with suitable driving mechanism, of a distributing device adapted to be operated by said driving mechanism, a cylindric casing inclosing said distributing device and having closed ends, but provided with an inlet-opening and a discharge-opening, and a plate arranged adjacent to the discharge-opening in the casing and adapted to be adjusted to control the discharge of material from the casing, substantially as described.

8. The combination with suitable driving mechanism, of a distributing device adapted to be operated by said driving mechanism, a cylindric casing inclosing said distributing device and having closed ends, but provided with an inlet-opening and a discharge-opening, a bracket carried by said casing and a plate secured in said bracket and adapted to be adjusted to project in front of the discharge-opening, substantially as and for the purpose described.

9. The combination with suitable driving mechanism, of a distributing device adapted to be operated by said driving mechanism, a cylindric casing inclosing said distributing device and having closed ends, but provided with an inlet-opening and a discharge-opening, a bracket secured on the periphery of said casing adjacent to the discharge-opening therein and a plate curved to correspond substantially with the curvature of said periphery and adapted to be adjusted in the bracket to project in front of the discharge-opening, substantially as and for the purpose described.

10. The combination with suitable driving mechanism, of a distributing device adapted to be operated by said driving mechanism, a cylindric casing inclosing said distributing device and having closed ends, but provided with an inlet-opening and a discharge-opening, said casing being adapted to be shifted to adjust the discharge-opening, a rack-and-detent mechanism for holding the casing in its adjusted position and a plate carried by

the casing on its periphery and adapted to be adjusted to project in front of said discharge-opening, substantially as described.

11. The combination with a driving-shaft, of a driven shaft adapted to be operated by said driving-shaft, a distributing device carried by said driven shaft, a horizontally-disposed cylindric casing inclosing said distributing device and having an inlet-opening in one end and a discharge-opening in its periphery, and bars for supporting the end of said driven shaft carrying the distributing device and casing, substantially as described.

12. The combination with suitable driving mechanism comprising a driven shaft, of a distributing device adapted to be operated by said driving mechanism, a horizontally-disposed cylindric casing inclosing said distributing device and having closed ends, but provided with an inlet-opening and a discharge-opening, bars for supporting the end of the driven shaft carrying the distributing device and casing, cross-pieces connecting said bars, a rack-bar secured on one of said cross-pieces and a spring-controlled detent carried by the casing and adapted to engage said rack to hold the casing in position, substantially as described.

13. The combination with a driving-shaft, of a driven shaft geared therewith and adapted to be operated thereby, a spider mounted on one end of said driven shaft, blades carried by the arms of said spider, a horizontally-disposed cylindric casing inclosing the spider and having closed ends, but provided with an inlet-opening in one end and a discharge-opening in its periphery on the side of the driven shaft opposite to the inlet-opening, supporting-bars, cross-pieces connecting said bars, and brackets carried by said cross-pieces to receive the said driven shaft, substantially as described.

14. The combination with a driving-shaft, of a driven shaft adapted to be operated by said driving-shaft, a distributing device carried by said driven shaft, a horizontally-disposed cylindric casing inclosing said distributing device, a bracket having one end of the driven shaft stepped therein, one arm of said bracket being secured to said driven shaft and the other arm of said bracket being removably secured to the driving-shaft, a beveled gear on the driving-shaft and a beveled pinion on the driven shaft meshing with the beveled gear, substantially as described.

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