No. 648,064. Patented Apr. 24, 1900.

J. C. BEAN.

AUTOMATIC CAR LOADER FOR GRAIN.

(Application filed July 14, 1899.)

(No Model.)

Fig. 1.

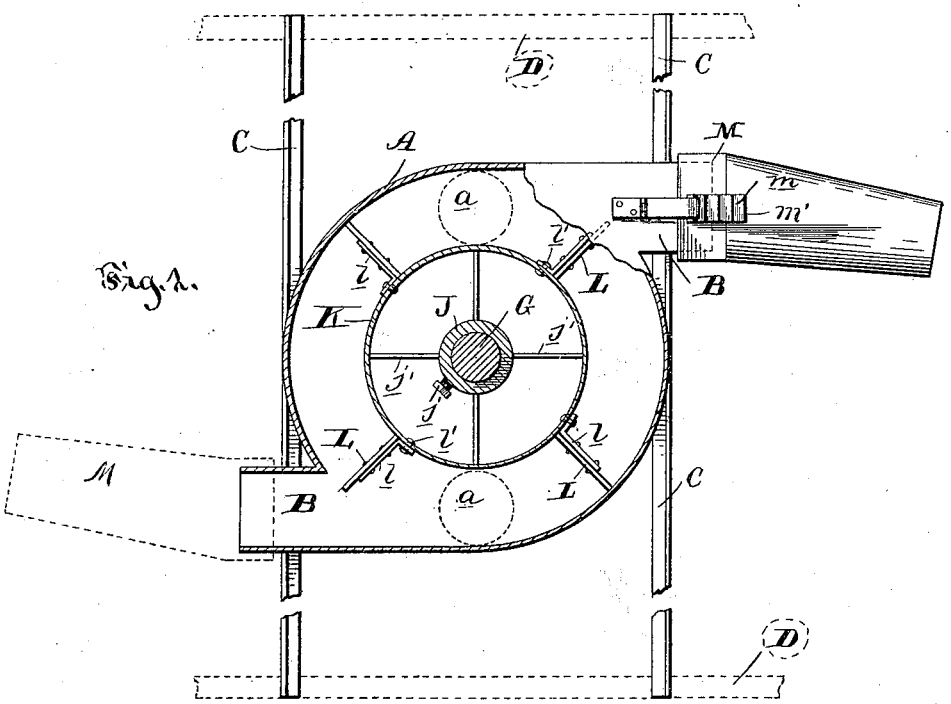


Fig. 2.

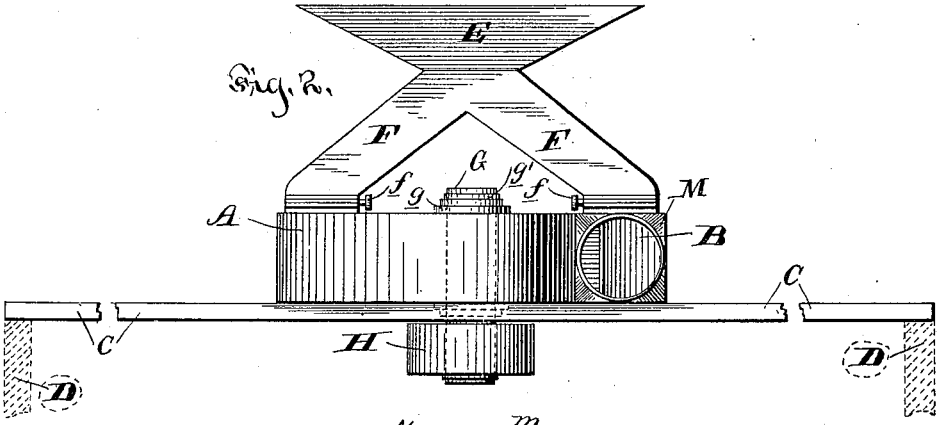
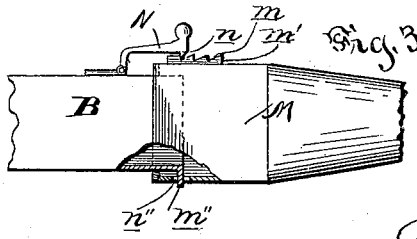


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN C. BEAN, OF SULLIVAN, ILLINOIS, ASSIGNOR OF ONE-HALF TO CHARLES D. COLE, OF SAME PLACE.

AUTOMATIC CAR-LOADER FOR GRAIN.

SPECIFICATION forming part of Letters Patent No. 648,064, dated April 24, 1900.

Application filed July 14, 1899. Serial No. 723,816. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. BEAN, a citizen of the United States, residing at Sullivan, in the county of Moultrie and State of Illinois, have invented certain new and useful Improvements in Automatic Car-Loaders for Grain; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to loaders for grain and the like, and more especially to loaders intended and constructed for use in grain-cars for receiving the grain or the like from the elevator or place of storage and directing the same to or toward the ends of the car to evenly and properly distribute the material therein.

In the present state of the art it is not new to provide a rotating fan or distributer into the path of the arms of which the grain is delivered and which fan throws or scatters the grain broadcast beyond the fan to distribute the same. In such devices, however, the grain is scattered, and although means have been provided for limiting to a slight extent the scattering of the grain it is not delivered in a compact or steady stream, the direction of which is completely within the control of the operator.

It is, among other objects, one object of my invention to produce a loader which in use will overcome the disadvantages above referred to and which is especially adapted for use in the ordinary grain-car, to produce a loader adapted to be supported in the car between the side central doors thereof, receive the grain, and deliver the same in compact steady streams to or toward the two ends of the car, to provide a loader which will not split or crack the grain, and to provide means whereby the direction of the stream of grain can be easily and quickly changed for properly distributing the grain to evenly load the car.

A further object is to generally improve and simplify the construction of such loaders.

With such objects in view the invention is embodied in the novel parts, arrangement, and combination of parts hereinafter described, and particularly set forth in the claims.

In order that my invention may be understood, I have shown in the accompanying drawings means for carrying the same into practical effect; but I desire it to be particularly understood that I do not limit the improvements in their useful applications to the particular construction which, for the sake of illustration, I have therein delineated.

In said drawings, Figure 1 is a horizontal sectional view through the fan-casing and showing the position which the device occupies in the car. Fig. 2 is an end elevation of the loader. Fig. 3 is a detail view showing one of the delivery-spouts and the means for adjusting and holding the same.

Referring to the drawings, wherein like reference characters refer to like parts throughout the several views, A indicates a fan or distributer casing which is generally circular in plan and comparatively shallow. This casing is provided in its top adjacent its periphery and at substantially diametrically opposite points with inlet-openings *a* for the grain or other material and at opposite sides with substantially-tangential discharges, (indicated at B.) Suitable means for supporting the casing in the car above the floor thereof is provided, which in the drawings are shown to be metal angle-beams C, secured one at each side in any desired manner to the bottom or lower part of the casing. These beams C are shown as extending across the car and being supported by the inner grain-doors, (indicated at D.) Above the fan-casing is a hopper E, adapted to receive the grain from a suitable conveyer leading from the elevator or place of storage, and leading from the hopper to the inlet-openings *a* are two chutes F. These chutes conveniently form means for supporting the hopper above the casing. Suitable gates *f* are provided for controlling the inlet-openings *a*.

Passing through central apertures in the top and bottom of the fan-casing and extending above and below the same is a vertical shaft G, journaled in bearings *g*, secured to the top and bottom of the casing A.

g' indicates a collar or shoulder above the top bearing for holding the shaft in place in the bearings.

Secured to the shaft G below the casing in any desired manner is a belt-pulley H, on which runs a belt for rotating the shaft and which may be operated from any suitable or preferred source of power.

Secured on the shaft G within the fan-casing, as by a set-screw j, is a sleeve or collar J, having secured thereto or formed therewith arms j', supporting at their outer ends a drum or circular partition K, which is located approximately half-way between the center and circular wall of the fan-casing and does not extend quite to the inner edges of the inlet-opening a. Extending beyond the drum K are radial fan-blades L of substantially the same shape and size as the vertical cross-area of the space combined between the drum K, top, bottom, and circular wall of the casing A. The blades L are shown as being connected to the drum by angle-bars l, suitably secured to the drum and to the blades, as by rivets or bolts l'. It is evident that other means of securing the blades may be employed—as, for instance, by extending the arms j' beyond the drum and securing the blades directly thereto.

M indicates discharge-nozzles, one for each discharge B. The nozzle is square in section at the attaching end, merging into a cone at its other end. Each nozzle is rigid and is flexibly connected to its discharge, so that it may be set and held at different angles in order to change the direction of the stream of grain discharged therefrom. For effecting this a series of teeth or projections m are provided on the spout or a separate piece m' secured thereto, with which a projection or tooth n on a dog N, hinged to the discharge B, is adapted to engage. The teeth or projections m and the tooth n are each beveled on one side, as shown, which permits the spout to be turned on a pin or stud m'', projecting from the discharge B and entering a hole or socket n'' in the spout, as a hinge, the dog riding over the teeth and catching in any desired one, and thereby holding the spout at the desired inclination.

In the use of a loader constructed as above described it will be readily observed that the grain enters the fan-casing not at the center, but in the space between the drum and the outer wall of the casing. The area of the inlet-opening and of the discharge-opening being almost as great as the annular space in the casing through which the cereal passes, the cereal enters the casing, passes through it, and is ejected in a substantially-compact stream, thus reducing the liability to breaking or splitting of the grains to a minimum.

The apparatus is small, light, and readily changed from its position in one car and set up for operation in another, and when so placed the adjustable nozzles can be set and fixed at the desired inclination, which can be easily and quickly changed as necessity requires.

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

1. In a loader for grain and the like, the combination, of a fan-casing provided with supporting means, and having inlets and tangential discharges, a rotary fan in the casing, means for operating the fan, spouts movably connected with said discharges, and means for holding said spouts in adjusted positions, substantially as set forth.

2. In a loader for grain and the like, the combination, of a fan-casing having a tangential discharge and an inlet adjacent the periphery of the casing, a circular grain-passage in said casing having nearly the same cross-area as the inlet and discharge, a fan working in said passage, and means for operating said fan, substantially as set forth.

3. In a loader for grain and the like, the combination, of a fan-casing, having a tangential discharge and an inlet adjacent the periphery of the casing, a fan in said casing, a drum secured to said fan and forming with the outer circular wall of the casing a grain-passage of nearly the same cross-area as that of the inlet and discharge, and means for operating the fan, substantially as set forth.

4. In a loader for grain and the like, the combination, of a circular fan-casing having a tangential discharge, and an inlet adjacent the periphery of the casing, a fan in the casing, a discharge-nozzle movably connected to said discharge, means for holding the discharge-nozzle in adjusted positions comprising a dog hinged to said discharge, and a series of projections or teeth on said discharge-nozzle with which the dog is adapted to engage, substantially as set forth.

5. In a car-loader for grain and the like, the combination, of a fan-casing, beams secured to the casing and adapted to rest on and be supported by the inner grain-doors of the car, a hopper above said casing having chutes leading to the casing at points adjacent the periphery thereof, opposite tangential discharges for the casing, a fan-shaft passing centrally through said casing and having a belt-pulley secured thereto, bearings secured to the top and bottom of said casing for said shaft, and a fan secured to said shaft within said casing, substantially as set forth.

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

JOHN C. BEAN.

Witnesses:
C. H. BRADLEY,
WM. GIBSON.