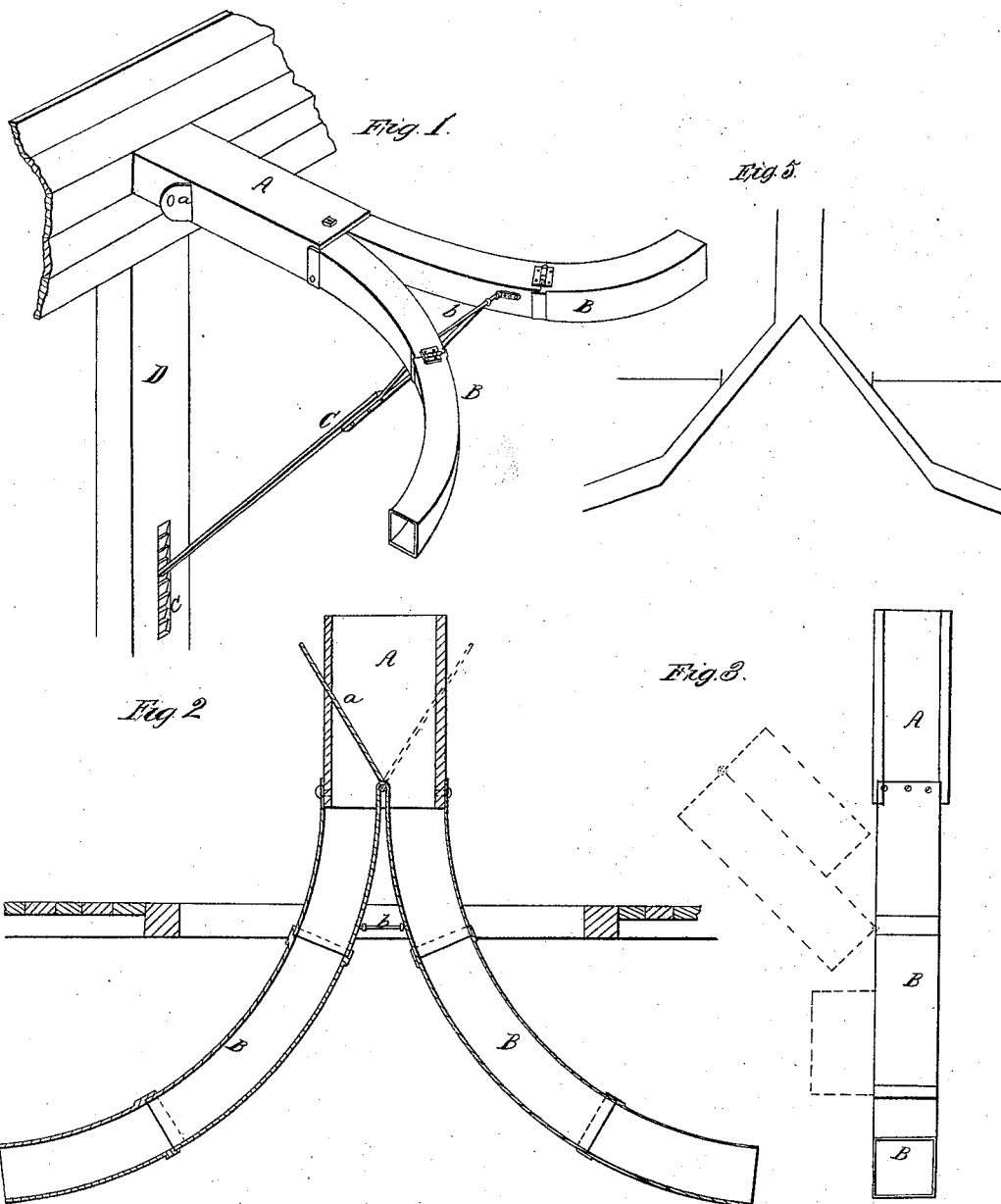


# A. D. Foote, Grain Conveyer.

N<sup>o</sup> 54,322.

Patented May 1, 1866.



Witnesses  
R. T. Campbell  
C. H. Hooper

Inventor.  
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# UNITED STATES PATENT OFFICE.

A. D. FOOTE, OF BERLIN, WISCONSIN.

## IMPROVEMENT IN GRAIN-SPOUTS.

Specification forming part of Letters Patent No. 54,322, dated May 1, 1866.

*To all whom it may concern:*

Be it known that I, A. D. FOOTE, of Berlin, in the county of Green Lake and State of Wisconsin, have invented a new and useful Mode of Loading Railroad-Cars and Vessels with Grain; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view, showing my invention applied to the common discharge-spout of a grain-elevator. Fig. 2 is a sectional view of the discharging-spouts arranged within the doorway of a car. Fig. 3 is a side view of the discharge-spouts.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to load railroad-cars and vessels with grain from elevators by so constructing the discharge-spouts of the elevators that they can be introduced within a car-door or the hatchway of a vessel and then adjusted so as to discharge the descending grain in a direction at right angles to the line of the main spout, or otherwise, so that the grain will be deposited in the proper place or places in the car or vessel, and the further necessity of handling it obviated, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

Grain is raised to the top of elevators by steam or horse power, and in some houses it is weighed while at the top of the building in scales that hold a car-load, more or less, after which it is discharged from the hopper and conducted down an inclined spout into a car or vessel. The grain which is thus discharged from the straight spouts upon the floor of a car or vessel is removed toward the ends thereof by manual labor.

The invention which I am about to describe obviates the necessity, existing under the old plan of discharging grain, of handling the grain after it is deposited in the car or vessel. This I effect as follows:

A represents an inclined spout, which conducts the grain from the hopper at the top of the elevator, and B B represent two curved sectional spouts, which may be secured rigidly

or by hinges to the discharge end of the spout A, as shown in Figs. 1 and 2. These spouts are bent or curved so that they will discharge grain in opposite directions in lines which are at right angles, or nearly so, to the line of the main spout A, as shown in Fig. 1.

In most, if not all, cases it will be desirable to have the discharging ends of the sectional spouts B B enter the doorway of a car or the hatchway of a vessel some distance for the purpose of depositing the grain just where it is required. This will in a great measure depend upon the distance the grain falls before it reaches the discharge-openings, for if the distance be short the momentum of the descending grain will be very slight, and consequently the spouts B B must be longer than they will be required if the grain falls from a considerable height and acquires greater momentum.

In order to allow the ends of the curved spouts to enter the doorway of a car I construct them of sections and hinge these sections together in such manner that they can be folded, and thus brought within a small compass, so as to enter such doorway. The hinges in this case are either upon the top of the curved spouts or upon the bottom thereof.

Where it is desired to discharge grain into a vessel the hinges of the curved spouts should be upon their sides, so that the spouts can be brought together and introduced through the hatchway, after which they are extended in their proper positions for discharging the grain toward the ends of the vessel.

When it is desired to load one end of a vessel or a car with one kind of grain and to load the opposite end of the same car or vessel with a different kind of grain, a slide, *a*, is employed in the spout A, as shown in Fig. 2, for cutting off the flow of grain from one spout, B, and allowing all the grain to flow through the other spout.

C represents a prop, which is hinged at one end to a cross-bar, *b*, that is fixed between the two spouts B B. This prop is intended for sustaining the spouts B B in an incline position and in the proper position for the discharge of the grain into a car. When the spouts B are hinged to the spout A, as shown in Fig. 1, the lower end of the prop C can be adjusted and set in the notches *c c* in a post,

D, so as to give a greater or less incline to the spouts B B, as may be required.

From this description it will be seen that I am enabled to discharge grain from a grain-spout in directions at right angles to the line of the main spout, thus depositing it in the ends of a car or a vessel where it is required, instead of in the center of such car or vessel, where it would have to be handled.

In Fig. 4 I have represented a modification of the pipes or chutes B B, consisting of straight sections connected together by an angular joint. This modification is intended to show that the pipes need not be curved, but that they may be straight, except at the discharging ends, where a slight angular bend is necessary to direct the grain toward the ends of the car or vessel.

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

1. In the operation of loading vessels with grain, providing for discharging the grain from an inclined spout at, or nearly at, right angles to the line of such spout, substantially as described.

2. The combination of one or more curved sectional grain-spouts, B, with the discharge-spout of an elevator, substantially as described.

3. Providing for depositing grain at either one or both ends of a car or vessel at pleasure from a grain-spout, substantially as described.

A. D. FOOTE.

Witnesses:

EZRA WHEELER,  
GEO. D. WANRY.