

(No Model.)

J. COLEMAN.
Grain Spout for Loading Cars, &c.

No. 232,597.

Patented Sept. 28, 1880.

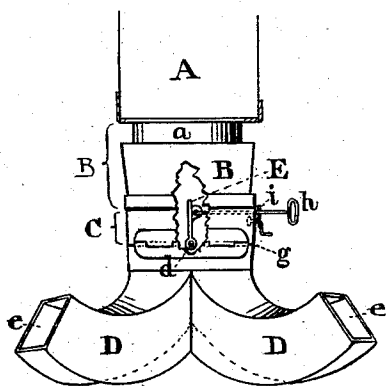


Fig. 1.

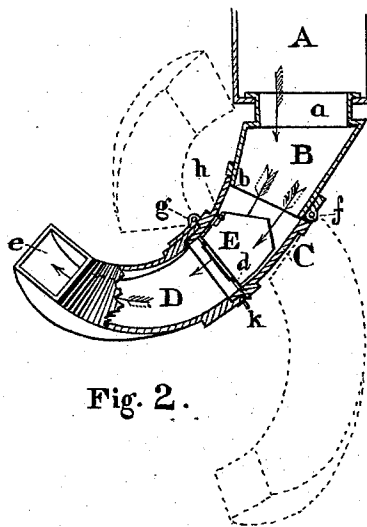


Fig. 2.

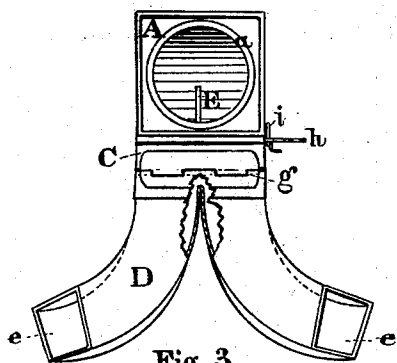


Fig. 3.

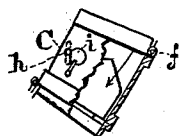


Fig. 6.

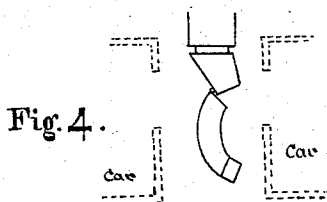


Fig. 4.

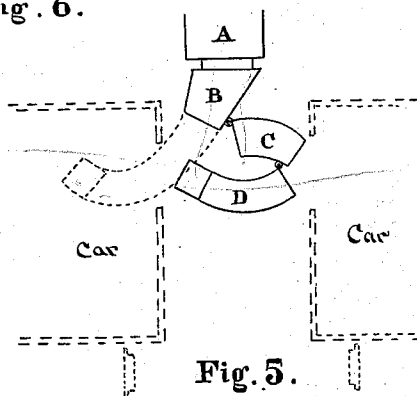


Fig. 5.

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JAIRUS COLEMAN, OF PEORIA, ILLINOIS.

GRAIN-SPOUT FOR LOADING CARS, &c.

SPECIFICATION forming part of Letters Patent No. 232,597, dated September 28, 1880.

Application filed August 16, 1880. (No model.)

To all whom it may concern:

Be it known that I, JAIRUS COLEMAN, of the city of Peoria, in the county of Peoria, in the State of Illinois, have invented an Improvement in Grain-Spouts for Loading Cars, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a front elevation, with portion removed to show equalizing-valve; Fig. 2, a side elevation, with part of the same removed to show interior; Fig. 3, plan view, with part of spout removed to show the bifurcation of the spouts; Fig. 4, side elevation, showing position of the spout, in which it can be rotated in a vertical position in the small spaces between railroad tracks and cars. Fig. 5 illustrates the form into which the spout may be doubled for introducing or extracting the same from the door of a grain-car; and Fig. 6 represents the middle section of the spout.

This is an improvement in bifurcated grain-spouts for filling cars, and is designed to fill cars automatically without any attendance or manipulation after it is turned into such car. Hitherto such spouts have required the attendance of from two to four persons, besides shovels, to fill a car with corn or grain.

I am aware that grain-cars have been loaded by means of spouts both bifurcated and single in orifice, and also with spouts which turn upon a swivel horizontally to either end of such car, filling one end at a time. Such inventions are seen in the patents of Merrill, issued June 15, 1875, No. 164,577; also of Jackson, issued October 9, 1877, No. 195,893; also that of Lenox, issued May 27, 1879, No. 215,760. Said patents are also provided with various movable or rotary nozzles or extension-sleeves to control and direct the flow of grain to parts of a car to load the same equally. These nozzles require the constant attention and handling of from two to four attendants stationed within the car, who have meanwhile to exist in the thick dust set flying by the column of grain, (sometimes descending from a height of sixty feet from the elevator,) to which is to be added the labor and inconvenience of handling

and turning the heated spouts and obviating the occasional persistence of the bifurcated spouts in discharging grain from one end only. Again, such spouts are not adapted to fill a car on each side of them, on adjacent tracks, where the space between cars is very limited.

Upon these premises my spout merits the title of a "self car-loading grain-spout." It is constructed (being placed or hung, like others, upon a horizontal swivel at the lower end of the spout descending from the weigh-hopper, bin, or other reservoir in an elevator-building, warehouse, &c.) in one or more sections, hinged together in a line, descending from its swivel attachment to the supplying-spout diagonally into the grain-car. The lowermost section or part of the spout ends in curved bifurcated spouts, diverging sufficiently to convey grain in separate streams to each end of the car.

In order to spread the grain and avoid heaping it, the mouth of each spout is directed or curved slightly upward from horizontal, each spout having also a slight spiral twist on its axis, which is also conducive to the throw and spread of the grain in loading the car.

In the throat, or at the bifurcation of my spout, I fix a valve, set on a hinge or pivot and pointing toward the descending grain, for the purpose of counteracting the tendency of the grain to flow more through one bifurcation than the other one, and it may be set to any angle and held by means of a stem and cam or other simple device on the outside of the spout.

The advantages of this spout, recapitulated, are, first, no attendance after adjustment to the door of the car; second, an even distribution of grain in the car without labor and expense of shoveling; third, economy of time in filling cars; fourth, avoidance of choking or of delivering grain from one nozzle or spout only; fifth, facility for doubling the spout up, both in passing it into a car as well as in taking it out; sixth, facility for rotating the spout vertically between two cars or lines of cars by allowing the spout to straighten itself by means of its joints.

In the drawings, which represent the preferable form of this spout, A is the lower end of the grain-spout of the weigh-hopper of an

elevator, warehouse, storage, &c.; B, uppermost section of my spout, preferably oblong in horizontal section, united to A by means of a circular horizontal collar, *a*, or flange resting upon the bottom of A. The lower end of this section, as well as the section immediately below it, projects and fits into the top of the next section. At the junction of this section with section C, at the rear, is a hinge, *f*, uniting these sections horizontally.

C is the middle section of the spout, and is a continuation of B in caliber, size, and in diagonally-descending direction, and hinged in the rear horizontally to section B, as said, and also hinged at *g*, at its front lower horizontal edge, to the bifurcated section D D. Said middle section of spout is provided, at or above the bifurcation of the grain-passage, with a valve, E, hinged on a spindle or hinge, *d*, in the plane of said bifurcation, so as to divide the passage at this point and project its free end against the descending grain. This valve is managed by means of a rod, *h*, attached to its free end, and said rod is retained by means of a cam, *i*, on the side of the spout.

D D is the lowest member of the spout, composed of two curved nozzles, and hinged, as stated, above and in front, by means of hinge *g*, to section C. Each spout D is half the capacity or caliber of the sections of spout above it, and preferably made square in section, each branching in a curve right and left from their origin, combined with a downward and upward curve, including a slight twist from origin to mouth, so constructed in order to throw the grain far from the spout, and also to spread it before falling.

The operation of this spout has been fully described above, and the drawings, Figs. 4 and 5, illustrate the vertical position of same ready for turning it to either car, Fig. 5 especially

showing its operation on its hinges in doubling it up for inserting it through the door of a car on either side of it. A pole placed under the lug *k* of section D, and extending thence to the ground or floor, supports the spout.

What I claim as my invention is—

1. A grain-car loading-spout having one or more sections, B C D, hinged together so as to hang nearly vertically when relaxed, the lower section, D, being bifurcated and curved right and left of their origin at the inclined sections above, and constructed with a falling and rising curve, or arched, combined with a spiral twist on their respective axes, substantially as shown and described.

2. The grain-spout B C D, with upward-inclined nozzles *e e*, the equalizing-valve E, joints *g f*, adapted to allow the whole of the sections to hang as near as may be in a vertical position for introduction into a car.

3. In a bifurcated grain-spout for loading cars, the combination of the swiveled section B with collar *a*, jointed or hinged to section C below it, provided with the valve E, and the bifurcated section D, substantially as and for the purposes described.

4. In a bifurcated spout for loading grain-cars, &c., the spout D, constructed with a spiral or partial turn on its axis, combined with a discharging mouth or exit, which ends at an angle above horizontal, for the purpose of throwing the grain slightly upward to spread the latter, as described.

In testimony that I claim the foregoing improvement in grain-spouts I have hereunto set my hand this 10th day of August, A. D. 1880.

JAIRUS COLEMAN.

Witnesses:

J. M. MORSE,
E. THORNTON.