E. M. GREENFIELD.

GRAIN CAR DOOR.

APPLICATION FILED SEPT. 2, 1909.

956,078. Patented Apr. 26, 1910.

Fig. 1.

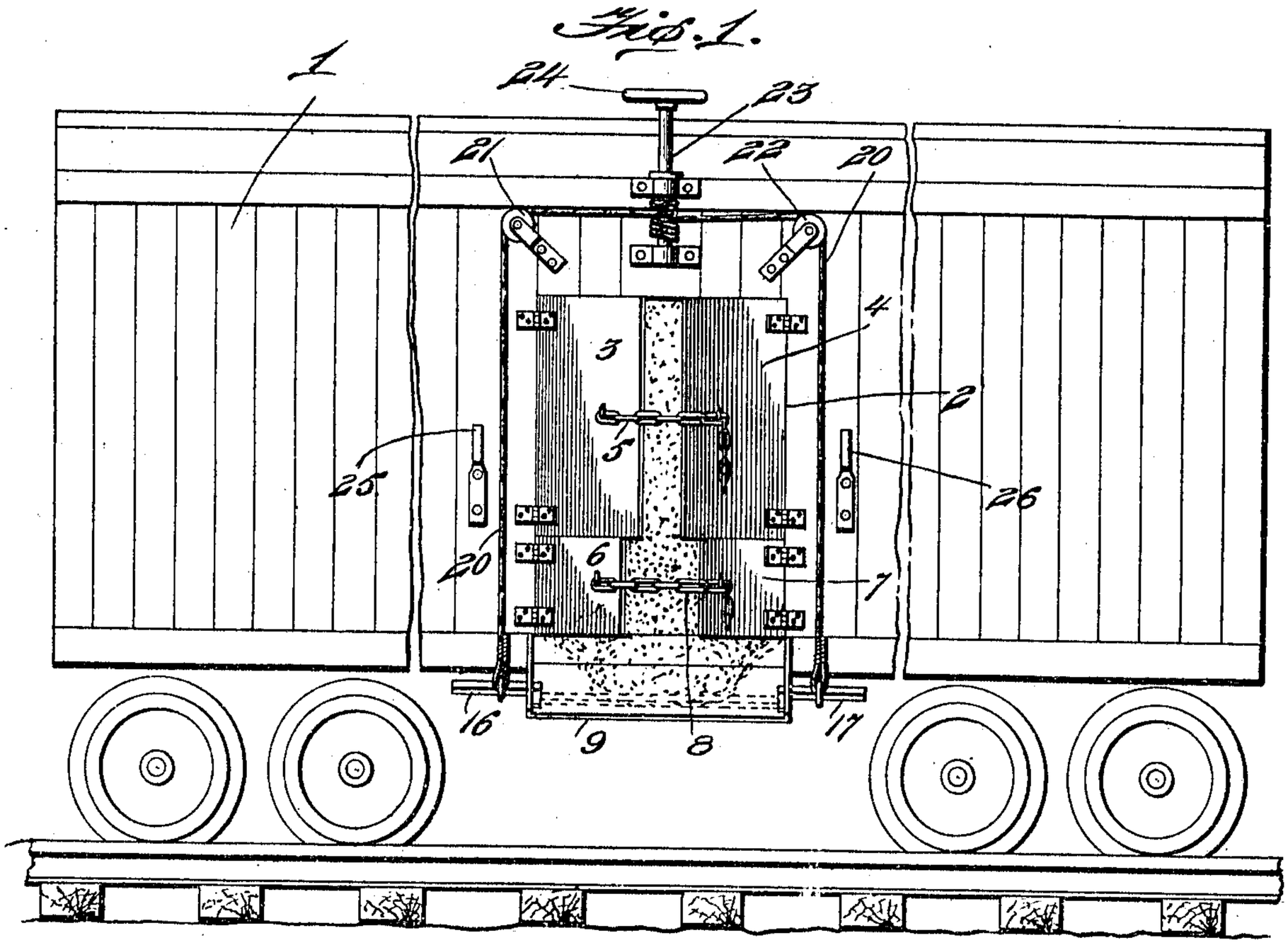


Fig. 2.

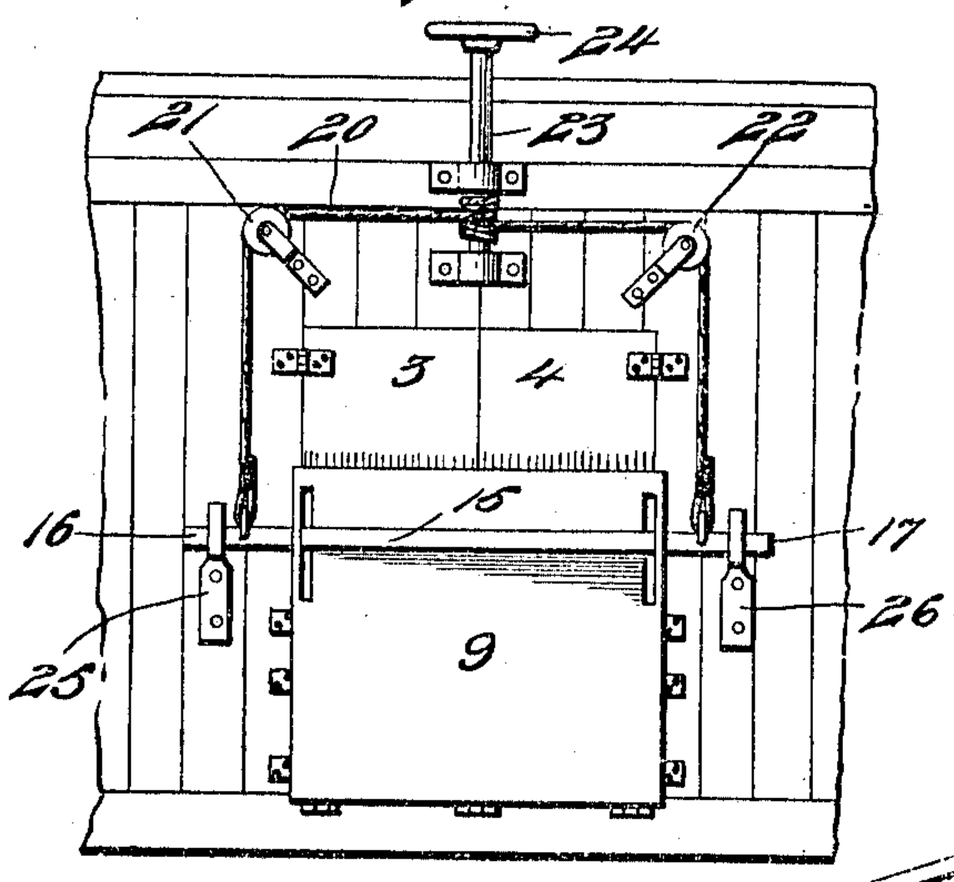


Fig. 3.

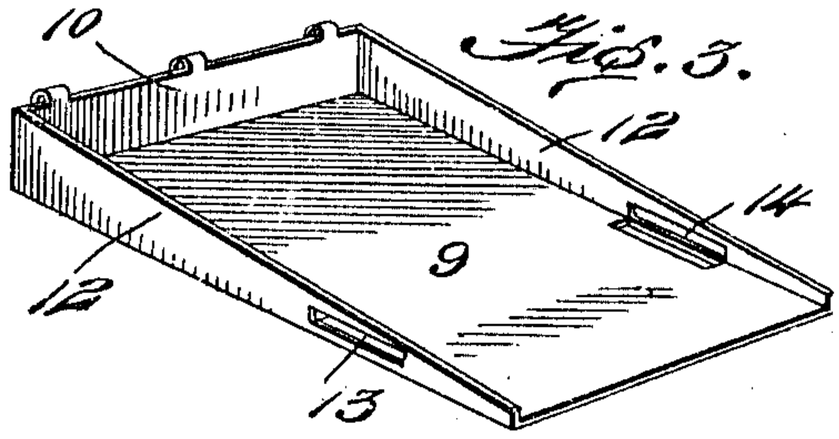
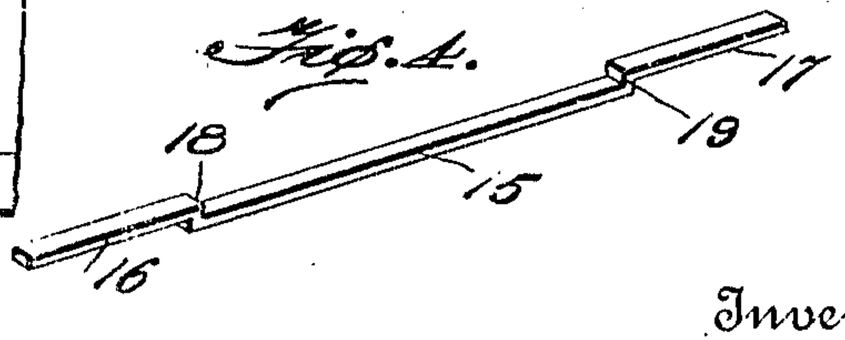


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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GRAIN-CAR DOOR.

956,078. Specification of Letters Patent. Patented Apr. 26, 1910.

Application filed September 2, 1909. Serial No. 515,794.

To all whom it may concern:

Be it known that I, ELLA M. GREENFIELD, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Grain-Car Doors; 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.

This invention relates to an improved grain car door.

The object of the invention is to provide a grain car door with a discharge spout or chute operable when not in use to lock the door in closed position.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in in the appended claims.

In the accompanying drawings, Figure 1 is a front elevation of a portion of a car, showing this invention applied in open position; Fig. 2 is a similar view of a door with the chute in closed position; Fig. 3 is a perspective view of the chute detached; Fig. 4 is a front elevation of the locking bar detached.

In the embodiment illustrated, a car side 1 is shown having a door opening 2 arranged therein and preferably extending to the bottom thereof. This opening is closed by a double door comprising upper sections 3 and 4, hinged to the opposite sides of the door frame to swing outwardly in opposite directions and designed to be limited in their outward movement by a chain 5 connected at its opposite ends to the outer faces of the two sections 3 and 4 and of a length sufficient to permit the doors to swing outwardly a predetermined distance. The lower portion of the door opening 2 is closed by outwardly swinging sections 6 and 7 which are preferably of less height than the upper sections 3 and 4. These sections are also connected with a chain 8 similarly to the upper sections and are designed to be opened first to relieve the pressure within the car.

A chute 9 preferably constructed as shown in Fig. 3, is pivotally connected or hinged at its rear end to the sill at the lower end of the door opening 2 and is of a width corresponding to the width of said opening 2. This chute as shown, has an upright rear flange 10, and side flanges 11 and 12 having their upper edges inclined downwardly toward the front end of the chute. These side flanges are provided near their front ends with longitudinally extending slots 13 and 14 arranged opposite each other and through which the ends of the locking and supporting bar 15 are designed to pass. This bar 15 is preferably constructed, as shown in Fig. 4, having the ends 16 and 17 off-set, said ends being passed through the slots 13 and 14 in the side flanges of the chute and projecting laterally on opposite sides of the chute, for a purpose to be described, the off-set portions 18 and 19 being adapted to fit the sides 11 and 12 of the chute.

A chute operating chain or cable 20 is secured at its opposite ends to the opposite ends 16 and 17 of the bar 15 and extends over pulleys 21 and 22 arranged on the side of the car and is connected to a shaft 23 operable by a hand wheel 24 arranged at the top of the car whereby the chain 20 may be wound or unwound to raise or lower the chute. The raising of the chute by the winding up of the chain 20 forces the door sections into closed position, as is shown in Fig. 2. The bar 15 performs the double function of a support for the front end of the chute in its lowered operative position and as a lock for holding the doors and chute in closed position, the free ends thereof being adapted to engage keepers 25 and 26 arranged at opposite sides of the door opening 2, when the chute is drawn into raised inoperative position.

The chute is designed for rapidly transferring grain, coal or other material to a bin, wagon or other receptacle without any waste of the material being transferred and whereby one man may unload a car in the same or less time that it ordinarily takes three men, said chute being also designed to close and lock the doors in closed position.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the appended claims.

Having thus described my invention, what I claim is:

1. The combination of a vehicle having a door opening therein, a closure for said opening, a chute hinged adjacent said opening and operable to close said closure, side flanges arranged on said chute and provided with longitudinally extending slots, and bars mounted in said slots and projecting laterally at opposite sides of said chute, and means connected with said bars for raising and lowering said chute.

2. A grain car having outwardly opening double doors, a chute hinged at its rear end to the lower end of the door frame, said chute having rear and side flanges and open at its front end, said side flanges having longitudinally extending slots, a bar having off-set ends mounted in said slots and projecting laterally at opposite sides of said chute, and a chain secured to the opposite ends of said bar and provided with means for winding and unwinding it to raise and lower the chute.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ELLA M. GREENFIELD.

Witnesses:
MAUDE A. WILLIS,
STEPHEN CONNER.