No. 720,654. PATENTED FEB. 17, 1903.

D. B. ARNOLD.

GRAIN DOOR FOR RAILROAD CARS.

APPLICATION FILED AUG. 6, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

FIG. 1

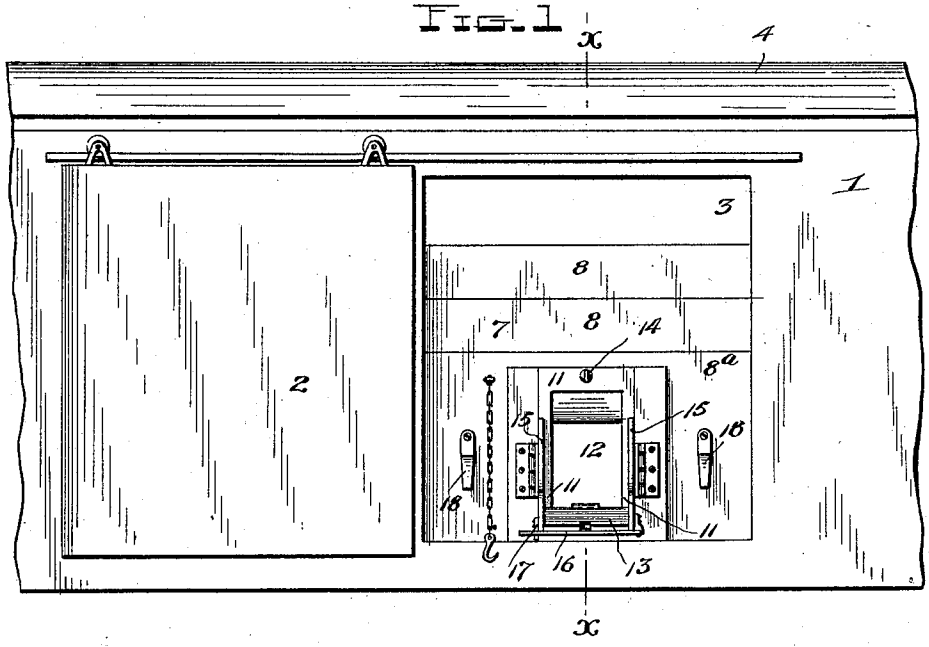
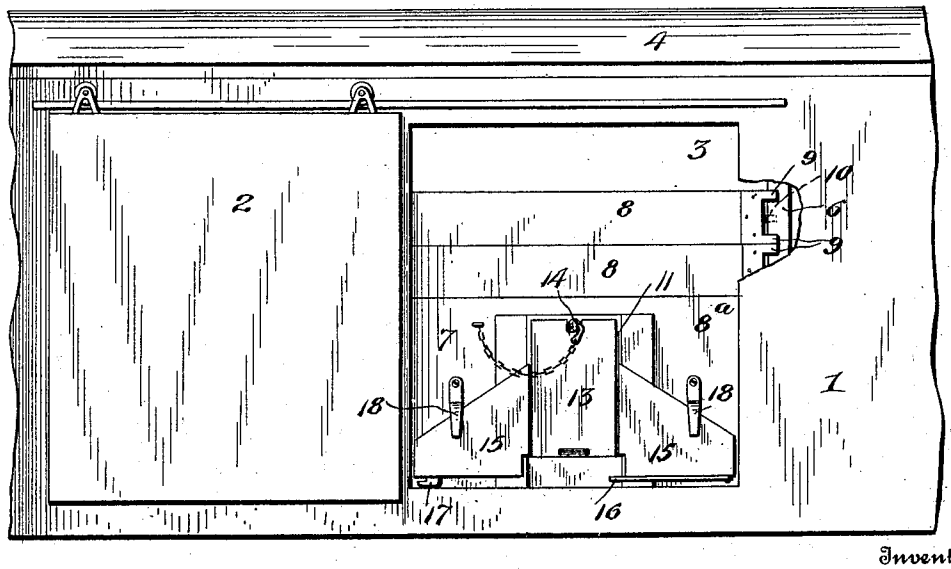


FIG. 2



Inventor

D. B. Arnold

Witnesses

J. C. Grisbauer Jr.

E. Cunison

By A. R. Williamson & Co.

Attorneys

No. 720,654. PATENTED FEB. 17, 1903.

D. B. ARNOLD.

GRAIN DOOR FOR RAILROAD CARS.

APPLICATION FILED AUG. 6, 1902.

NO MODEL. 2 SHEETS—SHEET 2.

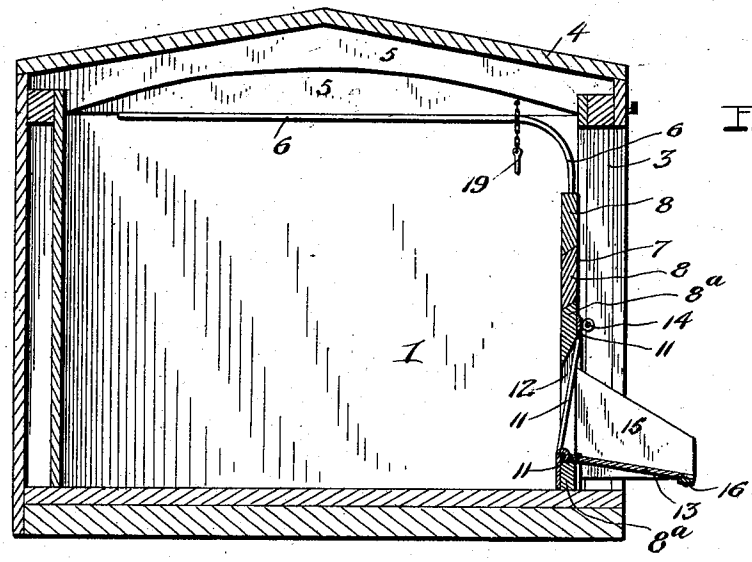


FIG. 3

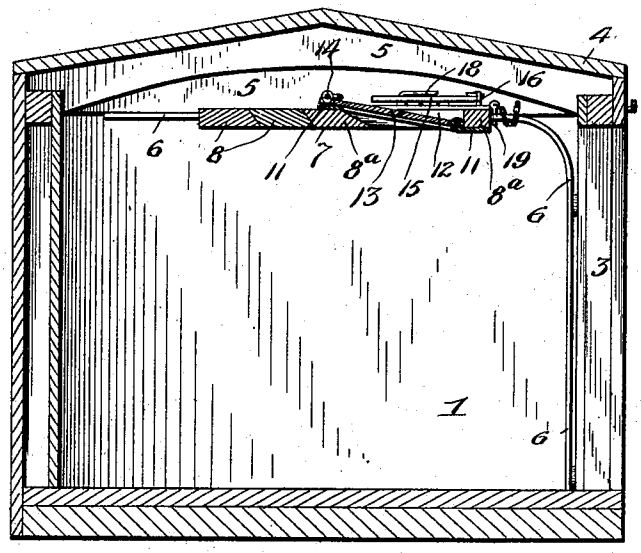


FIG. 4

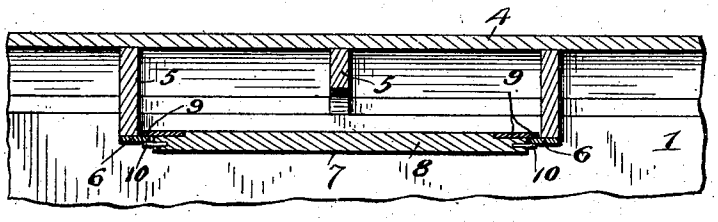


FIG. 5

Witnesses
J. A. Griesbauer, Jr.
Ellison

Inventor
D. B. Arnold

By A. B. Willson & Co.
Attorneys

UNITED STATES PATENT OFFICE.

DAVID BENSON ARNOLD, OF TERRE HAUTE, INDIANA, ASSIGNOR OF ONE HALF TO EDWIN ELLIS, OF TERRE HAUTE, INDIANA.

GRAIN-DOOR FOR RAILROAD-CARS.

SPECIFICATION forming part of Letters Patent No. 720,654, dated February 17, 1903.

Application filed August 6, 1902. Serial No. 118,668. (No model.)

To all whom it may concern:

Be it known that I, DAVID BENSON ARNOLD, a citizen of the United States, residing at Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Grain-Doors for Railroad-Cars; 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 grain-doors for railway-cars, and has for its object to provide such a door in connection with an ordinary car-door which can be quickly and conveniently moved out of the way and to a place of safe keeping when not needed and which can be just as quickly brought into use again.

A further object is to provide such a door that will be simple in construction, durable and efficient in use, and particularly well adapted to the use for which it is designed.

With these and other objects in view the invention consists in certain novel features of construction, combination, and arrangement of parts, which will be hereinafter more fully set forth, and particularly defined in the appended claims.

In the drawings, Figure 1 is a side view of a portion of a railway-car, showing the car-door open and my improved car-door in place and the chute opened for use. Fig. 2 is a similar view showing the chute closed and folded back. Fig. 3 is a transverse vertical sectional view through a car on the line *x x* of Fig. 1. Fig. 4 is a similar view with the grain-door slid up and under the car-roof, and Fig. 5 is a longitudinal sectional view of a portion of the upper part and roof of a car with the parts in the position shown in Fig. 4.

Referring to the drawings, 1 denotes a portion of an ordinary freight-car, 2 the car-door of the usual construction, and 3 the opening closed by said door.

4 denotes the roof or ceiling, and 5 denotes the roof-rafters.

6 denotes guideways or tracks formed upon the inside walls of the car adjacent to the edges of the opening 3, said guides continuing upwardly and across the ceiling 4, being attached to the rafters 5.

7 denotes the grain-door, consisting of the vertical sliding sections 8, the contiguous or meeting edges of the said sections being beveled in a downward direction, thereby forming a tight connection or joint. The ends of the sections 8 are provided on one side with a metal plate having lugs or projections 9, extending outwardly therefrom and engaging the tracks 6 on one side thereof, and said sections 8 are also provided on their ends with pins or lugs 10, which are adapted to engage said tracks 6 on the opposite side thereof, and by this means the slats or sections are held in place and slid into and out of use. The lowermost section of the grain-door is of considerably greater width than the other section and is provided with a centrally-disposed opening 12, normally closed by a metal plate 13, hinged at its lower edge to the lower cross-bar of a metal frame 11, which is fitted within the opening 12 and protects the edges of the same from injury, as well as forming a jamb for the door-plate 13.

14 denotes a lug projecting from the upper cross-bar of the frame 11, the said lug being adapted to enter a slot or notch formed in the free end of the plate 13 and to hold said plate in its raised or closed position by means of a pin or hook engaging an eye formed in said lug.

15 designates substantially triangularly-shaped side pieces hinged to the section 8^a of the grain-door adjacent to outer edges of the opening 12 and adapted to be swung outwardly alongside the plate 13 when the same is in its lowered position and to be locked in this outward position by means of a cross-bar 16, pivotally connected at one end to one of said side pieces and having a notch at its opposite end which is adapted to engage a keeper 17, projecting downwardly from the opposite side piece, thus securely locking the said side pieces in their open position. The plate 13 is now opened outwardly and downwardly between the extended side pieces 15 and is adapted to rest at its forward end upon the locking-bar 16, as shown in Figs. 1 and 3 of the drawings. When it is desired to close or fold the chute, the plate 13 is raised upwardly and swung back against the section 8^a and over the opening 12 and hooked in po-

sition. The bar 16 is now unhooked from its keeper and the side pieces 15 folded back against the section 8^a and fastened in this position by catches 18, as shown in Fig. 2 of the drawings. Should it now be desired to remove the grain-door out of the way, the sections are simply grasped and slid upwardly in the guideways or tracks and across overhead immediately beneath the ceiling of the car and are held in this position against accidental jarring down or displacement by means of pins 19, which are adapted to be inserted through holes formed in the tracks, as shown in Fig. 4 of the drawings. It will be seen that the grain-door when in this position will be entirely out of the way and not liable to be injured.

From the foregoing description the advantages and mode of operation will be readily understood without requiring an extended description, and while I have described the same for use as a grain door and chute it is obvious that the chute may be used for many other purposes and can be constructed of such dimensions as to serve admirably well for loading and unloading stock.

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

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

1. In a grain-door for cars, the combination with the car-door opening, of a vertically-sliding door, formed of horizontally-disposed slats or sections, a chute comprising side pieces or wings hinged to one of said sliding door-sections and adapted to be swung outwardly to form sides for said chute, and a plate hinged to said section and adapted to be lowered between said side pieces to form a floor to said chute and to be folded up to close a chute-opening formed in said door-section, and means for locking said parts in their extended positions, and means for locking the same in their closed or folded positions, substantially as set forth.

2. The combination of a car-door, of a chute board or plate hinged to said door and adapted to be folded up against the same to cover an opening in said door, and to be extended outwardly to form a floor for said chute, side pieces or wings also hinged to said door and adapted to be folded back against the same, and to be extended forward to form sides for said chute, and means for locking the said parts in their extended and folded positions, substantially as set forth.

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

DAVID BENSON ARNOLD.

Witnesses:
SCOTT B. MARTIN,
HARRY S. WALLACE.