(No Model.) 2 Sheets—Sheet 1.

A. B. TAYLOR.

GRAIN CAR DOOR.

No. 385,021. Patented June 26, 1888.

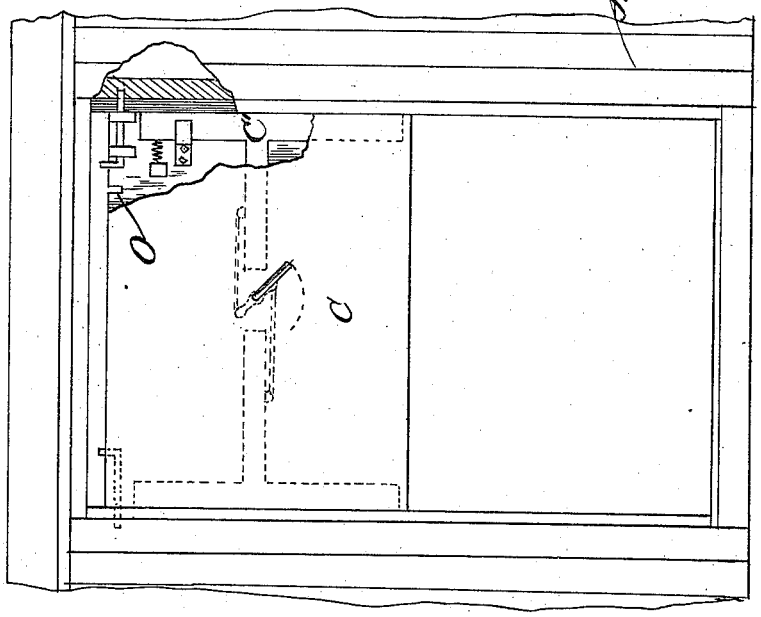

Fig. 2.

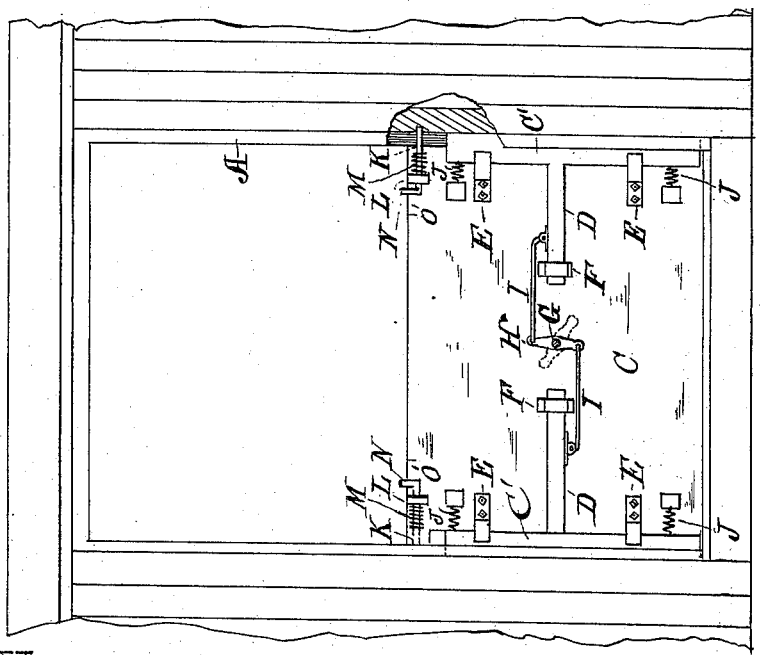

Fig. 1.

WITNESSES:

Robert Kirk

R. S. Millar

INVENTOR:

Abraham B. Taylor.

By J. L. Zerbe

Attorney.

(No Model.)

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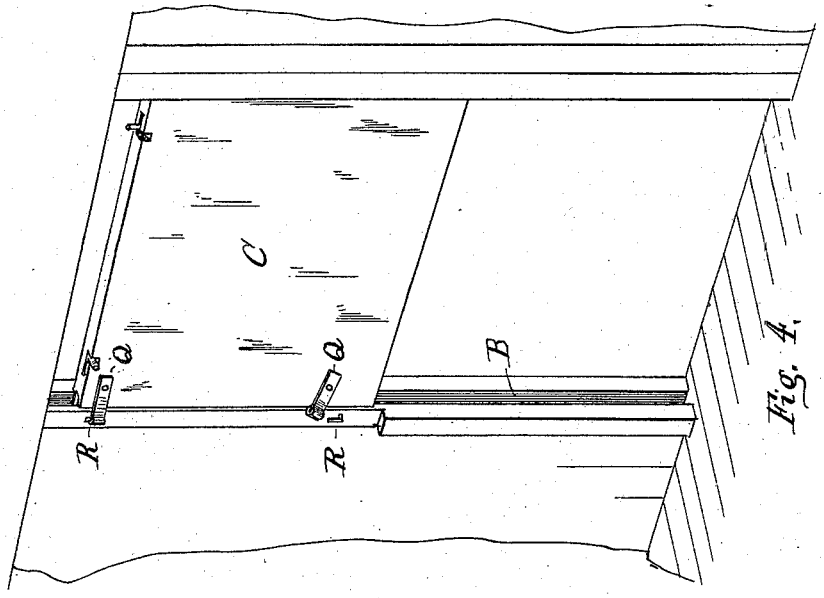

Fig. 4.

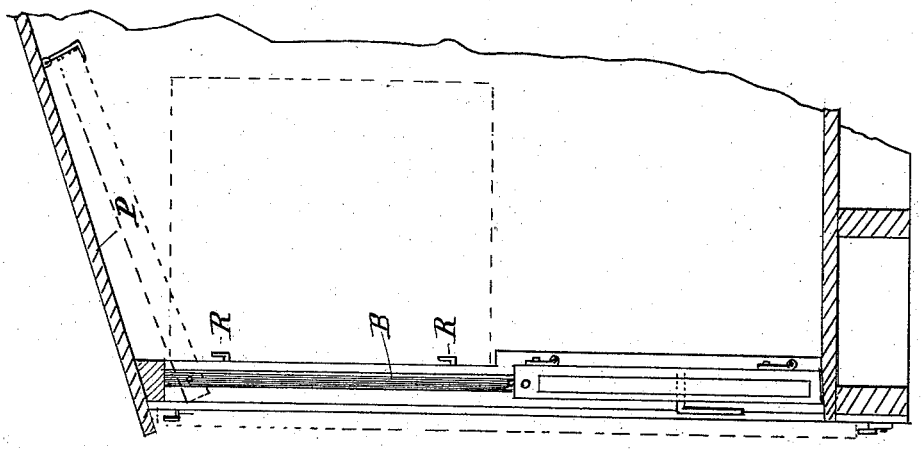

Fig. 3.

WITNESSES:

Robert Kirk

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UNITED STATES PATENT OFFICE.

ABRAHAM B. TAYLOR, OF CINCINNATI, OHIO.

GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 385,021, dated June 26, 1888.

Application filed June 9, 1887. Serial No. 240,800. (No model.)

To all whom it may concern:

Be it known that I, ABRAHAM B. TAYLOR, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Grain-Car Doors, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a view of the door, the exterior face being removed, showing the operating mechanism between the two faces. Fig. 2 is a view of the same raised and bolted at the top, the exterior face restored and parts broken away to show the bolting mechanism. Fig. 3 is a sectional view of the door and part of the car, showing the two faces of the door and the intervening space for the operating mechanism. Fig. 4 is a view from the inside, showing how the door can be hung and swung around by means of the pivoted hinges turned down upon the supporting-lugs.

The object of my invention is to provide an independent secondary or supplementary adjustable and removable door for grain-cars, which can be attached or applied to any and all cars having the present form of sliding doors, in order to make a perfectly tight door for grain-cars; and it consists in providing the sides or ends of the door which abut the frame with expanding cleats or strips which enter and slide in suitable grooves in the frame, said cleats being connected with suitable arms or levers whereby they may be retracted or drawn out of the grooves or locked therein, said arms or levers and operating mechanism being disposed between the interior and exterior faces of the door; and it further consists in having sliding bolts on the upper end of the door, which bolts are adapted to enter holes provided in the grooves of the frame, whereby the door may be swung on said bolts or moved up or down in the grooves of the frame, all of which will now be fully set forth in detail.

In the accompanying drawings, A represents the car-door frame, having grooves B in the sides.

C is a door of sufficient height to hold the amount of grain usually loaded in cars of this class. This door is of such a size that it will readily slide between the frame or frame-jambs.

Preferably on the front or outer face of the door, at each end, is a T-shaped piece having its outer limb, C′, vertical and its single limb D horizontal and located midway between the upper and lower end of the door. The vertical limbs are held in position against the door by means of guides E, while the horizontal limb of each passes through a guide-block, F. The horizontal limbs D are therefore on a line, but do not touch each other centrally. In the center of the door is an arbor, G, having a T-head or cross-arm, H, each end of limb of which is connected with one of the horizontal bars D through the medium of a hinged link or connecting-rod, I. Each end of the vertical limbs C′ has a coiled spring, J, or its equivalent, so situated as to press out or expand the limbs C and force them to enter the grooves B of the frame or jambs.

At the upper end of the door, on each side, is a horizontal sliding lock or bolt, K, secured in suitable keepers, L, and having a coiled spring, M, on the bolt between the keepers. The outer ends of these bolts are designed to enter holes in the frame or jamb, and the inner ends of the bolts have right-angled extensions or handles N, so as to enable the user to draw back the bolts and fasten the same by turning the right-angled limbs N into the notches O in the door.

The bolts K lock the door in position when placed in the door-frame, as shown in Figs. 1 and 2, and also act as pivots when the door is raised up in the grooves to its highest limit and is swung up against the car-roof, as shown in Fig. 3 by dotted lines P.

I show another mode of swinging the door in Fig. 4. On either of the inner sides are pivoted hinges Q, and driven into the jamb are pins K, which enter the eye of the hinge Q. When the bolts R are withdrawn from the bolt-holes and the cleats or strips C′ are withdrawn from the grooves B in the sides of the car, the door will be free to be swung around and fasten to the inside of the car; or it can be removed entirely from the car by lifting it from the pins R.

It will thus be observed that with this construction of door the same can become either a permanent fixture or be removable and used only at pleasure; but one of the most important features is the fact that in unloading cars there is no necessity of attempting to raise up the door when the car is loaded with grain and

pressing against the door. Instead of doing this, the operator turns the lever or T-head H, which causes the sliding tongue C to retreat within the door, or, rather, they are drawn from the grooves B of the jamb, when the pressure of the grain within causes the lower end of the door to move out, the upper end being pivoted or hinged to the frame or jambs by means of the bolts K K.

What I claim as new is—

1. A grain-car door having between the interior and exterior faces a pair of movable cleats, arms D, rods I, and cross-arm H, for operating said cleats, combined with a grooved frame for receiving the cleats and springs for holding said strips or cleats in a normal position, substantially as and for the purposes set forth.

2. In a removable car-door, the combination of the interior and exterior faces provided with vertical movable cleats adapted to be forced into and withdrawn from grooves in the door-frame by means of the arms D, rods I, and cross-arm H, with pivoted hinges Q, and suitable staples or pins on the door-frame to receive the eyes of said hinges, whereby the door may be swung around against the inside of the car, substantially as shown and described.

3. In a car-door, C, sliding between the frame-jambs and having notches O, provided at its upper end with sliding bolts K, secured in suitable keepers, L, and having extensions N and coiled springs M on each, whereby said bolts can be used to lock the door and as pivots when the door is swung up against the car-roof.

In testimony that I claim the foregoing I have hereunto set my hand, this 22d day of February, 1887, in the presence of witnesses.

ABRAHAM B. TAYLOR.

Witnesses:
JOE H. BAILEY,
J. S. ZERBE.