J. MILLER & F. C. L. G. SUSEMIHL.

Car-Door.

No. 198,408. Patented Dec. 18, 1877.

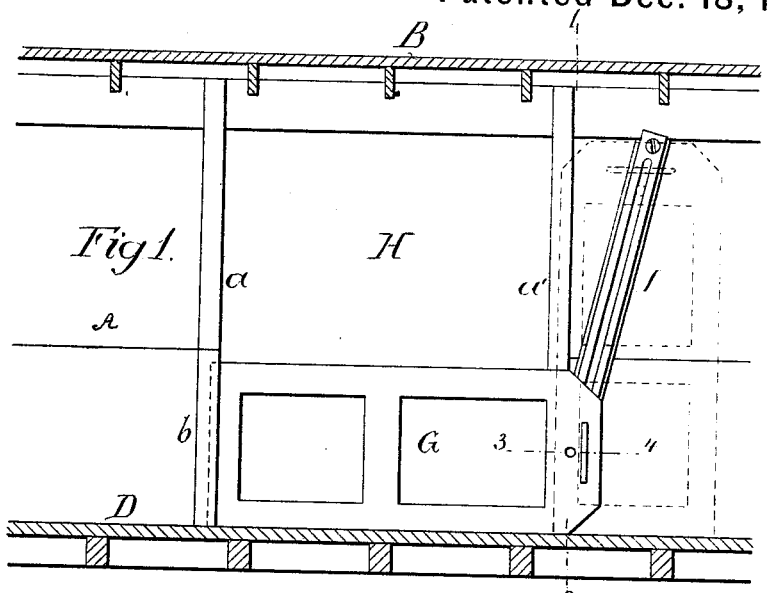


Fig 1.

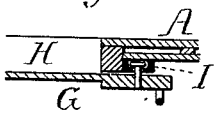


Fig 4.

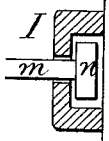


Fig 5.

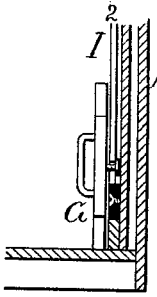
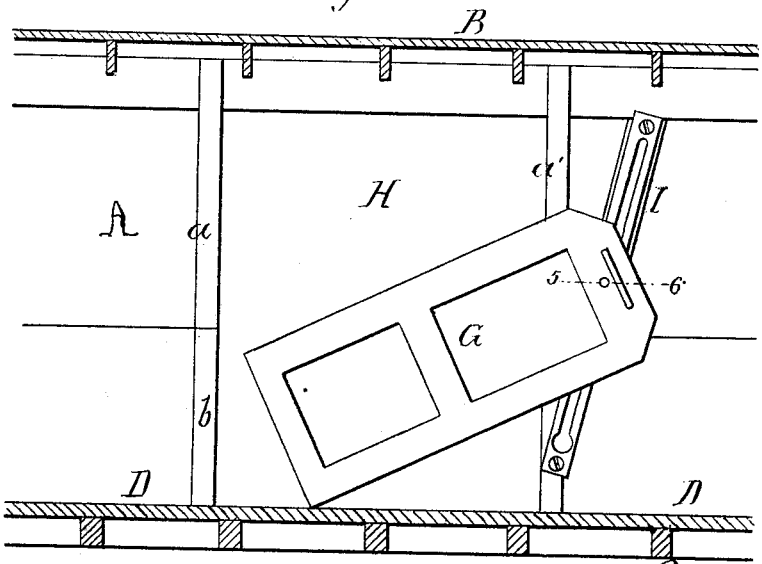


Fig 3.

Fig. 2.



Witnesses Henry Howson Jr.
Harry Smith.

Inventors
James Miller
and
Francis C. L. G. Susemihl
by their Attorneys
Howson and Howson

UNITED STATES PATENT OFFICE.

JAMES MILLER AND FRANCIS C. L. G. SUSEMIHL, OF DETROIT, MICHIGAN, ASSIGNORS OF ONE-THIRD THEIR RIGHT TO WILLIAM J. WATSON, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN CAR-DOORS.

Specification forming part of Letters Patent No. **198,408**, dated December 18, 1877; application filed November 26, 1877.

To all whom it may concern:

Be it known that we, JAMES MILLER and FRANCIS C. L. G. SUSEMIHL, of Detroit, Michigan, have invented a new and useful Improvement in Doors for Grain-Cars, of which the following is a specification:

The object of our invention is to provide a freight-car, which is used for the transportation of grain, with a convenient supplementary door, which, when let down, will close the lower portion of the usual doorway, but which can be easily raised and made to occupy a position out of the way against the side of the car, and which at the same time is confined to the car, so that it cannot easily be taken out.

In the accompanying drawings, Figure 1 is a vertical section of a car-body with our improved supplementary door as it appears when let down to close the doorway; Fig. 2, the same, showing the door as it appears when partly opened; Fig. 3, a vertical section of part of Fig. 1 on the line 1 2; Fig. 4, a sectional plan on the line 3 4; and Fig. 5, a section drawn to an enlarged scale on the line 5 6, Fig. 2.

A represents part of one side of a car-body; B, part of the roof; D, the floor; and H the usual doorway, extending from the post *a* to the post *a'* of the car-body, and from the floor to the plate under the roof. To this doorway is adapted an inner door, G, which, when let down, as shown in Fig. 1, will close so much of the lower portion of the doorway as will prevent the grain from escaping when the car is loaded and during transportation. One end of this door G is arranged to fit snugly in a pocket, *b*, made, preferably, of cast-iron, and fastened securely to the door-post on the inside of the car. The upper end of the recess in this pocket is, by preference, inclined, so that the end of the door which projects into the pocket is held down firmly to the floor. The other end of the door bears against an inclined slotted bar, I, which is secured to the body of the car, and the door is confined to this bar by a stud or button, *m*, (shown in the enlarged view, Fig. 5,) this stud being secured to the door, and being arranged to slide freely in the slot of the bar, from which it cannot escape, owing to its head *n*. The slot in the bar is enlarged at the bottom, so as to form an opening large enough to admit the head of the stud when the door is being fitted to its place. As this opening is at a point below that occupied by the pin *m* when the door is down, the latter cannot be withdrawn from the slot in opening or lowering the door.

In unloading the grain, the end of the door adjacent to the bar I will be raised, while the other end recedes from the pocket *b* and moves along the floor of the car, the stud *m* traveling upward in the slotted bar I, and at the same time moving sidewise, owing to the inclined position of said bar. The upward and sidewise movement of the door continues until the stud *m* arrives at or near the upper end of the slot in the bar I, when the door will be in the vertical position shown by dotted lines in Fig. 1.

The movement of the door can be easily accomplished, as an outlet for the grain will be formed as soon as the door commences to move.

We claim as our invention—

1. The combination, in a grain-car, of a pivoted door, G, adapted to the lower portion of the doorway inside the car, with an inclined guide for the pivot.

2. The combination of the door G and its stud *m* with the inclined guide I, secured to the side of the car, on the inside of the same, as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JAMES MILLER.
FRANCIS C. L. G. SUSEMIHL.

Witnesses:
HERBERT H. HEWITT,
F. C. ADAMSON.