F. C. L. G. SUSEMIHL.
Grain-Car Door.

No. 213,004. Patented Mar. 4, 1879.

Fig 2

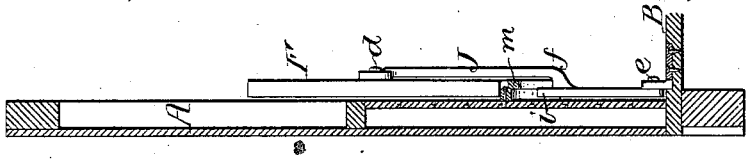
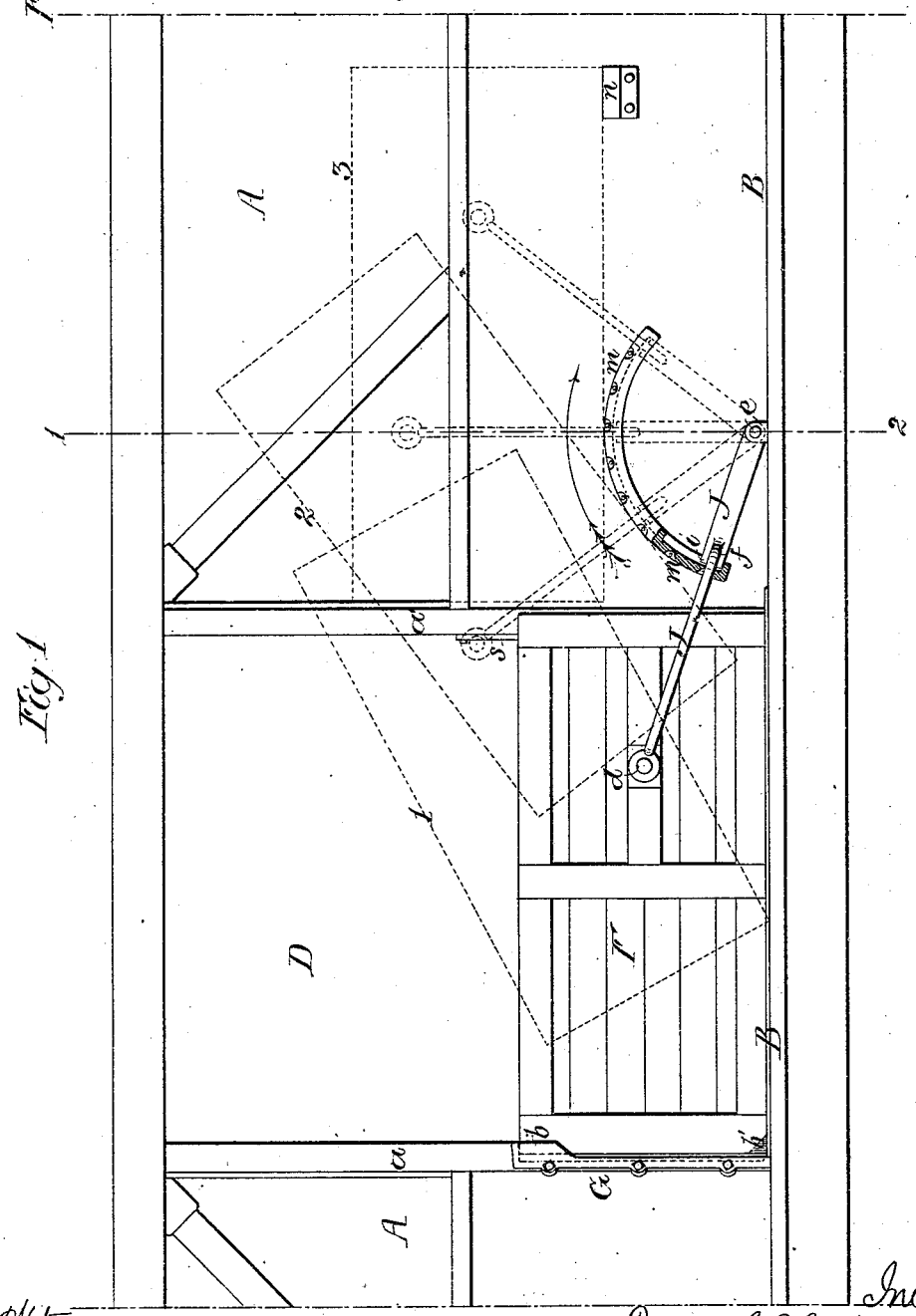


Fig 1



Witnesses
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Harry Smith

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by his Attorneys
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UNITED STATES PATENT OFFICE.

FRANCIS C. L. G. SUSEMIHL, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF HIS RIGHT TO JAMES MILLER, OF SAME PLACE.

IMPROVEMENT IN GRAIN-CAR DOORS.

Specification forming part of Letters Patent No. **213,004**, dated March 4, 1879; application filed December 23, 1878.

To all whom it may concern:

Be it known that I, FRANCIS C. L. GUSTAVUS SUSEMIHL, of Detroit, Michigan, have invented a new and useful Improvement in Grain-Car Doors, of which the following is a specification:

The object of my invention is to provide the supplementary door of a grain-car with cheap and simple devices, whereby the door can be easily opened and closed, but will be securely retained in its closed position, and will be out of the way when opened. This object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1 is an interior view of a portion of one side of a car, showing the supplementary door in its closed position; and Fig. 2, a transverse section on the line 1 2, Fig. 1, with the door opened.

A represents one side of the car; B, the floor of the same, and D the usual doorway, which extends from the floor almost to the roof. This doorway is intended to be furnished with the ordinary outside door or doors, (not shown in the drawings,) and the lower portion of the doorway is provided on the inside with the supplementary door F, as is usual in cars for carrying grain. To one of the side posts, *a*, of the doorway D is secured a box or pocket, G, to which the front end of the door F is adapted when said door is closed, as shown by full lines in Fig. 1, the top of the box being by preference inclined, so as to depress the end of the door as it enters the pocket.

The upper end of the box has a projecting plate, *b*, which serves to laterally guide the front end of the door F as the latter is being closed, thus insuring the proper entrance of said end into the pocket G.

The lower front corner of the door slides in and is guided by the ordinary grooved iron threshold, and in order to prevent the rapid wearing away of this corner it is provided with a metal plate, *b'*.

The rear end of the door F is hung, by means of a pin, *d*, to the upper end of an arm, J, the lower end of which is pivoted to a stud, *e*, secured to the floor B of the car, or to the side of the same. The arm J is bent at the point *f*, and has formed on it at this point a projection, *i*, which is adapted to a recess in a segmental plate, *m*, the latter being secured to the side of the car. A block, *n*, is also secured to the side of the car at some distance from the plate *m*, the upper edge of the block being on a level with the highest portion of said plate.

The rear end of the door F is secured in position when the door is closed by means of a turn-buckle, *s*, pivoted to the post *a'* of the doorway D.

The mode of opening the door is as follows: The turn-buckle *s* being thrown to one side, the arm J is moved in the direction of the arrow, Fig. 1, the first effect of this movement being to elevate the rear end of the door and cause the rearward movement of the entire door, the front lower corner of the latter sliding in the grooved threshold, as shown by dotted lines 1 in Fig. 1. This movement is continued until the lower edge of the door strikes the upper edge of the plate *m*, as shown by dotted lines 2, when the further movement of the arm J in the direction of the arrow will depress the rear end of the door, while continuing the rearward movement of the same, the lower edge of the door during this movement sliding on the curved upper surface of the plate *m*, the latter serving as a fulcrum on which the door swings until it assumes the horizontal position shown by dotted lines 3 in Fig. 1, the door then being fully opened, and being elevated some distance from the floor B of the car, the rear end of the door resting upon the block *n*, and its front end upon the plate *m*.

In order to close the door the above-described operations are reversed.

The segmental plate *m* serves to laterally confine the arm J, and thus insures the maintenance of the rear end of the door F in its proper lateral position during the operations of opening and closing.

It is not necessary that the block *n* should be separate from the plate *m*. In some cases, for instance, a horizontal projection or continuation of the plate *m* might be substituted for the block *n*.

When the door F is opened it is supported

above the grain, and thus offers no obstacle to the shoveling of the same from the car. The opening and closing of the door can be easily effected, as one end of the door is always supported during such movement either upon the floor B or upon the support *m*, so that there is no dead-weight to lift.

I claim as my invention—

1. The combination of the door F with a fixed elevated support, *m*, upon which the door slides and is vibrated during its rearward movement, all substantially as specified.

2. The combination of the door F, the single pivoted arm J, to which said door is hung, and the support or supports *m m*, on which the door vibrates as it is being opened, and by which said door is maintained in its elevated position when opened, all substantially as set forth.

3. The combination of the door F, the pivoted arm J, to which said door is hung, and the segmental supporting-plate *m*, all substantially as specified.

4. The combination of the door F, the pivoted arm J, having a projection, *i*, and the recessed segmental plate *m*, all as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANCIS C. L. GUSTAVUS SUSEMIHL.

Witnesses:

JOHN MCKAY,

L. M. CURTIS.