

(No Model.)

2 Sheets—Sheet 1.

W. J. LATTA & S. W. NEALL.

Grain Car Door.

No. 229,716.

Patented July 6, 1880.

FIG. 3.

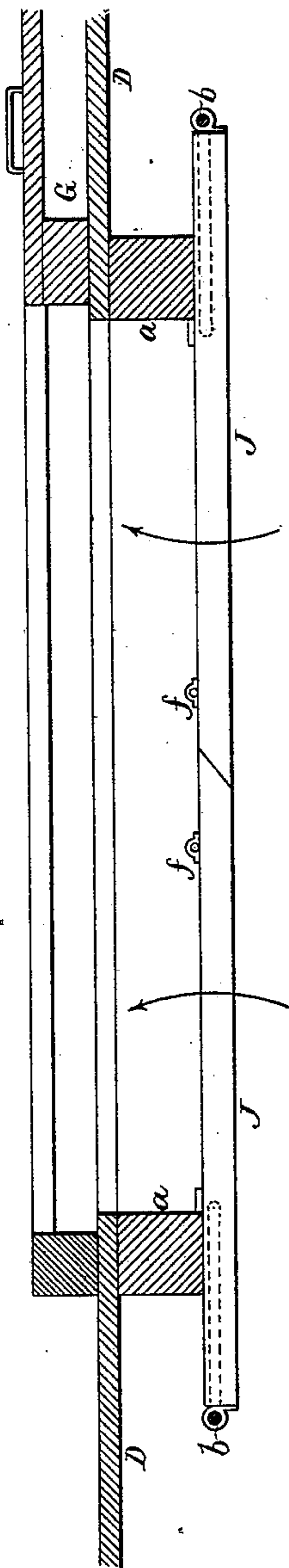
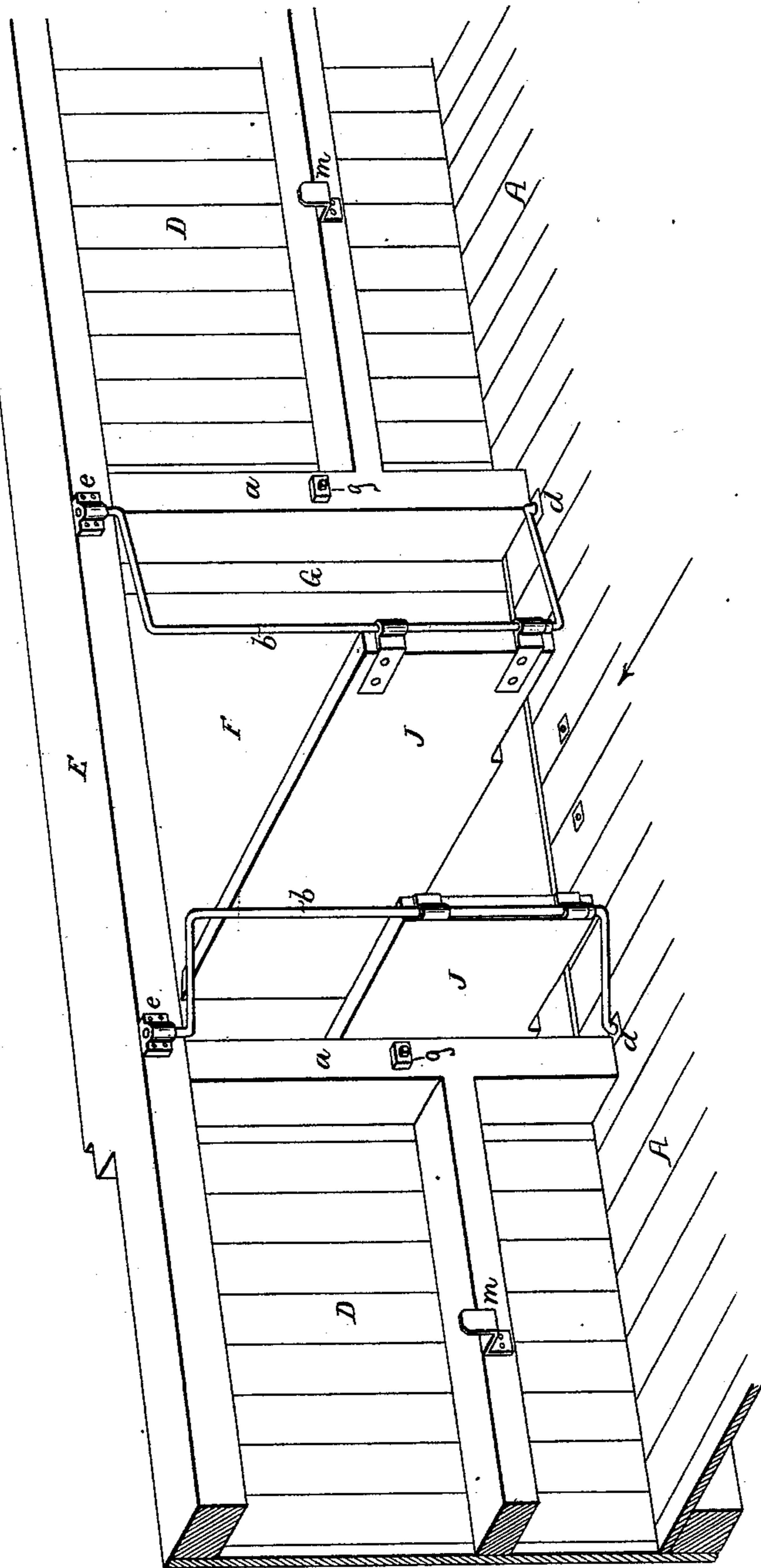


FIG. 1.



WITNESSES

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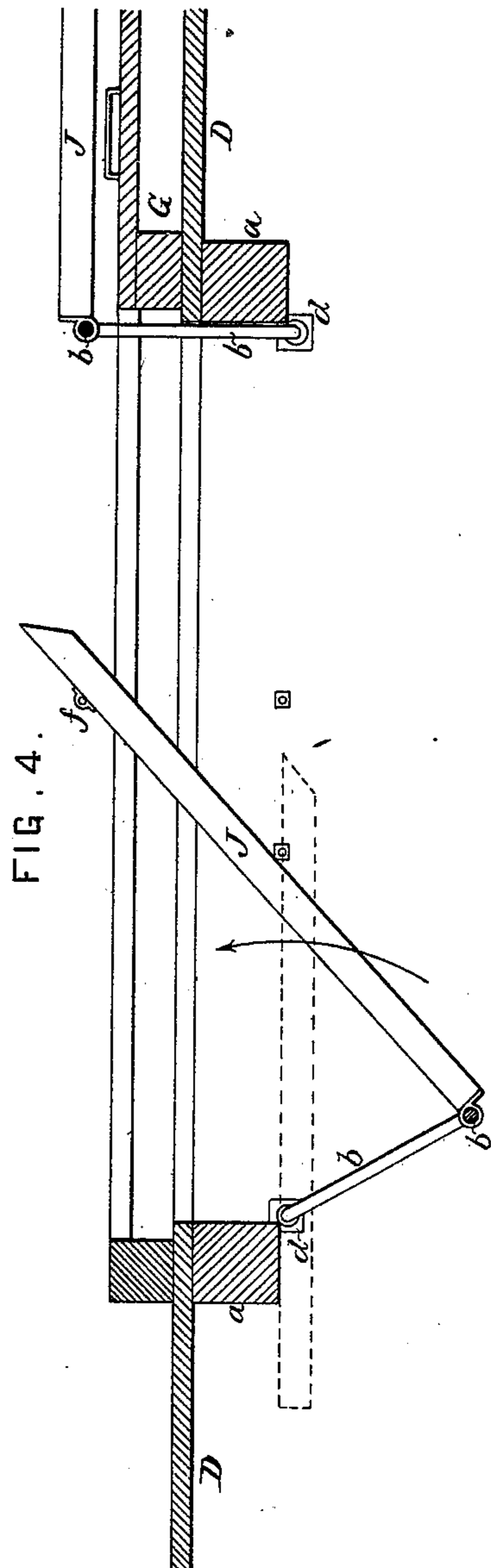
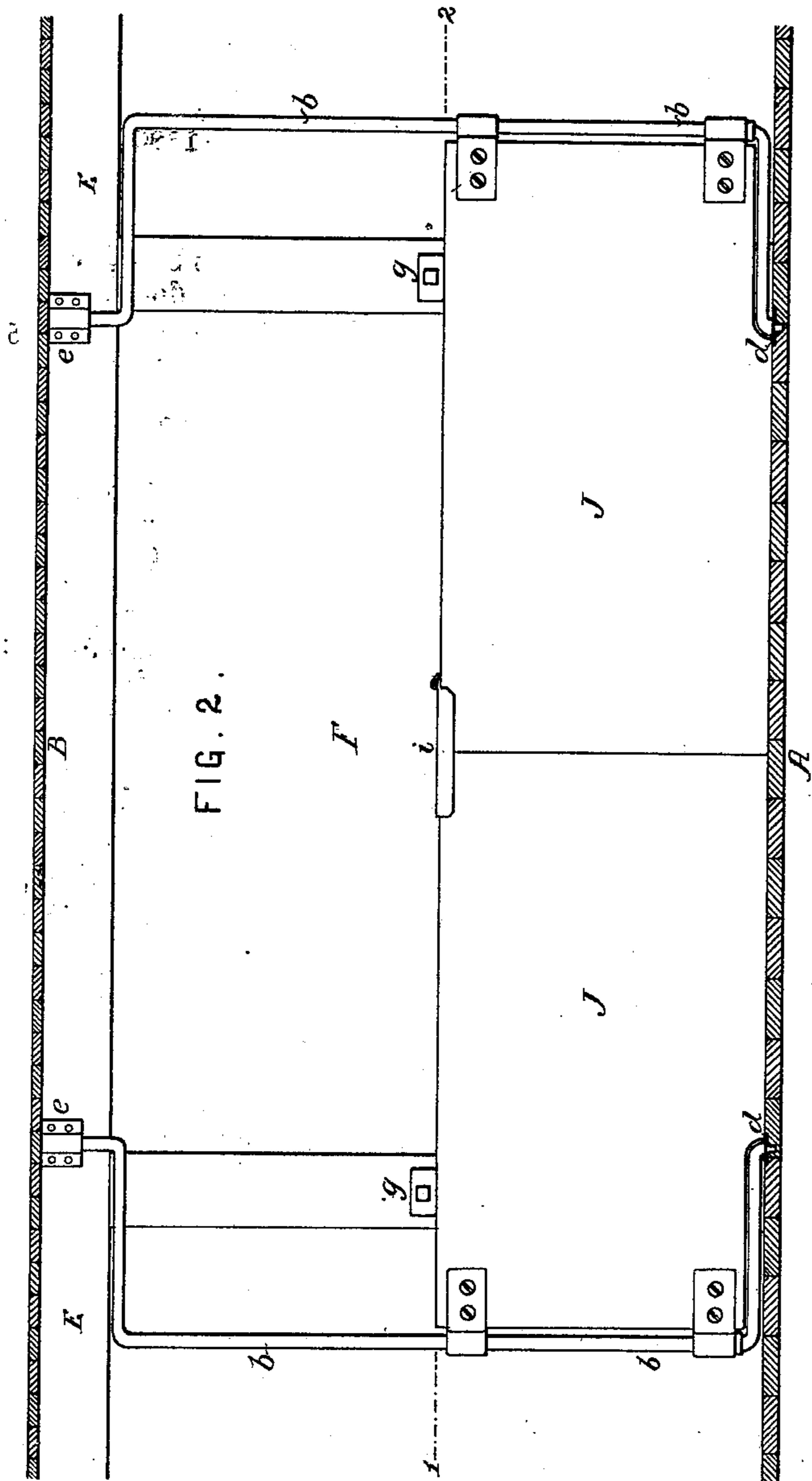
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2 Sheets—Sheet 2.

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WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM J. LATTA AND SAMUEL W. NEALL, OF PHILADELPHIA, PA.

GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 229,716, dated July 6, 1880.

Application filed May 5, 1880. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM J. LATTA and SAMUEL W. NEALL, both citizens of the United States, and both residing in Philadelphia, Pennsylvania, have invented certain Improvements in Grain-Car Doors, of which the following is a specification.

The object of our invention is to so hang supplementary doors to cars for carrying grain that while the escape of the grain will be effectually prevented when the doors are closed, said doors can be opened without effort, and, when opened, will not interfere with the free discharge of the grain from the cars.

In the accompanying drawings, Figure 1, Sheet 1, is a perspective view of part of the interior of a car, showing a pair of supplementary doors hung thereto according to our invention; Fig. 2, Sheet 2, a view looking in the direction of the arrow, Fig. 1, and showing the doors closed; Fig. 3, Sheet 1, a sectional plan on the line 1 2, Fig. 2; and Fig. 4, Sheet 2, a view of a similar character, but showing one door open and the other partly open.

A represents part of the floor of the car; B, part of the roof; D, part of the car-side; E, the longitudinal beam at the junction of the roof and car-side, and F the doorway, of which *a a* are the opposite side posts.

The doorway has the usual door G sliding in grooved ways on the outside of the car, and is also furnished with a pair of supplementary doors, J, which are intended for use when the car is loaded with grain, these doors being arranged on the inside of the car, and, when closed, fitting so closely to each other, to the floor A, and to the side posts, *a a*, of the doorway as to prevent the escape of grain.

Each door is hung to the cranked portion of a rod, *b*, said rods being adapted to bearings just within the lateral limits of the doorway F, these bearings consisting, in the present instance, of plates *d* in the floor of the car, and boxes *e*, secured to the inner side of the beam E.

When the doors are closed, as shown in Figs. 2 and 3, the cranked portions of the rods *b* are in line with the doors, the lower edge of each door being recessed, as shown in Figs. 1 and 2, for the reception of the lower arm of the cranked rod to which the door is hung.

The doors are retained in the closed position shown in Figs. 2 and 3 by means of bolts *f f*,

any vertical movement of the doors being prevented by means of blocks *g* on the door-posts *a*. If desired, also, a flanged bar, *i*, may be adapted to the upper edges of the doors at and near the meeting-point, with the view of maintaining said upper edges in proper parallel relation to each other.

When the bolts *f* are drawn the doors are at liberty to swing freely outward in the direction of the arrows, Fig. 3, the pressure of the grain being sufficient to effect the opening of the doors without any effort on the part of the attendants, the doors swinging on the rods *b* and the latter swinging in their bearings, so that perfect freedom of movement of the doors is insured.

The doors may be thrown back against the outside of the car in order to be entirely out of the way, as shown at the right-hand side of Fig. 4, the arms of the cranked portions of the rods *b* being sufficiently long to permit this; or, if desired, the doors may be elevated on the rods and moved to the inside of the car, so as to rest on hooks *m*.

We have shown in the drawings, and prefer to use in practice, a pair of doors, J, and a pair of cranked rods, *b*, for each doorway F; but our invention may be carried out in connection with a single door extending completely across the doorway and closing against a suitable strip on the door-post; or the door may have at the free end a hinged section, which, when the door is closed, will overlap the door-post, but which, on the outward movement of the door, will be at liberty to yield, so as to clear said post.

We are aware that a door has been pivoted to a vertical rod on the inside of a car so as to be free to rise vertically; but such rod was not at the edge of the doorway, and was not cranked, so as to carry the pivot to the outside of the car; hence the device lacked one of the main features of our invention.

We claim as our invention—

1. The combination of a cranked rod pivoted to the car at the edge of the door-opening with a door hung to the cranked portion of said rod, whereby the pivot of the door can, by the turning of the rod, be carried to the outside of the car, all substantially as set forth.

2. The combination of a pair of cranked rods pivoted to a car at opposite edges of the door-

opening so as to swing outward, as described, a pair of doors hung to the cranked portions of said rods and constructed to meet each other in order to close the doorway, and means for
5 retaining said doors in the closed position, as specified.

3. The combination of a cranked rod hung to a car at one edge of the door-opening so as to swing outward, as described, with a door
10 pivoted to the cranked portion of said rod and capable of moving vertically thereon, as described.

4. The combination of the cranked rods *b*, hung to the car at the edges of the doorway
15 *F*, the doors *J J*, hung to the cranked portions of said rods, and the bolts *f f*, as specified.

5. The combination of a cranked rod, *b*, hung to a car at the edge of the door-opening *F*, a door, *J*, hung to the cranked portion of said rod, and a fixed retaining-block, *g*, on the door- 20 post *a*, as set forth.

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

WILLIAM J. LATTA.
SAMUEL W. NEALL.

Witnesses:

JAMES F. TOBIN,
HARRY SMITH.