

(No Model.)

T. Z. RORABACK.

CAR DOOR.

No. 370,712.

Patented Sept. 27, 1887.

Fig. 1.

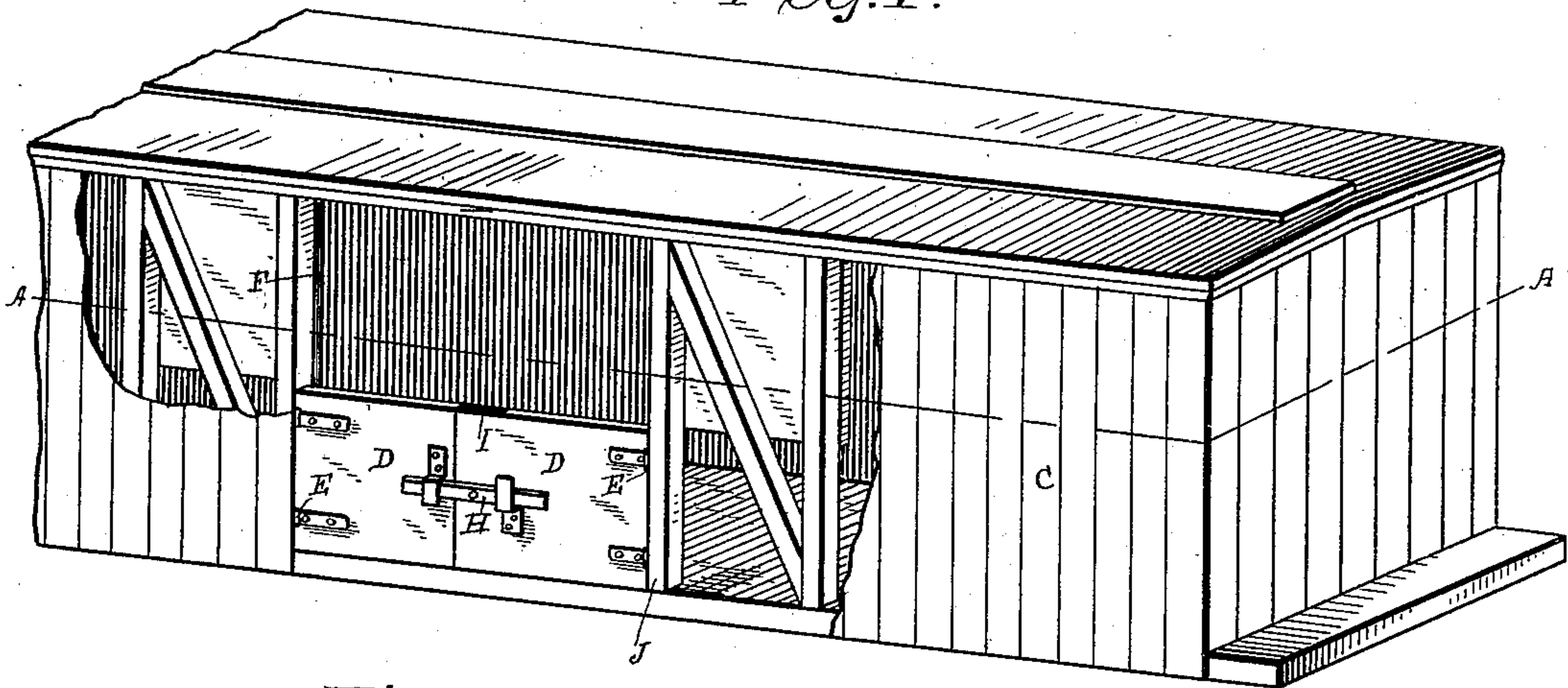


Fig. 2.

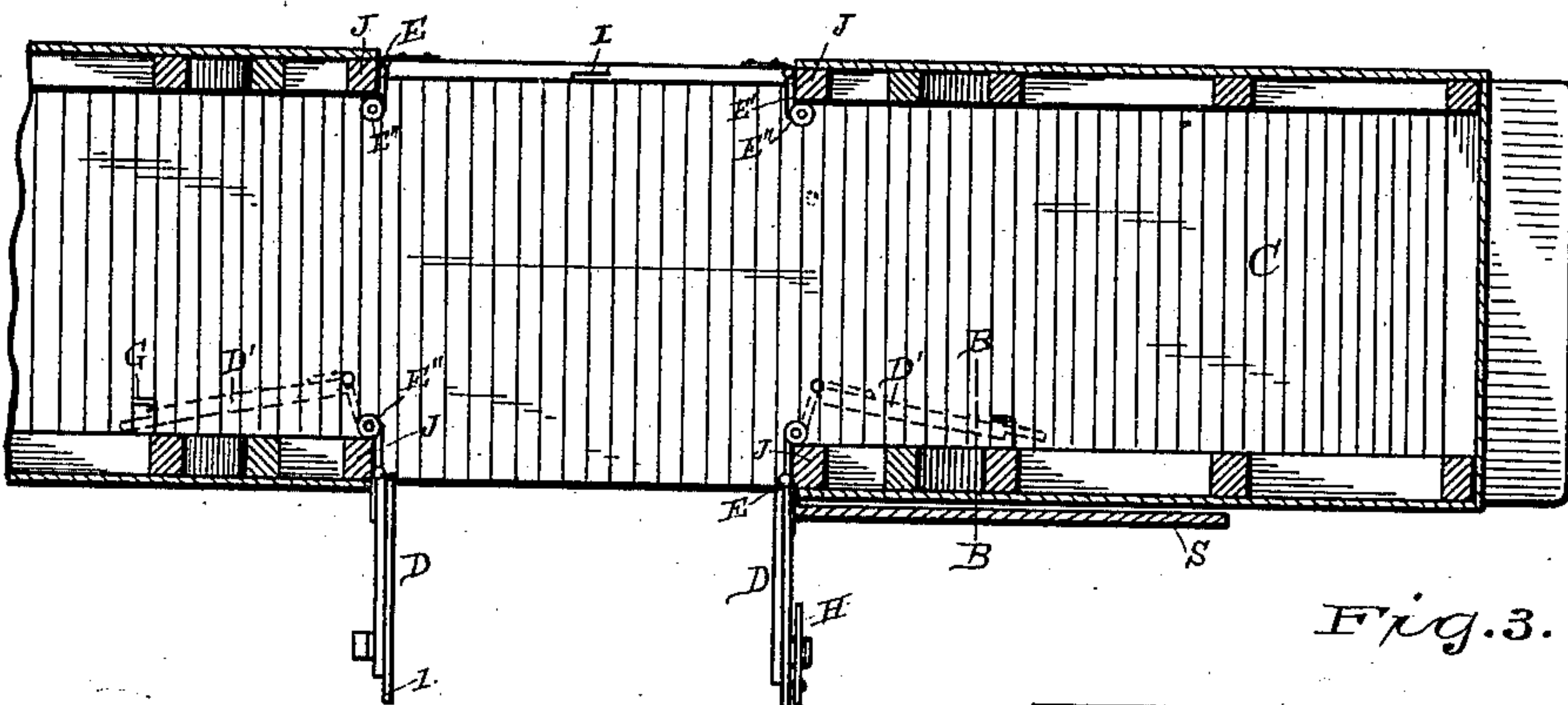


Fig. 3.

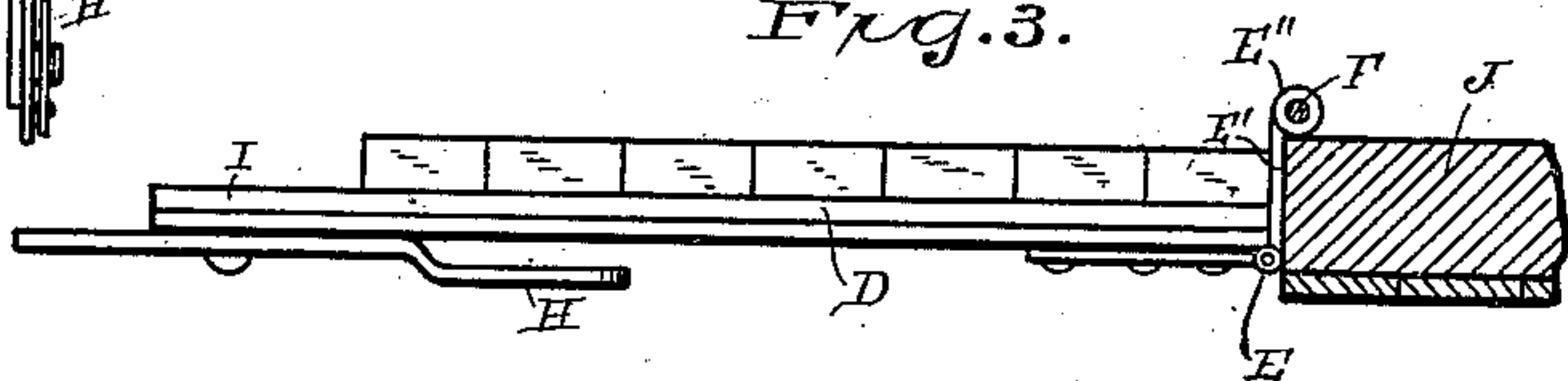


Fig. 4.

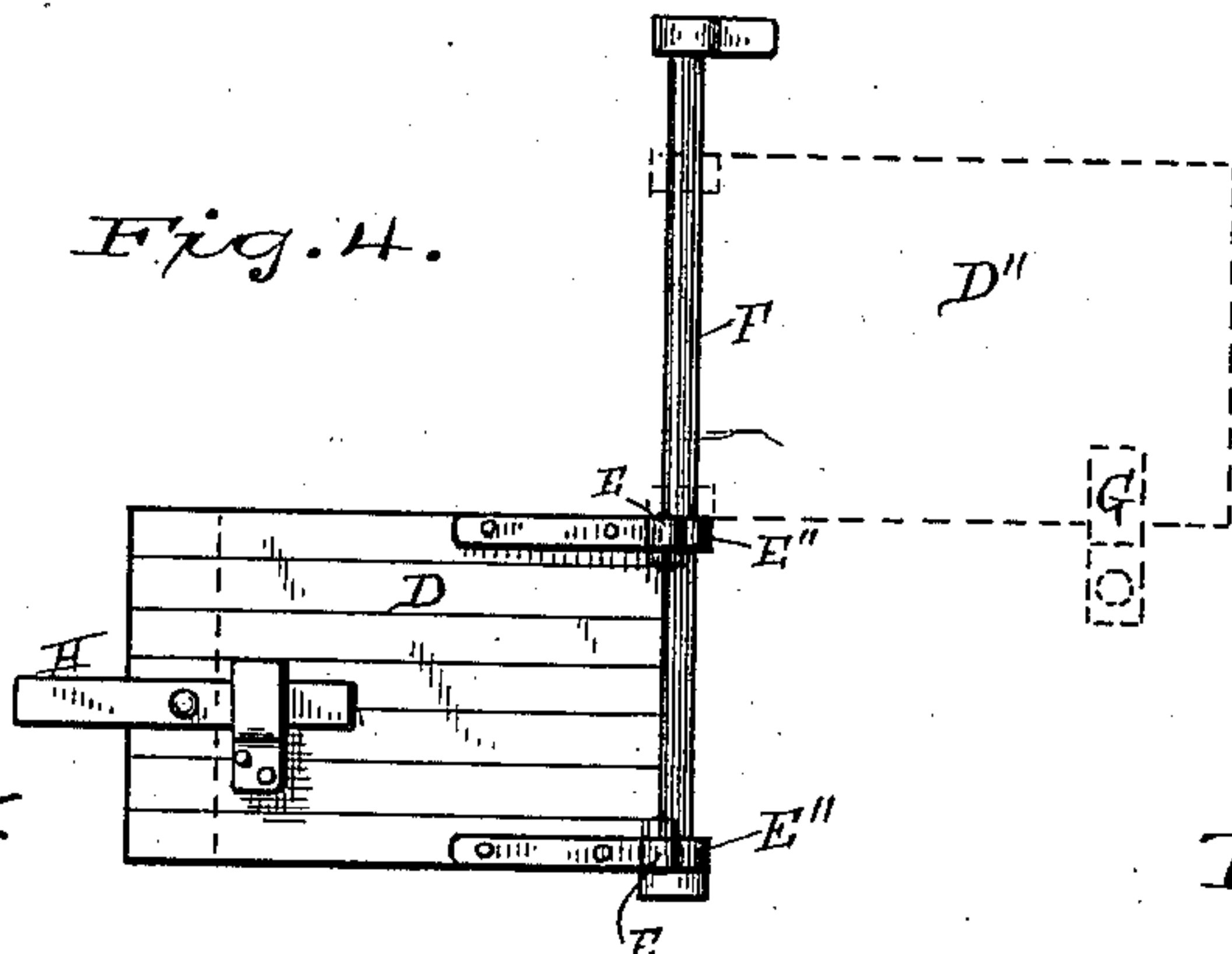
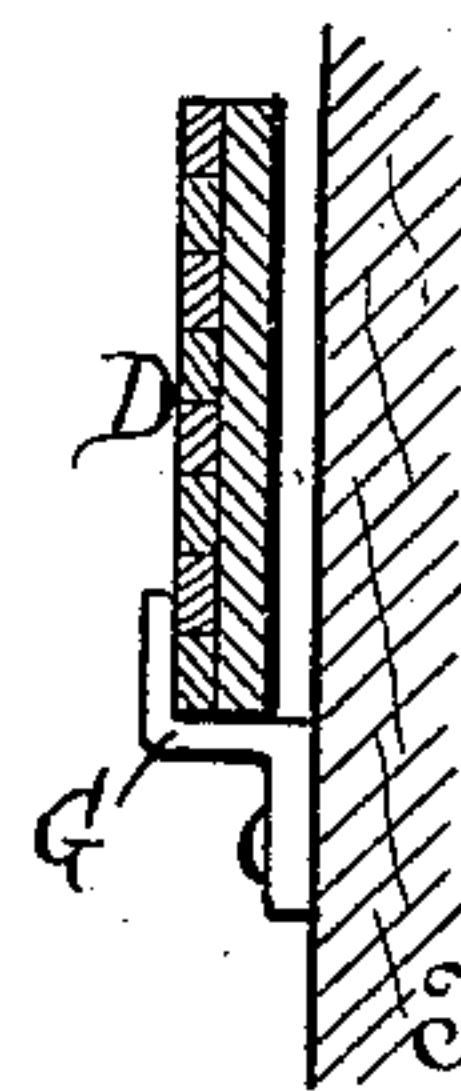


Fig. 5.



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UNITED STATES PATENT OFFICE.

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CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 370,712, dated September 27, 1887.

Application filed December 22, 1886. Serial No. 222,266. (No model.)

To all whom it may concern:

Be it known that I, TARBELL Z. RORABACK, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Improvement in Car-Doors, of which the following is a specification.

In the transportation of grain by railroad the grain is commonly loaded into covered freight-cars in bulk, which cars are ordinarily filled to the depth of about three or four feet, and such cars are usually provided with sliding doors, which doors, in connection with this service, only serve as safety and weather-tight closings to the gangways, but cannot be used as retainers of the grain, and other means for this purpose must be provided, which means generally consist of ordinary boards, nailed or otherwise secured across the said gangways a sufficient height to admit of convenient lading.

The nature of my invention consists in providing a neat, durable, convenient, and inexpensive closing for this purpose, which shall not in any manner obstruct the operation of the aforesaid sliding doors, which shall be easily and quickly put in position when desired for retaining the said grain, shall not offer any obstruction to lading, shall be readily and easily opened for the purpose of unlading, and readily and securely put out of the way when not in use and offer no obstructions to other uses of the car, and when in a closed position in the doorway their outside surfaces will be substantially flush with the outside corresponding surface of the jamb-post at the side of the doorway. I accomplish these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a car embodying my invention. Fig. 2 is a section on line A, Fig. 1. Fig. 3 is a top view of one of my improved doors and a section of a portion of the car-side, showing the hinge-connection of the said parts, taken on line A, Fig. 1. Fig. 4 is a side elevation of one of the said doors and the vertical hinge and the hinge-supporting shaft. Fig. 5 is a vertical section of one of the said doors on line B, Fig. 2.

Similar letters refer to similar parts throughout the several views.

Referring to the drawings, C represents the body of a common freight-car having the common opening or gangway in its side, which is usually closed by means of a sliding door, S, (shown in the drawings,) which, however, is not of any particular use in connection with my invention.

D represents my improved door or doors, having thereto attached a double hinge—that is, a hinge having two independent and separate acting pivoted joints, E and E'. The joint E, upon which the door D is adapted to swing outwardly, is located immediately adjacent to the outside corner of the jamb-post J, whereby the outer faces of the doors, when closed, will be flush with the outer face of said jamb-post. The leaf E' of the hinge extends from said joint E transversely across the end of the door, and terminates in an eye, E'', coiled loosely upon a vertical shaft or rod, F. The shaft F, upon which the part E' of the said hinge is pivoted, and upon which it swings inwardly and slides vertically in the order hereinafter explained, is located immediately adjacent to the inner corner of the jamb-post J nearest the doorway side, so that when the doors D are opened to a right angle, as shown in Fig. 2, the vertical planes of the exterior surfaces of the said doors, if extended to the interior of the car, would bisect the vertical centers of the joints E and E', thus giving a very strong support to the door. The vertical shaft F is attached to the jamb-post J by means of any suitable fastenings, and there should be at least two of the hinges E and E' upon each door.

At G is shown a bracket which is intended for holding the door D when it is folded in position on the inside of the car.

The operation of this device is as follows: When the car is loaded with grain, the doors will be in the position shown at D in Fig. 1, and locked or barred together by bar H. These doors are preferably lapped together by a part of one overlapping its mate, as shown at I in the several figures. When thus lapped, the bar H furnishes a convenient and effective lock or fastening to the said doors. When such a car is loaded with grain, it is obvious that considerable pressure will be exerted against the inner sides of the said doors D,

which in most cases is a serious obstacle to the removal of the doors; but with these improved doors it is only necessary to unlock the fastening H, when the doors will by the internal pressure exerted upon them by the grain immediately open outwardly, as shown in Fig. 2. As soon as the pressure upon the said doors is thus removed by the escape or removal of a portion of the grain, the said doors D may be lifted upon the vertical bar F above the level of the grain, and swung upon the said bar as a hinge or pivot to the position shown at D' in Fig. 2, and by the dotted lines at D'' in Fig. 4. When placed in this position, it is secured by means of the bracket G in an obvious manner.

Having described my invention, I do not claim, broadly, vertically-removable or swinging removable doors; but

What I claim as new, and desire to secure by Letters Patent, is a freight-car embodying the following elements of novelty:

1. The combination, with a box-car provided with the ordinary gangway and a vertical rod, F, adjacent to the inner corner of the jamb-post J on each side thereof, of the car-door D, its outer face flush with that of the jamb-post

when closed, and the double hinge E E', one leaf whereof is secured to the outer face of the door with a pivot at the meeting-point between said door and jamb-post, and the other leaf extending from said pivot transversely across the end of the door to the rod F, whereon it is loosely coiled, as and for the purpose set forth.

2. The combination, with a box-car provided with the ordinary gangway, a vertical rod, F, adjacent to the inner corner of the jamb-post J on each side thereof, and a bracket, G, secured to the inner side of the car, of the car-door D, substantially half as high as said gangway, the outer face of said door being flush with that of the jamb-post when closed, and the double hinge E E', one leaf whereof is secured to the outer face of the door with a pivot at the meeting-point between said door and jamb-post, and the other leaf extending from said pivot transversely across the end of the door to the rod F, whereon it is loosely coiled, as and for the purpose set forth.

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Witnesses:

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