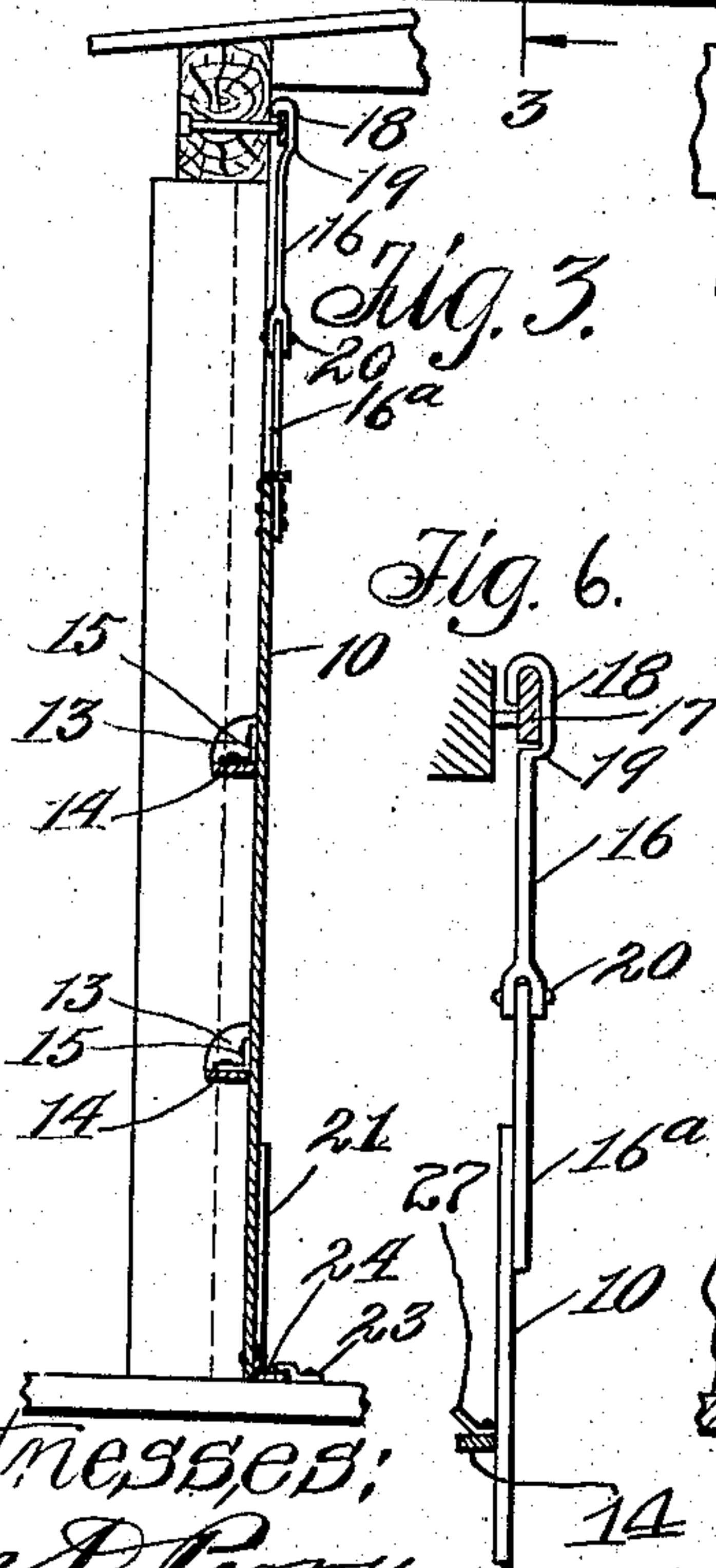
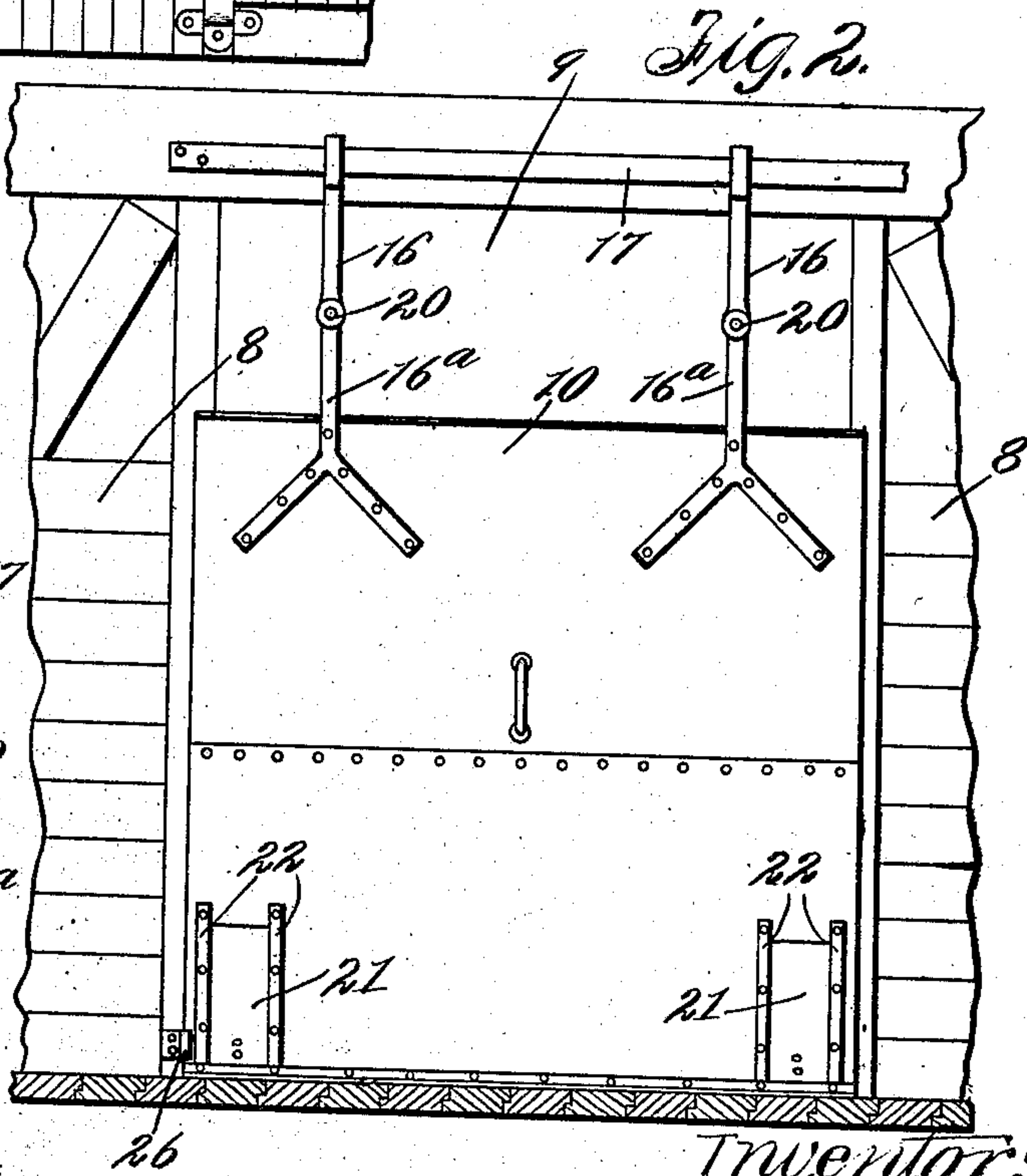
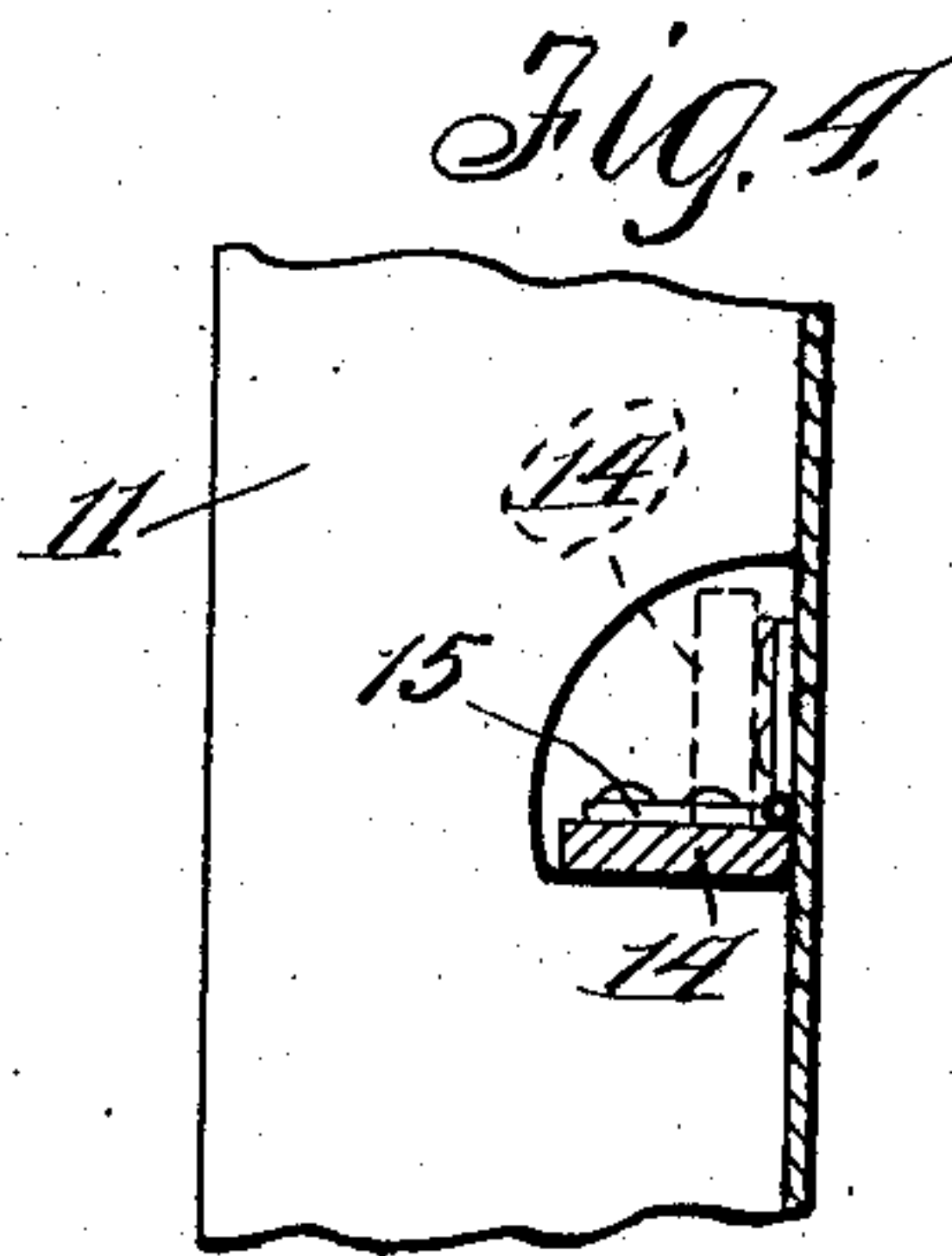
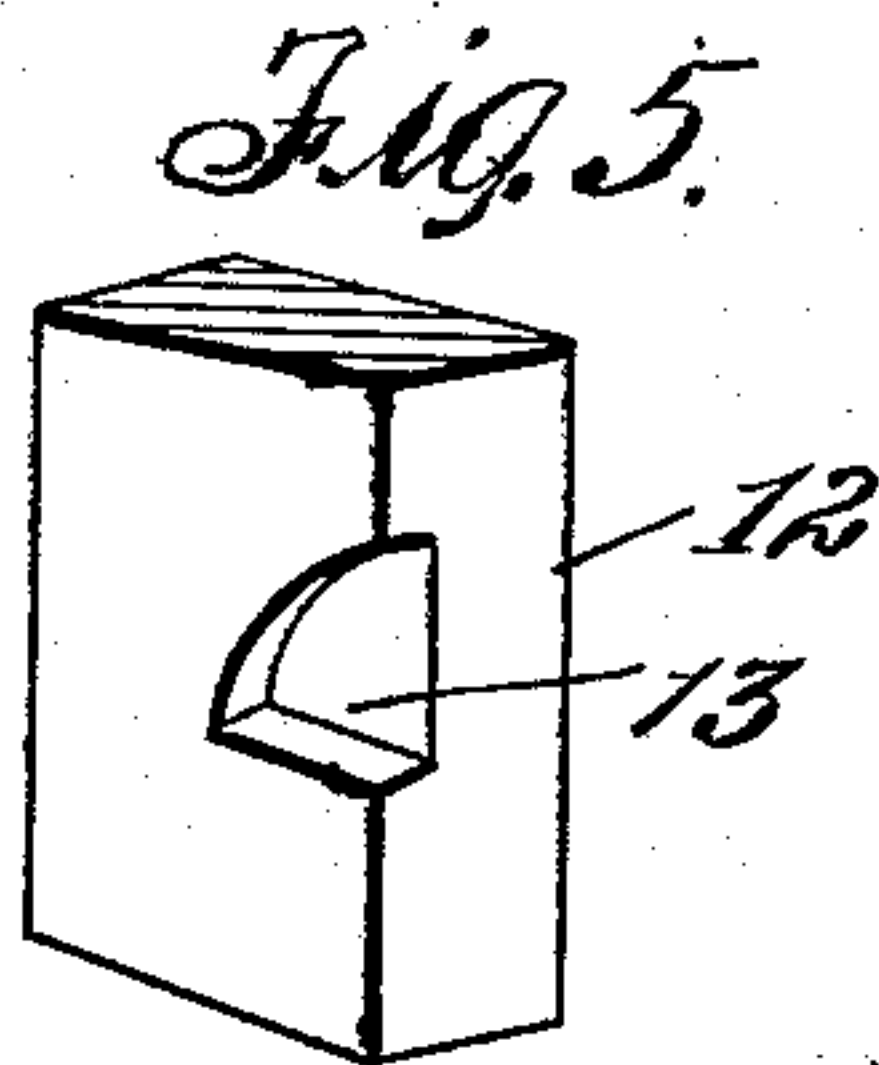
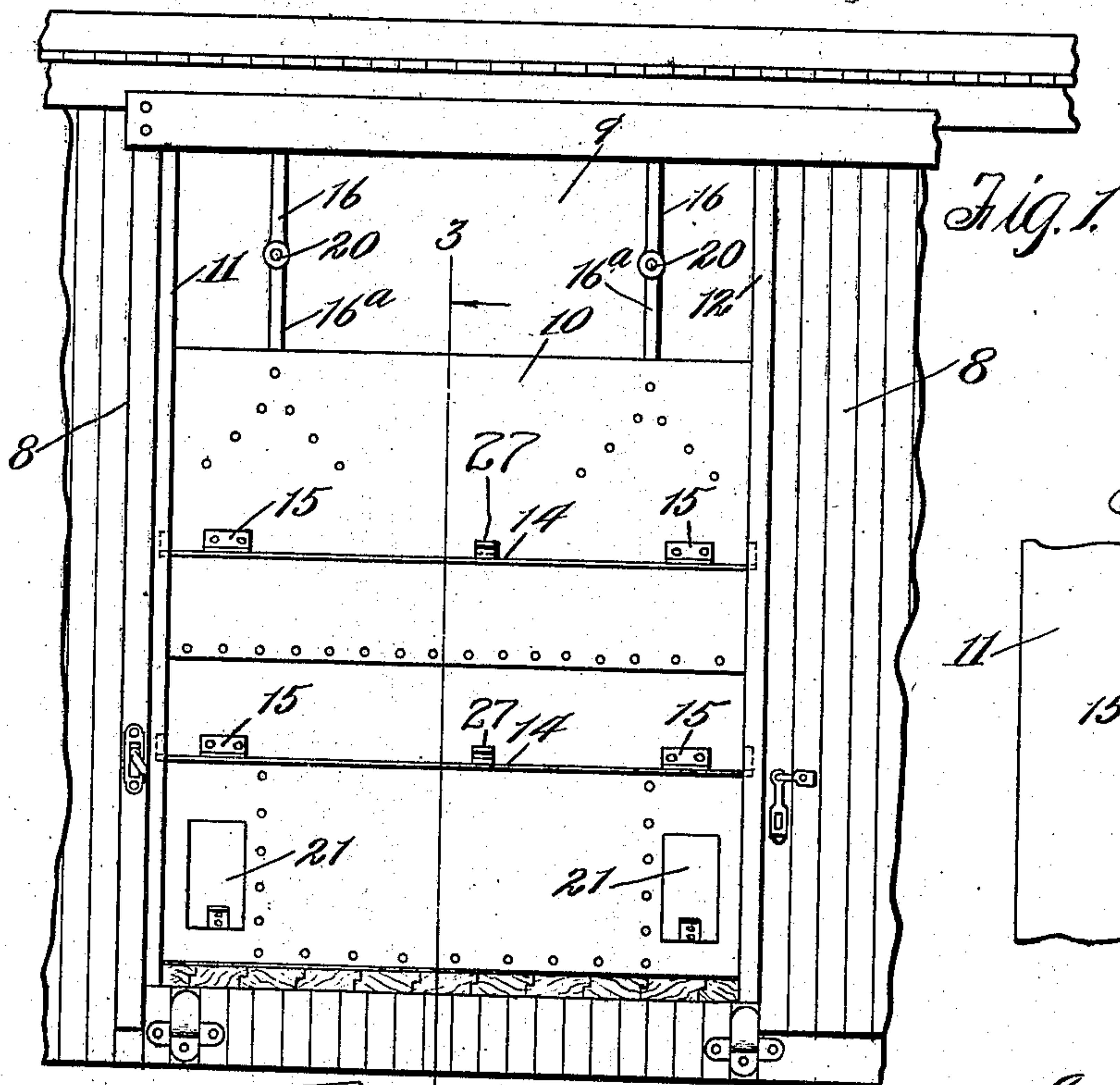


CAR DOOR.

APPLICATION FILED NOV. 10, 1906.

899,385.

Patented Sept. 22, 1908.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM J. COOKE, OF OAK PARK, ILLINOIS, ASSIGNOR TO MCGUIRE-CUMMINGS MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

CAR-DOOR.

No. 899,385.

Specification of Letters Patent.

Patented Sept. 22, 1908.

Application filed November 10, 1906. Serial No. 342,878.

To all whom it may concern:

Be it known that I, WILLIAM J. COOKE, a citizen of the United States, residing at Oak Park, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Doors, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to car doors, and has especially to do with doors of the type known as "grain-car doors" designed to close the lower portion of the door opening of a box car to permit of its being filled to a greater or less extent with grain.

The object of my invention is to provide a new and improved car door by which the capacity of the car may be increased and which may readily be manipulated to move it either into operative or inoperative position; also to provide a new and improved metallic car door meeting the requirements essential for its use as a grain-car door. I accomplish these objects as illustrated in the drawings and as hereinafter described.

What I regard as new is set forth in the claims.

In the accompanying drawings,—Figure 1 is a partial view of a box car, illustrating the outer side of my improved car door in operative position; Fig. 2 is a similar view showing the inside face of the car door; Fig. 3 is a vertical section on line 3—3 of Fig. 1; Fig. 4 is an enlarged detail, showing a part of a door in section and one of the door posts in elevation; Fig. 5 is a perspective view of a part of one of the door posts; and Fig. 6 is a detail, illustrating the manner in which the door is suspended from the track.

Referring to the drawings,—8 indicates one side of a car, of which 9 is the door opening, and 10 indicates the door.

11—12 indicate the posts at the sides of the door opening. As shown in Figs. 1, 3 and 5, the door posts are each provided with two recesses 13, the recesses in one post being opposite those in the other. As shown in Fig. 3, said recesses are in the sides of the posts which face the door opening, and at the inner edges thereof, for a purpose which will be hereinafter explained.

The door 10 is composed of sheet metal, either a number of sheets secured together or a single sheet. Said door is of such width as to overlap the two door posts, against the inner faces of which its ends are adapted to

fit, as shown in Fig. 2. On its outer face said door is provided with one or more pieces or girders 14, which extend longitudinally of the door, *i. e.* parallel, or approximately so, with the upper and lower edges thereof and are hinged to the door by hinges 15, as shown in Figs. 1 and 3, so that each of said girders may be turned about an axis parallel with its length to permit of its being folded down at right angles to the plane of the door, or up against the door. The two positions of the girder are shown, respectively, in dotted lines in Fig. 4. When the girder 14 is in its operative position it is at right angles, or substantially so, to the door 10, and its ends fit in the recesses 13, as shown in Fig. 4. Said girders, therefore, serve to brace the door against internal pressure and also hold it in operative position by reason of their engagement with the recesses 13. I prefer to provide the door with two girders, but the number may be varied to meet special conditions.

The door is supported by hangers 16 which suspend it from a track 17, as shown in Figs. 2 and 3. The track 17 is rectangular in cross-section, and the hanger 16 at its upper end is provided with a hook 18 which hooks over the track, as shown in Fig. 6. The hanger is also provided with an offset portion 19, which extends under the track so that the door is not only suspended under the track but any considerable upward movement of the hanger is prevented. In its best form the hanger is made of two parts, which are connected by a pivot 20, the upper portion 16^a of the hanger being thus capable of swinging, relatively to the lower portion thereof. By this means the door may be slightly lifted, as is sometimes desirable in starting it, this being accomplished by moving the door endwise, thereby swinging the upper portions of the hangers 16 laterally in the same direction after the manner of parallel bars. The pivots 20 permit the necessary angular adjustment of the upper and lower members of each hanger, the upper portion of each hanger turning slightly on the track. This adjustment is not of any great extent as the upward movement of the door is very slight. The lower portion of the hanger is fixedly secured to the upper portion of the door, preferably by rivets,—the lower end of the hanger being bifurcated so as to provide a more secure connection.

21 indicates auxiliary doors at the corners of the door 10 for releasing the pressure upon the door before opening it. Said auxiliary doors are fitted in slides 22, as shown in Fig. 2, so that they may be raised or lowered at pleasure.

23 indicates guides for the lower edge of the door, which is also provided with a horizontal flange 24, as shown in Fig. 3.

26 indicates a stop for holding the lower edge of the door closely against the door post when the door is closed.

When the door is in inoperative position, the girders 14 are folded up against the inner face of the door 10, and the door is slid back away from the door opening, lying closely against the side of the car so that it does not interfere with the use of the car for any desired purpose. When the car is to be used for loading grain, the door is slid into position opposite the door opening and the girders 14 are folded down to their operative position, at which time their ends enter the recesses 13. The car may then be filled with grain, or other similar freight. The girders do not prevent the door from being moved endwise when the car is empty since the door may then be easily sprung far enough away from the posts to enable the girders, when turned up out of operative position, to pass the door posts. If it is necessary in releasing the door to lift it to a greater or less extent, this may be accomplished by reason of the pivots 20 with which the door hangers are provided.

In order to insure the folding down of the girders into operative position when the door is to be closed, I provide springs 27 preferably carried by the girders, but which, if desired, may be carried by the door. Said springs are arranged to be put under tension when the girders are folded up against the door and are held so when the door is in inoperative position. When, however, the door is moved out into operative position, the girders are released and the springs automatically cause them to move downward into operative position.

That which I claim as my invention, and desire to secure by Letters Patent, is,—

1. A car door having a girder adjustably secured thereto and extending longitudinally thereof, said girder being adapted to be turned about an axis parallel with its length so as to lie at an angle to the door or to be folded thereagainst, said girder when turned at an angle being arranged to present a greater width substantially perpendicular to the plane of the door than when in its folded position.

2. The combination of a car having door posts at opposite sides of the door opening, a door, the ends of which bear against said posts, and a longitudinal girder adjustably secured to the door, said girder being ar-

anged to be turned about an axis parallel with its length so as to lie at an angle to the door or to be folded thereagainst, said girder when turned at an angle being arranged to present a greater width substantially perpendicular to the plane of the door than when in its folded position.

3. The combination of a car having door posts at opposite sides of the door opening, a door, the ends of which bear against said posts, and a longitudinal girder adjustably secured to the outer side of the door, said girder being arranged to be turned about an axis parallel with its length so as to lie at an angle to the door or to be folded thereagainst, said girder when turned at an angle being arranged to present a greater width substantially perpendicular to the plane of the door than when in its folded position, said posts having recesses to receive the ends of said girder.

4. The combination of a car having door posts at opposite sides of the door opening, an endwise-movable door, the ends of which bear against said posts, a longitudinal girder adjustably secured to the door on the outer side thereof, said girder being arranged to be turned about an axis parallel with its length so as to lie at an angle to the door or to be folded thereagainst, said girder when turned at an angle being arranged to present a greater width substantially perpendicular to the plane of the door than when in its folded position, said posts having recesses to receive the ends of said girder.

5. A car door having a girder adjustably secured thereto and arranged longitudinally thereof, said girder being arranged to be turned about an axis parallel with its length so as to lie at an angle to the door or to be folded thereagainst, said girder when turned at an angle being arranged to present a greater width substantially perpendicular to the plane of the door than when in its folded position, and means for automatically moving said girder to its angular relation with the door.

6. A car door having a girder adjustably secured thereto and arranged longitudinally thereof, said girder being arranged to be turned about an axis parallel with its length so as to lie at an angle to the door or to be folded thereagainst, said girder when turned at an angle being arranged to present a greater width substantially perpendicular to the plane of the door than when in its folded position, and a spring for automatically moving said girder to its angular relation with the door.

WILLIAM J. COOKE.

Witnesses:

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