

No. 722,941.

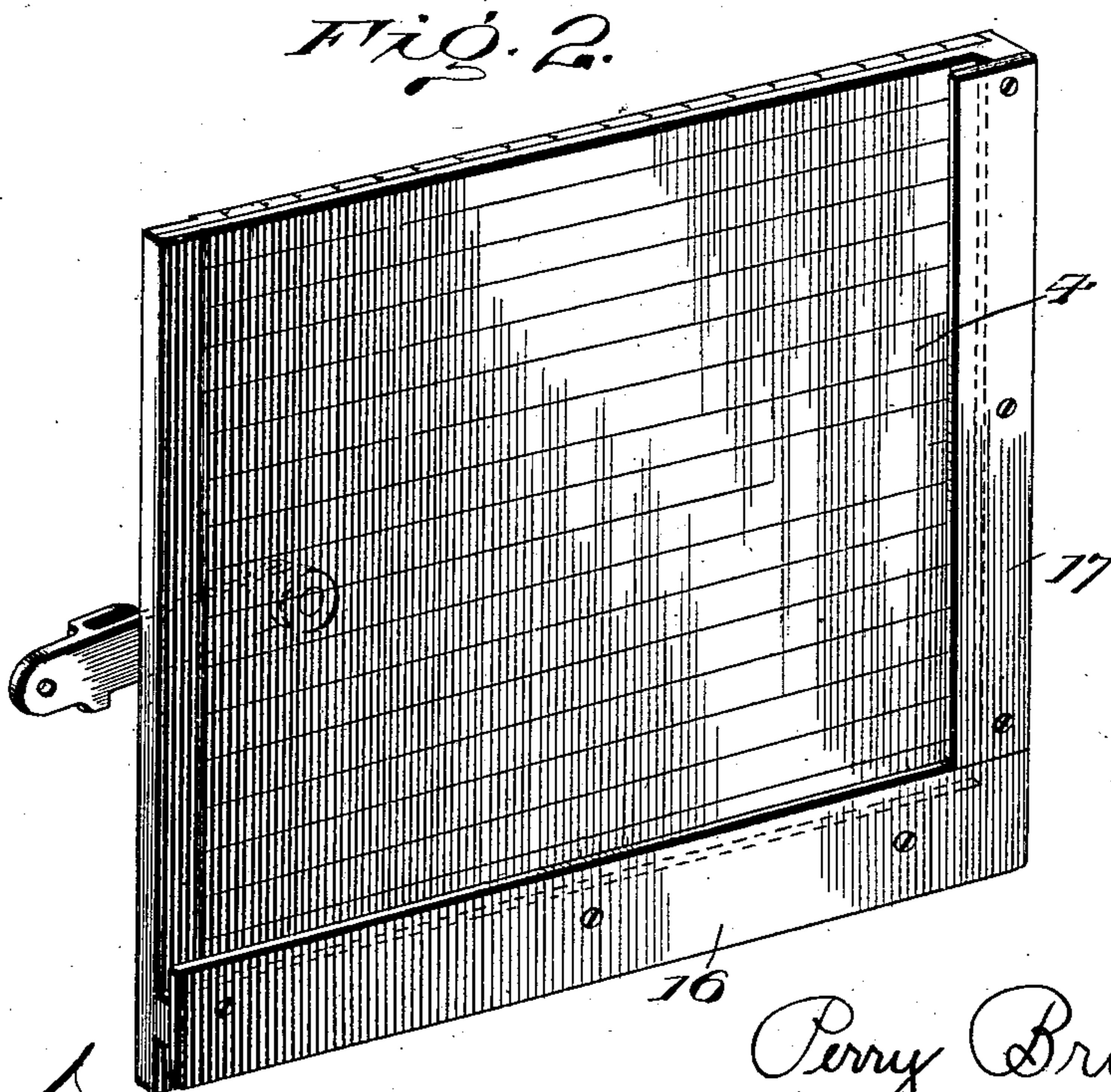
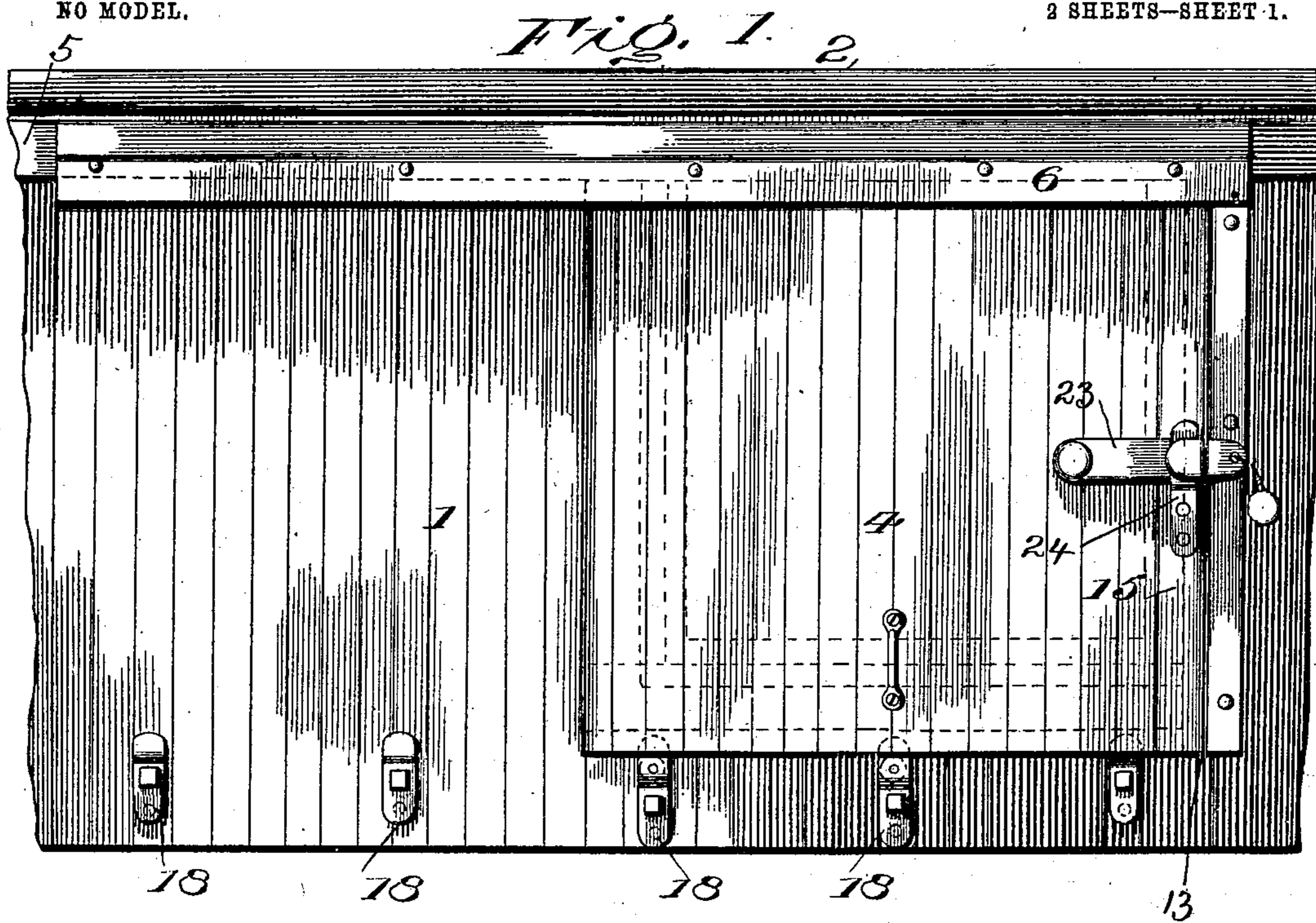
PATENTED MAR. 17, 1903.

P. BROWN.
CAR DOOR.

APPLICATION FILED MAY 24, 1901.

NO MODEL.

2 SHEETS--SHEET 1.



Inventor

Witnesses

Witnesses

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Attorney

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2 SHEETS—SHEET 2.

NO MODEL.

Fig. 3.

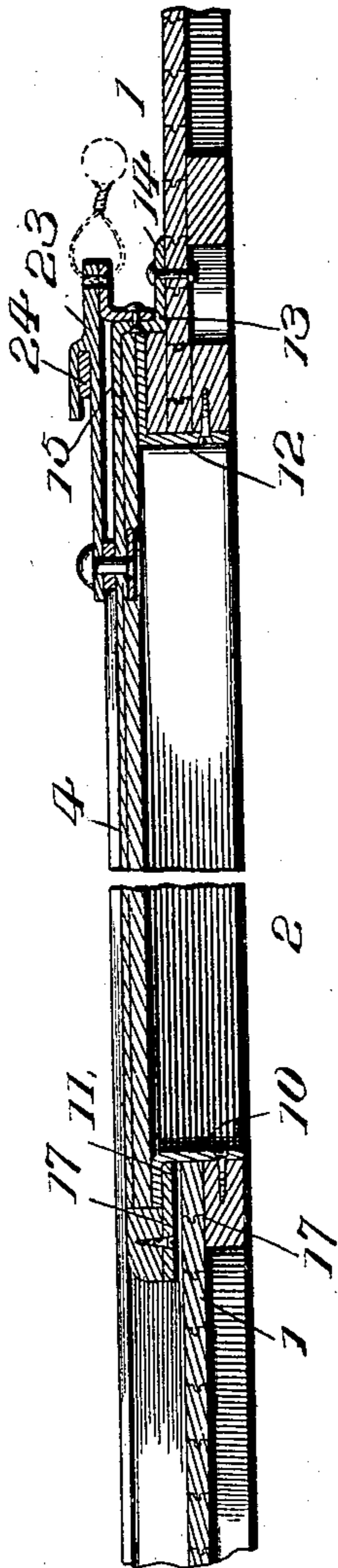


Fig. 4.

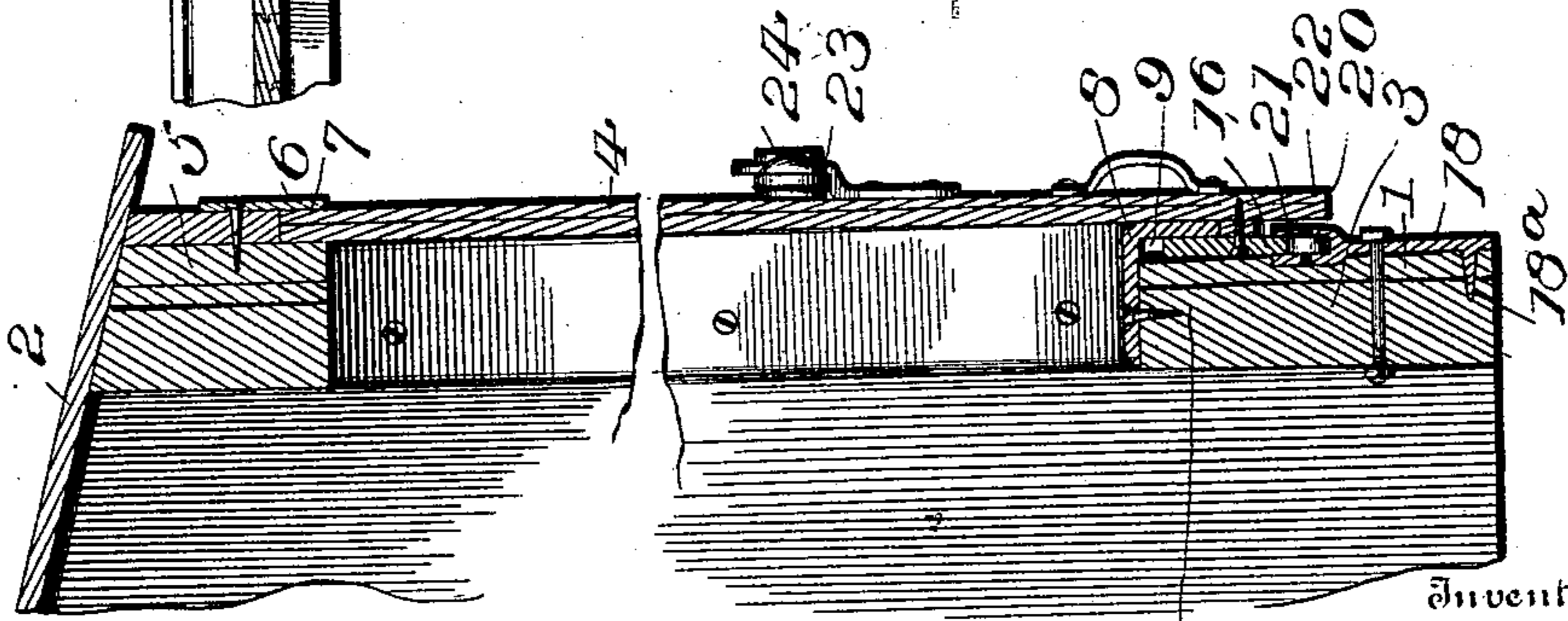


Fig. 5.

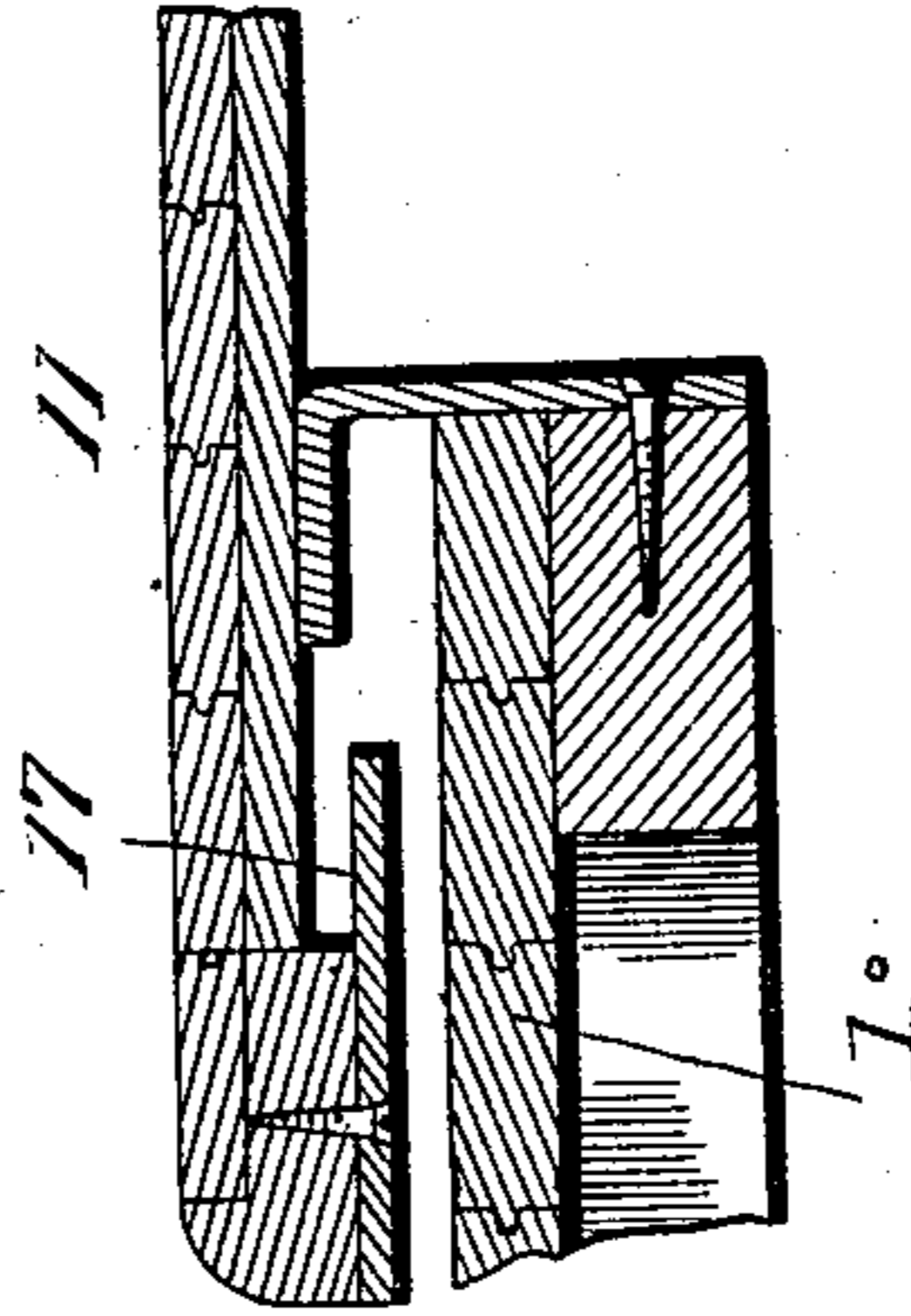
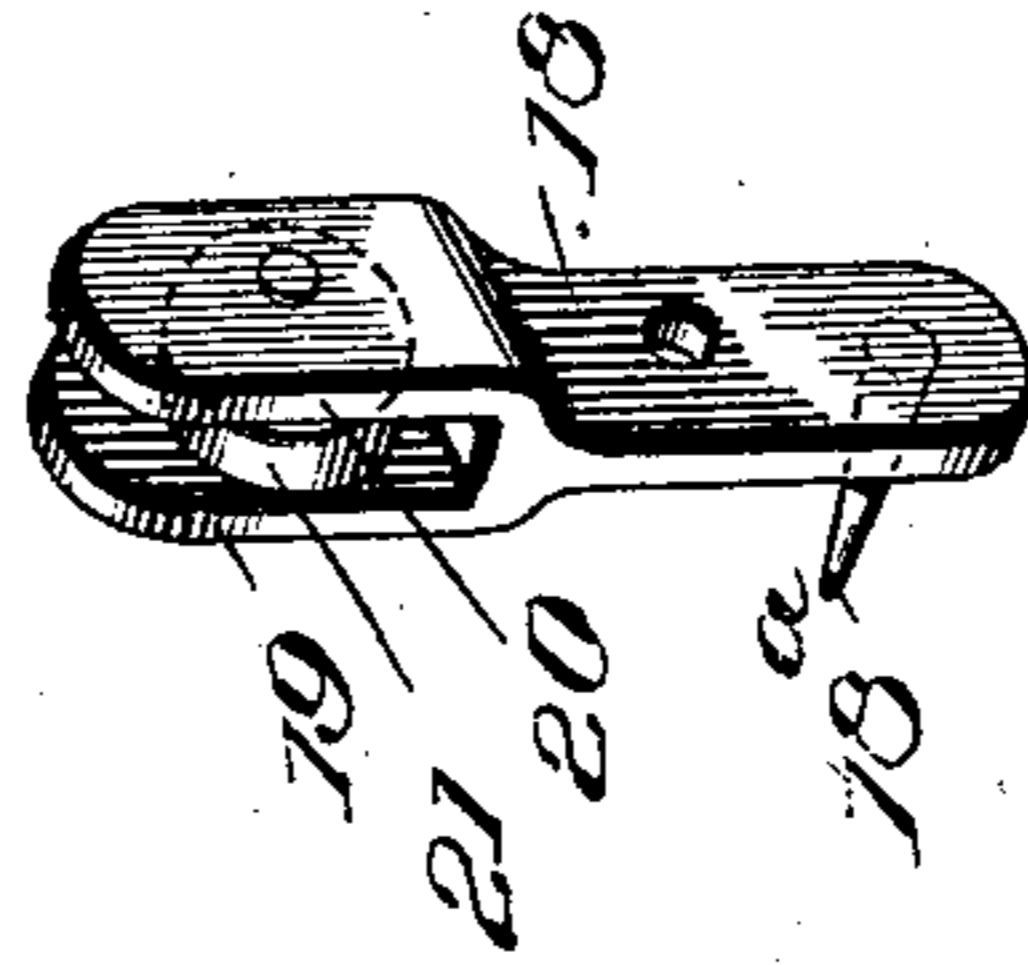


Fig. 6.



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UNITED STATES PATENT OFFICE.

PERRY BROWN, OF WILMINGTON, DELAWARE.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 722,941, dated March 17, 1903.

Application filed May 24, 1901. Serial No. 61,761. (No model.)

To all whom it may concern:

Be it known that I, PERRY BROWN, a citizen of the United States, residing at Wilmington, in the county of Newcastle, State of Delaware, have invented a certain new and useful Improvement in Car-Doors, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in doors of the sliding variety designed especially for use on cars, although it is capable of other use; and my object is to invent a door-closure wherein a groove is formed around the door-frame, so that the door may slide therein and effectually close the door-opening.

It is well known that great trouble has been experienced on railways because of the fact that the doors are not proof against either sparks or rain, and damage results from both to a considerable extent. By shutting the door into a groove entirely surrounding the door these objections or defects are overcome.

My invention therefore consists in the door-closure, as hereinafter more particularly described and then definitely claimed at the end hereof.

In the accompanying drawings, Figure 1 represents part of the side of a car with the preferable embodiment of my invention illustrated thereon. Fig. 2 is a perspective view of the door from the inside. Fig. 3 is a horizontal section of part of the car with the door closed. Fig. 4 is a vertical section of the same, taken through one of the supporting-brackets. Fig. 5 is a detail sectional view showing the door in the act of being closed, and Fig. 6 is a perspective view of one of the "brackets."

Referring now to the details of the drawings by numerals, 1 represents the siding of the car, 2 the roof, and 3 one of the horizontal sills, all of which may be of ordinary construction.

The numeral 4 indicates the sliding car-door closing the opening in the side of the car. This opening is formed at the top by the top rail 5, to which is bolted or otherwise secured an overhanging longitudinal metal strip 6, which forms a groove 7, in which the upper part of the door 4 projects and slides. The bottom of the opening is formed of angle-iron, as seen at 8, and between its downwardly-projecting vertical member and the

siding 1 is left a deep groove 9 for a purpose to be hereinafter described. Similar strips of angle-iron 10 and 12 form the sides of the door-opening, the left-hand angle-iron 10 also having a space 11 left between its outside member and the sides 1; but the right-hand angle-iron 12 fits tight against the walls of the opening at all points. A closing metal rail 13 is secured to the siding next to the said right-hand angle-iron 12, which comprises a member 14, by which the rail is secured to the siding 1, and a member 15, which is situated over said angle-iron 12, a space being left between the two, as clearly seen in Fig. 3. It will thus be seen that each of the four sides of the door-opening is formed with a groove, the two horizontal grooves 7 and 9 opening downward, whereby the walls thereof tend to shed rain, and the grooves formed in the side walls each opening from the same side, so that the car-door may slide or be slid into said side grooves, and thus effectually close the opening. To make this closure most effectual, I secure metal strips 16 and 17 on the bottom and left-hand side of the door, the bottom strip 16 entering the groove 9 and the side strip 17 entering the groove 11. In this way the door is absolutely closed, and when locked it will be impossible for any one to pry the door open, as it is securely held in grooves around its entire edges. Likewise it is impossible for rain or moisture to leak or be beaten through the door and the walls of the opening. A further advantage is that as the door is actually locked only on one edge it can swell without causing any injury whatever and still be securely locked, as the grooves are deep enough to cover the strip on the door for any ordinary amount of swelling.

To support the door at the bottom, I provide brackets 18, bolted to the longitudinal sill 3, and which brackets comprise a forked upper portion 19 20, the inner member 19 being preferably embedded, as seen in Fig. 4. Within the opening formed by the forked part of the brackets 18 I journal antifriction-rollers 21, on which the metal strip 16 (on the bottom of the car) runs. If preferred, the outer brackets may be formed without the rollers, as they are not really needed except in the center. Each of the brackets 18 is provided with a tooth or spike 18^a, which assists

the bolts in securing them in place. It will be noticed that the door proper extends down over these brackets, as seen at 22 in Fig. 4, so that water is prevented from dripping from the door and freezing on the brackets.

I have shown a pivoted latch 23 with which to lock the door and which coacts with a keeper 24, perforations being formed in each of these parts, through which the wire of the ordinary seal may be passed. It is obvious, however, that any desired form of lock may be used.

From the foregoing and the accompanying drawings it will be seen that I have invented a sliding door and door-frame which are specially adapted to be rain and spark proof and which, nevertheless, are simple, cheap to build, and most effective and durable in use.

It is manifest that structural changes may be made without departing from the salient feature of my invention, which is the door-frame arranged with grooves into which the door slides and in which it is held.

What I claim as new is—

1. A door-frame having grooves formed therein, the grooves at the sides opening in the same direction and the grooves at the top and bottom opening downward, in combination with a door coacting with said grooves and having portions entering the side grooves and a bottom strip projecting up into the groove at the bottom.

2. A door-frame having grooves formed therein, the grooves at the sides opening in the same direction and the grooves at the bottom being formed by an angle-iron, one member of which is secured to the frame and the other member leaving a downwardly-opening space or groove between said iron and the framing, in combination with a door having parts arranged to fit into said side grooves and a strip projecting upward into said downwardly-opening space or groove.

3. A door-frame having one of its sides formed of angle-iron, one member of the iron secured to the frame and the other projecting over the frame in the same plane therewith and leaving a space between it and the frame, in combination with a door having a strip projecting into said space.

4. A door-frame having one of its sides formed of angle-iron, and a closing-strip projecting over one of the members of said angle-iron and leaving a space therebetween, in combination with a door having a part entering the space between said angle-iron and closing-strip and having its entering part covered for substantially its entire length by said closing-strip.

5. A door-frame having a downwardly-opening groove formed in its lower side or bot-

tom, in combination with a door having a strip fitted within the said groove and means coacting with said strip for supporting the door.

6. A door-frame having a groove formed in its lower or bottom side, in combination with a door having a strip fitting within said groove, means for supporting said strip, on which means the said strip slides, the said door projecting down partially over said means.

7. A door-frame having its lower or bottom side formed of substantially L-shaped iron, the horizontal member of said iron lapping the sill and the vertical member spaced from the outer face of the sill to form a groove.

8. A door-frame having a downwardly-opening groove formed in both of its horizontal sides in combination with a door having a part fitting within each of said grooves, and means for supporting said door comprising a bracket having a roller supported thereby.

9. A door-frame having a groove formed in its lower or bottom side, in combination with a door having a strip fitting within said groove, means for supporting said strip, comprising a bracket having a roller on which the strip slides, the said door projecting downward and covering said roller.

10. A door-frame having grooves therein, the side grooves opening in the same direction and the top and bottom grooves opening downward, one of the side grooves being formed of angle-iron, and a closing-strip projecting over said angle-iron and leaving a space between it and said iron, in combination with a door having portions sliding in said top and bottom and one of the side grooves and a portion fitting within the space between said angle-iron and said closing-strip.

11. A door-frame having its lower or bottom side formed of angle-iron, the horizontal member of which iron is secured to said frame, and having a passage left between the vertical member and said frame, in combination with a door having a strip fitting within said space, and means for supporting said door at the bottom thereof.

12. A door-frame having downwardly-opening grooves at the top and bottom thereof, the bottom groove being formed of angle-iron secured to the frame so as to leave a downwardly-opening groove or space between it and the frame, in combination with a door having a part fitting within each of said grooves.

In testimony whereof I affix my signature, in the presence of two witnesses, this 18th day of May, 1901.

PERRY BROWN.

Witnesses:

J. STEWART RICE,
THOS. S. ROBERTSON.