

No. 724,474.

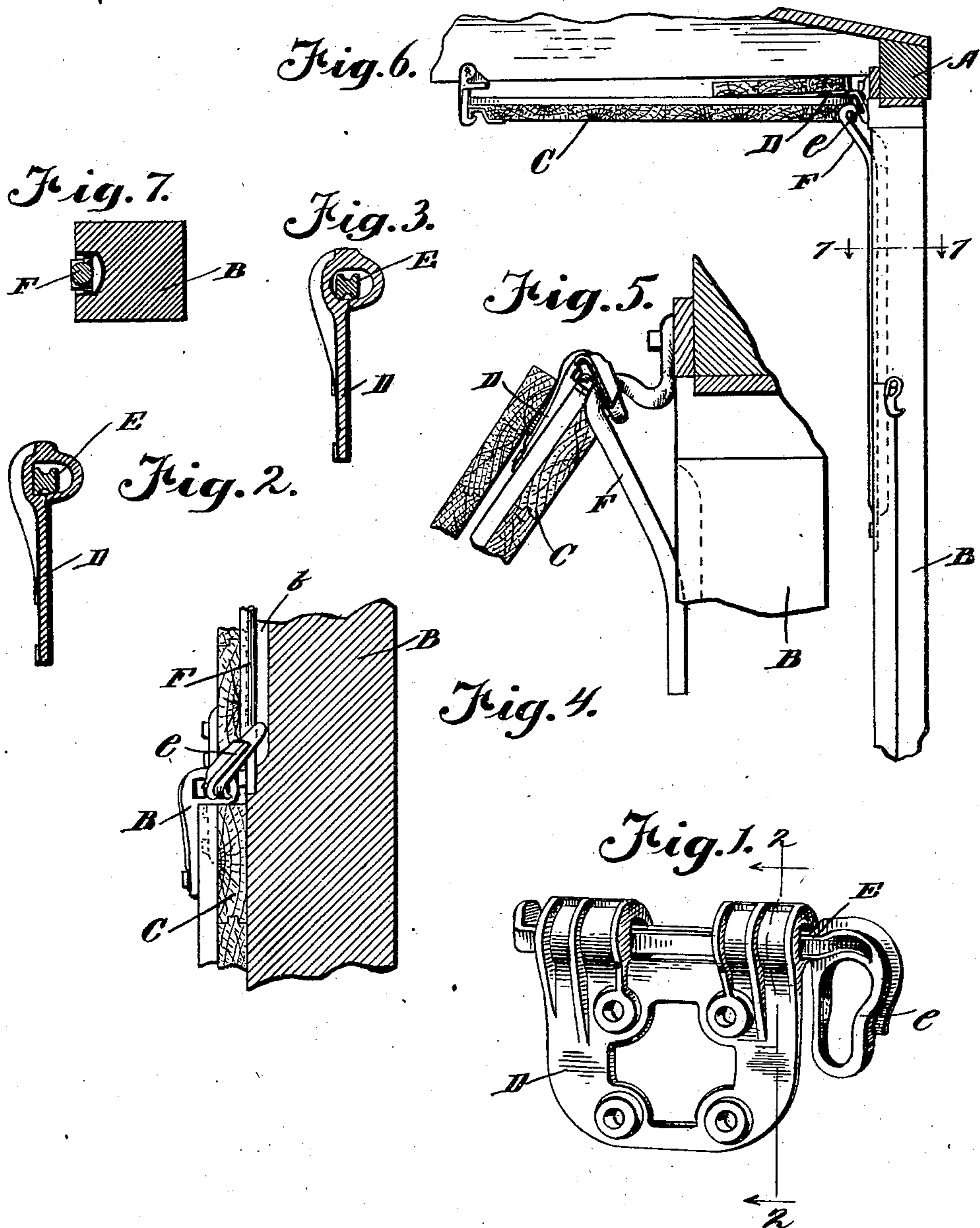
PATENTED APR. 7, 1903.

E. A. HILL.  
ATTACHMENT FOR CAR DOORS.

APPLICATION FILED MAY 15, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



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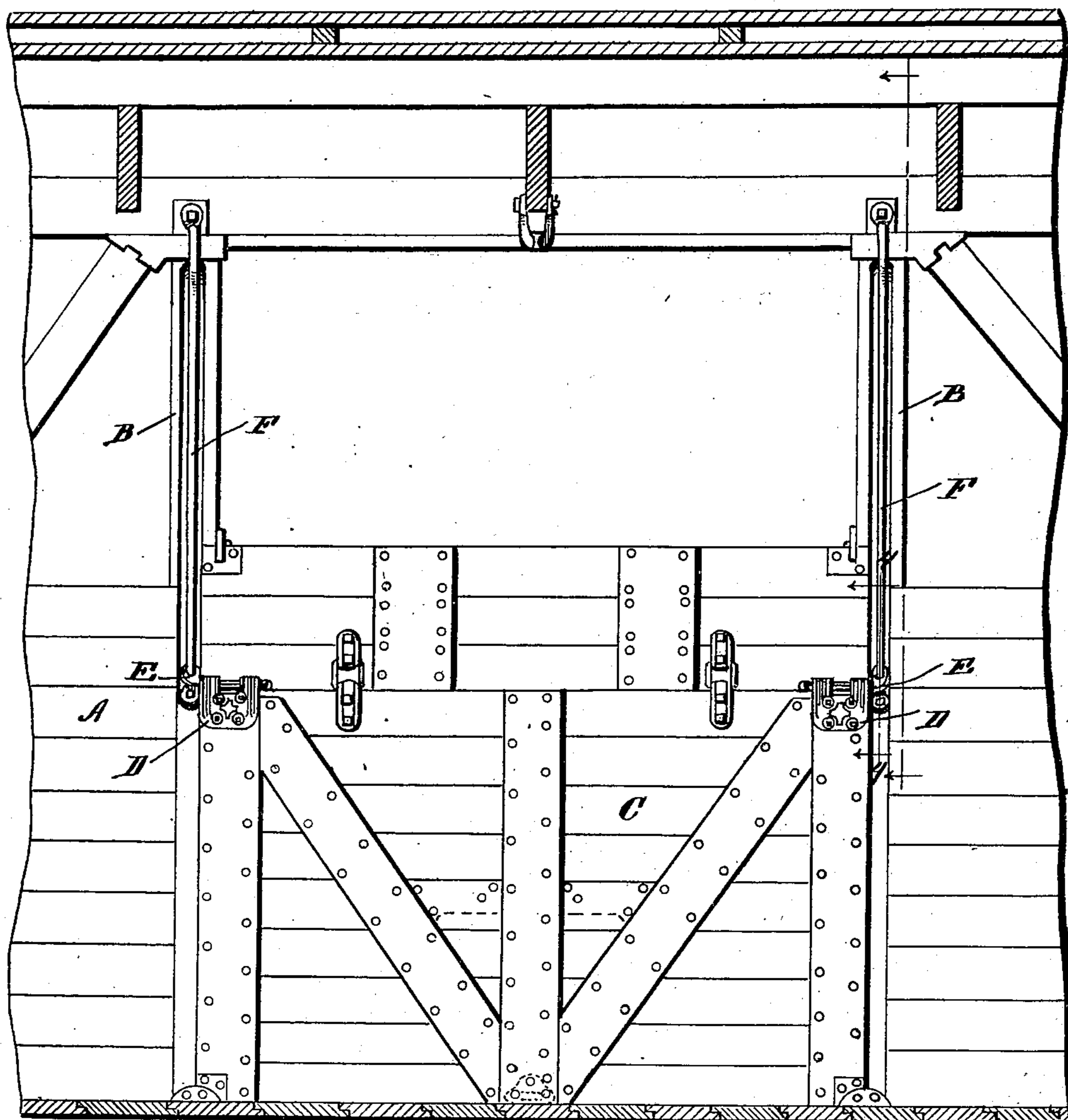
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*Fig. 8.*



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# UNITED STATES PATENT OFFICE.

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## ATTACHMENT FOR CAR-DOORS.

SPECIFICATION forming part of Letters Patent No. 724,474, dated April 7, 1903.

Application filed May 15, 1902. Serial No. 107,407. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD A. HILL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Attachments for Car-Doors, of which the following is a specification.

My invention relates to improvements in the construction of the pivot-pins and sockets of attachments for grain-doors of the type shown in my Patent No. 613,273.

The object of my invention is to provide means for attaching a grain-door to a car which shall automatically adapt itself for use with grain-doors of varying thicknesses and which may be used in connection with guide-rods of any desired diameter attached to the car-door posts of any standard size without unduly weakening the door-posts. These and such other objects as may hereinafter appear are attained by the devices illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved attachment. Fig. 2 is a sectional view on the line 2 2 of Fig. 1 looking in the direction indicated by the arrows. Fig. 3 is a like view of a modification. Fig. 4 is a detail in section, showing the relations between the car-door, the door-post, the guide-rod, and the pivot-pins when the door is in closed position. Fig. 5 is a detail of a part of the structure with the door in partially-raised position. Fig. 6 is a view, partly in section and partly in elevation, of a portion of a car, showing the car-door raised to open position. Fig. 7 is a cross-section on the line 7 7 of Fig. 6 looking in the direction indicated by the arrows, and Fig. 8 is a side elevation of a car-door fitted with my improved device looking outwardly from the inside of the car.

Like letters of reference indicate the same parts in the several figures of the drawings.

Referring by letter to the accompanying drawings, A is a side of a car provided with the side posts B at each side of the car-door opening. C is the car-door, to which are attached socket-plates D, within which are pivotally mounted pins E. The pivot-pins E are provided with elongated perforated ears

e, which are slidingly mounted upon the guide-rods F upon the door-posts B.

To insure the close fitting of the door against the inner face of the door-posts, the door-posts are provided with rabbeted grooves b behind the guide-rods F, which rabbeted grooves receive the inner ends of the ears e. Each of the guide-rods F is bent outwardly and then inwardly adjacent to its upper end, thereby providing a shoulder or rest upon which one end of a car-door is supported when the door is in open position, as shown in Fig. 6. The contour of this bend or shoulder and the relation of the assembled parts is such that in order to pass readily over this bend or shoulder the eye of the ear e of the pivot-pins E must be of considerably greater diameter than the diameter of the guide-rods F; but if the pivot-pin E is made, for instance, like the pivot-pin C shown in said prior Patent No. 613,273 such enlargement of the ear e will call for a proportionate enlargement of the rabbet b within the posts B, which enlargement is objectionable with posts of standard sizes and tends to unduly weaken the posts at that point. To overcome this difficulty, I have provided an improved pivot-pin in which while the outer end of the ear e is sufficiently narrow to fit readily within the rabbet b that portion of the eye which extends within the outer end of the ear e is sufficiently large to allow the pivot-pin to slide freely along the rod F. At the same time I enlarge the inner portion of the ear e and correspondingly enlarge the elongated eye therein at its inner end, so that when the door is lifted to open position the enlarged portion of the eye of the ear e will pass freely over the bend or offset at the upper end of the rod F.

To allow the use of my improved attachment upon car-doors of varying thicknesses, I provide the socket-plates D with sockets of greater depth extending inwardly from the inner face of the car-door than the diameter of the stem of the pivot-pins E, so that the pivot-pins may have sufficiently free play back and forth within said socket to automatically adapt themselves to doors of vary-

ing thicknesses. With this construction the door will swing forwardly and fit snugly against the inner faces of the door-posts B regardless of variations in the thickness of the door within all usual and practical limits.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with the door and door-posts, grooved longitudinally, of guide-rods secured to the said posts and overlying the grooves thereof, said rods being formed at their upper ends with shoulders, pins pivotally mounted on the said door, and being capable of lateral movement, and ears formed integral with the said pins, said ears being formed with openings which decrease in width toward the outer ends thereof, and in which the said guide-rods are received, each of said ears narrowing toward its outer end.

2. An attachment for car-doors comprising a plate formed with sockets, pins pivotally mounted in the said sockets and being capable of being moved laterally therein, and an ear formed integral with the outer end of the said pin, said ear being formed with an elongated slot, the inner end of which is enlarged, said ear being narrower at its outer end than it is at its inner end.

3. The combination with a car-door, of a pair of rabbeted door-posts, guide-rods overlying the rabbets in said posts, said guide-rods being bent to provide seats for supporting said door in upraised position, pins pivotally mounted upon said door and having heads provided with slots, said heads being arranged to slidably engage said rods and to extend into said rabbets, the inner ends of said slots being enlarged, and said heads being narrowed at their outer ends, substantially as described.

4. A device of the class described, comprising a pivot-pin with a transversely-elongated head, said head being narrowed at its outer end and having an elongated slot enlarged at one end and narrowed at its outer end, substantially as described.

EDWARD A. HILL.

Witnesses:

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