No. 755,049. PATENTED MAR. 22, 1904.

T. W. SALING & J. McKIEL.

CAR DOOR.

APPLICATION FILED MAR. 2, 1903.

NO MODEL.

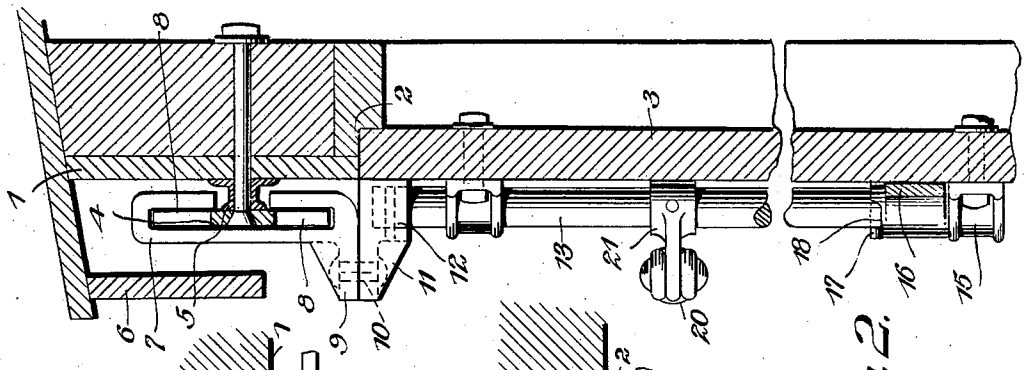

Fig. 2.

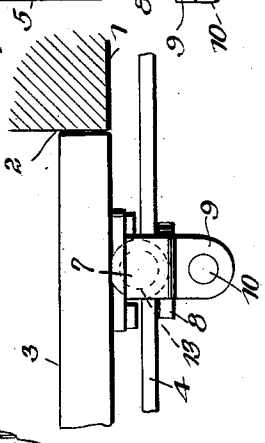

Fig. 3.

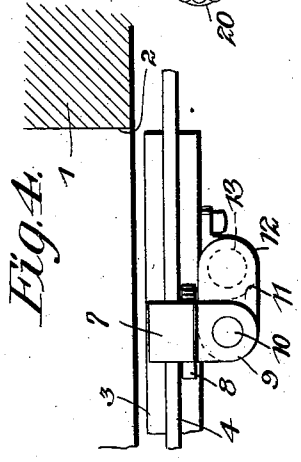

Fig. 4.

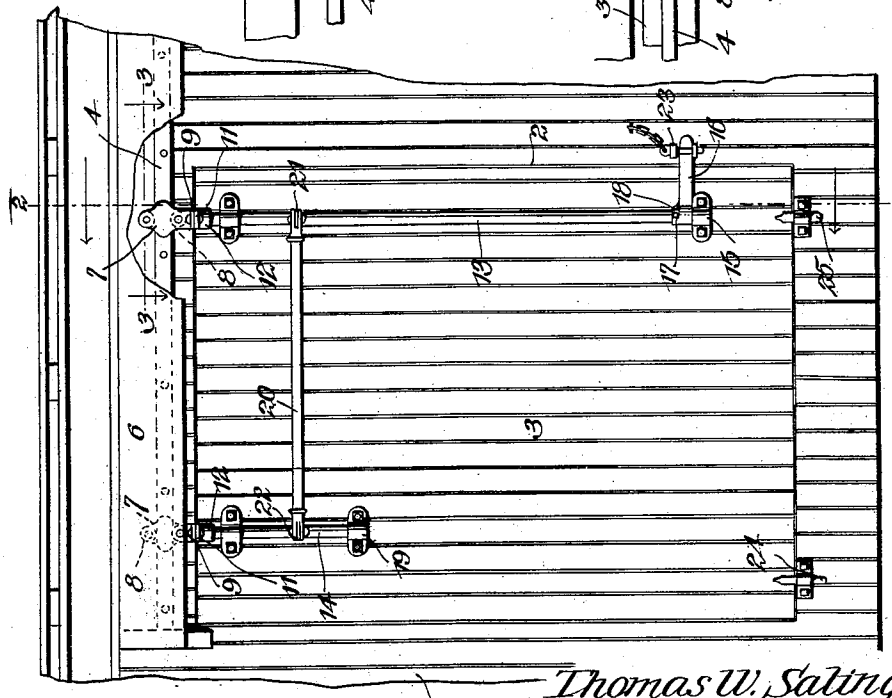

Fig. 1.

Witnesses
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 755,049. Patented March 22, 1904.

UNITED STATES PATENT OFFICE.

THOMAS W. SALING AND JAMES McKIEL, OF MARSHALL, TEXAS.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 755,049, dated March 22, 1904.

Application filed March 2, 1903. Serial No. 145,783. (No model.)

To all whom it may concern:

Be it known that we, THOMAS W. SALING and JAMES MCKIEL, citizens of the United States, residing at Marshall, in the county of Harrison and State of Texas, have invented a new and useful Car-Door, of which the following is a specification.

This invention relates to car-doors, and particularly to that class known as "flush doors," in which the door when in its closed position lies with its outer face flush with the outer side face of the car and which is moved laterally outward from the door-openings in order to clear the sides of the same before being moved along the overhead track to the open position, and has for its objects to produce a device of this character which will be simple of construction, efficient in operation, and one in which the door-operating mechanism will maintain the same firmly and securely in its closed position and swing the same freely and evenly outward from its socket at the beginning of the opening movement.

To these ends the invention comprises the details of construction and combination of parts more fully hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a car and its door having our improvements applied thereto. Fig. 2 is a vertical transverse section on the line 2 2 of Fig. 1 as viewed in the direction of the arrow. Fig. 3 is a horizontal section on the line 3 3 of Fig. 1 as viewed in the direction of the arrow. Fig. 4 is a similar view illustrating the door withdrawn from the doorway.

Referring to the drawings, 1 indicates the side of a car provided with a doorway 2, adapted to be closed by a door 3. These parts may all be of the usual or any desired construction and material, inasmuch as they constitute no part of the present invention.

In applying our invention we bolt or otherwise secure to the side of the car horizontally over the doorway a straight track 4, sustained distant from the side of the car by suitable blocks or castings 5. This track is protected, as usual, by an overhanging weather guard or shield 6 and is made of a length sufficient for the door 3 to travel fully beyond the doorway.

The door is suspended from the track 4 by means of hangers 7, carrying antifriction-rollers 8, suitably journaled in the hangers to bear and travel upon the upper and lower edges of the track. These hangers are each provided with a lateral outwardly-extending horizontal flange 9, to the outer end of which is pivoted, by means of a vertical axle 10, preferably in the form of a rivet, a horizontal arm or finger 11 of a head-block or member 12, one of which is fixed to the upper end of each of a pair of vertical rock-shafts 13 14. The rock-shaft 13, which will be termed herein the "main" rock-shaft, extends downward to a point near the bottom of the door, where its lower end is seated in a suitable casting 15, bolted or otherwise secured to the door, and is provided with a horizontal operating arm or lever 16, mounted loosely thereon. The lever is maintained on the shaft by means of the bearing 15 and is operatively engaged with the former by a stud or pin 17, fixed to the shaft and engaging a recess 18, formed in the lever-sleeve.

The secondary lever 14 is journaled in bearings 19 and is connected with and operated from the main shaft by means of a connecting-rod 20, pivoted to the arm of a sleeve 21 of the main shaft and similarly connected to the arm of a sleeve 22 on the secondary shaft, the sleeves 21 and 22 being fixed to their respective shafts in any suitable manner.

23 indicates a casting secured to the side of the car in the path of the lever 16 and provided with horizontal perforated ears, which receive a pin for engaging and locking the lever when the door is in its closed position.

24 25 indicate two pins which engage socketed castings for securing the lower edge of the door when the latter is closed.

Supposing the door to be in the closed position (illustrated in Fig. 1) and that it is desired to open the same, the pins 24 are first removed to free the door at its bottom. The lever 16 is then released and swung outward from the side of the car, which action rotates the main shaft 13, and through the medium of the connecting-rod 20 the shaft 14 is simul-

taneously rotated. This rotation of the shafts swings the head blocks or members 12, which are fixed to the upper end thereof, on their pivots 10 and draws the upper end of the door outward from the doorway, which movement of the upper end of the door causes its lower end to swing outward by gravity, thus freeing the door from its seat and moving it to a position vertically beneath the hangers, which are now free to travel on the track 4 to move the door to its open unobstructing position. It will of course be understood that the closing of the door is effected by a reversal of the above-described steps.

From the foregoing it will be seen that we provide a flush door for cars with an operating means which will maintain the same securely in its closed position and will during the opening operation move the door smoothly and evenly and with but little exertion on the part of the operator, and in attaining these ends we believe ourselves to be the first to provide a door with a pair of simultaneously-operated shafts eccentrically journaled for drawing the door positively from its seat. Hence it is to be understood that we do not limit or confine ourselves to the details herein shown and described, inasmuch as various minor changes may be made therein without departing from the spirit or scope of the invention.

Having thus described our invention, what we claim is—

The combination with a framework having a doorway, of a track or guide associated with the framework, a pair of hangers mounted for travel on the track or guide and each provided with a horizontal arm, a door sustained by the hangers and seated in the doorway to close the same, a pair of head-blocks eccentrically pivoted respectively to the horizontal hanger-arms, a pair of vertical shafts operatively connected with the door and fixedly associated respectively with the head-blocks, means for rotating one of the shafts, and a rod connecting the shafts whereby they are simultaneously rotated for moving the door directly outward transversely from the doorway.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

THOMAS W. SALING.
JAMES McKIEL

Witnesses:
W. O. HILL,
E. T. BEDELL.