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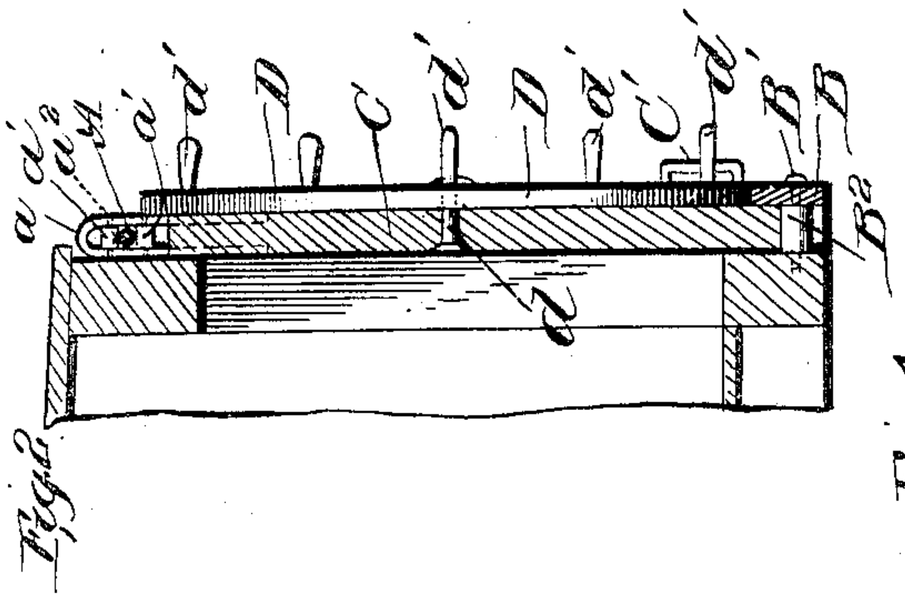
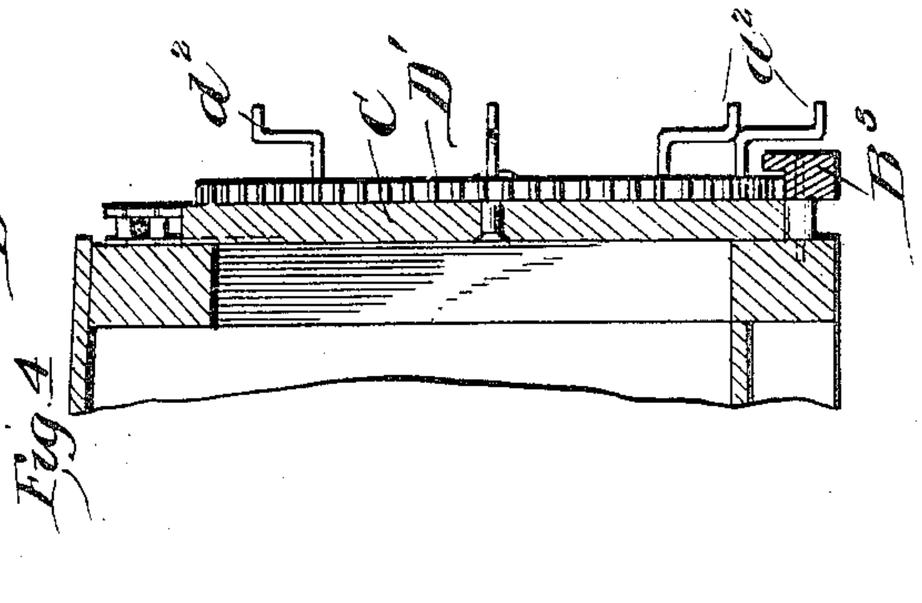
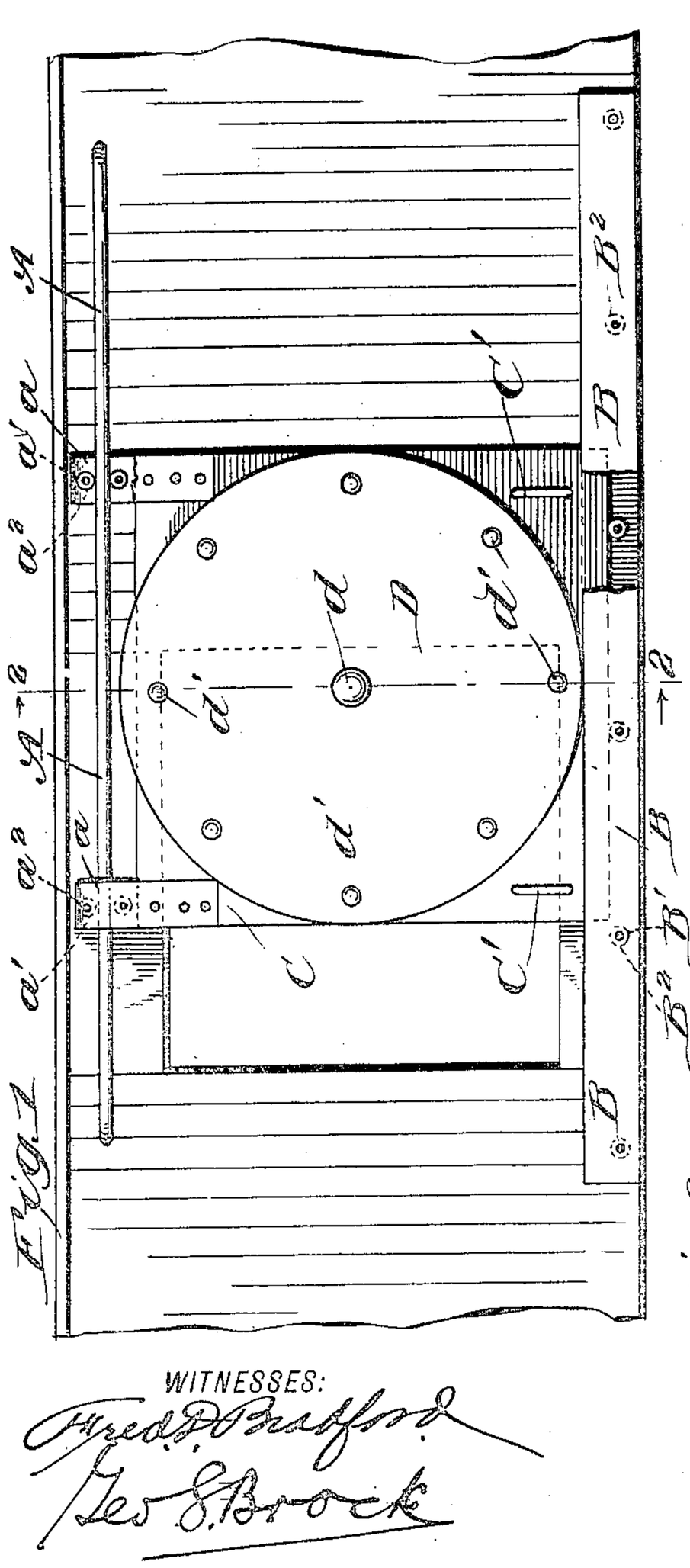
H. C. PERCY.

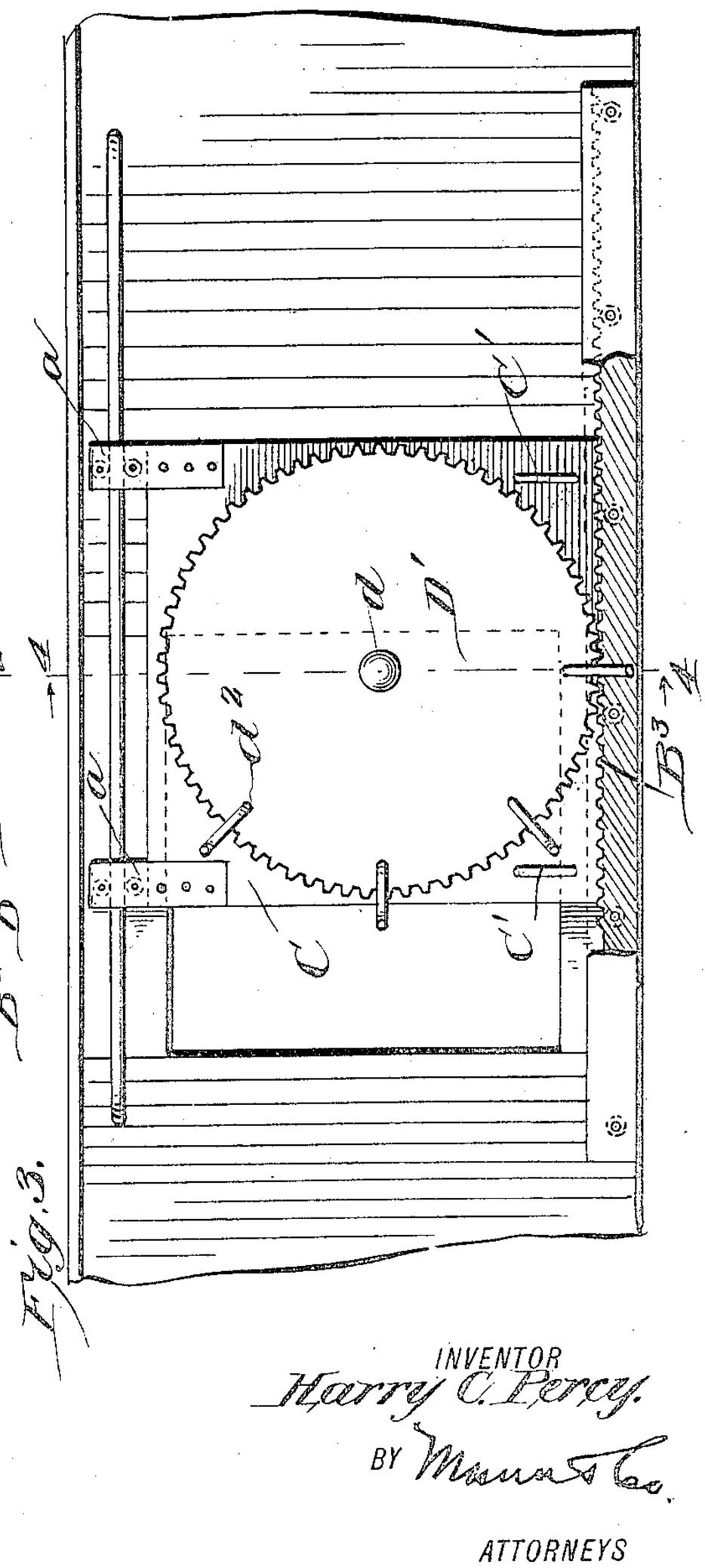
SLIDING DOOR HANGER AND MEANS FOR MOVING THE DOOR.

APPLICATION FILED SEPT. 30, 1904.









WITNESSES:

Fred. D. Bradford

Geo. S. Brock

INVENTOR

Harry C. Percy.

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

HARRY C. PERCY, OF NATCHITOCHES, LOUISIANA.

SLIDING-DOOR HANGER AND MEANS FOR MOVING THE DOOR.

No. 804,815. Specification of Letters Patent. Patented Nov. 14, 1905.

Application filed September 30, 1904. Serial No. 226,673.

To all whom it may concern:

Be it known that I, HARRY C. PERCY, a citizen of the United States, residing at Natchitoches, in the parish of Natchitoches and State of Louisiana, have invented a new and useful Improvement in Sliding-Door Hangers and Means for Moving the Door, of which the following is a specification.

My invention relates to an improvement in hangers for car-doors, and more particularly to the manner of hanging such doors and operating the same, whereby they may be more expeditiously and easily opened and closed than is possible with the ordinary method of hanging such doors in common use.

To these ends my invention consists, broadly, in the combination, with a door, of a device rotatively mounted on said door and engaging with its periphery a track, whereby its revolution will cause the door to travel forwardly or backwardly on said track.

My invention further consists in certain novel features of construction, arrangement, and combination of parts, as will be hereinafter fully described, and pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation showing the device as applied to a car with the door partly open. Fig. 2 is a vertical section on line 2 2 of Fig. 1. Fig. 3 is a side elevation of a modified form. Fig. 4 is a vertical section on line 4 4 of Fig. 3.

In carrying out my invention I secure to the outside of the car, just above the door-opening, a track A, which may be round or square in cross-section, as desired. This track extends beyond one side of the opening a suitable distance. At the bottom of the car I secure a rail B by bolts B′, on which are mounted loosely antifriction-rollers B^2. Said rail is set off from the side of the car a distance somewhat greater than the thickness of the door C. Said door has at each of its upper ends the straps *a*, which may be of one continuous piece, as shown in Fig. 2, or in two pieces, as shown in Fig. 4.

a′ a′ are antifriction-rollers secured between the straps by axles a^2, above and below the track A, forming hangers upon which the door may be run back and forth.

D represents a disk of wood or other material mounted at about the center of the outer face of the door on a journal-pin *d*. Said disk, which will generally be a complete circle, is of such thickness as to project beyond the face of the door and rest upon the rail or track B.

d′ represents handles which are secured to the outer face of the disk and project outwardly sufficiently far to be easily grasped by the hand.

C′ represents two handles, one at each lower corner of the door. The lower edge of the door lies below the level of the upper edge of rail or track B, so that said door cannot jump or swing outwardly, and the antifriction-rollers mounted in the straps at the top of the door above and below the hanger-track A prevent the door jumping up and down.

As shown in Fig. 3, the rail B may have the whole or a portion of its upper edge toothed to form a rack-rail B^3, or said rack-rail may be secured to the inner face of said rail B below its edge. Said rack-rail may be made quite thin, and the disk D′ may be made quite thin and have peripheral cog-teeth which will mesh with the teeth of the rack-rail B^3. In this form the handles d^2 are made to offset from the disk, so that they will clear the bottom rail when the disk travels on the rack-rail back and forth.

When it is desired to open or close the door by taking hold of one of the handles and rotating the disk in either direction, the disk will rotate and carry the door with it forwardly or backwardly, said disk being rotatively mounted at its center on the door, or by taking hold of one of the handles at the lower corners of the door and pushing in either direction the door will slide and through the medium of the disk revolving on the bottom rail and the rollers mounted in the straps at the top track cause the door to run in either direction with very little effort. The main weight of the door will be carried by the journal-pin upon which the disk is mounted, thus relieving the strain from the antifriction-rollers and top track and prevent any buckling, jumping, or jamming, such being a common fault with the ordinary car-door hangers now in use.

The car-door by virtue of being suspended from the upper rail A and its lower end being between the lower track B and the side of the car will be held snugly to the side of the car and form a tight closure for the door-opening.

While I have shown the disks as a complete circle, it is obvious that said disks may be

segments of sufficient periphery to roll on the bottom track or rail a sufficient distance to cover and uncover the door-opening.

The ends of the top track where it is secured to the side of the car will limit the travel of the door and prevent it being moved too far in either direction. It is obvious that the periphery may be and will usually be provided with a protective band or tire applied in any suitable manner.

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

1. In a door-hanger, the combination with a top rail, of a door, means for hanging and guiding the door on said rail, a disk rotatively mounted on the outer face of the door, and a bottom rail or track upon which the periphery of the disk bears and travels back and forth, to move the door in either direction.

2. In a door-hanger, the combination with a top rail secured to the side of a car, of a door movably suspended from said top rail, a disk rotatively mounted on the outer face of the door, a lower stationary track adjacent to the lower edge of the door, the periphery of the disk resting on and adapted to roll upon said lower track to cause the door to travel backwardly or forwardly.

3. In a door-hanger the combination with a stationary top rail or track, of a door, hanger-straps secured to the door whereby the same may be suspended from said track, antifriction-rollers so mounted in said straps as to engage said track, a disk rotatively mounted on the outer face of said door, an offset bottom rail or track adjacent to the lower edge of the door, antifriction-rollers upon which the lower edge of the door rests, the periphery of the disk resting upon the bottom rail or track, and means for rotating the disk to cause the door to travel backwardly or forwardly.

4. In a door-hanger, the combination with a top rail or track of a door suspended from said track, a disk having a toothed periphery and rotatively mounted on the outer face of the door, and a bottom rail or track adjacent to the lower edge of the door, said bottom rail having a toothed or rack surface upon which the periphery of the toothed disk rests, and means for causing the disk to roll upon the rack-rail and carry the door backwardly or forwardly.

5. In a door-hanger the combination with a door and guides between which said door slides, of a device rotatively mounted on the face of said door, and having its edge curved to form the arc of a circle whose center is coincident with the pivotal point of the said rotatively-mounted device said arc being at least equal to the width of the door-opening, and a track upon which said rotatively-mounted device travels.

6. In a door-hanger, the combination with a door, of a device rotatably mounted on said door and resting on a track adjacent to the lower edge of the door, and means for guiding the door in its horizontal movement whereby the revolution of said rotatively-mounted device will cause the door to travel forwardly or backwardly.

7. In a door-hanger, the combination with a door, of upper and lower stationary tracks, means for hanging the door to the upper track, and a disk having a circular periphery and rotatively mounted on the door with its periphery bearing on the lower track located adjacent to the lower edge of the door.

8. In a door-hanger, the combination with a door and guides between which said door slides, of a disk rotatively mounted on the door, a stationary track located adjacent to the lower edge of the door, said rotatively-mounted disk having its periphery bearing on said track.

9. In a door-hanger the combination with a top rail or track secured to a vertical wall, of a door, means for suspending said door from said track comprising a hanger-strap adapted to be secured to the upper edge of the door and antifriction-rollers mounted therein to bear on the upper and lower faces of said track, a disk rotatively mounted on the outer face of the door, a bottom rail or track secured to said vertical wall and offset therefrom adjacent to the lower edge of the door, antifriction-rollers mounted between the vertical wall and the bottom rail or track, upon which the lower edge of the door rests, the periphery of the disk resting upon the bottom rail, and means for rotating the disk to cause the door to travel forwardly or backwardly.

HARRY C. PERCY.

Witnesses:
J. H. STEPHENS,
JAMES MCCOOK.