

(No Model.)

E. L. PHIPPS.
CAR DOOR.

No. 515,248.

Patented Feb. 20, 1894.

Fig. 1.

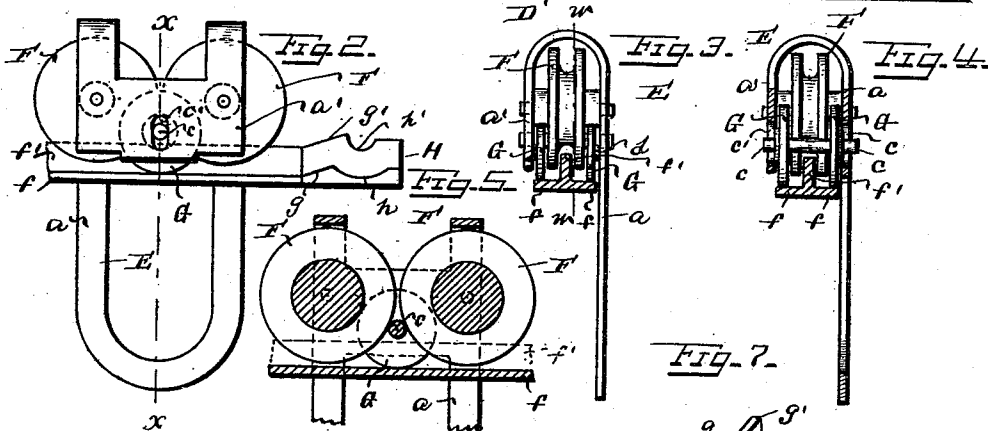
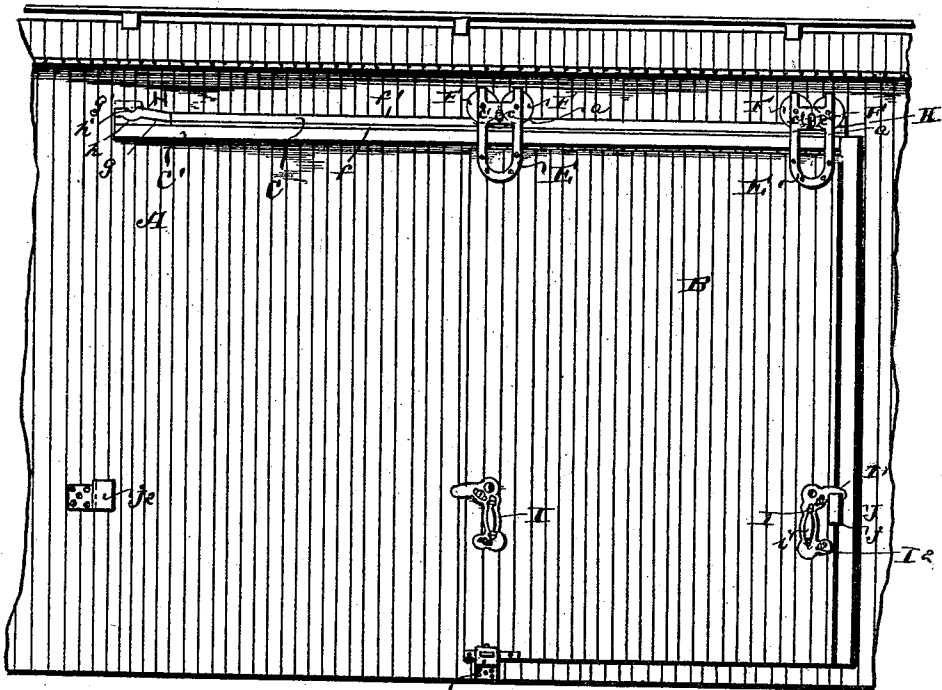


Fig. 6.

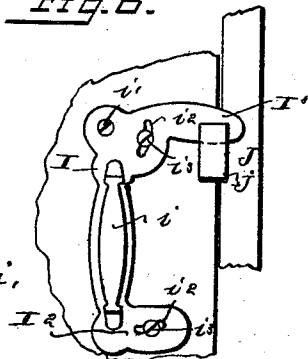
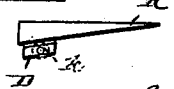


Fig. 8.



WITNESSES

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EDWARD L. PHIPPS, OF MILFORD, MICHIGAN.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 515,248, dated February 20, 1894.

Application filed December 31, 1892. Serial No. 456,885. (No model.)

To all whom it may concern:

Be it known that I, EDWARD L. PHIPPS, a citizen of the United States, and a resident of Milford, in the county of Oakland and State of Michigan, have invented certain new and useful Improvements in Car-Doors; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side elevation of a part of a car. Fig. 2 is a rear view of one of the hangers. Fig. 3 is an end view. Fig. 4 is a vertical section on line $x-x$, Fig. 2. Fig. 5 is a vertical longitudinal section on line $w-w$, Fig. 3. Fig. 6 is an enlarged detail view of the latch lever. Fig. 7 is a perspective detail of the inclined part of the track, and Fig. 8 is a detail of the wedge and bracket.

This invention has relation to certain new and useful improvements in doors for freight cars, and it consists in the novel construction and combination of parts, all as hereinafter described and pointed out in the claims.

The objects of the invention will hereinafter appear.

Referring to the accompanying drawings, the letter A designates the side portion of an ordinary car, to which is applied my improved door B. Said door is designed to work upon a single overhead track C, secured to the car near the top thereof upon a cleat C', the lower edge of the door being supported upon a small bracket D, which also acts as a guide therefor.

E, E, designate my improved hangers, one of which is secured to each upper corner of the door. Said hangers comprise each a bracket, having a body portion a , which is secured to the door, and projects above the upper edge thereof, and an upper portion a' , which is bent over toward the car and downwardly into a position parallel with the body of the bracket. Journalled between the body a , and the bent parallel portion a' , are two anti-friction rollers F, F, placed edge to edge and hav-

ing each a deep grooved periphery. Journalled underneath said rollers F, F, and centrally thereof, is a short shaft c , having slotted bearings c' in the two portions a, a' , of the bracket, and carrying near each end, inside the bearings, a roller disk G. On the outside face of each of said disks is a circular hub or boss d , which holds the disk away from the hanger. The rollers F, F, are so placed that they are in bearing contact with the shaft c , between said disks and act as anti-friction rollers therefor. The track C is formed with the lateral flanges f, f and with a central vertical flange f' . The lateral flanges are traveled by the two roller disks G, G, and the central flange lies within the grooves of the rollers F, F, but does not contact therewith, said rollers serving as guides, and as above stated, as anti-frictional bearings for the shaft c .

In order to lock the door in either opened or closed position, I place at each end of the track a block H, which forms a continuation of the track, and is similar thereto, with the exception that the lateral and horizontal flanges g, g , and g' are higher than the flanges f, f , and f' ; and said flanges g, g , and g' at the ends nearest the end of the tracks are inclined as shown, so that the rollers may travel readily onto the higher portions. In said flanges g, g , and g' are formed accurate concavities h, h , and h' , the roller disks G, G, being designed to drop into said concavities h, h , and the central portion of the shaft c , into the concavity h' . The lowest portion of each of said concavities is about in the same plane as the respective portion of the track.

I designate the latch lever of the door, which consists of a vertical portion carrying the handle i , and the two arms I', I', which project toward the cleat J on the car, which carries the catch lug j for said latch. The latch lever is pivoted to the door at i' at its upper corner portion, and in each arm I', I', is a slot i^2 , which is engaged by a pin i^3 in the door, so that said latch is capable of a slight rocking movement. The arm I' constitutes the latch proper, and when the door is closed, engages the lug j . A similar latch lever is attached to the rear edge of the door, and when the door is open engages a lug j^2

on the car, said lug also serving as a stop for the door. Said latch levers I serve to hold the door against movement away from the car. As the door approaches its completely opened or closed position, the roller disks of the respective hangers ride up the inclined portion of the block H, throwing the door upwardly with its latch lever in position to engage the catch lug. The rollers then drop into the concavities in the said block and the door is secured in its open or closed position. In order to release this lock, it is necessary to rock the latch lever in such a manner that its latch arm takes a bearing on the catch lug, and elevates the door sufficiently to permit the rollers to pass out of the concavities and down the inclines.

In order to hold the door close to the car as it is closed, and at the same time avoid friction, I usually place a small wedge-shaped piece K, on the lower rear corner portion of the door, which contacts with a small anti-friction roller *k* on the bracket D.

It will be apparent that a door hung in the manner above described will operate with very little friction, and will be securely held in its open or closed position, the simple operation of lifting the latch lever releasing the lock.

I reserve the right to make a future separate application for the form of hanger herein shown and described.

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

1. In a car door, the combination with the sliding door, its track and the hangers supporting said door and traveling on said track, of the short raised inclined portions at each end of said track and forming continuations thereof, the depressions in said raised portions to engage with the hangers, and means for throwing said hangers out of engagement with said depressions, substantially as specified.

2. The combination of a sliding door, its single overhead track, the hangers suspending said door, the rollers in said hangers traveling said track, a short block at the end of the track and having an inclined bearing surface extending above the level of the

track and forming a continuation thereof, a concavity in said block adapted to engage the hanger roller, and means for throwing said roller out of engagement with said concavity, substantially as specified.

3. In a car door, the combination with a hanger, having the grooved anti-friction rollers F, F, journaled therein, the shaft *c* journaled centrally of and below said rollers in slotted bearings, the roller disks on said shaft, and the hubs or bosses having bearing contact with said anti-friction rollers, of a track having lateral horizontal flanges traveled by said roller disks, and a central vertical flange lying within the grooves of said anti-friction rollers, substantially as specified.

4. In a car door, the combination with the horizontally sliding door, its single track, the hangers and the track extensions forming locks for said hangers, of the latch levers pivoted to said door and having a limited rocking movement, and the lugs with which said latch levers engage, substantially as specified.

5. The combination with a car door, and its single overhead track, of a hanger at each upper corner of said door, said hangers having each an anti-frictional bearing on said track, the raised continuations at each end of said track, means on said continuations for engagement with the hangers to normally prevent their movement, a pivoted latch lever at each edge of the door, and lugs for engagement with said latch levers, said latch levers operating to release said hangers, substantially as specified.

6. The combination with the hangers having the grooved anti-friction rollers, the shaft hung in slotted bearings and in contact with said rollers, and the roller disks on said shaft, of the track having the lateral horizontal flanges traveled by said roller disks, the central vertical flange and the blocks forming raised continuations of said track, said block having the inclines and the concavities, substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD L. PHIPPS.

Witnesses:

PHILIP C. MASI,

GEO. H. PARMELEE.