A. G. SAFFORD.

Car Door.

No. 49,308. Patented Aug. 8, 1865.

Fig. 1.

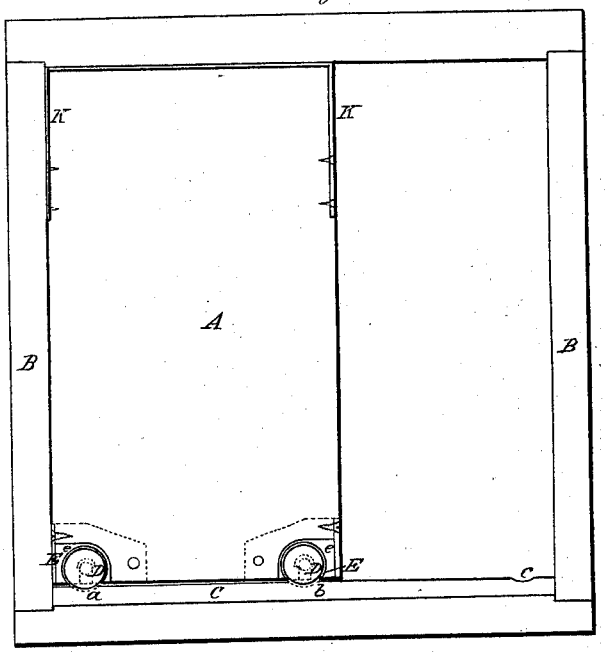


Fig. 2.

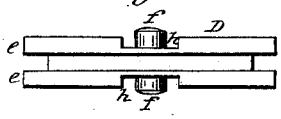


Fig. 4.

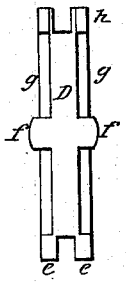


Fig. 3.

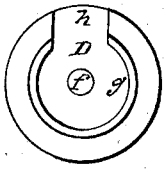


Fig. 5.

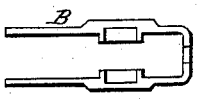


Fig. 6.

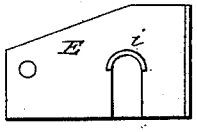
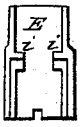


Fig. 7.



Witnesses:

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Frederick Curtis

Inventor:

Albert A. Safford

by his attorney

R. H. Eddy

UNITED STATES PATENT OFFICE.

ALBERT G. SAFFORD, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN SLIDING DOORS OF RAILWAY-CARS.

Specification forming part of Letters Patent No. **49,308**, dated August 8, 1865.

To all whom it may concern:

Be it known that I, ALBERT G. SAFFORD, of Boston, in the county of Suffolk and State of Massachusetts, have made an invention of certain new and useful improvements having reference to sliding doors, and particularly for such as used in railway-carriages; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 denotes a longitudinal section of a door and its frame or case as provided with my invention. Fig. 2 is a top view, and Fig. 3 a side elevation, and Fig. 4 a vertical and transverse section, of one of the supporting wheels or rollers of such door. Fig. 5 is an under-side view, Fig. 6 a longitudinal section, and Fig. 7 a transverse section, of the wheel-case.

In the said drawings, A denotes the sliding door, and B its frame, the latter being provided at its lower part with a metallic rail, C, which has three notches, *a b c*, formed within it, in manner as shown in Fig. 1. These notches are to receive the two wheels D D, by which the door is supported on such rail, the notches serving to hold the door either closed or open. Each of the said wheels has its journals so applied to the door as to enable the door to rise to the extent of its upward movement without lifting the wheels off the rail. To this end (as well as for the easy application of the wheel to, or its removal from, the door, as circumstances may require) the said wheel and the bearings of its journals are constructed in manner as represented in the drawings. The wheel is grooved around its periphery, and has two flanges, *e e*, to keep it in place on the rail. Furthermore, it has a journal projecting from each side of it, each journal being circumscribed by a circular space, *g*, formed within the wheel, and provided with a passage, *h*, leading radially out of it, in manner as shown in Figs. 2, 3, and 4.

Each wheel is supported or placed within a case, E, which is fastened to the door. The opposite inner edges of this case are provided with arched bearings *i i*, for receiving the journals of the wheels and supporting the door thereon.

The passages *h h*, leading out of the annular spaces *g g*, should be wide enough to enable the arched bearings *i i* to pass through them and into the said spaces *g g*, in order that the journals of the wheel may be brought to bear against the arched bearings. The annular space from its circumference to the journal is of a width greater than the thickness of the bearing *i*, the same being for the purpose of enabling the wheel to remain down on the rail while the door may be in the act of being raised during an attempt to either open or close it.

By allowing the wheel to remain on the rail during any lifting of the door there will be no danger of the wheel getting off the rail, as the flanges of the wheel, by not rising above the rail, keep the wheel thereon.

The peculiar construction of the wheel enables it to be readily applied to or removed from the door, as circumstances may require.

At each upper corner of the door there is a spring, *k*, formed as shown in the drawings, the said spring being fastened at or near its lower extremity to the door. The upper end of the spring bears against the door-frame. The object of these springs is to prevent the door from binding at its top in the frame while such door may be in the act of being slid along within the frame for being either opened or closed. While the door may be in movement the spring, in consequence of its elasticity, will be moved more or less by the friction which may result from the movements of the upper part of the spring against the door-frame. This operation of the spring will prevent the door from "sticking" in the frame and enable it to run easily therein.

What I claim as my invention is as follows, viz:

1. The improved rail as made with the notches *a b c* for reception of the wheels of the door and to hold the door either open or closed.

2. The application of each of the wheels to the door in such manner that while the door may be raised in its frame and with respect to the rail the wheels may rest in contact with the top surface of the rail.

3. The combination and arrangement of the relieving friction spring or springs *k* with the door, and to operate therewith and with the door-case, substantially in manner as described.

A. G. SAFFORD.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.