No. 844,585. PATENTED FEB. 19, 1907.

E. L. FORSGREN.

CAR VESTIBULE.

APPLICATION FILED OCT. 2, 1906.

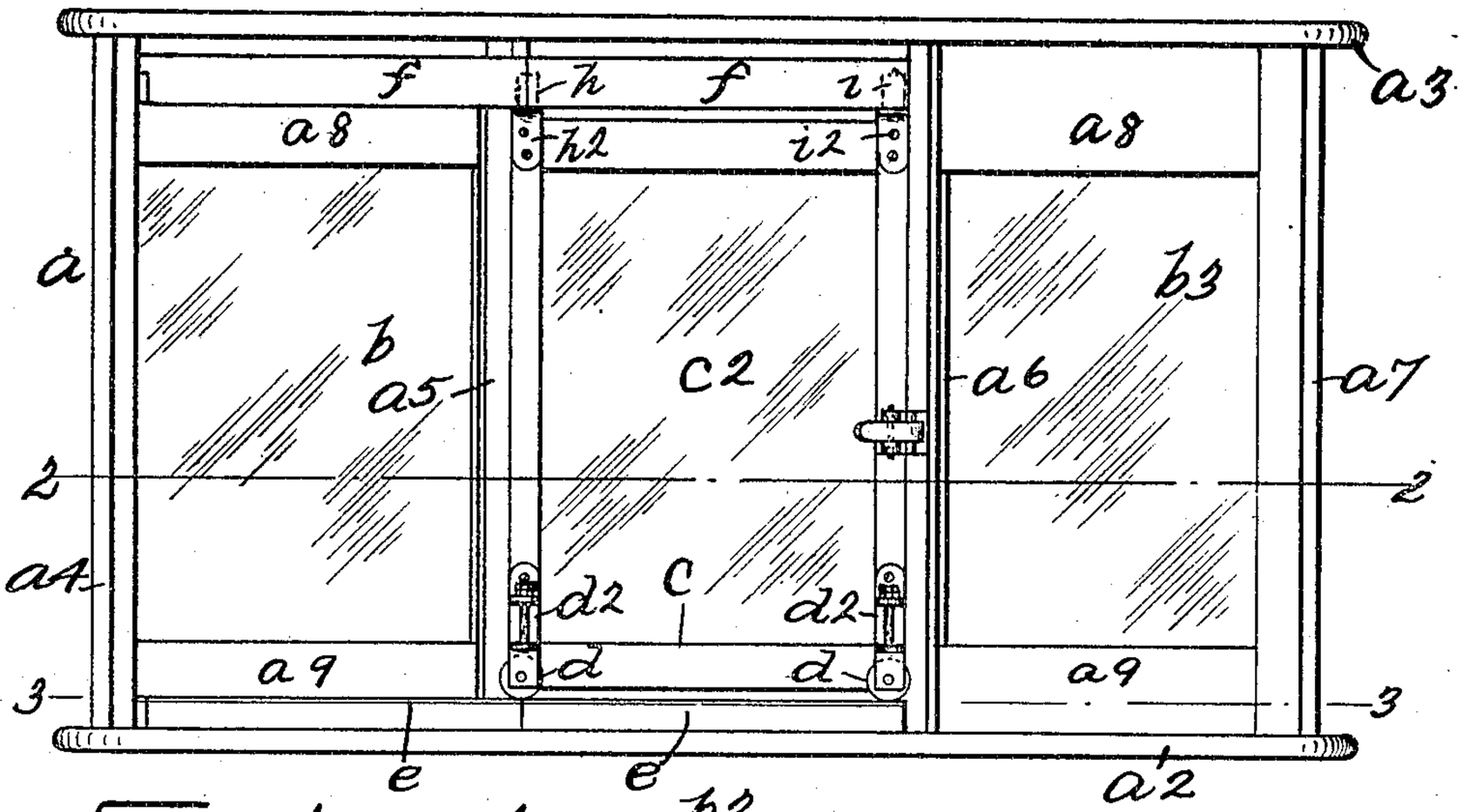



Fig. 1.

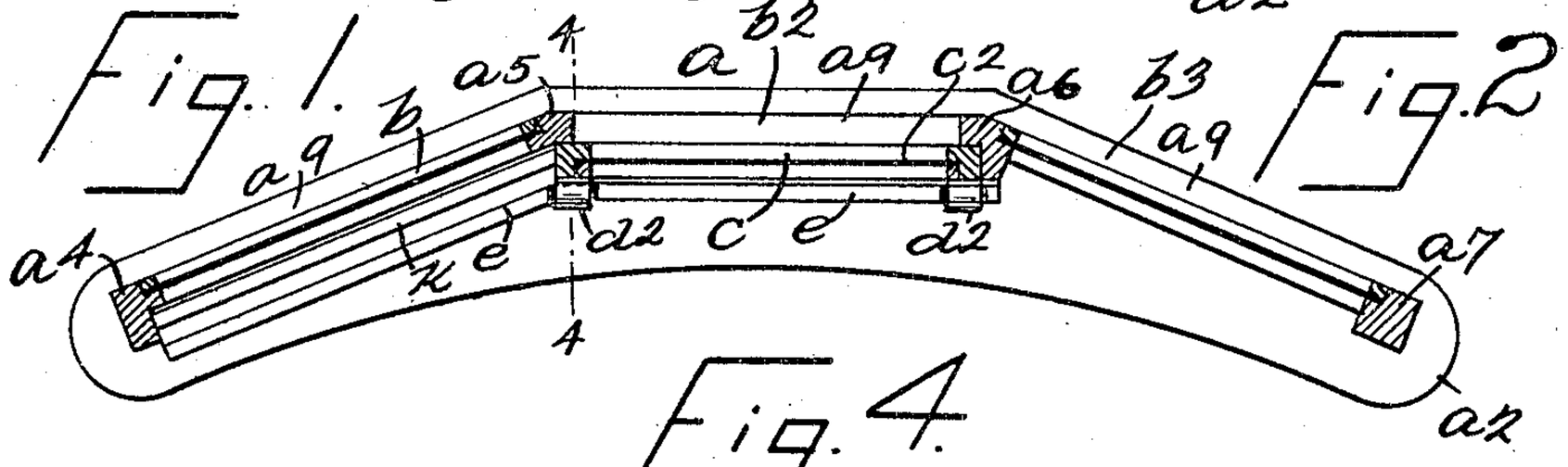



Fig. 2

Fig. 4.

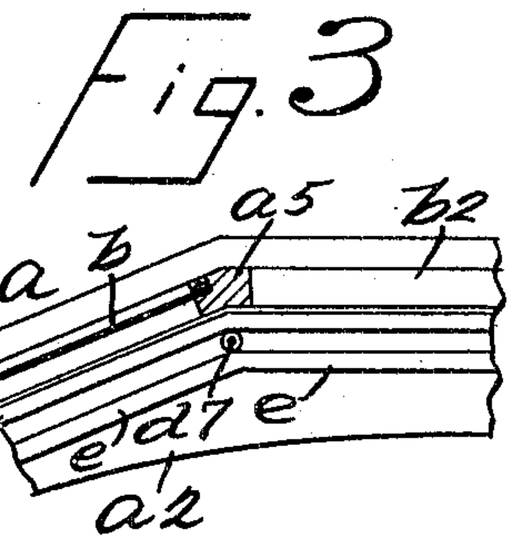



Fig. 3

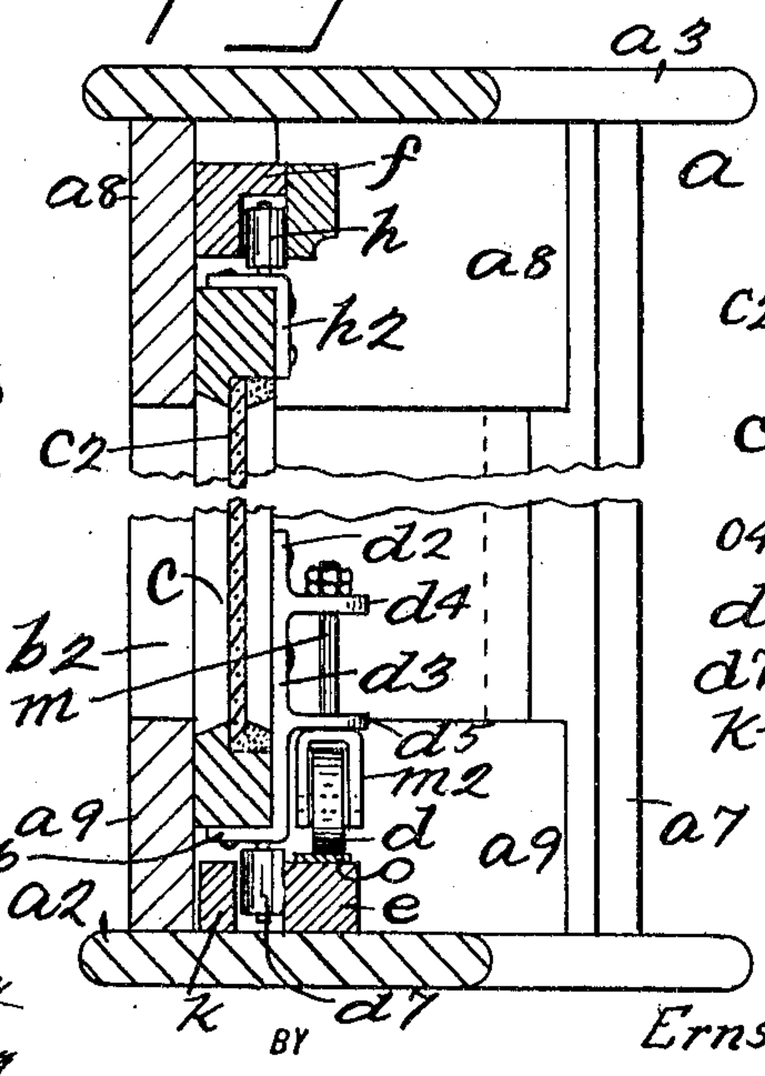
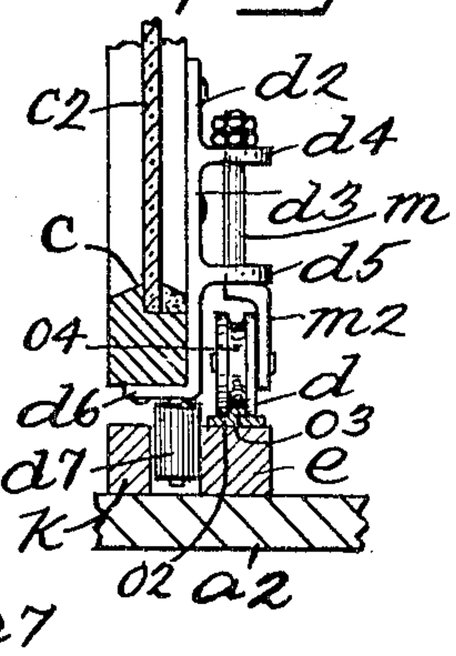



Fig. 5




WITNESSES

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## CAR-VESTIBULE.

No. 844,585. Specification of Letters Patent. Patented Feb. 19, 1907.

Application filed October 2, 1906. Serial No. 337,099.

*To all whom it may concern:*

Be it known that I, ERNST L. FORSGREN, a citizen of the United States of America, and residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Car-Vestibules, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to car-vestibules, and is an improvement over that shown and described in Patent No. 805,326, November 21, 1905; and the object of this invention is to provide a movable sash in a car-vestibule which will not bind nor be detached from its supports, a further object being to provide such a vestibule in which the said movable sash may be so closed as to entirely exclude the wind and air between the same and the frame of said vestibule, and a still further object being to provide attachments of a specific construction in order to accomplish these results, which are simple in construction and operation and comparatively inexpensive.

My invention is fully described in the following specification, of which the accompanying drawings form a part, in which the separate parts are indicated by suitable reference characters in each of the views, and in which—

Figure 1 is an inside view of a car-vestibule constructed according to my invention. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a partial section on the line 3 3 of Fig. 1. Fig. 4 is a section taken on the line 4 4 of Fig. 2, and Fig. 5 is a fragmentary view of a modification of the construction shown in the preceding figures.

In the drawings forming a part of this application I have shown a car-vestibule $a$, comprising a base $a^2$, a top member $a^3$, and a plurality of upright posts $a^4$, $a^5$, $a^6$, and $a^7$, said uprights being united by means of transverse members $a^8$ and $a^9$, thereby forming open spaces $b$, $b^2$, and $b^3$, and, as clearly shown, the spaces $b$ and $b^3$ are each provided with panes of glass, forming windows.

Movably mounted directly to the rear of the space $b^2$ is a sash $c$, provided with a sheet of glass $c^2$, and the sash $c$ is provided with rollers $d$, mounted in suitable brackets $d^2$, upon which said sash is movable, the said rollers being adapted to move over suitable tracks $e$, secured to the base $a^2$, and, as will be seen by reference to Fig. 2, the vestibule is composed of windows arranged at an angle to each other, and the tracks $e$ are arranged substantially parallel to the window $b$, as well as to the open space $b^2$.

Secured to the inner sides of the windows $b$ and $b^2$ and at the top of the vestibule is a guide $f$, which is in line with the tracks $e$ at the bottom of said vestibule, and in the guide $f$ are two rollers $h$ and $i$, secured to the sash $c$ by means of suitable brackets $h^2$ and $i^2$, and in this manner the upper part of the sash $c$ is always guided in its movement, but at the same time held against accidental displacement or removal, as will be readily understood.

The brackets $d^2$ comprise a plate $d^3$, provided with two arms or projections $d^4$ and $d^5$ and with an angle-piece $d^6$, turned under the sash $c$ and to which is rotatably secured a roller $d^7$, which operates upon the inner side of the tracks $e$ and on the outer face of a guide-strip $k$, arranged parallel to the tracks $e$ and in line with the guide at the top of the vestibule, as shown at $f$.

Secured in the projections $d^4$ and $d^5$ of the brackets $d^2$ is a rod $m$, which carries at its bottom end a yoke $m^2$, in which the rollers $d$ are mounted, and it will be seen from this construction that the sash $c$ is freely movable upon the rollers $d$ and is guided in its movement by the rollers $h$, $i$, and $d^7$, moving in the guides described.

By reference to Fig. 3 it will be seen that when the sash $c$ is entirely closed, so as to be held by the catch $n$, the roller $d^7$ of the bracket $d^2$ at the outside end of the sash is just at the angle formed in the tracks $e$ and guide $k$, and when the sash is moved to the left the guide $k$ immediately carries the sash $c$ away from the post $a^5$ and toward the post $a^4$, which is recessed to receive it and which serves as a stop therefor, and in practice I prefer to place the roller $d$ at the left of the sash $c$ at a very slight angle to the sash, the better to accommodate it to the direction of movement of the sash; but this is not essential, as the roller is freely rotatable at all times.

In the form of construction shown in Figs. 1 to 4, inclusive, I place a metal strip $o$ upon the tracks $e$, which serves as the real track for

the rollers *d;* but in Fig. 5 I have shown a slight modification in which the metal strip $o^2$ is provided with a rib $o^3$, which enters a groove $o^4$, formed in the rollers *d,* and in this form of construction I prefer to have the rod *m,* as well as the yoke at the bottom thereof, rotatable, so that the roller *d* may adjust itself to the direction of the tracks *e,* and, as will be seen, in this event the rollers $d^7$ may be dispensed with.

It will also be evident that various changes in and modifications of the construction shown and described may be made within the scope of the invention without departing from the spirit thereof or sacrificing its advantages, and, with this reservation,

What I claim as new, and desire to secure by Letters Patent, is—

1. In a car-vestibule, comprising a plurality of plane surfaces and a sash movable from one to another thereof, brackets at the bottom of said sash, a roller thereon and rotatable upon a vertical axis, and a supplemental roller rotatable on both a vertical and a horizontal axis.

2. In a car-vestibule, comprising a plurality of plane surfaces and a sash movable from one to another thereof, guides at the top and bottom of said vestibule, rollers mounted upon vertical shafts operating in said guides and secured to said sash and supporting-rollers at the bottom of said sash rotatable both in a vertical and in a horizontal plane.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 1st day of October, 1906.

ERNST L. FORSGREN.

Witnesses:
R. M. ROSENBERG,
C. F. SJOBERG.