A. A. FREEMAN.

ANTI-FRICTION ROLLERS FOR SLIDING-DOORS.

No. 193,647. Patented July 31, 1877.

FIG I

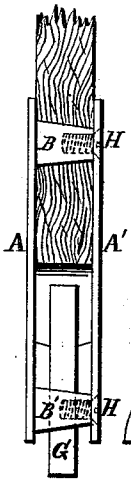


FIG II

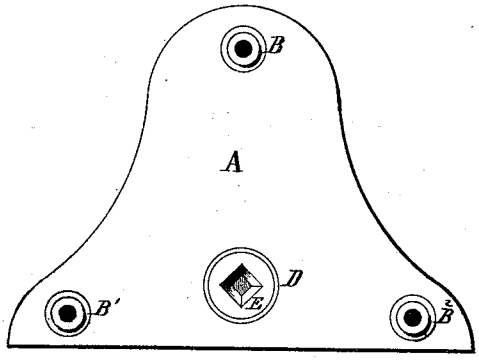


FIG III

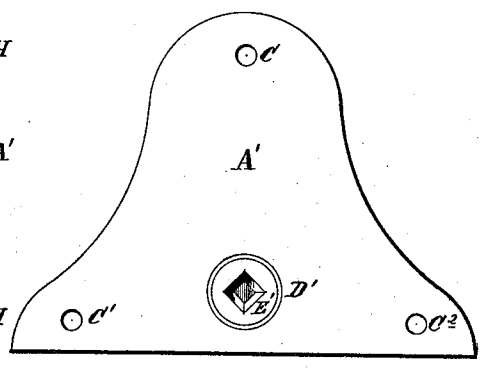


FIG IIII

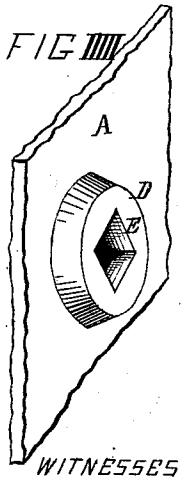


FIG IIIII

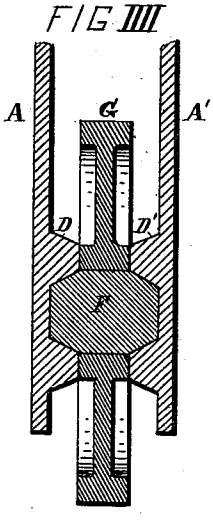
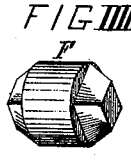


FIG IIIIII



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UNITED STATES PATENT OFFICE.

ALBERT A. FREEMAN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO SAMUEL L. GARRETT, OF SAME PLACE.

IMPROVEMENT IN ANTI-FRICTION ROLLERS FOR SLIDING DOORS.

Specification forming part of Letters Patent No. 195,647, dated July 31, 1877; application filed June 4, 1877.

To all whom it may concern:

Be it known that I, ALBERT A. FREEMAN, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Car-Doors, which improvement is fully set forth in the following specification and accompanying drawing.

My invention relates to a cheap and simple device for connecting the anti-friction wheels or rollers to the lower edge of sliding doors; and, also, to obviate a difficulty heretofore experienced in sliding doors, where the weight of the doors causes an uneven wear on the lower side of the axle, and allows them to drop down and work unsatisfactorily.

My present invention consists of two side plates, held in position on each side of the door by means of tapering posts or studs formed on one of them, which project through suitable openings in the wood and support the plate on the opposite side, the plates being also furnished with bosses on their inner sides, in which sockets are formed to support the ends of a reversible axle, which may be readily changed when the lower side wears away by simply removing one of the side plates.

Figure 1 is a vertical edge view of my invention, showing it applied to the lower portion of a sliding door. Figs. 2 and 3 are plan views of the side plates detached. Fig. 4 is a vertical section of one of the anti-friction wheels or rollers and a portion of the side plates. Fig. 5 is a perspective view of a part of one of the side plates, showing the socket formed for the reception of the reversible axle. Fig. 6 is a perspective view of the reversible axle or spindle for supporting the anti-friction wheels or rollers.

A and A′ are side plates, made in the shape as shown in Figs. 2 and 3 of the drawing. B, B^1, and B^2 are tapering posts or studs formed on the inside of the plate A, as shown in Figs. 1 and 2. C, C^1, and C^2, Fig. 3, are circular openings made in the plate A′, directly opposite to the posts on the plate A. D and D′ are bosses or projections formed on the inner sides and near the lower edge of the plates A and A′. E and E′ are sockets, square in shape, made in the said bosses, to receive the squared ends of the axle or spindle F and prevent its turning. G is an anti-friction wheel supported on the axle or spindle F, and resting on a rail secured to the floor.

The operation of securing the plates in position is exceedingly simple, requiring very little labor. The plate A′ is first held against the door in proper position, and the openings C, C^1, and C^2 marked on the wood, after which the plate is removed and holes bored to receive the posts or studs on the plate A. One end of the axle F is then inserted in the socket E and the wheel G placed over it, (the door being cut away to accommodate the wheel,) after which the plate A′ is held in position, with the opposite end of the axle resting in the socket E′. The screws H, Fig. 1, are then inserted through the openings C, C^1, and C^2, and screwed into the ends of the posts or studs, which are drilled and tapped to receive them.

The posts or studs, as above mentioned, are made tapering. This is done in order to facilitate casting and to jam and fit closely in the openings in the door through which they pass. The posts should also be made slightly shorter than the thickness of the door, so that when the opposite plate is screwed up the two plates will be firmly clamped against the sides of the door.

It will be observed that the posts or studs will answer the purpose of long screws or bolts for holding the plates, and that they will hold the plates firmly without working loose or rattling.

When the lower side of the axle F wears away, caused by the weight of the door, the plate A′ may be readily removed and the axle shifted a quarter of a turn, which will change the wearing-surface. In this position the axle will be held by the square ends fitting in the corresponding sockets E and E′.

My invention is applicable to car as well as other sliding doors, and may be adapted to hanging sliding doors by simply reversing the position of the side plates, so that the anti-

friction wheels will project above the upper edge of the door and support the same on the overhead rail.

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

The combination, with the side plates A and A′, tapering posts or studs B, B^1, and B^2, screws H, and anti-friction wheel or roller G, of the solid axle or spindle F, provided with tapering polygonal ends, and supported in corresponding sockets E and E′, formed in the bosses D and D′, substantially as set forth.

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Witnesses:

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