No. 676,284. Patented June 11, 1901.

J. M. TWISS & F. H. COOK

DOOR.

(Application filed Apr. 4, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

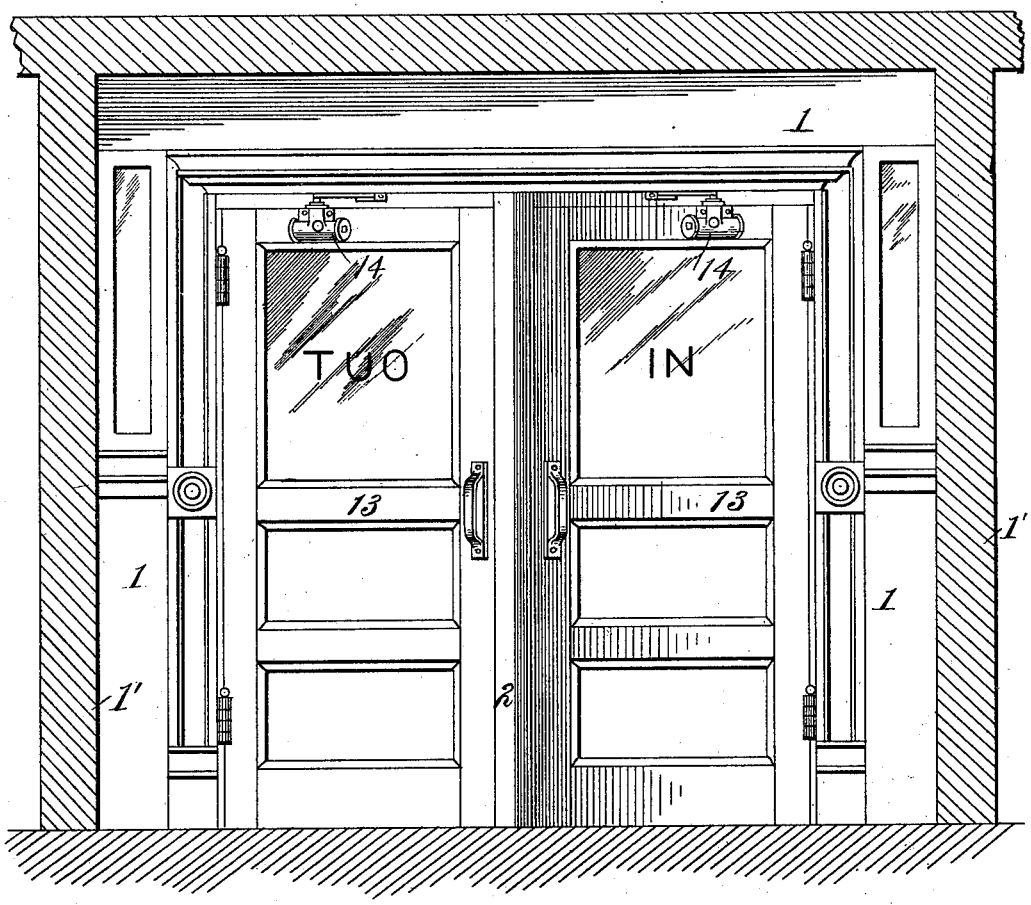

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Fig. 2.

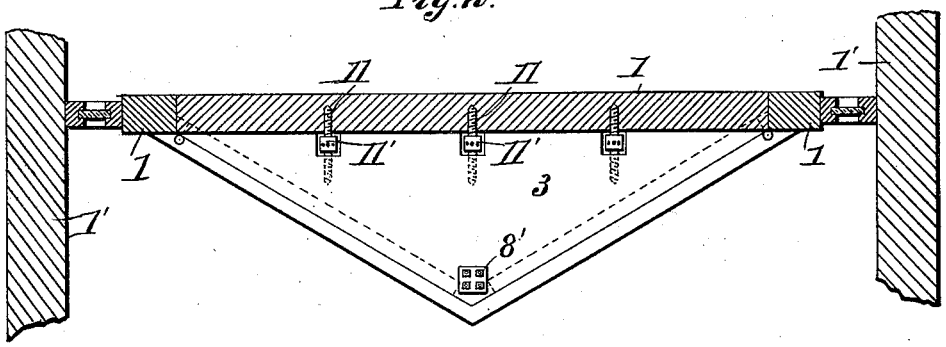


Fig. 3.

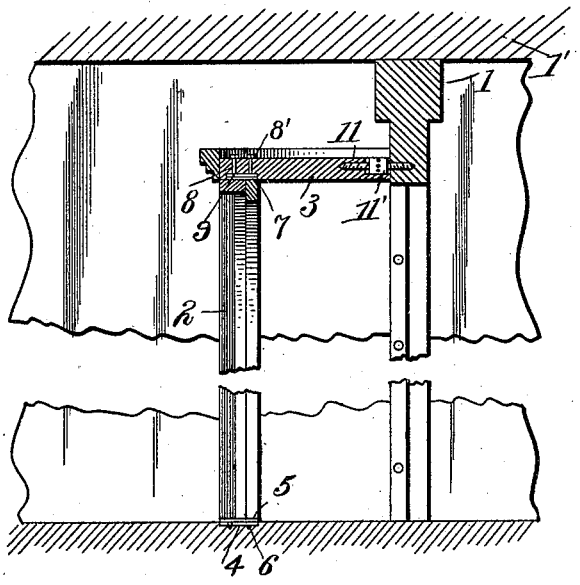
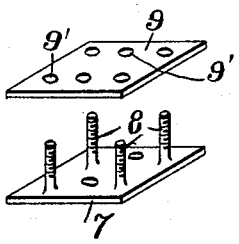


Fig. 4.



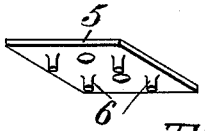
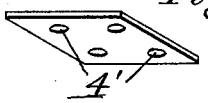


Fig. 5.



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UNITED STATES PATENT OFFICE.

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DOOR.

SPECIFICATION forming part of Letters Patent No. 676,284, dated June 11, 1901.

Application filed April 4, 1901. Serial No. 54,329. (No model.)

To all whom it may concern:

Be it known that we, JAMES M. TWISS and FERDINAND H. COOK, citizens of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Doors, of which the following is a specification.

This invention relates to improvements in doors; and its object is to provide a door which will not be violently closed by a strong wind or draft.

In large buildings where there is generally a strong indraft, particularly when the wind is directed against the door from the outside, ordinary doors placed in the entrance corridor or passage are apt to slam with such force as to break the glass even when door-checks are provided. This has been obviated in some cases by the use of revolving doors; but these are objected to, for the reason that they are hard to push and are liable to catch the garments of the person entering same. We have found that by placing a swinging door in the entrance corridor or passage of the building and arranging means to stop it in closed position obliquely to the corridor we can almost wholly obviate the slamming effect of a strong draft, so that with the use of an ordinary door-check we can insure that violent closure of the door with consequent breakage will not occur.

Our invention consists in a door placed with its frame at such an angle in the corridor or passage that when the door is closing it is caught and stopped by the frame before the violent pressure due to broadside impact of the wind can take place. If the pressure on an ordinary door under a strong draft be observed, it will be found that as the door is closing from a wide-open position the first part of the movement is accompanied by but little pressure, which gradually increases; but when it is about two-thirds closed the pressure suddenly increases, causing a violent closure of the door. By catching or stopping the door before this sudden increase of force we are enabled to insure gentle closure of the door and prevent breakage.

Our invention further comprises certain details of construction, as hereinafter set forth.

In the accompanying drawings, forming part of this specification, Figure 1 is a front elevation of a set of doors embodying our invention, showing the walls of the corridor in section. Fig. 2 is a plan view thereof, showing the walls and the main door-jamb in section. Fig. 3 is a vertical section perpendicular to the main door-jamb. Figs. 4 and 5 are detail views.

1 represents the main door frame, jamb, or wall to which our invention is to be applied, said wall extending across or being located in a corridor or passage, whose walls are indicated at 1′. A post 2 is secured opposite the middle of the door-space in said frame or wall 1 and a little in front of or removed from same, and a top board or frame 3 is secured to this post and to the lintel of the main door-frame. We prefer to attach these parts in the manner shown, namely, as follows: A plate 4 is sunk in the floor in the position to be occupied by the post 2, said plate being cemented in or otherwise secured. Another plate 5 is fastened to the bottom of post 2 and has dowel-pins 6, adapted to engage holes 4′ in the plate 4, these parts being shown more in detail in Fig. 5. On the top of post 2 is secured another plate 7, provided with projecting bolts or screw-pins 8, which are adapted to pass through holes 9′ in a plate 9, secured to the top frame 3, and to also pass through the said top frame, nuts 8′ above said frame fastening the parts together. At the rear side of edge of top frame 3 are a number of screw devices 11 in the form of turnbuckle-screws, with reverse threads on opposite ends, one of the ends screwing into the top frame 3 and the other into the top or lintel of the main door-frame 1. A wrench-collar or capstan-ring 11′ in the middle of this screw device enables it to be turned by a suitable wrench or pin to bring the parts together, the frame 3 being notched, as at 3′, to receive these collars.

The post 2, top frame 3, and main door-jamb 1 at each side form a supplementary frame or stopping means for the door proper, (indicated at 13,) which is of any usual construction and is hinged to the jamb 1 at each side, and the top frame 3 is triangular in shape, so that the frames for the doors 13 thus provided are arranged at an angle to the main wall or doorway and are consequently oblique to the corridor, as shown. The effect of this is to prevent the doors from ever ap-

proaching the position where they are exposed square or broadside to the wind or draft, with the result that liability of breakage of the door is practically obviated. The fact that the door is located in a corridor is also essential to this invention, as the walls of the corridor insure that the draft will always be directed substantially parallel to such walls and cannot therefore strike the door broadside when it is so placed obliquely in the corridor. With a door placed obliquely, but outside of the building, the wind is just as liable to strike it broadside as if it were placed straight. It is, however, desirable to provide the usual automatic-closing door-checks 14 to insure gentle closing of the door. It will also be understood that this door when applied to large buildings may be used in connection with other doors to cut off through-draft.

It will be seen that the supplementary frame or stopping means, consisting of top frame 3 and the post 2, is removably attached to the main door-frame 1 and may be put up or taken down with little trouble. In putting it up the post 2 is placed with the lower dowel-pins in the sockets in the floor-plate and the top frame 3 is placed on the post, with the top pins on the latter projecting through it. The screw devices 11 at the rear edge of the top frame are mounted in holes previously formed in the lintel of the main frame and are screwed up to draw the parts tightly together, and the nuts 8′ are placed on pins 8 and screwed tight.

The form of supplementary frame or stopping means shown herein with the triangular top frame and the center post is that preferably adopted for carrying out our invention; but it is understood that the center post may be omitted, the two doors being allowed to come that much closer together, and that instead of the means shown we may employ any means for engaging both the doors, so as to carry out the object of our invention herein stated—to wit, the stopping of the door in inclined position, so as to obviate the slamming effect.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination with a corridor or passage, of a door located therein, and stopping means attached to the corridor for stopping the door in oblique position relatively to the corridor, the door being arranged in such manner as to be closed when in such stopped position.

2. The combination with a corridor or passage, of a door located therein, and a frame attached to the corridor and against which said door is stopped and closed in oblique position relatively to the corridor.

3. The combination with a corridor or passage, of a door located therein and a frame against which said door is closed obliquely to the corridor.

4. The combination with a corridor or passage and main door-frame therein, of a door hinged thereto and having a supplementary frame against which it closes, said supplementary frame being inclined to the main door-frame, and to the corridor, substantially as and for the purpose set forth.

5. The combination with a corridor or passage and a main door-frame therein, of a supplementary door-frame attached thereto and inclined to said main frame, and to the corridor, and a hinged door closing against said supplementary frame.

6. The combination with a main door-frame, and floor structure, of a supplementary frame comprising a post removably attached to the floor structure and a top frame removably attached to the post and to the main frame, and hinged doors closing against said supplementary frame.

7. The combination with a main door-frame, and a floor structure, having a plate secured therein, and provided with sockets, of a supplementary frame, comprising a post with dowel-pins on the bottom adapted to engage in said sockets and with pins on the top of said post, and a triangular top frame engaged by said pins and fastened thereby to said post, and provided with screw devices whereby it is fastened to the main frame.

8. The combination with a main door-frame, and a floor structure, having a plate secured therein, and provided with sockets, of a supplementary frame, comprising a post with dowel-pins on the bottom adapted to engage in said sockets and with pins on the top of said post, and a triangular top frame engaged by said pins and fastened thereby to said post, and provided with screw devices whereby it is fastened to the main frame, such screw devices consisting of pins reversely threaded at opposite ends to engage respectively with the said top frame and the main frame, and provided with means whereby they may be turned.

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