(No Model.) 2 Sheets—Sheet 1.

J. WELTER.

DOUBLE SWINGING DOOR.

No. 418,255. Patented Dec. 31, 1889.

FIG. 1.

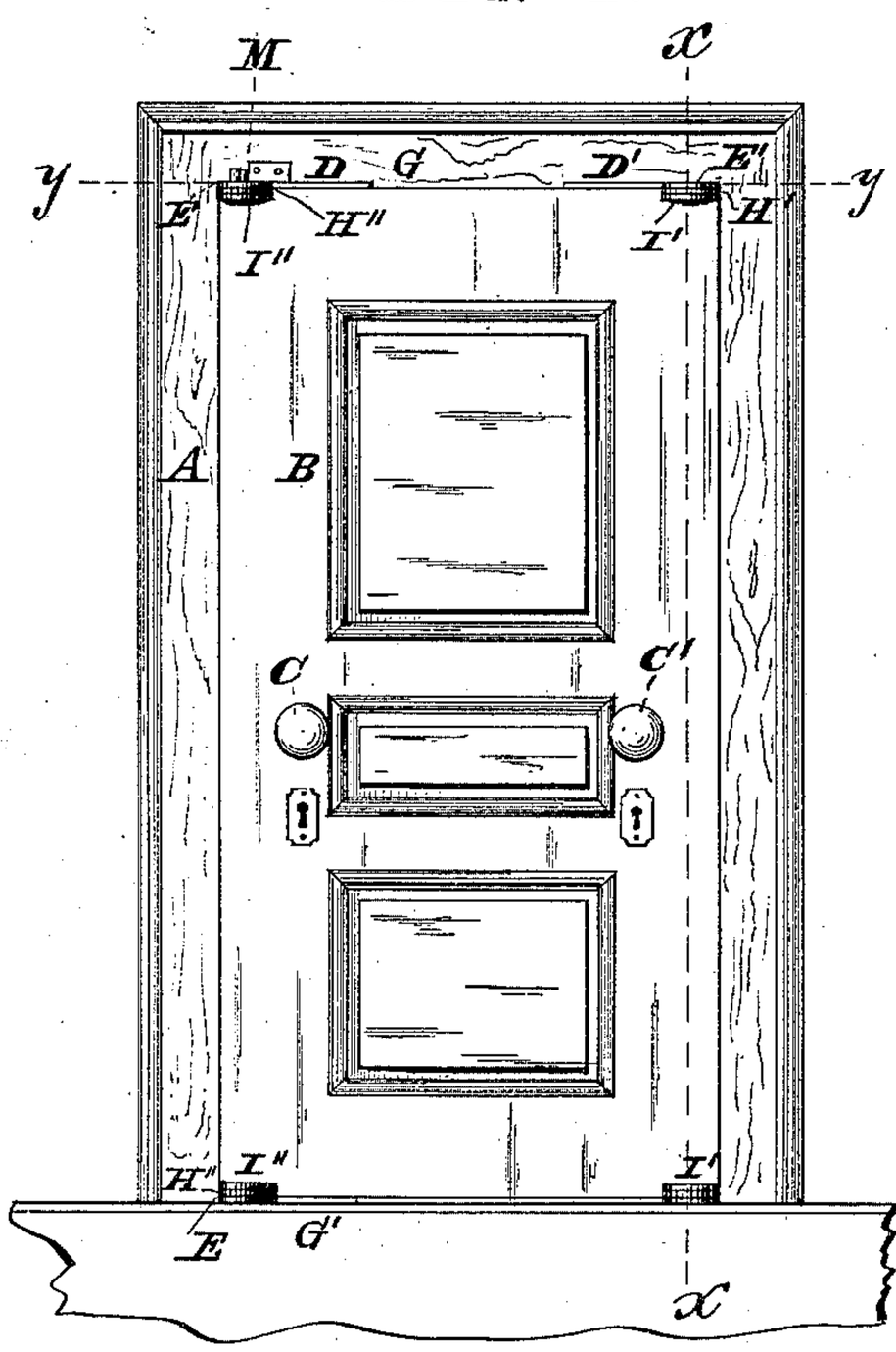
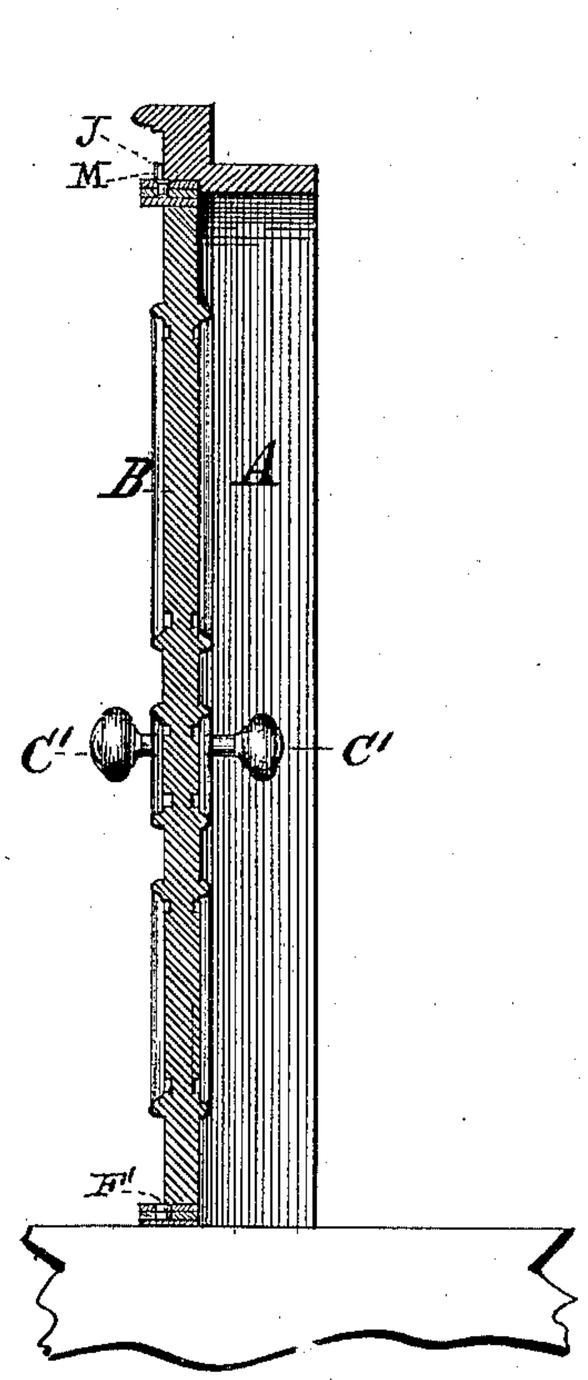


FIG. 2.



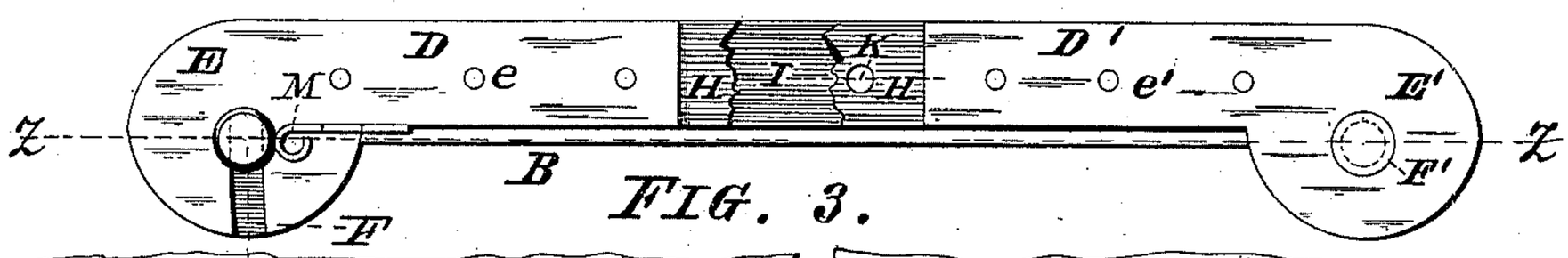


FIG. 3.

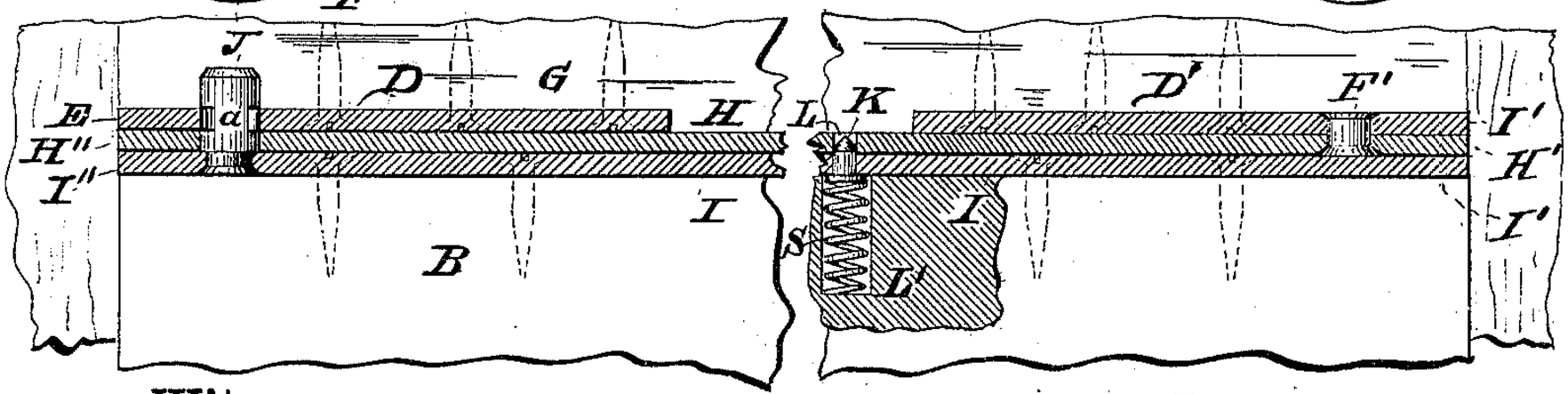


FIG. 4.

Witnesses:

Wm O Stark

Centie S Stark

Inventor:

Joseph Welter,

by Michael J Stark,

Attorney

(No Model.) 2 Sheets—Sheet 2.

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DOUBLE SWINGING DOOR.

No. 418,255. Patented Dec. 31, 1889.

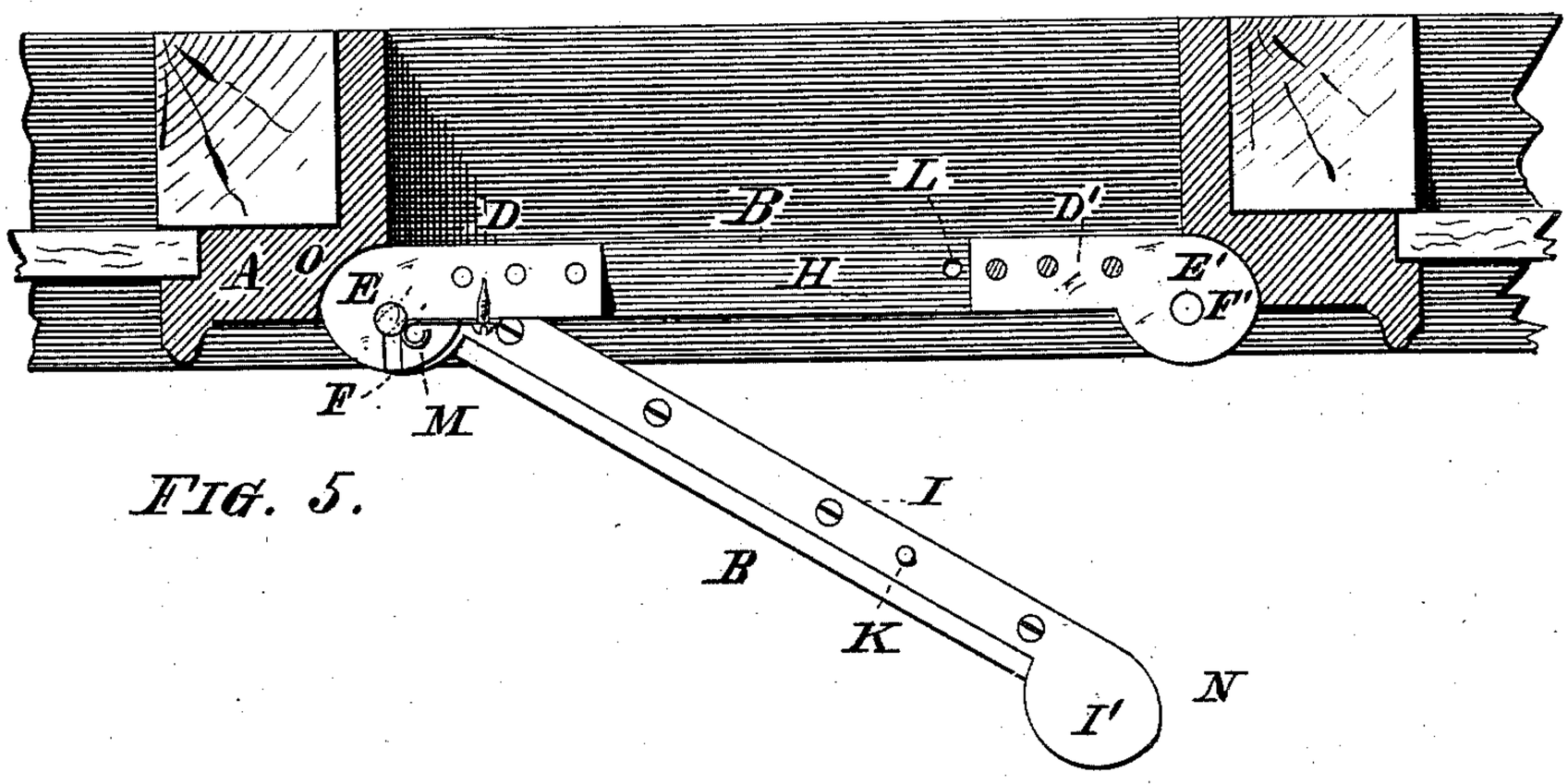


FIG. 5.

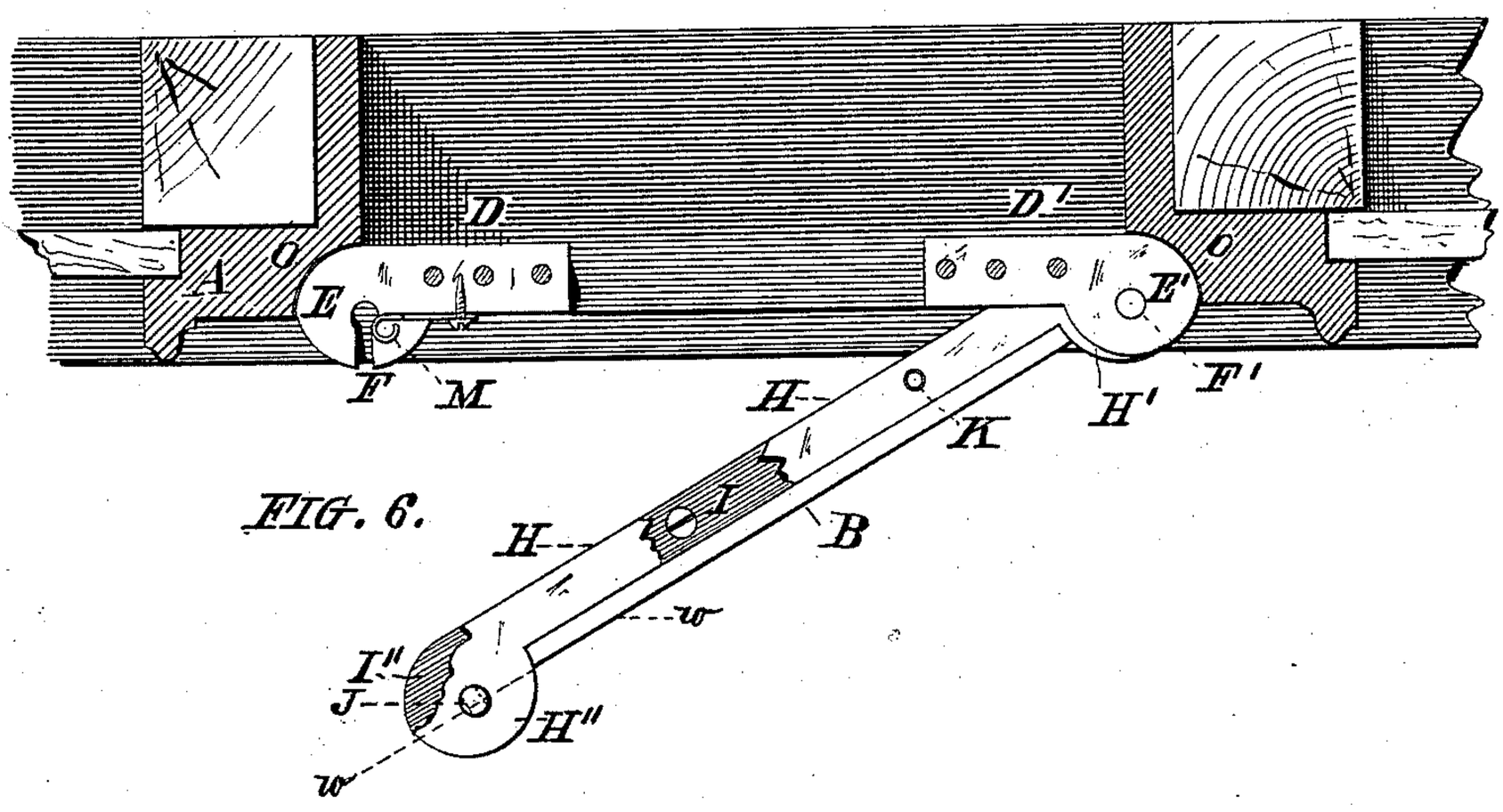
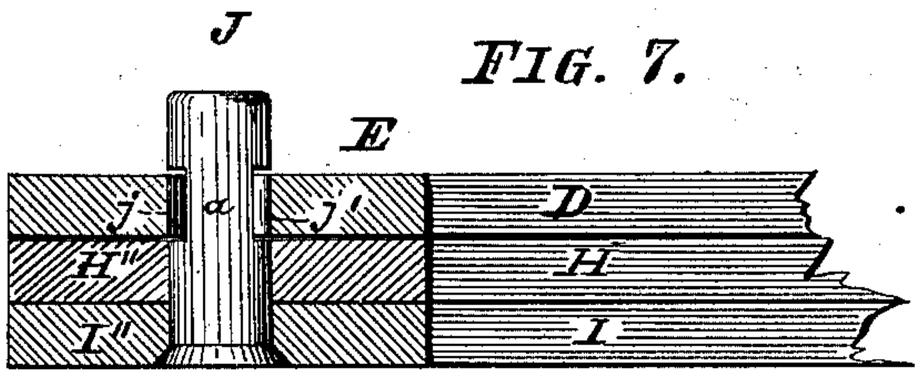


FIG. 6.

FIG. 7.



Witnesses:

Wm O. Stark.

Gentie S. Stark.

Inventor:

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UNITED STATES PATENT OFFICE.

JOSEPH WELTER, OF BUFFALO, NEW YORK.

DOUBLE SWINGING DOOR.

SPECIFICATION forming part of Letters Patent No. 418,255, dated December 31, 1889.

Application filed April 29, 1889. Serial No. 309,021. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH WELTER, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements on Double Swinging Doors; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheets of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has general reference to double swinging doors; and its object is the production of a door for buildings capable of being opened on either side.

It consists, essentially, in the novel and peculiar combination of parts and details of construction, as hereinafter first fully set forth and described, and then pointed out in the claims.

In the drawings already mentioned, which serve to illustrate my said invention more fully, Figure 1 is a front elevation of a door and its frame constructed in accordance with my invention. Fig. 2 is a transverse sectional elevation of the same in line *x x* of Fig. 1. Fig. 3 is a detached plan of the irons and mechanism for hinging the door. Fig. 4 is a longitudinal sectional elevation in line *z z* of Fig. 3. Figs. 5 and 6 are plans below the line *y y* of Fig. 1, showing the door in its different positions when opened on either side. Fig. 7 is a transverse sectional elevation of a portion of the hinge-irons in line *w* of Fig. 6.

Like parts are designated by corresponding letters of reference in all the figures.

A in the drawings designates the door-frame, and B the door, the latter being supplied with the usual door-knobs C C′ and locks, (not shown,) except that in place of only one set of such door knobs and lock my improved door is supplied with two sets, one near each edge of the door. This door may be opened by operating either of the door-knobs, and to enable me to do so I hinge the door in a peculiar manner by means of hinge-plates on the top and bottom edges of said door. These plates being alike on both the top and bottom edges, I shall in describing them refer to but the top set thereof, it being understood that the description thereof applies also to the bottom set.

D D′ are two plates of about one-eighth of an inch in thickness and one inch in width, having substantially circular heads E E′ and apertures *e e′*, by means of which they are secured to the top and inside portion G G′ of the door-frame and threshold respectively.

In the head E of the plate D there is a curved slot or aperture F, the center of the curve of which is in the center of the head E′, there being in said head E′ a circular aperture for the reception of a cylindrical pivot F′, the latter being the pintle around which the door swings when opened from the side having the knob C.

To the plate D′ there is movably secured by the pintle F′ a plate H, being of a length corresponding to that of the width of the door, so that it, as well as a further plate I, located directly underneath said plate H, are perfect matches when placed one above the other. This plate H has two heads H′ H″, the latter being connected with the head I″ by a pintle J, riveted tightly to said head I″ and turning loosely in the head H″. This pintle is of a length exceeding the thickness of the three plates D H I, and it has grooves *j j′*, Fig. 7, to form a neck *a*, Fig. 4, which neck engages the curved slot F in the head of the plate D in a manner hereinafter to be referred to.

The plate I is secured to the top (respectively the bottom) edge of the door by means of screws in any suitable manner. It has an aperture through which a pin K is passed, said pin having a spring S acting against it to push it through said plate I.

In the plate H there is an aperture L, Fig. 5, corresponding with that in the plate I, the object of which is to receive the pin K and by it to connect the plates I and H and to hold them opposite each other sufficiently so to enable the door being opened by the knob C′, it then swinging on the pintle F′, yet not so much so but that when the door is opened by said knob C′ said pin can slip out of the aperture L to allow the door to swing on the pintle. It will now be readily observed that when the door is opened by the door-knob C

the plates H and I swing together around the pintle F′ on the right-hand side of the door, the neck *a* of the pintle J passing through the slot F in the head E, while when the door is opened by the knob C′ the plate I swings around with the door, the pintle J being the pivotal point, it being noticed that as soon as the door swings open but a trifle the pintle J has turned in the slotted aperture F sufficiently to prevent the door from swinging out of said slot-hole.

There is but one position in which the door can be entirely removed from the frame, which is when both knobs are turned at the same time and the door pushed so as to swing the pintle J out of the slots F; but to prevent this as much as possible I locate curled springs M in front of the pintle J, so as to retain them in said slots with sufficent force to hold the door for the moment when it is being opened by the knob C′, not enough so, however, to interfere with its being opened by the knob C and the pintle J moved out of the slot F.

It will be readily observed that the advantages derived from the construction of this door, aside from novelty, are that in a dark hall and other places where the door-knob cannot be seen, and, in fact, at night on any door, it is immaterial on which side a party may try to find the knob, he being able to open the door on either side. The longitudinal edges of the door are curved to a segment of a circle at N and the casing A rabbeted correspondingly at O. I find this or a similar arrangement desirable, for the reason that a square-edged door fitting the casing a snug fit could not swing out of the casing without the edges being beveled. By making them curved, as described, I derive the advantage of a close fit of the door to prevent drafts, though it may not fit the casing snugly.

Another advantage of my construction is that the metallic plates I being fastened to the door and working smoothly upon the plates H, and the latter in turn being in close contact with the plates D D′, fastened to the door-frame, (respectively to the threshold,) the said door fits so nicely and snugly into its casing as to effectually prevent ingress of cold-air drafts, and thereby produces quite a saving of fuel in the winter-time, besides the advantage of not exposing the inmates of a room to the danger of catching cold.

The door and its trimmings may be manufactured at but a slight additional cost over that of an ordinary door, and since it can be completed in a factory it does not prevent their being made in large quantities ready for the market.

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

1. The combination, with the frame A, of the door B, having the two sets of hinge-plates, each consisting of the plates D, D′, H, and I, the plates D D′ being secured to the door-frame and the plates I to the door, the plates D I being connected by the intermediate plates H, in the manner as and for the purpose set forth.

2. The combination, in double swinging doors, of the door A and frame B, the threshold G, and the hinge-plates consisting of the plates D, D′, H, and I, the said plates H being pivoted to the plates D′ with one end and to the plates I with the other end, said plates H I having pintles J, provided with necks *a*, engaging slotted apertures F in the plates D, as and for the object stated.

In testimony that I claim the foregoing as my invention I have hereto set my hand in the presence of two subscribing witnesses.

JOS. WELTER.

Attest:

MICHAEL J. STARK,
WM. O. STARK.