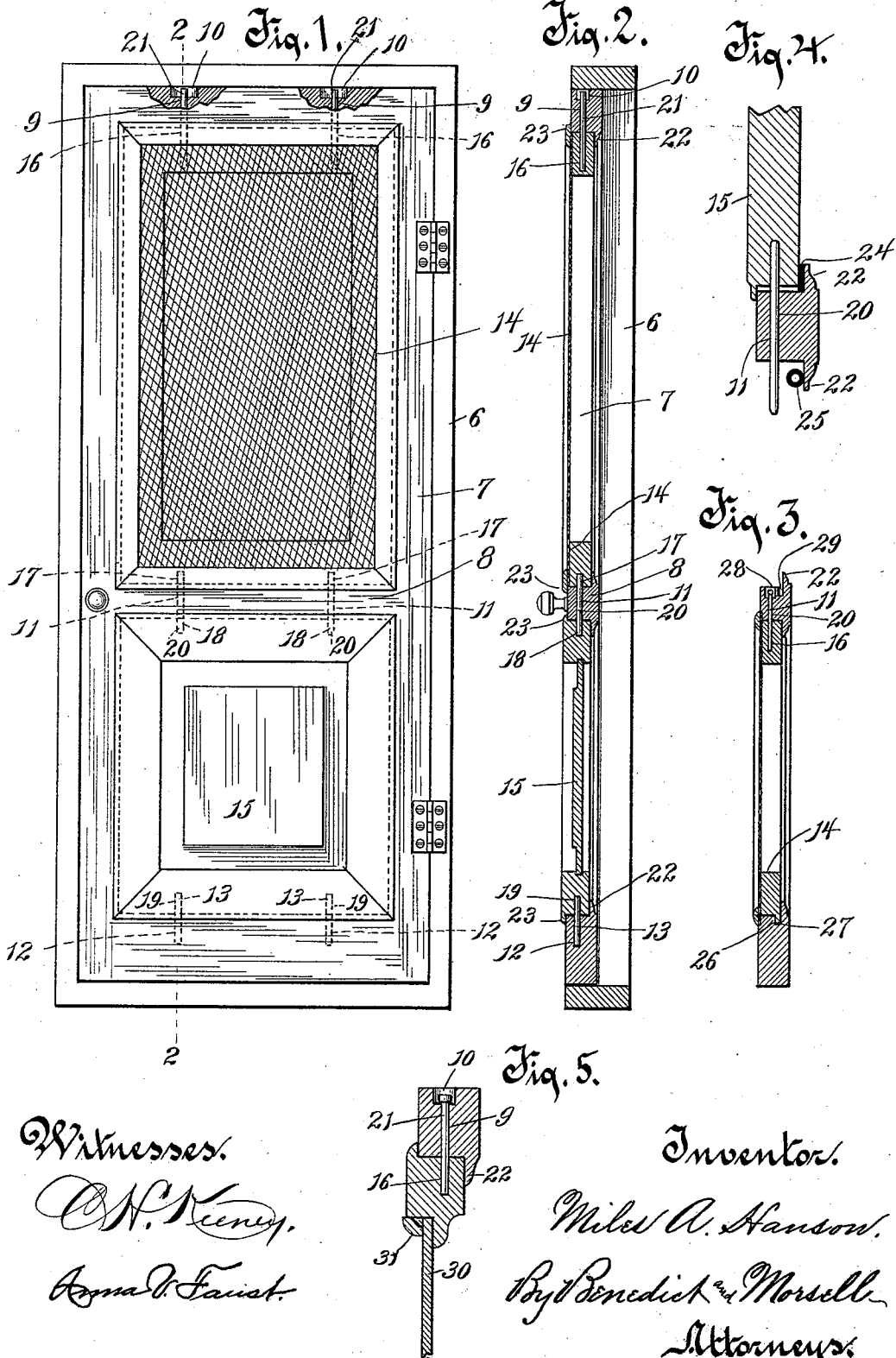


(No Model.)

M. A. HANSON.
SCREEN AND STORM DOOR.

No. 539,176.

Patented May 14, 1895.



Witnesses.

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SCREEN AND STORM DOOR.

SPECIFICATION forming part of Letters Patent No. 539,176, dated May 14, 1895.

Application filed January 25, 1895. Serial No. 536,165. (No model.)

To all whom it may concern:

Be it known that I, MILES A. HANSON, of Port Washington, in the county of Ozaukee and State of Wisconsin, have invented a new and useful Improvement in Screen and Storm Doors, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention has relation to improvements in screen and storm doors.

The invention contemplates as an object the readiness with which a screen frame may be substituted for a storm panel, or vice versa, and when properly adjusted in place will be securely locked, with no protruding or visible parts to mar the appearance of the door.

With the above object, and others, in view the invention consists of the devices and parts or their equivalents as hereinafter more fully set forth.

Referring to the drawings, Figure 1 is a front elevation of my invention with parts broken away, the upper space of the door having a screen-frame therein and the lower space having a panel therein. Fig. 2 is a vertical sectional view on the line 2 2 of Fig. 1. Fig. 3 is a fragmentary sectional view of a modified form of construction. Fig. 4 is a sectional fragmentary view of another modification, and Fig. 5 is a sectional view showing a pane of glass substituted for a panel or screen-frame.

Like numerals of reference denote like parts throughout the several views.

Referring to the drawings, the numeral 6 indicates an ordinary door frame, and 7 the door hinged thereto in the ordinary manner. This door is shown as provided with two openings for the screen frames or panels, said openings separated by a middle or lock rail 8. The upper rail of the door is provided with apertures 9, 9, therethrough, said apertures merging at their upper ends into recesses 10, 10. Apertures 11, 11 are also formed through the middle or lock rail 8. The lower rail is provided with sockets 12, 12, in which are fitted or secured pins 13, 13, said pins projecting above the edge of the rail.

The numeral 14 indicates a screen frame and 15 a panel.

In the drawings, as before stated, a screen frame is shown in the upper opening of the door and a panel in the lower opening. In practice, of course, both openings will generally be occupied by either screens or panels. The screens and panels, where they combine with the other parts, are of course constructed alike. The upper screen frame or panel has its upper bar provided with recesses 16, 16 in alignment with the apertures 9, 9 of the top rail of the door. The lower rail of this top screen frame or panel is also provided with similar recesses 17, 17, in alignment with the apertures 11, 11 of the middle rail. The top and bottom strips of the lower screen frame or panel are provided, respectively, with recesses 18, 18 and 19, 19, the former adapted to be in alignment with the apertures 11, 11, and the latter adapted to receive the pins 13, 13.

In adjusting the parts together, the panel or screen frame, as the case may be, is first inserted in the space or opening therefor in the door, the recesses 19, 19 of the lower strip receiving the pins 13, 13. The upper edge is now locked in place by inserting the pins 20, 20 through the middle rail of the door into the recesses 18, 18. The upper screen frame or panel is next inserted in place, the recesses 17, 17 of the lower strip thereof being made to receive the upper ends of pins 20, 20 while the upper end is locked in place by passing the pins 21, 21 through the aligned apertures 9, 9, and recesses 16, 16.

When the screen or panel is inserted in place, in the manner pointed out, it will be seen that the back edge of its frame fits against a rectangular shoulder 22 projecting from the bordering edge of the screen frame or panel opening. The screen frames or panels are also provided with overlapping edges or flanges 23 which bear against the outer face of the door. If desired, the shoulder 22 may have a rubber weather strip secured thereto, which when the panels are inserted in place will make an effective joint against the entrance of cold air.

The weather strips are shown in Fig. 4, and may be either a flat strip of rubber 24, or a rubber tube 25, the latter adapted to be compressed flat, when the panel is inserted in place.

The rectangular shoulder 22 extends about half way of the width of the sides of the screen or panel frame, whereby the joint is not only completely hidden but also completely protected. This disposition of the screen or panel frame against the shoulder 22, in combination with the overlapping front edges or flanges 23, permits the screen or panel frame to fit loosely in its opening, and at the same time protecting and obscuring the loose joint thereby formed. A loose joint is of course quite desirable in order to allow for contraction and expansion, this particular class of devices being peculiarly subject thereto, owing to exposure to extremes of temperature.

In removing the screen frames or panels, the door is opened, which gives access to the upper ends of the pins 21 projecting into the recesses 10. After these pins are withdrawn, the upper screen frame or panel can be readily removed, after which access can be obtained to the pins 20, and after the removal of these latter pins, there is no trouble in taking out the lower screen frame or panel.

In Fig. 3 is shown a modification wherein, instead of employing the lower pins 13 and having the upper ends of the central pins 20 entering the recesses 17 in the lower rail of the top frame, a longitudinal groove 26 is provided in the bottom rail of the door, said groove adapted to receive a longitudinal tongue 27 formed upon the lower strip of the screen frame or panel, while the upper ends of the pins 20, 20 are received in recesses 28 in the top of the middle or lock rail. The middle or lock rail 8 is also provided with a longitudinal groove 29 adapted to receive a corresponding tongue of the upper panel or screen frame. (Not shown in this figure.) The upper end of this upper panel or screen frame, is, of course, locked by means of pins 21, the same as in the other figures of the drawings.

The form of construction shown in Fig. 5 only differs from the other views of the drawings in the substitution of the pane of glass 30 for the screen frame or panel. The numeral 31 on said figure indicates the molding or putty.

My invention can of course be applied to a door in which but one opening is provided. Such opening may extend longitudinally of the length of the door, or may be in the upper portion thereof, while the lower portion of the door is provided with a non-removable panel. In either arrangement the lower edge of the removable screen frame or panel will be held in place either by pins or projections, while the upper edge will be held in place by pins similar to 21, having their upper ends in recesses 10.

Having thus described my invention, what

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

1. The combination, of a door frame, a door hinged in the frame, said door having an opening therein, a panel or screen frame detachably held in place at one end within the opening in the door by a projection in one engaging a corresponding recess or groove in the other, and a pin or pins for holding the opposite end of the screen frame or panel in place, said pin or pins passing through an aperture or apertures in the rail and entering a recess or recesses therefor in the panel or screen frame, said pin aperture or apertures merging at its or their outer end or ends into a recess or recesses, the upper open end or ends of said recess or recesses, when the door is shut, being closed so as to prevent access to the pin or pins, and the upper end or ends of said recess or recesses opened, to permit access to the pin or pins, when the door is swung outward from within its frame, substantially as set forth.

2. The combination, of a door having openings therein separated by a middle or lock rail, a lower panel or screen frame detachably held in place at its lower end within its opening of the door by a projection in one engaging a corresponding recess or groove in the other, an upper panel or screen frame detachably held in place at its lower end within its opening of the door by a projection in one engaging a recess or groove in the other, and a pin or pins passing through the middle or lock rail, the lower end or ends thereof adapted to engage a recess or recesses in the upper edge of the lower screen frame or panel, and the upper end or ends of said pins adapted to engage a recess or recesses in the lower edge of the upper screen frame or panel, substantially as set forth.

3. The combination, of a door having openings therein separated by a middle or lock rail, screen frames or panels adapted to be inserted into the openings, and each provided at their top and bottom edges, respectively, with a recess or recesses, a pin or pins projecting up from the bottom rail of the door and adapted to engage the recess or recesses of the lower screen frame or panel, a pin or pins passing through an aperture or apertures in the middle or lock rail, the lower end or ends thereof adapted to engage the recess or recesses of the upper edge of the lower screen frame or panel, and the upper end or ends of said pins adapted to engage the recess or recesses in the lower edge of the upper screen frame or panel, and a pin or pins carried by the upper rail of the door, and adapted to enter a recess or recesses in the upper edge of the upper screen frame or panel, substantially as set forth.

4. The combination, of a door having an opening therein, the outer bordering edge of said opening provided with a projecting shoulder, a screen frame or panel fitting the open-

ing and having an unshouldered rear portion,
the rear face of said rear portion bearing
against the projecting bordering shoulder, and
the outer edges of the screen frame or panel
5 bearing against or opposed to the bordering
edges of the opening, and a front shoulder ex-
tending from the screen frame or panel and
bearing against the front face of the edge of

the door adjacent to its opening, substantially
as set forth. 10

In testimony whereof I affix my signature
in presence of two witnesses.

MILES A. HANSON.

Witnesses:

MABEL M. COE,
LENA SCHWIN.