(No Model.)

C. H. SHELDON.

COMBINED SCREEN AND STORM DOOR.

No. 497,899. Patented May 23, 1893.

Fig. 1.

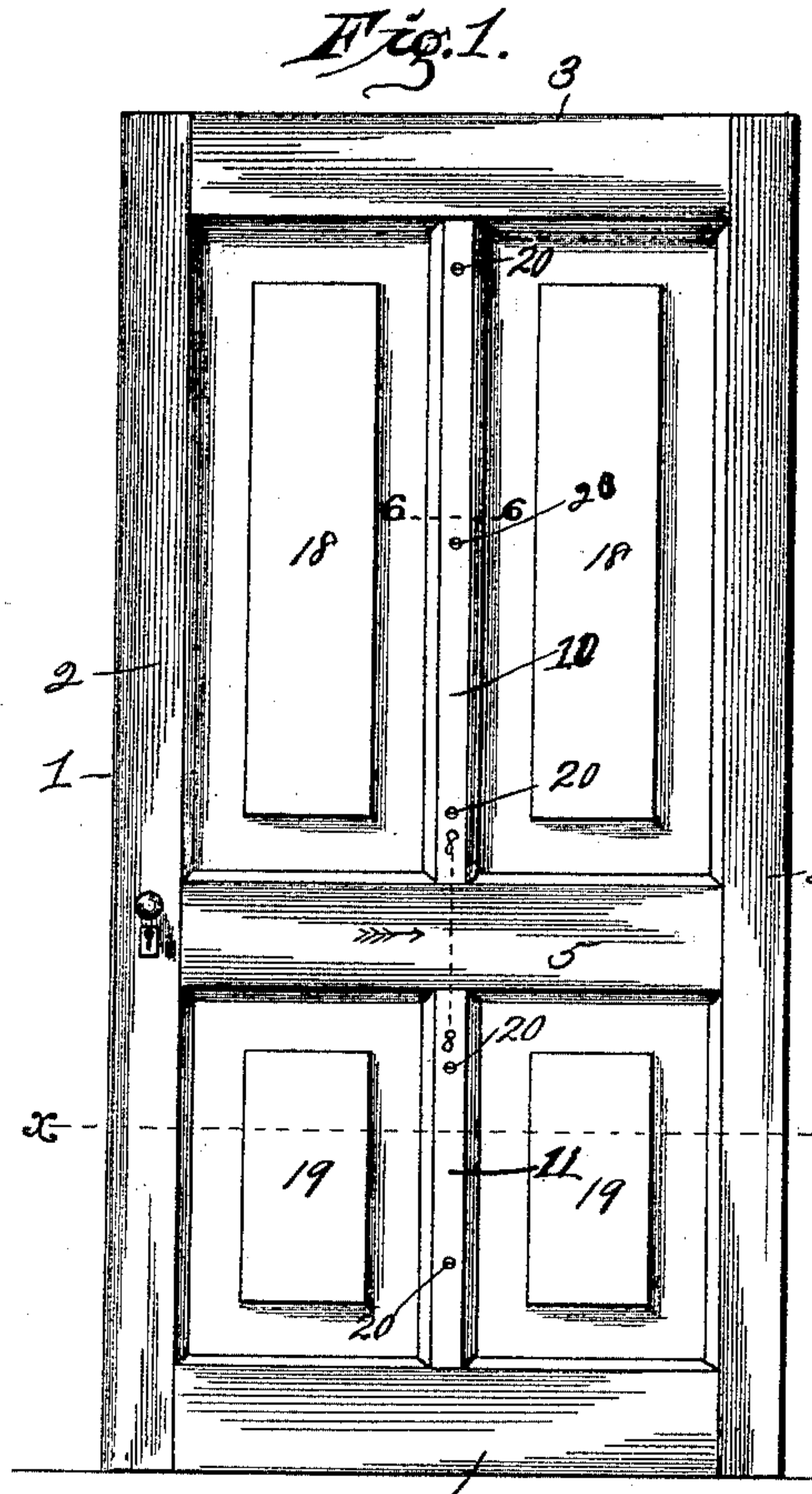

Fig. 2.

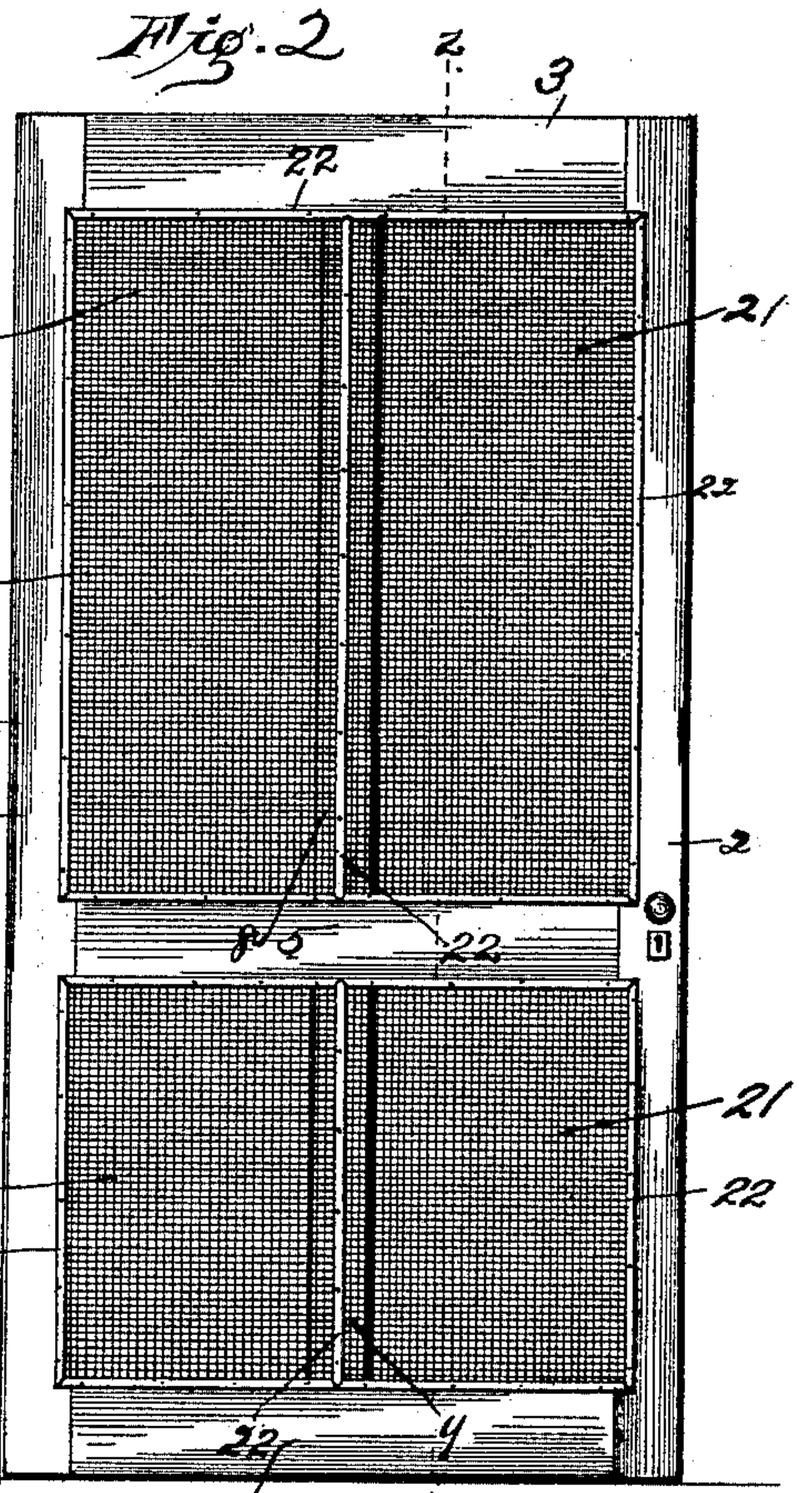

Fig. 3.

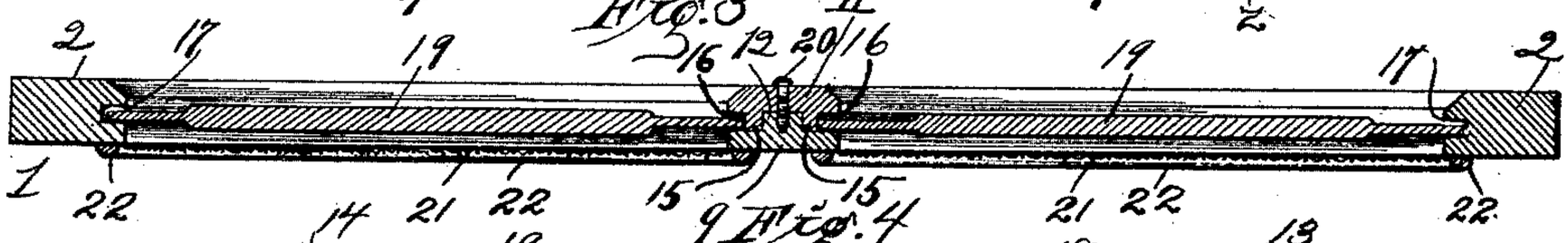

Fig. 4.

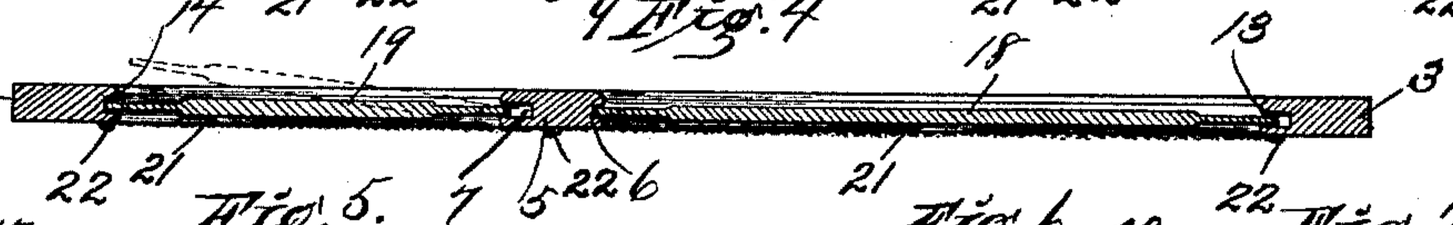

Fig. 5.

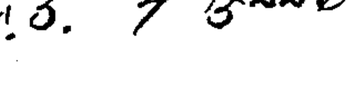

Fig. 6.

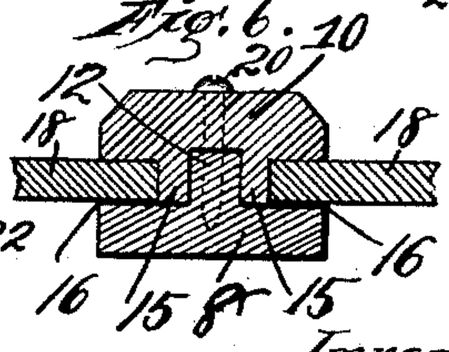

Fig. 7.

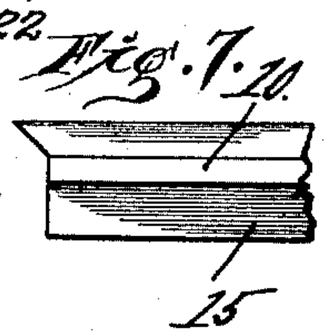

Fig. 8.

Witnesses:-
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UNITED STATES PATENT OFFICE.

CARSON H. SHELDON, OF KANSAS CITY, MISSOURI.

COMBINED SCREEN AND STORM DOOR.

SPECIFICATION forming part of Letters Patent No. 497,899, dated May 23, 1893.

Application filed December 22, 1892. Serial No. 456,035. (No model.)

To all whom it may concern:

Be it known that I, CARSON H. SHELDON, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in a Combined Screen and Storm Door, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in combined screen and storm or weather doors, and the objects of my invention are to produce a door, with permanent screen panels, and with removable ordinary or imperforate panels, which imperforate panels can be easily and readily removed from, or secured within, the panel openings of the door; and further to provide a door which is simple and inexpensive of construction.

To the above purposes my invention consists in certain peculiar and novel features of construction and arrangement, as will be hereinafter specified and claimed.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1, is the inside face view of the door with the ordinary panels in position. Fig. 2, is a face view of the opposite or outside of the door and showing permanent screens secured thereto. Fig. 3, is an enlarged horizontal sectional view taken on the line *x*—*x* of Fig. 1. Fig. 4, is a vertical longitudinal sectional view taken on the line *x*—*x* of Fig. 2. Fig. 5, is an enlarged sectional view of a portion of the door, and showing one member or section of the mullion or dividing strip of the door removed. Fig. 6, is a detail sectional view taken on the line 6—6 of Fig. 1. Fig. 7, is a side elevation of the lower end of one of the removable members of the mullion. Fig. 8, is a vertical sectional view, taken on the line 8—8 of Fig. 1, and looking in the direction of the arrow, showing the intersections of the mullions with the middle or locking rail.

In the drawings, 1 designates a door, constructed of the usual stiles 2, the top and bottom rails 3 and 4, and the middle or locking rail 5, having in its upper and lower edges, grooves 6 and 7, extending longitudinally, from one end to the other of said locking rail. The vertical mullions or dividing strips, are composed of the upper and lower permanent or fixed members 8 and 9, and the upper and lower removable or detachable members 10 and 11. The upper members 8 and 10 connect the top rail 3 and the middle or locking-rail 5, and the lower members 9 and 11 connect the bottom rail 4 and the lower edge of the middle or locking rail 5. The upper and lower fixed or permanent members 8 and 9 are provided with a central and longitudinally extending rib or tongue 12, which projects beyond the ends of the said members, the upper ends of each rib or tongue 12, engaging respectively the groove 13 in the lower edge of the top rail 3, and the groove 7 in the lower edge of the locking rail 5; the lower projecting ends of the said ribs or tongues 12, engage respectively the groove 6 in the upper edge of the locking rail, and the groove 14 in the upper edge of the bottom rail 4. The grooves 13 of the top rail 3, and the groove 7 of the locking rail 5, are of greater depth than the grooves 14 of the bottom rail, and the groove 6 of the locking rail. The necessity for the increased depth of these grooves 7 and 13, will be hereinafter explained.

The removable or detachable members 10 and 11 of the mullions, are provided with a body-portion of width equal to the body-portion of the permanent or fixed members 8 and 9 of the said mullions, and the said removable members are each provided on their inner face, with the longitudinally extending and parallel ribs 15, which are adapted to fit closely on opposite sides of the central ribs 12 of the permanent members 8 and 9, and grooves 16, of suitable depth are formed between the side margins of the body-portions of the permanent and removable members of the vertical mullions; the outer sides of the ribs 15—15 forming the bottom of the grooves 16. The stiles 2, are each provided with a groove 17, extending longitudinally of their inner edges. The imperforate or ordinary panels 18 and 19 are adapted to fit snugly at their side margins, in the grooves 16 of the vertical mullions and the grooves 17 of the stiles 2; the upper panels 18 fitting at their lower ends in the shallow groove 6 of the locking rail 5, and at their upper ends, fitting a slight distance into the deeper groove 13 of the top rail 3; a space equal to the depth of

the groove 6 being left between the bottom of the groove 13 and the top edge of the panels 18. The lower panels 19, fit at their lower ends in the shallow groove 14 of the bottom rail 4, and at their upper ends fit a slight distance into the deeper groove 7 of the locking rail 5; a space equal to the depth of the groove 14, being left between the bottom of the groove 7 and the upper edge of the lower panels 19. To remove the imperforate panels 18 and 19, the screws 20, which secure the removable members 10 and 11 to the fixed members 8 and 9, are first removed; the removable members are then removed, and the panels 18 and 19 are then moved inwardly toward each other, and toward the opposite sides of the vertical ribs 12 of the permanent or fixed members 8 and 9 of the vertical mullions, (which may be done when the parallel ribs 15 on the inner face of the removable members of the vertical mullions, are out of the way,) until the outer side margins of the said panels have cleared the inner edges of the stiles 2, (as shown in Fig. 5;) the panels are now lifted or forced upwardly into the deeper grooves 13 or 7, until the lower edges of said panels, clear the upper edges or margins of the shallow grooves in which they rest at their lower ends; the panel may then be tilted outwardly at the bottom (as illustrated in Fig. 4) and then withdrawn from the upper grooves and the door. The reverse operation to that described is performed in replacing the panels in the door. Secured opposite to the panel openings and to the opposite side of the door from that occupied by the removable sections of the vertical mullion or dividing strip, are the screen sections 21, which are rigidly secured in place in the usual manner by retaining strips 22 tacked or otherwise secured to the door.

From the above description, it will be seen that I have produced a combined screen and storm or weather door which may easily and readily be converted from one to the other, and which is simple and inexpensive of construction.

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

1. In a combined screen and storm door, the combination of a door having grooves in the inner side edges of the stiles, and in the inner edges of the top and bottom rails, a locking rail permanently secured therein and having a longitudinal groove in its upper and in its lower edge, with a central vertical mullion or dividing strip consisting of permanent or fixed members, and removable members, and panels secured in position between said permanent and removable members of the vertical mullion, and between the middle or locking rail and the stiles of the door, and screens secured to the door and opposite to the panel openings, substantially as set forth.

2. In a combined screen and storm or weather door, having the stiles and the top and bottom rails provided with longitudinal grooves in their inner edges, a middle or locking rail, provided in its upper and lower edges with longitudinal grooves, and the vertical mullions or dividing strips, consisting of fixed or permanent members provided with longitudinal and centrally extending ribs on their inner faces, and removable members screwed or otherwise secured to the permanent members and provided with parallel and longitudinal extending ribs, adapted to fit on the opposite sides of the longitudinal ribs, of the permanent or fixed members; and removable panels resting in the grooves of the stiles and the top and bottom rails of the door, and the middle or locking rail, and in the groove formed between the inner sides of the body-portions of the fixed or permanent members and the removable members of the vertical mullions, substantially as set forth.

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

CARSON H. SHELDON.

Witnesses:
M. P. SMITH,
MAUD FITZPATRICK.