

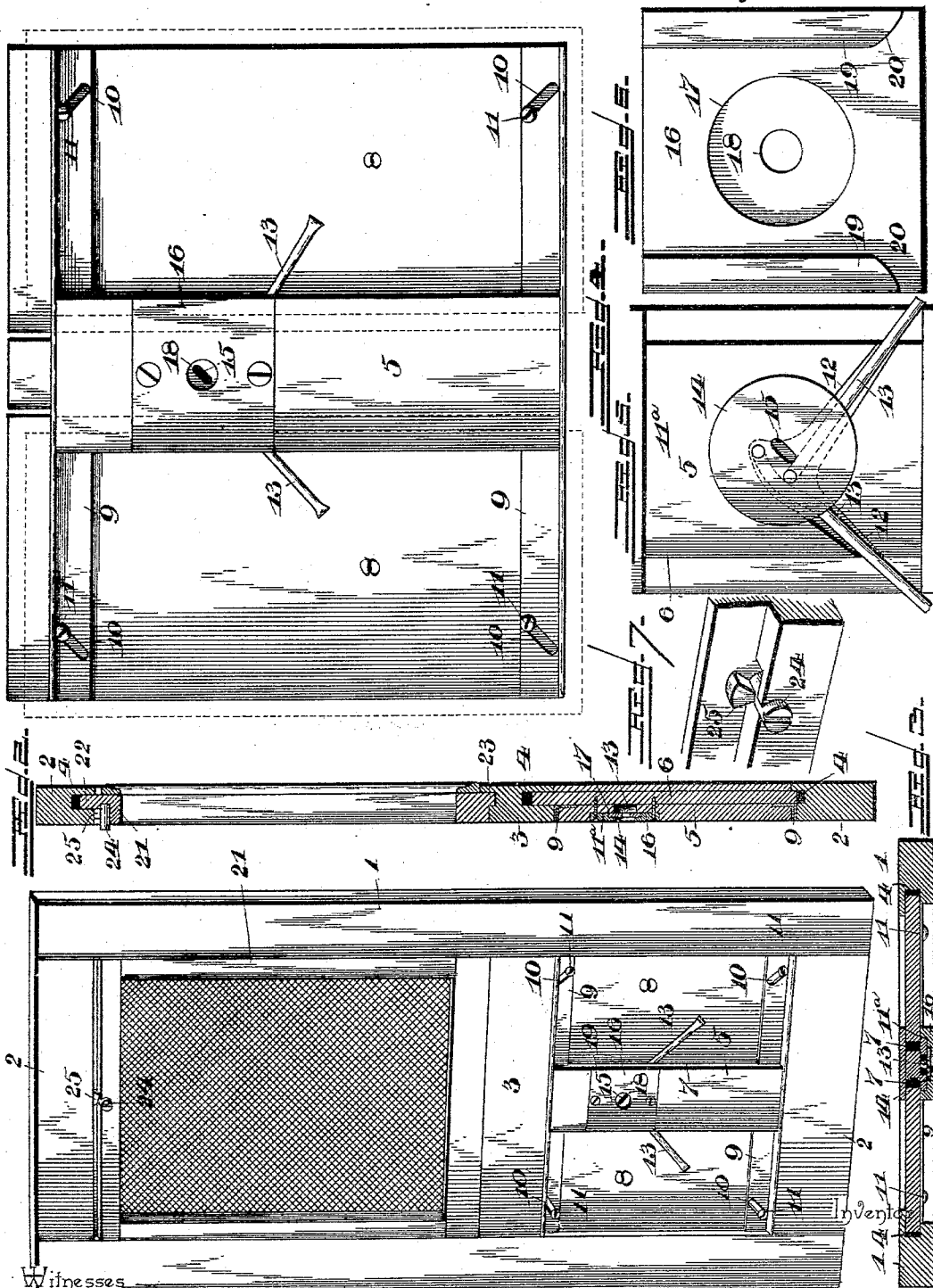
(No Model.)

J. BRANCA.

COMBINATION SCREEN AND STORM DOOR.

No. 563,649.

Patented July 7, 1896.



Witnesses

W. T. Doyle
R. M. Smith

By his Attorneys,

John Branca,

Attorney at Law.

UNITED STATES PATENT OFFICE.

JOHN BRANCA, OF WEST SUPERIOR, WISCONSIN.

COMBINATION SCREEN AND STORM DOOR.

SPECIFICATION forming part of Letters Patent No. 563,649, dated July 7, 1896.

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To all whom it may concern:

Be it known that I, JOHN BRANCA, a citizen of the United States, residing at West Superior, in the county of Douglas and State of Wisconsin, have invented a new and useful Combination Screen and Storm Door, of which the following is a specification.

This invention relates to combination screen and storm doors, and the general object in view is to provide a door which is quickly and easily convertible from a screen-door to a storm-door, or vice versa.

The specific object of the invention is to provide a panel of novel construction which may be expanded or contracted in size for enabling it to be introduced into and removed from the door, and to provide suitable mechanism carried by and forming a part of the panel whereby said expansion and contraction may be effected.

Other objects and advantages of the invention will appear in the course of the ensuing description.

The invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and finally incorporated in the claims hereto appended.

In the accompanying drawings, Figure 1 is a perspective view of the combination-door, illustrating the application of the present improvements thereto. Fig. 2 is a vertical section through the same. Fig. 3 is a horizontal section thereof. Fig. 4 is a front elevation of one of the adjustable panels. Fig. 5 is a detail elevation of a portion of the mullion, showing the rods and the rotating disk or turn-button in place. Fig. 6 is an inside face view of the cap or plate which covers the operating mechanism. Fig. 7 is a detail perspective view of a portion of one of the screen-frames.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the accompanying drawings, the door to which the improvements are shown applied comprises the usual stiles 1, the top and bottom rails 2, and the middle rail 3. The stiles 1 and the top and bottom rails 2, are each provided in their inner edges with grooves 4, to receive the edges of the

panels, hereinafter described, and the middle rail 3 is provided in both its top and bottom edges with corresponding grooves 4, for the same purpose.

Each of the storm-panels comprises a central mullion 5, which is made in two sections, as shown, one section being arranged behind and in line with the other section, but separated therefrom a suitable distance by means of a spacing-strip 6, the said sections and the spacing-strip being rigidly connected, and thus forming a mullion which is substantially in the form of the letter H in cross-section. The mullion thus comprises longitudinal grooves 7 in its opposite side edges, which grooves are adapted to receive the inner adjacent edges of the two adjustable sections 8 of the panel. The mullion 5 may be made up of separate pieces, as described, but it is preferable to make the same in a single piece and to plow the grooves 7 therein by machinery.

Attached rigidly to the top and bottom of the mullion 5 are angle-irons 9, extending equally upon each side of the mullion and practically the entire width of the panel. Each of said angle-irons is substantially L-shaped in cross-section and provided at or near its ends with inclined or oblique guide-slots 10, through which screws 11 are passed into the panel-sections, said screws working in the guide-slots for the purpose of guiding the panel-sections as they are drawn inward or thrust outward. The vertical flanges of the angle-irons are confined between the heads of the screws 10 and the panel-sections, and when the screws are tightened there can be no relative movement between said sections and the angle-irons. When, however, the screws are slightly loosened, the panel-sections may be adjusted in or out by the means hereinafter described. The angle-irons 9 not only serve to guide the panel-sections, but they form efficient stays for preventing the warping of such sections and of the panel as a whole.

The panel-sections are moved in and out by the following means: The mullion 5 is mortised out, as indicated at 11^a, and in the base of this mortise are formed diverging grooves or recesses 12, within which reciprocate a pair of metal rods or arms 13, which

connect pivotally at their adjacent ends to a revoluble disk or turn-button 14, arranged just over the intersection of the grooves 12. The rods or arms 13 connect rigidly at their outer diverging ends to the panel-sections and extend in lines substantially parallel to the guide-slots 10, whereby when the rods are operated they will have a tendency to move the panel-sections in the directions they would naturally be caused to move by reason of their pin-and-slot engagement with the angle-irons 9. The rods or arms are connected to the disk or button 14 in such manner that when the button is turned they will be drawn inward relatively to the mullion, and when such button is turned in an opposite direction they will be thrust outward, a corresponding movement being thereby imparted to the panel-sections. The disk or button 14 is provided with an oblong slot or keyhole 15 at its center in which a screw-driver or key may be inserted for turning it and actuating the rods 13. A cap or cover 16, preferably of metal, is placed over the disk or button 14, and is provided with a recess 17 in its inner surface, which forms a bearing-seat for such disk or button. The cap or cover 16 has a central opening 18, through which the screw-driver or key may be inserted, and is provided with flanges 19 at its edges, which embrace the side edges of the mullion, said flanges being cut away obliquely to form guiding-shoulders 20 for the reciprocating rods or arms 13.

In order to apply one of the panels to the door, the screws 11 are loosened and the screw-driver then inserted in the slot or keyhole 15, after which the disk or button 14 is turned in a direction that will draw the panel-sections inward and upward. The panel is now inserted, upper edge foremost, after which the bottom edge of the panel is moved to place. The disk or button 14 is then rotated in the opposite direction, thus forcing the panel-sections outward and downward, thus forcing them to engage the grooves in the stiles and bottom rail. The outward and downward movement of the panel-sections is not sufficient, however, to withdraw the upper edges of said sections from the groove in the bottom edge of the top rail or middle rail, as the case may be. The panel is thus securely retained at all points.

The screen-frames, which are intended to be substituted for the storm-panels in summer, are made of a size adapting them to fit snugly between the stiles of the frame and between the top or bottom rail and the middle rail. Each frame (indicated at 21) is provided with an upper tongue 22 and a lower tongue 23, the upper one being of greater length than the lower tongue. Each of the screen-frames is provided in its upper rail with a turn-button 24, formed in its adjacent end with a notch or slit for the screw-driver, and also provided with a lateral extension or lug 25, adapted to abut against the door-

frame when in operative position and when inoperative to be folded into a recess in the screen-frame. To apply the screen-frame, the upper tongue thereof is inserted into the groove in the top or middle rail of the door-frame, after which the frame is moved into place and then depressed to bring the lower tongue into its groove. With the aid of a screw-driver the turn-button 24 is now rotated, so as to bring the lateral extension or lug 25 against the under side of the overlying rail, after which the screen-frame cannot be accidentally displaced. Means, such as a staple, may be employed for preventing the displacement of the turnbuckle 24. It will thus be seen that the combination-door may be quickly and easily converted from a screen-door to a storm-door, or vice versa, with the aid of a screw-driver alone, thus saving the necessity for and expense of having separate and independent doors for summer and winter.

It will be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

1. An adjustable panel, comprising a grooved center piece or mullion, the panel-sections arranged on opposite sides thereof, and means for moving said sections toward or away from the mullion, substantially as described.

2. The combination with the mullion, of the panel-sections adjustable relatively thereto, the irons secured to the top and the bottom of the mullion and having a pin-and-slot engagement with the panel-sections for guiding the latter, and means for moving said sections, substantially as described.

3. An expansible panel comprising a mullion grooved in its opposite edges, the panel-sections having their inner edges working in said grooves, the turn-button mounted in the mullion and the rods or arms interposed between said button and the panel-sections, substantially as and for the purpose described.

4. The combination with the mullion, of the relatively adjustable panel-sections, the metal cap or cover fitted over the mullion and provided in its inner surface with a bearing-seat, a turn-button mounted therein, the rods or arms attached at their outer ends to the panel-sections and connected pivotally at their inner ends to the turn-button, and provision whereby said button may be actuated, substantially as described.

5. The combination with the mullion, of the end pieces attached thereto and provided with the inclined or oblique slots, the panel-sections having pins or screws working in said slots, and means for actuating the panel-sections, substantially as described.

6. The combination with the mullion, of the angle-irons secured thereto and extend-

ing upon opposite sides thereof and formed
with guide-slots, the panel-sections having
their inner edges loosely fitted in grooves in
the mullion and also carrying pins or screws
5 working in the guide-slots, and actuating
means for simultaneously moving the panel-
sections inward or outward, substantially as
described.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in ro
the presence of two witnesses.

JOHN BRANCA.

Witnesses:

R. I. TIPTON,
J. S. WELLS: