No. 736,802. PATENTED AUG. 18, 1903.

L. J. R. DE VRIES.

COMBINED SCREEN AND STORM DOOR.

APPLICATION FILED DEC. 11, 1902.

NO MODEL.

Fig. 1.

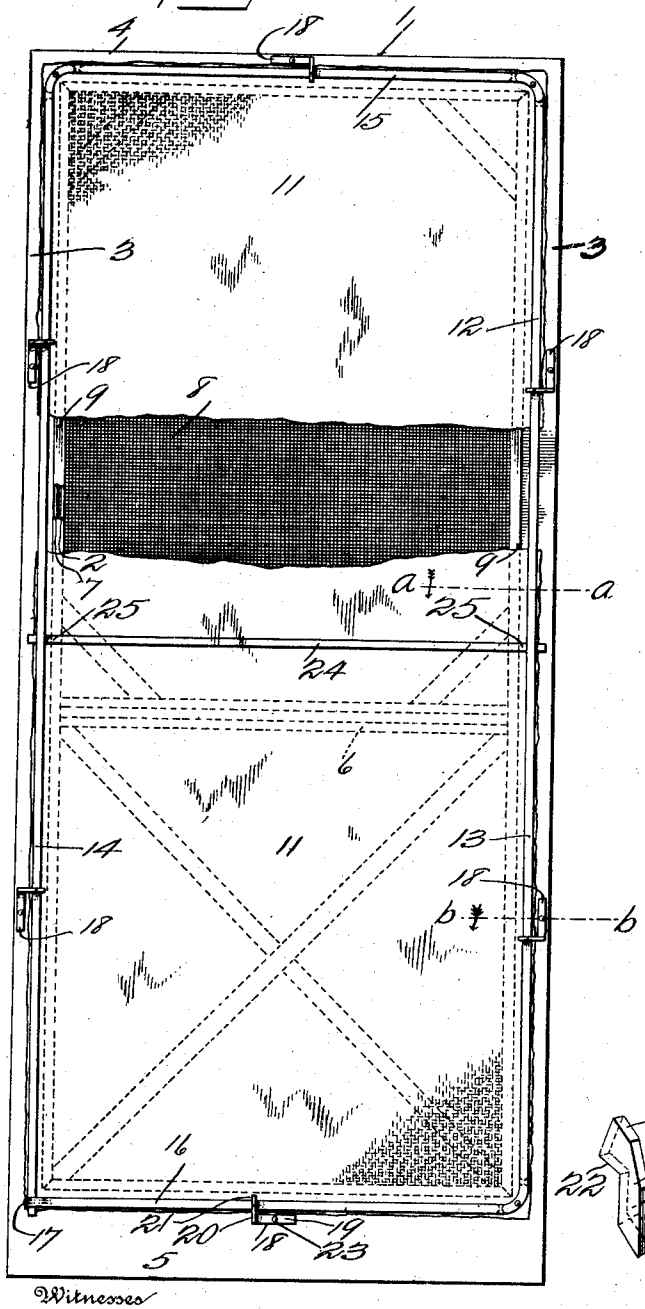


Fig. 2.

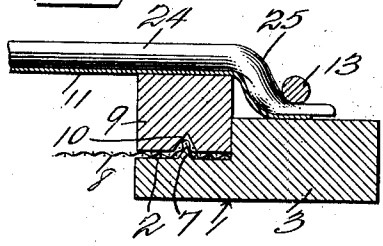


Fig. 3.

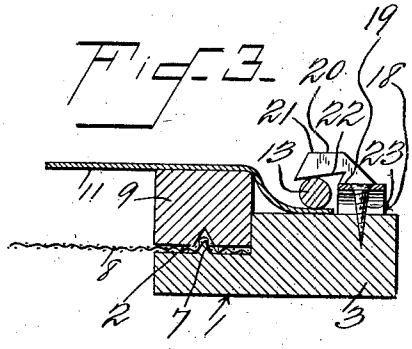
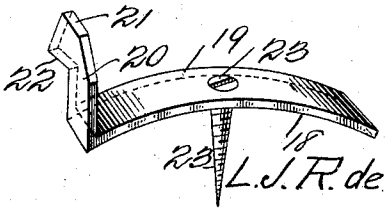


Fig. 4.



Witnesses

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No. 736,802. Patented August 18, 1903.

UNITED STATES PATENT OFFICE.

LUITJEN J. R. DE VRIES, OF PANOLA, ILLINOIS.

COMBINED SCREEN AND STORM DOOR.

SPECIFICATION forming part of Letters Patent No. 736,802, dated August 18, 1903.

Application filed December 11, 1902. Serial No. 134,810. (No model.)

To all whom it may concern:

Be it known that I, LUITJEN J. R. DE VRIES, a citizen of the United States, residing at Panola, in the county of Woodford and State of Illinois, have invented certain new and useful Improvements in a Combined Screen and Storm Door; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention is an improved combined screen and storm door; and it consists in the peculiar construction and combination of devices hereinafter fully described and claimed.

The object of my invention is to provide an improved door which is adapted for use both as a screen-door in warm weather and as a storm-door in cold weather.

In the accompanying drawings, Figure 1 is an exterior elevation of a combined screen and storm door embodying my improvements with parts removed to disclose subjacent constructions. Fig. 2 is a detail transverse sectional view of the same, taken on the plane indicated by the line *a a* of Fig. 1. Fig. 3 is a similar view taken on the plane indicated by the line *b b* of Fig. 1, and Fig. 4 is a detail perspective view of one of the spring-catches.

In the embodiment of my invention here shown the screen 1 is provided in its outer side with rabbets 2 in the inner corners or angles of its side bars 3 and top, bottom, and center cross-bars 4, 5, and 6. These rabbets are right angular in cross-section, and in the lower sides thereof are formed outwardly-projecting beads or flanges 7. The screen fabric 8 has its edges placed on the bottom of the said rabbets. The beads or flanges 7 are preferably triangular in cross-section and have outwardly-converging sides. The stretcher-bars 9 are placed in the rabbets 2 and bear on the outer side of the edge portions of the screen fabric. These stretcher-bars are provided on their inner sides with grooves 10, which are adapted to receive the beads or flanges 7 of the door-frame and to snugly fit the same. Owing to the shape of the said beads or flanges and the said rabbets, the screen fabric is stretched across the door, as will be understood. The thickness of the stretcher-bars 9 exceeds the depth of the rabbets 2, so that the outer sides of the said stretcher-bars project beyond the outer side of the screen-door, as is clearly shown in Fig. 2.

When it is desired to convert the screen-door into a storm-door, I employ a covering fabric 11, which may be made of oil-cloth or other suitable material and which is of sufficient size. This covering fabric is placed on the door 1 so that its edges project beyond the stretcher-bars 9. In practice the width and length of the covering fabric 11 is such that the edges thereof project about a half-inch beyond the outer sides of the stretcher-bars 9. Around the said stretcher-bars and upon the projecting edge portions of the covering fabric is placed a stretcher-frame 12. The same is here shown as comprising a pair of side rods 13 14, an upper cross-rod 15, and a lower cross-rod 16. The latter and the rod 15 are pivotally jointed to the upper and lower ends of the side rod 13. The upper end of the side rod 14 is pivotally jointed to one end of the rod 15, and the lower end of the rod 14 is slidably engaged with an eye 17, with which one end of the lower cross-rod 16 is provided. The construction of the stretcher-frame enables the same to be very compactly disposed when not in use, as will be understood.

On the outer side of the door 1 are a number of pivotally-mounted catches 18, which are adapted to engage the stretcher-frame to secure the latter to the door, and hence cause the stretcher-frame to coact with the stretcher-bars 9 to stretch the outer or cover fabric 11 and secure the same firmly on the outer side of the door, and yet in such manner that it may be readily detached therefrom. Each of these catches comprises a spring base portion or arm 19, which is normally curved longitudinally from end to end, as shown in Fig. 4, and a lug 20, which projects outwardly from one end of the spring brace or arm and has on its inner side a projecting hook or shoulder 21, adapted to engage the stretcher-frame. This shoulder or hook 21 has on its under side a bevel 22, forming a reëntrant angle or notch to receive the stretcher-frame and lock the catch 18 to the said stretcher-frame and prevent accidental disengagement

of the catch therefrom. The pivots 23 of the said catches are here shown as ordinary screws. In practice the same may be nails or other suitable devices, and I do not limit myself in this particular. It will be understood that the spring bases or arms 19 of the catches bear upon the outer side of the door-frame and that owing to the resiliency of the said spring-bases the same coact with the notches 22 to keep the hooks or shoulders of the said catches in engagement with the stretcher-frame.

In order to further strengthen the connection between the outer or covering fabric and the door-frame, I provide a transverse stretcher-rod 24, which is disposed across the outer or covering fabric at or near the central portion thereof, bears thereagainst to press the same on the outer sides of the stretcher-bars 9 to prevent the said outer or covering fabric from flapping, and the ends of the said stretcher-rod are provided with hooks 25, which are engaged by the stretcher-frame 12 and pass under the same, as shown in Fig. 2. Hence the stretcher-frame, which is itself secured on the outer side of the door by the spring-catches, serves to secure the transverse stretcher-rod, and the latter coacts with the stretcher-bars 9 to strengthen the connection between the outer or covering fabric and the door.

It will be understood that by reason of the stretcher-bars 9, which project beyond the outer side of the door, and the stretcher-frame, which bears on the outer side of the outer or covering fabric and extends around the outer sides of the projecting portions of said stretcher-bars, the outer or covering fabric is so tightly stretched on the door that the same is prevented from flapping to such an extent as to cause it to come in contact with the screen fabric, and hence wear of both the outer and covering fabric and the screen fabric is prevented.

From the foregoing description, taken in connection with the accompanying drawings, the construction, mode of operation, and advantages of my invention will be readily apparent, it is thought, without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. A door having rabbets in its outer side extending around the same, in combination with a screen fabric having its edges disposed in the bottoms of said rabbets, stretcher-bars in said rabbets and projecting beyond the outer side of the door, an outer fabric on said stretcher-bars and projecting outwardly beyond the same, and a stretcher-frame fitted on and around the said stretcher-bars and bearing against the outer side of the said outer or covering fabric to secure the latter on said stretcher-bars, substantially as described.

2. In combination with a door having stretcher-bars projecting from one side thereof and extending around the same, a covering fabric bearing on and extending beyond the outer sides of said stretcher-bars, a stretcher-frame engaging the projecting edges of said covering fabric and fitting around the outer sides of said stretcher-bars, and means to detachably secure said stretcher-frame to the door, substantially as described.

3. In combination with a door having stretcher-bars projecting from one side thereof and extending around the same, a covering fabric bearing on and extending beyond the outer sides of said stretcher-bars, a stretcher-frame engaging the projecting edges of said covering fabric and fitting around the outer sides of said stretcher-bars, and pivoted catches to engage said stretcher-frame and secure the same in place, substantially as described.

4. In combination with a door having stretcher-bars projecting from one side thereof and extending around the same, a covering fabric bearing on and extending beyond the outer sides of said stretcher-bars, a stretcher-frame engaging the projecting edges of said covering fabric and fitting around the outer sides of said stretcher-bars, and pivoted spring-catches to engage said stretcher-frame and secure the same in place, substantially as described.

5. In combination with a door having stretcher-bars projecting from one side thereof and extending around the same, a covering fabric bearing on and extending beyond the outer sides of said stretcher-bars, a stretcher-frame engaging the projecting edges of said covering fabric and fitting around the outer sides of said stretcher-bars, and pivoted spring-catches having hooks or shoulders to engage said stretcher-frame, substantially as described.

6. In combination with a door having a projecting stretcher element extending around the same, a covering fabric bearing on and extending beyond the outer sides of said stretcher element, and a stretcher-frame to fit on said fabric and stretcher element, said stretcher-frame being flexibly jointed at its corners, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LUITJEN J. R. DE VRIES.

Witnesses:
C. F. ZINKAN,
L. K. EVANS.