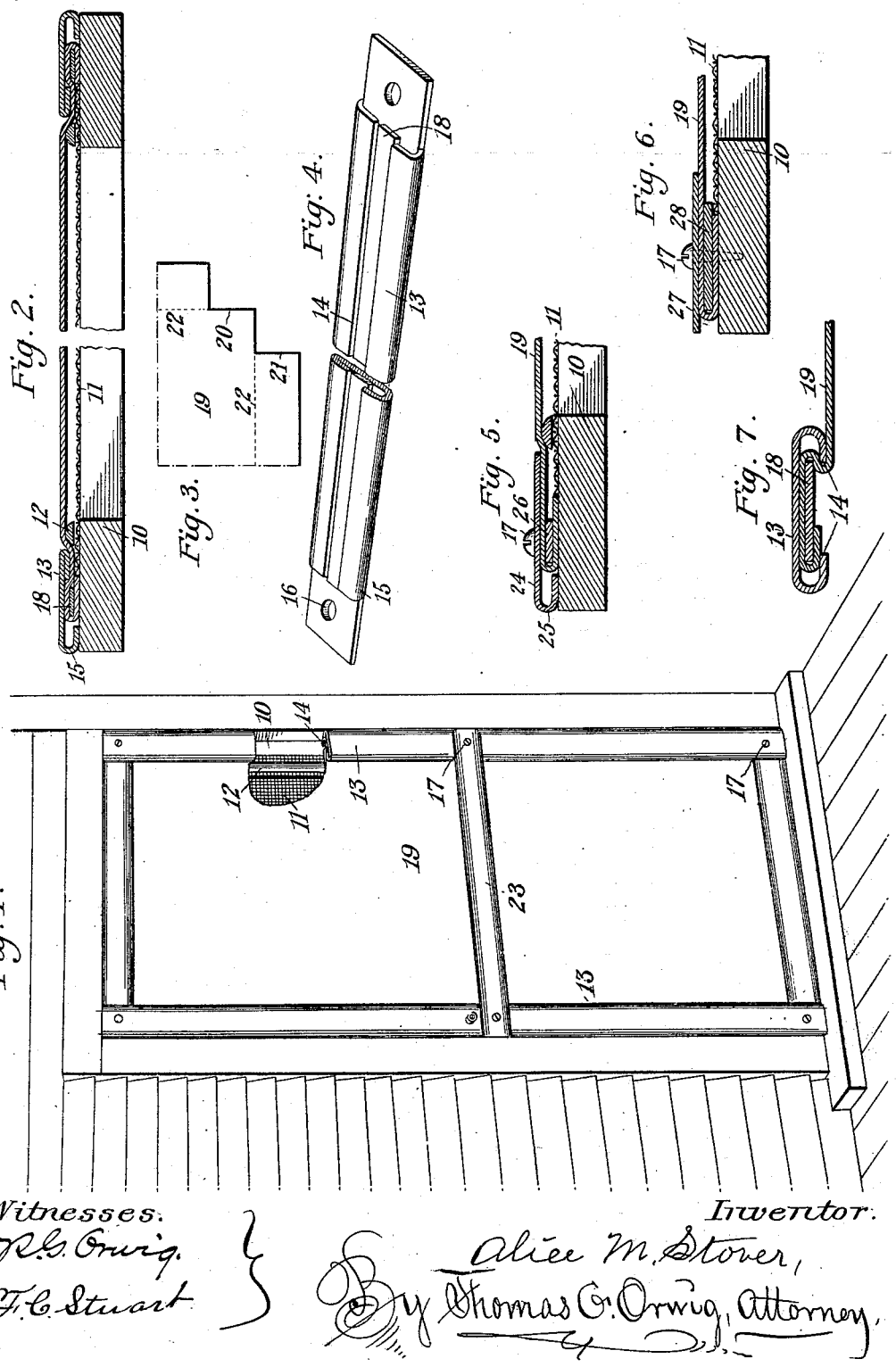
No. 647,891. Patented Apr. 17, 1900.

A. M. STOVER.

TRANSFORMABLE SCREEN DOOR.

(Application filed Jan. 8, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

ALICE M. STOVER, OF GUTHRIE CENTRE, IOWA.

TRANSFORMABLE SCREEN-DOOR.

SPECIFICATION forming part of Letters Patent No. 647,891, dated April 17, 1900.

Application filed January 8, 1900. Serial No. 679. (No model.)

To all whom it may concern:

Be it known that I, ALICE M. STOVER, a citizen of the United States, residing at Guthrie Centre, in the county of Guthrie and State of Iowa, have invented a new and useful Transformable Screen-Door, of which the following is a specification.

One object of this invention is to provide a combined screen and storm door which may be readily, quickly, and easily transformed from the one to the other and which will present a door of strong, neat, and durable construction when used either as a screen or storm door.

My object is, further, to provide a door of this class in which the outer surface of the door will not be defaced or injured by frequent attachments of the storm-protecting portion, so that its usefulness as a screen-door is not diminished, and, further, to provide a storm-protecting attachment which may be readily, quickly, and easily applied when desired and which will present a finished appearance, and, furthermore, to provide an attachment of this sort which may be easily and quickly removed from the screen-door and folded and rolled into a comparatively-small space for storing during the summer months.

My invention consists in certain details in the construction of the storm-protecting attachment, in means for connecting the flexible body of the attachment with the strips for holding same to the door, and in the arrangement and combination thereof with a screen-door, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows a front elevation of the combined door ready for practical use, part of the storm-protecting body being broken away to show the screen behind. Fig. 2 shows a transverse sectional view of the same. Fig. 3 shows one corner of the body of the storm-protecting attachment and also dotted lines to indicate the point at which the same is folded under the connecting-strips. Fig. 4 shows one of the connecting-strips for securing the flexible storm-protecting attachment to the door. Fig. 5 shows a transverse sectional view of one of the side pieces of the screen-door frame and a modified form of the connecting-strips fixed thereto. Fig. 6 shows a similar view of another modification. Fig. 7 shows a sectional view of another modification.

Referring to the accompanying drawings, I have used the reference-numeral 10 to indicate the frame of the screen-door, which is of the ordinary construction and which has wire-netting 11 secured to its outer surface in the ordinary manner. A raised bead 12 is fixed to the outer surface to serve the purpose of holding the wire-netting in place and also to finish the face of the door. The storm-protecting attachment comprises a series of metal strips to extend along the sides, top, bottom, and central portions of the screen-door frame to secure the flexible storm-protecting part to the screen-door frame. These strips are all of the same construction, and hence but one will be hereinafter fully described.

The reference-numeral 13 is used to indicate the strips, which, as before stated, are made of sheet metal, with their edges 14 bent inwardly to points near a central line, with a slight space between said edges at the body of the strip, thus providing a strip with rounded edges at 15 and of a width to extend from the said bead 12 to the outer edge of the screen-door frame. As will be seen in Fig. 4, these inwardly-turned edges 14 do not extend to the ends of the strip, and in the central portion of each of these ends an opening 16 is provided, through which a screw 17 may pass. For each of the aforesaid strips I have provided a flat rod 18 of a width somewhat less than the distance between the edges 14, and preferably this flat rod 18 is fixed to the top of the strip between the edges 14 and at both ends of said rod. However, the rod may be disconnected, if desired, and held in place by being inserted under one or both of the edges 14, as shown in Fig. 7.

The flexible body of the storm-protecting attachment is indicated by the reference-numeral 19 and may be made of oil-cloth, canvas, or the like, and at each corner thereof the material is cut away at 20 and 21 for the purposes hereinafter set forth.

In practical use the attachment is connected with the door and with a flexible body 19 as follows: First, the edge of the flexible body 19 is bent inwardly along the indicated

line 22 of Fig. 3, and this edge is inserted into the opening in the strip 13 beneath the flat rod 18. Then in case the flat rod is secured to the strip the flexible body will be securely held to the strip by the rod; but when the rod is not secured to the strip it is only necessary to force the edge of the rod, together with the flexible body, between the edges 14 and the body of the strip, which it will bind and securely hold the flexible body to the strip. Each of the four strips is secured to one of the edges of this flexible body, as set forth, and then these strips are placed upon the outer surface of the screen-door. Then all of the slack in the flexible body is taken up, and the screws 17 are passed through the openings in the end of the strips and inserted into the screen-door frame. It is obvious that the flexible body cannot be stretched smoothly and evenly in the manner described and by hand, and therefore I have arranged that the strips shall pass outside of the raised bead 12. It will be seen that when the screws 17 are driven home the flexible body will be drawn taut over the said bead, and thus all slack in the body 19 will be taken up, and the same will be stretched smoothly and evenly over the door, and the complete door will present a finished appearance. An auxiliary strip 23 is then placed over the central portion of the door to serve as a brace; but this strip is not attached in any way to the flexible body. When it is desired to remove the storm-protecting attachment from the door, it is only necessary to take out the four corner-screws and then detach the end strips from the flexible body, the strips 23 being, of course, first removed. Then these strips are placed parallel with one of the side strips, and the flexible body may then be wound around these strips, and when tied a compact bundle may be formed which may be stored in a comparatively-small space.

In the modification shown in Fig. 5 the strip 24 is provided with only one underturned edge 25, which is at its outer side. The flat bar 26 is provided, that will clamp the edge of the flexible body to the under surface of the strip 24 when the strip is secured to a door-frame. This rounded edge will present a smooth surface on the outer side of the door, which in some cases is sufficient.

In Fig. 6 I have shown a door-securing attachment in which two strips 27 and 28 of substantially the same size are used. These strips are preferably made of "hoop-iron," and as this is thicker than sheet metal, of which the other strips are made, no underturned edges are necessary, and the flexible body is clamped between the two strips.

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

1. A combined screen and storm door comprising a screen-door frame, a series of strips each having a recess therein, rods to enter the recesses and clamp a flexible storm-door body therein, a flexible storm-door body having corners cut out as set forth and connected with said strips, and means for securing the strips to the door-frame substantially as set forth.

2. A combined screen and storm door, comprising a screen-door frame, a wire-netting secured thereto, a raised bead to cover the edges of the netting on the outer surface of the door, a series of sheet-metal strips with their edges turned to have a space between the edges and a body of the strip, and having openings in the ends thereof, a flat bar to enter each strip as set forth, and a flexible storm-door body having its edges cut away as shown, all arranged and combined as and for the purposes stated.

ALICE M. STOVER.

Witnesses:
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