

May 5, 1936.

M. A. PIXLEY

2,039,447

CLOSURE

Original Filed Nov. 6, 1931 2 Sheets-Sheet 1

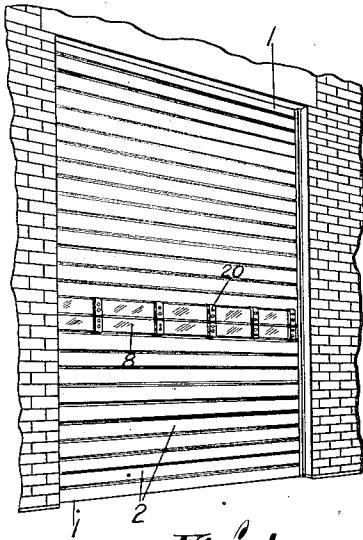


Fig. 1

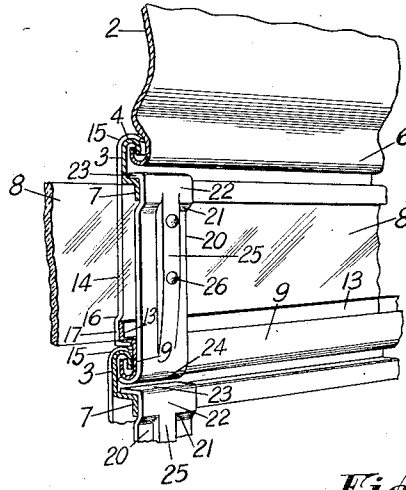


Fig. 2

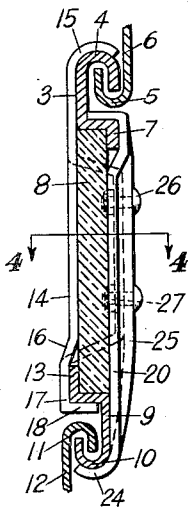


Fig. 3

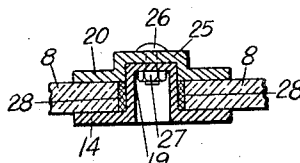


Fig. 4

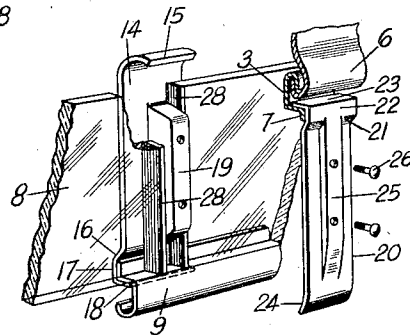


Fig. 5

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Original Filed Nov. 6, 1931 . 2 Sheets-Sheet 2

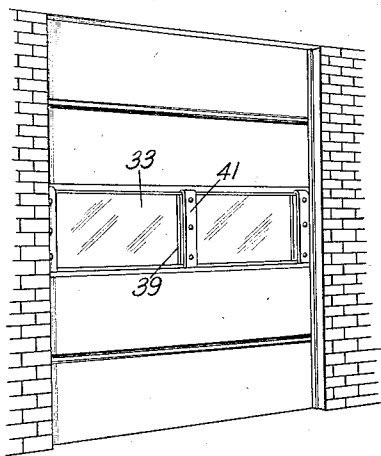


Fig. 6

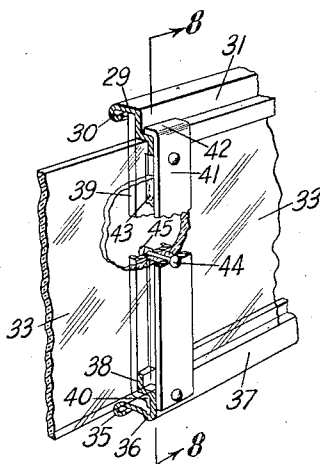


Fig. 7

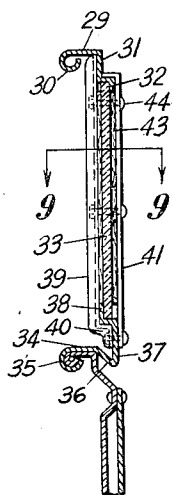


Fig. 8

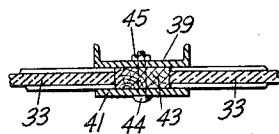


Fig. 9

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UNITED STATES PATENT OFFICE

2,039,447

CLOSURE

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Original application November 6, 1931, Serial No. 573,331. Divided and this application December 3, 1934, Serial No. 755,753

4 Claims. (Cl. 189—56)

My invention relates to closures. It has to do particularly with flexible curtain closures or similar structures, such as coiling doors, overhead doors and other flexible devices used for closing an opening.

One of the objects of my invention is to provide a simple and effective means for incorporating panels of transparent or opaque material in closures of the type indicated.

Another object of my invention is to provide panel structures which may be embodied in closures of this type in such a way that they will be entirely water-proof.

Another object of this invention is to provide a means for incorporating transparent or opaque panels in closures of the kind indicated in such a way as to adequately protect them from shocks and jars to which these closures are likely to be subjected.

In its preferred embodiment, my invention contemplates the provision of a sectional closure structure wherein one or more of the sections takes the form of a built-up section embodying a transparent or opaque panel and a framework for said panel which is separable into parts and which is of such a nature that the transparent or opaque panel area may be of any desired width or length.

This application is a division of my application on Closures, filed November 6, 1931, Serial Number 573,331, which issued as Patent No. 1,983,098, on December 4, 1934.

The preferred embodiment of my invention is shown in the accompanying drawings wherein similar characters of reference designate corresponding parts and wherein:

Figure 1 is a perspective view of a flexible curtain door structure built in accordance with my invention.

Figure 2 is a perspective view of a portion of the door structure shown in Figure 1.

Figure 3 is a vertical transverse section taken through one of my novel built-up sections and showing how a single built-up section is inserted in the door structure.

Figure 4 is a section taken on line 4—4 of Figure 3.

Figure 5 is a perspective view illustrating parts of my built-up section with the elements thereof disassembled.

Figure 6 is a perspective view showing a modification of my invention applied to an overhead type door.

Figure 7 is a perspective view of one of my

built-up sections of the type illustrated in Figure 6.

Figure 8 is a section taken on line 8—8 of Figure 7 and illustrating the manner of connection of my built-up section to another section of the door.

Figure 9 is a section taken on line 9—9 of Figure 8.

In the drawings, with particular reference to Figures 1 to 5, I have shown a rolling door which is provided with a plurality of sections 2 which are built in accordance with my invention. As shown, these sections 2 extend the full width of the door and are each of the same height as the other sections of the door to which they are connected.

In structure, each of my novel sections comprises a transverse upper portion and a transverse lower portion and these two portions are held in proper relation to each other by means of a clamp which also serves to hold a transparent or opaque panel in position between the two transverse portions. Obviously, these portions may vary as to length and the number of clamps and panels which I use for any given door section made in accordance with my invention may, likewise, vary.

The upper and lower transverse portions of my novel section are preferably of an integral form and are merely reverse as to position in a manner that will be explained. The upper portion comprises a vertical part 3 whose upper edge is provided with a down-turned hook-shaped flange 4 which is designed to cooperate with an up-turned hook-shaped flange 5 of an adjacent section 6. This upper transverse portion is preferably provided along its lower edge with an L-shaped flange 7 within which a panel 8 of transparent or opaque material is adapted to seat.

The lower transverse portion also preferably comprises a vertical part 9 and the lower edge thereof carries an upturned hook-shaped flange 10 which is designed to interlock with a down-turned hook-shaped flange 11 upon an adjacent section 12. The upper edge of the vertical wall 9 of this lower transverse portion is provided with an L-shaped flange 13 within which is designed to seat the lower edge of the transparent or opaque panel 8.

Attention is called to the fact that the L-shaped flange 7 of the upper transverse portion of my section is disposed on one side of my transparent or opaque panel while the L-shaped flange 13 of the lower transverse portion of my section is on the opposite side. Under preferred condi-

tions, the flange 7 is on the outer side of the door and the flange 13 is on the inner side thereof. Thus, the flange 7 will shed any moisture, such as rain-water, while the flange 13 is so disposed that it will not collect moisture.

The section is preferably completed at the ends of the upper and lower transverse portions by means of a clamp which is illustrated in disassembled condition in Figure 5. This clamp comprises a member 14 having its upper end curved as at 15 so that it will lie in intimate contact with and partially embrace the hook-shaped flange 4 of the upper transverse portion of the section. The lower end of the clamp member 14 is preferably bent outwardly as at 16 and its lower extremity is then bent to form an L-shaped flange 17 which lies in intimate contact with the L-shaped flange 13 of the lower transverse portion of the section. This contact is such that the leg 18 of the L-shaped flange 17 extends beneath the horizontal leg of the L-shaped flange 13. The clamp member 14 is further provided with a longitudinally extending rib 19 that may be pressed up from the center thereof and that is preferably of a greater depth than the transparent or opaque panel which is to be mounted in the section.

Complemental to the member 14 is a clamp member 20 which has its upper end outwardly bent as at 21 and then bent to form an L-shaped flange 22 having a horizontal leg 23. This L-shaped flange 22 is designed to lie in intimate contact with the flange 7 of the upper transverse portion and with its horizontal leg 23 superimposed upon the horizontal leg of the L-shaped flange 7. The lower end of the clamp member 20 is preferably curved as at 24 and this curved portion 24 is adapted to lie in intimate contact with the exterior of the hook-shaped flange 9 of the lower transverse portion of my section. The clamp member 20 is further provided with a longitudinal socket 25 which receives and embraces the longitudinally extending rib 19 of the clamp member 14, being held thereto by the bolts 26 and nuts 27.

By reference to Figures 4 and 5, it will be noted that the sections are provided with cushioning means 28 at the ends of the transparent or opaque panels 8. This cushioning means may be of felt, rubber or any other suitable material and is preferably disposed in between the ends of the panel 8 and the sides of the rib 19 of the clamping members 14. It will serve to absorb any shocks to which the panels may be subjected and will permit adequate expansion or contraction.

In the modified form of my invention, shown in Figures 6 to 9, an upper transverse portion 29 is curled as at 30 so that it may make an interlocking hinge connection with an adjacent section. This upper transverse portion is provided upon its opposite edge with a vertical wall 31 whose lower edge is bent to form a down-turned L-shaped flange 32. This down-turned L-shaped flange 32 forms a seat for the upper horizontal edge of a transparent or opaque panel 33.

A lower transverse portion of the section is also provided and is designated 34. It is curled at one edge as at 35 so that it may readily make an interlocking hinge connection with an adjacent section. This lower transverse portion 34 is provided with a downwardly inclined portion 36 whose lower edge is integrally connected to a vertical wall 37. Thus, a drip member is formed at this point which will permit the water to drip therefrom and prevent it from mining back into

the interlocking portions of the two sections. The upper edge thereof is provided with an L-shaped flange 38 which forms a seat for the lower horizontal edge of the panel 33.

The transverse portions just described are held in proper relation to each other and the transparent or opaque panel is retained therein by means of one or more clamps which extend vertically from the section. Each clamp comprises three members with means for securing them in cooperative relation.

One of these clamp members is designated 39 and is preferably of channel formation. It is substantially straight throughout with the exception of its lower end. This lower end is turned to form an L-shaped flange 40 with its horizontal leg fitting beneath the L-shaped flange 38 of the lower transverse portion. Another member comprises a flat strip of metal designated 41 and provided at its upper end with a horizontal flange 42 that fits over the L-shaped flange 32 of the upper horizontal portion of the section. These clamp members 39 and 41 are preferably spaced apart by means of a block of wood or other suitable material 43 which likewise fits in between the ends of the transparent or opaque panel in such a manner as to cushion any shocks or permit adequate expansion or contraction. The three clamp members are preferably held together in cooperative relation to each other and to the transverse portions and the panels by means of bolts 44 and nuts 45.

It will be seen from this description that I have provided a novel type of section for doors or other closures of the type indicated and that certain material advantages arise from the structure of this section. For one thing, it is possible to build these sections of any length or width and to assemble them with a minimum of difficulty. Furthermore, they are entirely moisture proof, inasmuch as they are especially built and arranged to shed any moisture contacting therewith. The panels used may be either transparent or opaque and cushioning means has been provided to absorb all shocks and permit adequate expansion or contraction. It will likewise be apparent that my section is of such a structure that it may be readily substituted for any section of a sectional door or other closure and may be removed and replaced with equal readiness.

Other advantages will appear from the appended claims and from the description as a whole.

Having thus described my invention, what I claim is:

1. A flexible closure member for an opening vertically adjustable between closed and open positions, said flexible closure member comprising a plurality of interlocking sections and including a built-up section, said built-up section comprising a frame member embodying a pair of main frame members extending transversely of the closure member, each of said main frame members having an edge which is curled in such a manner that it will interlock with a cooperating curled edge on the adjacent section, said main frame members being spaced apart so that a panel member which extends transversely of the closure member may be disposed therebetween, the lower main frame member being turned downwardly and rearwardly so that it will interlock with an upwardly and forwardly turned portion on the upper edge of the adjacent section disposed beneath said built-up section, the lower main frame member being also bent in such a

manner that a portion which is substantially V-shaped in cross section is formed extending substantially the entire length of said main frame member, said V-shaped portion extending downwardly to such an extent that it will overlap the upper portion of the adjacent section and the sharp edge thereof will be disposed at a point below the joint between the two sections to prevent entrance of water thereinto.

2. A flexible closure member for an opening vertically adjustable between closed and open positions, said flexible closure member comprising a plurality of interlocking sections, one of said sections having its lower edge curled in such a manner that it will interlock with a cooperating curled upper edge of a section disposed directly below it, the lower edge of said section being turned downwardly and rearwardly so that it will interlock with an upwardly and forwardly turned portion on the upper edge of the section disposed beneath it, the lower edge of said section being also turned in such a manner that a portion is formed which extends substantially the entire length of the section and has a sharp edge that serves as a drip member, said portion extending downwardly to such an extent that it overlaps the upper portion of the adjacent section and the sharp edge thereof will be disposed at a point below the joint between the two sections in order to prevent entrance of water into said joint.

3. A flexible closure member for an opening vertically adjustable between closed and open positions, said flexible closure member comprising a plurality of interlocking sections and including a built-up section, said built-up section comprising a frame member embodying a pair of main frame members extending transversely of the closure member, each of said main frame members having an edge which is curled in such a manner that it will interlock with a cooperating curled edge on the adjacent section, said main frame mem-

bers being spaced apart so that a panel member which extends transversely of the closure member may be disposed therebetween, the lower main frame member being turned downwardly and rearwardly so that it will interlock with an upwardly and forwardly turned portion on the upper edge of the adjacent section disposed beneath said built-up section, the lower main frame member being also bent in such a manner that a drip member is formed extending substantially the entire length of said main frame member, said drip member extending downwardly to such an extent that it overlaps the upper portion of the adjacent section and the drip edge thereof will be disposed at a point below the joint between the two sections.

4. A flexible closure member for an opening vertically adjustable between closed and open positions, said flexible closure member comprising a plurality of interlocking sections, one of said sections having a curled lower edge which will interlock with a cooperating curled upper edge of a section disposed directly below it, the lower edge of said section being turned downwardly and rearwardly so that it will interlock with an upwardly and forwardly turned portion on the upper edge of the section disposed beneath it, the lower edge of said section being also turned in such a manner that a portion which is substantially V-shaped in cross section is formed extending substantially the entire length of said section, said V-shaped portion extending downwardly to such an extent that it will overlap the upper portion of the adjacent section and the sharp edge thereof will be disposed at a point below the joint between the two sections in order to prevent entrance of water into said joint, said sharp edge being disposed at a point spaced a substantial distance in front of the interlocking curled edges of the adjacent sections.

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