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PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements in or relating to Insect-Proof Closures

I, DEREK SELBY, a British subject of Bukit Siput Estate, Segamat, Johore, Malaya, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to the insect-proofing of buildings, and is particularly concerned with the provision of improved closures for sealing door, window or like wall openings against the ingress of insects.

It is an object of the invention to provide a closure which is of simple and inexpensive construction but which provides an efficient seal and is sufficiently robust to withstand frequent usage, as well as buffeting by wind and other pressures.

According to the invention there is provided a closure for door, window and like wall openings (hereinafter referred to generally as "wall openings") comprising a closure blind mountable adjacent such an opening so as to be movable between closed and open positions, such blind being formed or provided along and adjacent each of its two side edges with a resilient sealing flap which projects inwardly of the blind, and a pair of guide members mountable at opposite sides of such an opening to define a pair of main channels capable of receiving the said side edges of the blind to guide the latter in its movement between its closed and open positions, each such guide member being formed with an internal channel which, in use, opens in the opposite direction from its main channel and receives one of said resilient flaps therein to form an insect-proof seal therewith.

Engagement of the said resilient flaps in said internal channels defined by the guide members will thus firstly provide a seal at its edges, and secondly will lock the blind against displacement out of the guide members under the action of strong winds or other pressures caused, for example, by a person leaning against the blind.

[Price 4s. 6d.]

It will be understood that the said guide members will act in use to define the position of the blind when it is in its closed position, and to guide it in its movement between its closed and open positions.

The said flaps may be formed in any of a variety of ways. Thus they could be formed by doubling over the edges of a blind itself formed of resilient material and securing together the two layers thus formed at each edge of the blind whilst leaving the edge regions themselves free to form the flap. In a preferred form of the invention, however, each of the flaps is constituted by a free edge portion of a strip of resilient material secured to the blind proper. Said strips may then constitute reinforcing pieces at the edges of the blind.

The said guide members may, if desired, be adapted to define said main channels in conjunction with the frame, e.g. a wall surface, of an opening to which the apparatus is to be applied; i.e. each such member could then form one side wall of the main channel whilst the other side wall thereof could be formed by the surface of such frame when the guide member is mounted thereon. In a preferred form of the invention, however, the guide members are shaped to define said main channels wholly within themselves. Each guide member may then be substantially U-shaped in transverse cross-section, the longitudinal edge of one arm thereof being reversed into the main channel thereby defined so as to define said internal channel.

In one form of the invention a further resilient flap is formed or provided along and adjacent that end edge of the blind which will extend between said guide members during movement of the blind between its said closed and open positions, such flap projecting inwardly from such edge.

The blind will preferably be a flexible roller blind and may have a rigid manipulating member secured along its free end edge. Then, where a resilient flap is formed or provided

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adjacent such edge, such flap will project inwardly of the blind beyond the inner edge of said manipulating member. Preferably, where such a manipulating member is provided, the said resilient flaps at the side edges of the blind will terminate adjacent the outer or lower edge of such member.

In order that the invention may be more readily understood, one embodiment of the same will now be described by way of example and with reference to the accompanying drawings, in which:—

Fig. 1 is a front elevation of apparatus according to the invention, with the blind in its closed position;

Fig. 2 is a transverse cross-section taken on the line II—II of Fig. 1, with the central part of the blind omitted and also showing, in dot and dash lines, the blind in its open position; and

Fig. 3 is a perspective view of the lower right-hand corner of the apparatus as seen in Fig. 1, with parts broken away so as to illustrate the arrangement more clearly.

Referring to the drawings, the apparatus comprises a blind 1 formed of glass-fibre mesh, mounted on a sprung roller 2 which is housed in a blind box 3. The blind box will be secured to a wall, for example, above a door, window or other wall opening which the blind is to close against the ingress of insects and the like.

A pair of guide members 4, whose construction is most clearly apparent in Fig. 3, are secured one at each side of the opening by means of screws.

Each guide member 4 is formed of metal and defines a main channel 6 between front and back walls 7 and 8 respectively, whilst the front wall 7 of each guide member is turned back on itself at 9 into the main channel 6 to define an internal channel 10. The guide members extend downwardly from the underside of the blind box 3 to just below the bottom edge of the opening which the blind is to close.

Openings 5 are provided in the front walls 7 of the guide members to give access to the rear walls to enable the guide members to be fixed in position by screws extending through such rear walls; such openings 5 will preferably be sealed after the guide members have been erected. Alternatively the inner edge of each rear wall 8 could be extended somewhat inwardly beyond the front wall 7 and formed with suitable apertures for screws in such extended part; provision of the openings 5 would not then be necessary.

At each of the side edges of the blind 1 is secured, by rows of stitching 11 and 12, a sealing strip 13 formed of resilient material such as P.V.C. sheeting. The inner edge of each such strip is, as is clearly shown in Fig. 3, left free to form a resilient sealing flap 14 extending inwardly from the edge of the blind.

A rigid manipulating member is secured to the blind along its lower edge, and comprises a metal channel 15 having front and back walls 16 and 17 respectively, the front wall 16 having a forwardly and downwardly projecting flange 18 which may be grasped to operate the blind, whilst the rear wall 17 of such channel has a rearwardly projecting flange 19 which may rest on a window-sill 20 (Fig. 2), for example, when the blind is closed so as to provide a seal along the bottom of the wall opening. An aperture 21 (Fig. 2) is formed in the rear wall 17 of the channel 15, to receive a stud 22 secured to the lower frame of a wall-opening, e.g. a window-sill, to secure the blind in its closed position against the returning force of its sprung roller 2; the stud 22 is so positioned as to ensure that the rearwardly projecting flange 19 of the channel 15 will engage firmly on the surface 20 to provide an efficient seal along the bottom of the wall opening.

In a modification of the invention, which is not illustrated, the flange 19 is not provided but a further sealing strip, similar to the strips 13, is secured along the bottom edge of the blind on the side of the latter opposite from that mounting the strips 13. Such strip lies partially within the channel 15 but its sealing flap projects above the latter to engage with the surface 20 and thus seal the bottom of the wall opening.

The metal channel 15 is of a length somewhat less than the width of the blind and, as may be seen from Figs. 1 and 3, terminates just inwardly of the free edges of the sealing flaps 14. The blind is rolled over and sewn around a stiffening bar 23 at its bottom edge and is clamped in the channel 15 above such bar. The channel 15 thus extends below the bottom edge of the blind, and the sealing strips 13 are also so extended and terminate level with the bottom edge of the channel (Fig. 3).

The bottom corners of the blind are kept in shape and supported by key pieces 24 arranged one at each end of the channel 15, each key piece being in the form of a plate having an upright portion 25 and a pair of laterally extending tongues 26 and 27 which clip into the ends of the channel 15, the lower tongue 27 being formed with an arched portion 28 to cause it to engage frictionally with the interior of the channel walls. The bottom corners of the blind and the lower extremities of the sealing strips 13 (other than the adjacent ends of the flaps 14) are glued or otherwise secured to the upright portions 25 of the key pieces 24.

As may be seen from Fig. 3, the side edges of the blind 1 engage in the main channels 6 of the guide members 4, whilst the sealing flaps 14 of the strips 13 further engage in the internal channels 10 of the guide members. Due to the resilient nature of their material,



insects

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the flaps 14 will press against the internal edge of the wall 9 of such channel so as to provide a very effective seal. In addition the flaps lock the blind in the guide members to prevent its displacement under the influence of high winds or other pressures caused, for example, by a person leaning against the blind.

The edges of the blind will run freely in the guide members 4 so that the blind may easily be moved between its open and closed positions. The sealing strips, in addition to their main functions described above, also strengthen and protect the edges of the blind.

It will thus be seen that the invention provides efficient and easily operable apparatus for sealing a wall opening, which is of simple construction but is nevertheless proof against buffeting by high winds or other abnormal pressures as well as against the ingress of insects. Replacement of the blind material itself when necessary is, moreover, simple and inexpensive.

WHAT I CLAIM IS:—

1. Apparatus for closing a wall opening against the ingress of insects, comprising a closure blind mountable adjacent such an opening so as to be movable between closed and open positions, such blind being formed or provided along and adjacent each of its two side edges with a resilient sealing flap which projects inwardly of the blind, and a pair of guide members mountable at opposite sides of such an opening to define a pair of main channels capable of receiving the said side edges of the blind to guide the latter in its movement between its closed and open positions, each such guide member being formed with an internal channel which, in use, opens in the opposite direction from its main channel and receives one of said resilient flaps therein to form an insect-proof seal therewith.

2. Apparatus according to claim 1, wherein each of said resilient flaps is constituted by a free edge portion of a strip of resilient material secured to the blind proper.

3. Apparatus according to claim 2, wherein said strips constitute reinforcing pieces at the said edges of the blind.

4. Apparatus according to any of the pre-

ceding claims, wherein said guide members are shaped to define said main channels wholly within themselves.

5. Apparatus according to claim 4, wherein each of said guide members is substantially U-shaped in transverse cross-section, the longitudinal edge of one arm thereof being reversed into the main channel thereby defined so as to define said internal channel.

6. Apparatus according to any of the preceding claims, wherein said guide members are made of metal.

7. Apparatus according to any of the preceding claims, wherein said blind is a flexible roller blind.

8. Apparatus according to claim 7, wherein a rigid manipulating member is secured along the free end edge of the blind.

9. Apparatus according to any of the preceding claims, wherein a further resilient flap is formed or provided along and adjacent that end edge of the blind which will extend between said guide members during movement of the blind between its said closed and open positions, such flap projecting inwardly from such edge.

10. Apparatus according to claim 9 where dependent on claim 8, wherein the said resilient flap at said end edge of the blind projects inwardly of the blind beyond the inner edge of said manipulating member.

11. Apparatus according to any of claims 8 to 10, wherein said manipulating member comprises a metal channel clamped on said end edge of the blind and having a forwardly projecting flange which may be grasped to operate the blind.

12. Apparatus according to any of the preceding claims, wherein said blind comprises a glass-fibre mesh.

13. Apparatus for closing a wall opening against the ingress of insects, substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

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