

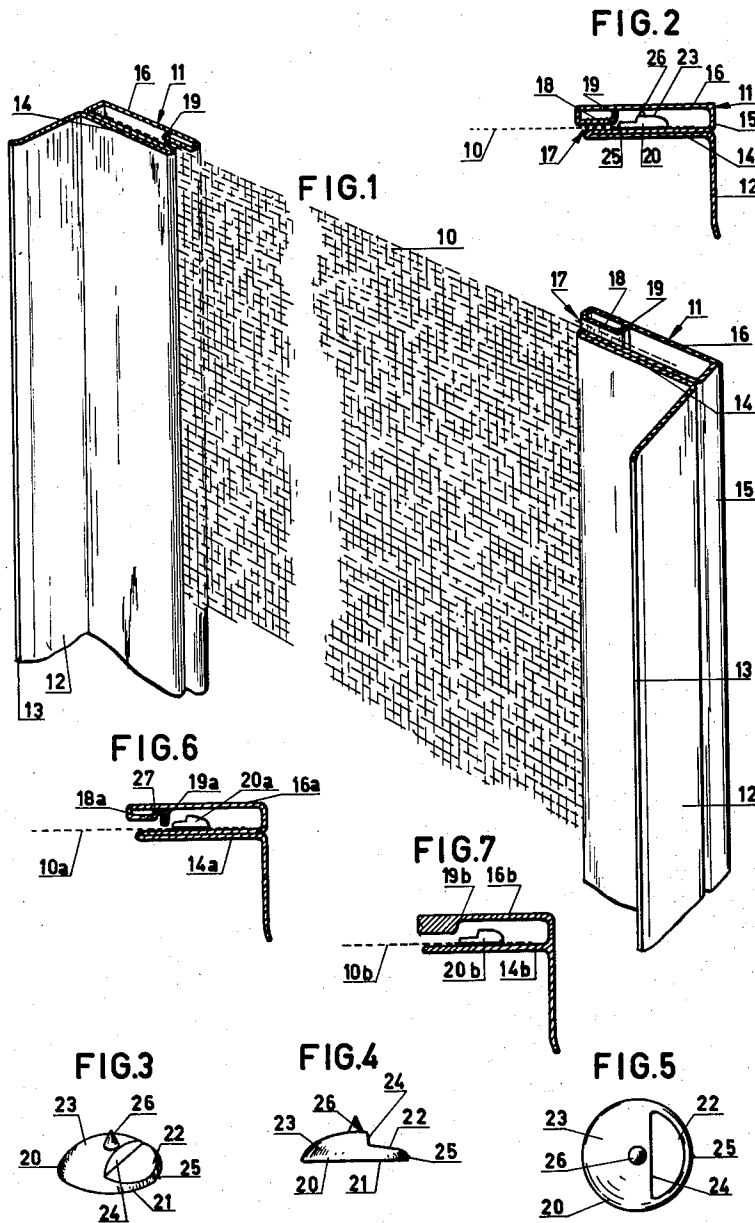
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ROLLER TYPE SCREENS FOR WINDOWS

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ROLLER TYPE SCREENS FOR WINDOWS

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This invention relates to improvements in roller type screens for windows, and it has particular reference to roll screen assemblies having fine mesh insect screens.

It is well known to provide a roll screen assembly of the type having a flexible fine mesh insect screen, made of metal or a plastic material and secured at one end to a spring-loaded roller adapted to be mounted horizontally in a housing above a window or other opening, there being mounted on each vertical side of the opening an edge track having a guide channel to receive and allow sliding movement of the respective side edge of the screen as the latter is drawn up or down to uncover or cover the opening. The lower end of the screen may be secured to a horizontal, movable bottom rail which also has its ends engaged slidably in the guide channels, catches being provided to hold the bottom rail in fully lowered position and in other adjusted positions, if so desired.

Although insect or other screens of this type are generally satisfactory, they have the principal disadvantage that the lowered screen may be distorted by unintentional bumping or by wind pressure so that one or both side edges may be drawn clear of the guide channels, permitting insects to pass the screen, and our present invention therefore has as its principal object the provision of a roll screen assembly of the aforementioned general type which will be of such improved construction that the side edges of the screen will be effectively restrained against withdrawal from the guide channels, while enabling as efficient or more efficient operation than has hitherto been attained.

Other objects of the invention are to provide such a screen assembly which may be manufactured very simply and economically and will prove particularly durable and trouble-free in use. Further objects and advantages of the invention will be hereinafter apparent.

With the foregoing and other objects in view, the invention resides broadly in a roll screen assembly of the type having a flexible screen secured at one end to a rotatable roller adapted to be mounted along one edge of an opening for a window or the like, and a pair of edge tracks adapted to be mounted on the adjacent opposite sides of the opening, each edge track having a guide channel to receive and allow sliding movement of the respective side edge of the screen; characterized in that the mouths of the guide channels have restricting shoulders, and the side edges of the screen are provided with engagement members adapted to engage the restricting shoulders and so restrain the said side edges from being drawn out of and clear of the restricted mouths of the guide channels. It is preferred that the engagement members have resilient contact portions through additionally or alternatively the restricting shoulders may have resilient contact portions. Then again, the parts may be so made and arranged that the side edges of the screen may be forcibly drawn out of the restricted mouths of the guide channels, the forcible

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withdrawal causing either resilient enlargement of the restricted mouths or resilient compression of the engagement members.

The invention may be applied particularly to an assembly in which the roller is mounted horizontally above the opening, the edge tracks being arranged on the vertical sides of the opening. However, the invention is equally applicable to assemblies in which the roller is mounted beneath the opening and the screen may be unwound in an upward direction, or assemblies in which the roller is mounted vertically at one side of the opening, and the edge tracks are arranged horizontally above and below the opening.

Other features of the invention will be apparent from the following description.

In order that the invention may be more readily understood and put into practical effect, reference will now be made to accompanying drawings, wherein:

FIG. 1 is a broken-away perspective view, showing portions of a mesh screen and two edge tracks in accordance with one form of the invention;

FIG. 2 is a sectional plan view of one of the edge tracks and part of the screen shown in FIG. 1;

FIGS. 3, 4 and 5 are respectively a perspective view, side elevation and plan view of one of the engagement members of the screen assembly;

FIG. 6 is a similar view to FIG. 2, but showing a modification of the assembly, and

FIG. 7 is also similar to FIG. 2, showing a further modification.

Referring initially to FIGS. 1 to 5 of the drawings, there is illustrated a fine mesh, flexible fiberglass insect screen 10 adapted to be drawn up or down in a vertical plane in an opening for a window or the like between a pair of edge tracks 11 adapted to be mounted on opposite vertical sides of the opening, the edge tracks 11 being oppositely arranged but otherwise of identical construction.

Each edge track 11 is of rolled sheet metal section and has an attachment flange 12 adapted to be secured by screws to the jambs or side members of the architrave of the window. The front edge 13 of each flange 12 faces out of the room and is bent slightly, as illustrated, for improved sealing purposes, while the rear end of the flange 12 is bent at right angles to extend inwards relative to the opening, being then bent back on itself to constitute a double-thickness front flange 14. This front flange 14 is continued through a base portion 15, co-planar with the attachment flange 12, to a rear flange 16, which also extends inwards parallel to the front flange 14. The front and rear flanges 14 and 16 define between them a guide channel 17 within which the respective side edge of the screen 10 may be engaged.

It will be understood that the upper end of the screen 10 is made fast to a spring-loaded roller (not shown) of known type adapted to be mounted horizontally above the opening in a box-like sheet metal housing so that the screen will normally be wound onto the roller clear of the opening but may be drawn down against the action of the spring to close or cover the opening. The lower end of the screen 10 is secured to a horizontal bottom rail (not shown) of suitable known or other type having its ends movable in the guide channels 17 of the edge tracks 11, the bottom rail also being provided with a finger-grip flange for operating purposes and with catch

means to enable the screen to be held in closed or intermediate positions.

As shown in FIGS. 1 and 2, the inner end of the rear flange 16 of each edge track 11 is turned into the mouth of the guide channel 17 and then has a parallel portion 18 terminating in an end flange which constitutes a continuous vertical restricting shoulder 19 providing a contact face for engagement with engagement members as hereinafter described, the extremity of the contact face within the mouth of the guide channel, that is, at the junction of the flanges 18 and 19, being rounded slightly, as illustrated.

Along each vertical side edge of the screen 10 there is provided a series of spaced engagement members 20 which are shown in more detail and larger scale in FIGS. 3 to 5. Each engagement member is made in this instance of resilient plastic material known by the trade mark "Synvec," one suitable type of material being green in colour and identified by the code "SGH601." The members 20 are secured to the fibreglass screen 10 on that side which faces the rear flange 16, being attached by heat-bonding or other moulding means into the interstices of the mesh (but not appreciably through the mesh) at desired intervals along the side edges according to the overall dimensions of the assembly and the uses for which it is required. In practice, the intervals may suitably be as small as four inches or as large as two feet or more.

Each engagement member 20 has a flat bottom face 21 for affixture to the screen 10, and it has a base portion 22 with an engagement lug 23 formed integrally thereon, the base portion 22 being of lesser thickness (in a direction away from its bottom face 21) than the mouth of the guide channel 17 between the rounded end of the restricting shoulder 19 and the front flange 14. The engagement lug 23 has an engagement face 24 substantially at right angles to the base portion 22 and disposed almost midway along the base so that it will be located outwardly of the inner extremity 25 of the base portion 22. At the same time, the base portion 22 is tapered, as illustrated, to decrease uniformly in thickness from the engagement face 24 to the inner extremity 25. It will also be seen that the engagement member 20 is of round cross-section in planes through the base portion 22 parallel to the bottom face 21, while it is also partly round in planes through the engagement lug 23, the cross-sectional area decreasing constantly in a direction away from the bottom face 21.

Formed integrally on the engagement lug 23 is a central, small and thus highly-resilient anti-rattle pip 26 which is adapted, as shown in FIG. 2, to extend towards the rear flange 16. At the same time, the overall thickness of the engagement member 20 is such that the screen may be drawn forcibly out of the restricted mouths of the guide channels 17, the forcible withdrawal causing resilient compression of the engagement lug 23 and anti-rattle pip 26 to enable the member 20 to pass between the restricting shoulder 19 and front flange 14.

As will be apparent from FIG. 2, the spacing between the engagement faces 24 of the engagement members 20 on opposite sides of the assembly is such that there will normally be a clearance between the faces 24 and restricting shoulders 19 so that the screen 10 is not too taut and may be drawn freely up or down in the guide channels 17. The outer or front face of the screen 10 may bear against the flat front flange 14, the fibreglass and metal contact having no undesirable frictional effect. Also, if the engagement members 20 move against the rear flange 16, contact will be made with the anti-rattle pips 26, while inward movement of the engagement members 20 will cause contact to be made between the resilient engagement faces 24 and the metal restricting shoulder 19. It will thus be seen that the side edges of the screen 10 may move quietly and efficiently in the channels 17 and will be restricted from being drawn inwardly and clear of the channels.

Another advantage of the invention arises from the

design of the base portion 22 and its location relative to the engagement face 24. The sloped inner section of the base portion may engage in the mouth of the channel 17 without undesirable wedging, while this design will act to prevent the member 20 from being peeled off by pressure on the screen 10 as could otherwise occur if the face 24 was located at the inner extremity of the member 20. Again, improved efficiency is obtained by the rounded ends of the restricting shoulders 19 which also reduce binding or wedging. In the event of extreme pressure on the screen 10, the thickness and resiliency of the members 20 allow for their being pulled out in consequence of resilient yielding, rather than tearing or peeling off of the members 20 or tearing of the edge of the screen 10.

Another advantage of the invention is that the small thickness of the engagement members 20 ensures that they will take up little space when the screen 10 is wound on the roller, thus ensuring that a bulky housing will not be required. If desired, the engagement members 20 may be so spaced along the edge of the screen 10 that they will be out of register with one another when the screen is rolled onto the roller.

The modification shown in FIG. 6 is substantially identical with that previously described except that the restricting shoulder 19a is constituted by a continuous, vertical, resilient, plastic restricting strip 27 held in place by the flange portion 18a so that forcible withdrawal of the side edges of the screen 10a will result in enlargement of the mouth of the guide channel as the shoulder 19a is compressed. With this construction, the engagement members 20a could be made of a rigid material secured, as by soldering or the like, to the screen 10a. If flanges 14a and 16a are of thin sheet metal, there will also be a tendency for them to separate on forcible withdrawal of the side edges to resiliently enlarge the mouth of the guide channel, but little or no such tendency would be exhibited if fairly thick sheet metal were employed.

FIG. 7 shows another modification which is virtually identical with that of FIG. 2 except that the edge track is made wholly of a resilient plastic material, the flanges 14b and 16b being adapted to move resiliently apart for forcible withdrawal of the edge of the screen 10b, while the restricting shoulder 19b is formed integrally with the rear flange 16b. The engagement members 20b may be made of either a rigid or a resilient material.

It will be appreciated that the anti-rattle pips 26 shown in FIGS. 2 to 5 are quite optional and would not be provided in cases where the engagement members 20 are made of rigid material, the pips accordingly being omitted from FIGS. 6 and 7 of the drawings.

While roll screen assemblies as described will be found very effective in achieving the objects for which the invention has been devised, it will of course be understood that these particular exemplary forms of the invention may be subject to many modifications of constructional detail and design. Furthermore, as previously mentioned, the spring-loaded roller could be mounted horizontally beneath the opening so that the screen 10 would be unwound in an upward direction, or the roller could be mounted vertically along one side of the opening with the edge tracks 11 arranged horizontally above and below the opening. Such modifications will be readily apparent and are deemed to reside within the scope and ambit of the invention, as defined by the appended claims.

What I claim is:

1. In a roller screen assembly adapted to extend over a window or similar opening, a flexible screen, said flexible screen being adapted to be mounted on roller means and to have one end secured thereto, a pair of edge tracks disposed on opposite sides of the screen in perpendicular relationship thereto, each of said edge tracks having a guide channel therein, each side edge of said flexible screen being received within the guide channel therefor to be movable along said guide channel, and a series of

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spaced engagement members secured to each side edge to restrain the side edges from being drawn out of either guide channel, said engagement members being plastic material and engaged within the interstices of the screen, said guide channel having a front flange and a rear flange, one of said flanges having a restricting shoulder extending toward the other of said flanges to form a mouth for said guide channel, each engagement member including a base portion of lesser thickness than said mouth, an engagement lug spaced from said base portion, an inner extremity disposed adjacent said base portion, and an engagement face interposed between said base portion and said engagement lug.

2. In a roller screen assembly according to claim 1

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wherein the engagement face is disposed at substantially right angles to said base portion, the latter being tapered to decrease uniformly in thickness from the engagement face to said inner extremity.

3. In a roller screen assembly according to claim 1 wherein said engagement lug has thereon a resilient anti-rattle member adapted to engage one of said flanges.

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