



(11) **EP 2 011 954 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
07.01.2009 Bulletin 2009/02

(51) Int Cl.:
E06B 9/54 (2006.01)

(21) Application number: **08159551.4**

(22) Date of filing: **02.07.2008**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT
RO SE SI SK TR**
Designated Extension States:
AL BA MK RS

(30) Priority: **04.07.2007 IT VR20070093**

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(54) **Roller fly-screen with concealed guides**

(57) A side-mounted fly-screen (10) comprising a part made in netting (11) which has a mesh designed to hold back mosquitoes or small insects preventing their entry through the doors, windows and other openings where the fly-screen is applied, and where at least one side of the netting (11) is applied to and held by a mobile vertical upright (12), while the other side is rolled onto a vertical roller (13), and where there is a lower profile (16),

a few millimetres in height, on which a slider (17) carrying the upright (12) slides and where the slider (17) carrying the handle bar profile (12) is connected to the guide tracks (19) sliding in the lower horizontal profile (16) and inside a vertical containing profile (20) located to the rear of the vertical winding roller (13).

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Description

TECHNICAL FIELD

[0001] The present invention relates to a roller fly-screen with concealed guides.

[0002] In particular the invention relates to a side-mounted roller fly-screen for doors or windows where the usual C-shaped aluminium lower guide is substituted by a plastic "track" which is concealed.

[0003] In this way the only part that remains on the floor is a profile a few millimetres high. The roller is contained inside a box which is fixed to the wall. The user opens and closes the fly-screen by simply moving the handle bar profile which together with the net slides at the top inside a guide profile.

[0004] When the user moves the handle bar profile to the right or to the left to open or close the fly-screen this also moves the lower guide plug which in turn is connected to the guide track parts.

[0005] When the handle bar profile is moved towards the box the lower guide plug pushes the tracks into the inside of the containing profile so that it is concealed.

[0006] The present invention relates to the field of accessories for the home and in particular to the sector for fly-screens and their accessories where these products are distributed in retail shopping centres, hobby shops and DIY stores.

BACKGROUND ART

[0007] It is known that fly-screens are barriers which prevent the entry of insects, particularly the most harmful type such as mosquitoes.

[0008] These barriers consist of netting which is applied in various positions and where the most suitable position is at openings such as doors and windows.

[0009] Fly-screens for doors and windows can be constructed in different ways. The most widely used design, in addition to the fixed screen type, is the version with retractable netting where the screen is detached and retracted.

[0010] Retractable fly screens of the most widely used type usually involve the use of winding parts such as a winding roller.

[0011] In the case where the winding roller is of the vertical type, the fly-screen is made to slide inside a lower guide usually made from aluminium.

[0012] Known systems include those where the lower guide, usually made from aluminium, is substituted by a "track". The characteristic of the track type is that when the fly-screen is not in use the track disappears leaving the passageway clear for equipment which rolls along the floor surface, such as wheelchairs. In these known systems the track is fixed to the box profile and travels up the handle bar profile when the fly-screen is rolled up. In existing systems, irrespective of whether the user moves the handle bar profile or the box, the track always

travels up the handle bar profile, that is, in the profile opposite to the box containing the roller.

[0013] This system is not without its problems and has shortcomings which discourage wider use of this type.

[0014] In particular, the traditional track type fly-screen cannot be adapted to any of the existing side-mounted fly-screen systems. This means that complete fly-screens have to be made-to-measure and this therefore limits the versatility and modularity of the system.

[0015] Moreover, in existing systems of the type where the guide comprises tracks, the tracks are always hinged to the head of the box containing the winding roller.

[0016] These shortcomings result in high costs due to the difficulty of adapting the fly-screen to existing structures and the need for tailor-made structures. In addition, these shortcomings also create problems of appearance because the tracks are hinged to the head of the box. These shortcomings mean that consumers show little interest in these types of device.

[0017] Other rather complex mechanisms are known and manufactured and do in part solve the problems described. However, they are inordinately expensive and this factor hinders their distribution to a larger market.

DESCRIPTION OF THE INVENTION

[0018] The present invention provides a fly-screen designed to eliminate or at least to reduce the shortcomings described above.

[0019] The present invention also provides a fly-screen designed and constructed according to criteria which make it suitable for use in most door and window openings and enables the construction of a standard size model or a small range of models consisting of the most common sizes thus avoiding the need to make costly made-to-measure fly-screens.

[0020] The system according to the present invention can be adapted to all existing side-mounted fly-screens without the need to make a complete, made-to-measure fly-screen, that is, without having to create a special fly-screen for this system; this is achieved by simply creating a few plastic fittings of a commonly used type and a containing profile.

[0021] The guide track passes under the head and travels upwards and disappears into the containing profile positioned between the wall and the box with the roller with considerable advantages from the point of view of appearance.

[0022] The tracks are not hinged to the head of the box containing the roller and travel upwards behind the box containing the roller.

[0023] This is achieved by using a fly-screen with the characteristics described in the main claim.

[0024] The dependent claims of the present invention outline preferred embodiments of the invention.

[0025] The main advantages of this solution, in addition to those which derive from the simplicity of its construction, principally concern the fact that it is no longer

necessary to call on the services of a skilled technician to adapt the screen to the measurements of the opening since the reduction of the fly-screen can be performed by installers or final users who do not need to be particularly expert in this work.

[0026] The system according to the present invention comprises a side-mounted roller fly-screen for doors and windows, where the usual C-shaped aluminium lower guide is substituted by a plastic "track" which is concealed.

[0027] The only part that remains on the floor is a profile of a few millimetres high.

[0028] The user opens and closes the fly-screen by simply moving the handle bar profile which, when it is moved together with the net, slides at the top inside a guide profile.

[0029] The invention includes the use of a plug solidly attached to the handle bar profile and which slides inside the floor-mounted guide.

[0030] When the user moves the handle bar profile to the right or to the left this also moves the plug which, in turn, is connected to the guide tracks.

[0031] When the handle bar profile is moved towards the box, the plug pushes the tracks into the inside of the containing profile so that the guide track passes inside the head under the roller and travels upwards inside the containing profile.

[0032] The containing profile has the task of guiding the tracks as they travel upwards and can therefore be a separate profile to be added and joined to existing boxes or can be an integral part of the box profile.

[0033] The last track inside the containing profile can be attached (if necessary) by means of a cord to a counterweight in order to facilitate the upwards movement.

[0034] The counterweight, which is connected by a cord which rotates inside the upper head, runs inside the containing profile.

[0035] Moving the handle bar profile towards the closing profile also moves the tracks out of the containing profile so that they form the lower guide.

[0036] Inserted in the guide track there is at least one brush which holds the fly-screen netting thus forming a barrier against insects in general. The guide track is also designed for the insertion of a second brush.

DESCRIPTION OF THE DRAWINGS

[0037] Further features and advantages of the invention will become apparent from the description of an embodiment which follows with reference to the annexed drawings, given purely by way of a non-limiting example, in which:

- Figure 1 is a perspective drawing of the entire fly-screen according to the present invention;
- Figure 2 is a perspective, exploded drawing showing the components of the fly-screen according to the present invention;

- Figure 3 shows a detail view of the corner unit where the track passes from the horizontal position to the vertical position and vice versa;
- Figure 4 shows a perspective view from below of the fly-screen according to the present invention;
- Figure 5 shows a detail view of the corner part of the track sliding unit.

DESCRIPTION OF ONE EMBODIMENT OF THE INVENTION

[0038] With reference to the annexed drawings, the fly-screen according to the present invention is indicated in its entirety by the numeral 10 and comprises a part made of netting 11 which has a mesh designed to hold back mosquitoes or small insects preventing their entry through the doors, windows and other openings where the fly-screen is applied.

[0039] One side of the netting 11 is applied to and held by a mobile vertical upright 12, known as a "handle bar", while the other side is rolled onto a vertical roller 13, contained in a fixed containing profile 14, known as a "box", which remains fixed to the wall in the position opposite to the first upright 15 of the opening to which the fly-screen is applied. Behind the box 14 there is a containing profile 20, which is connected to the box profile 14 by insertion, snap fitting or other systems designed to join two different profiles. The assembly comprising the box 14 and the containing profile 20 is such that it has the appearance of a single profile.

[0040] The fly-screen is shaped so that the mobile upright 12 can be moved between the two fixed uprights so that the fly-screen can assume the open or the closed position in the opening it occupies.

[0041] For this purpose there is a lower profile 16, a few millimetres in height, on which a slider 17 carrying the upright 12 slides.

[0042] At the top, the handle bar profile 12 and the netting 11 run inside a guide profile 18.

[0043] The slider 17 carrying the handle bar profile 12 is, in turn, connected to the guide tracks 19.

[0044] The guide tracks 19 are made to run inside the containing profile 20.

[0045] Initially, the guide track 19 is in the horizontal position and as the handle bar profile 12 is gradually pulled back it moves into a vertical position entering into the containing profile 20.

[0046] In effect, when the handle bar profile 12 is moved towards the box of the winding roller 13 this causes the slider 17 to push the tracks 19 into the inside of the containing profile 20.

[0047] The guide track 19 passes into the inside of a head 22 positioned under the roller 13 and travels upwards inside the containing profile 20. The last track inside the containing profile, that is, the track furthest away from the slider 17, can, where necessary, be attached by means of a cord to a counterweight 23 which facilitates upward travel.

[0048] The counterweight 23 is connected to the tracks 19 by means of a cord 24 which is made to pass over a drive wheel positioned in a bracket 25 at the side of the upper head 18.

[0049] The counterweight 23 runs inside the containing profile 20.

[0050] It should be noted that the only component which remains on the floor is the profile 16 which is just a few millimetres high. When the handle bar profile 12 is moved towards the closing profile 15, the tracks 19 come out of the containing profile 20, positioned at 90° to the horizontal guide 16 thus forming the lower guide.

[0051] Inserted in the guide track 19 there are one or more brushes 26 which hold the fly-screen netting and form a barrier against insects in general.

[0052] Finally, it should be noted that the most common embodiment of this fly-screen with tracks is made in a single version, that is, with one box only.

[0053] This solution is suitable for widths up to 150 cm. For larger widths, there is a double version of the side-mounted fly-screen with tracks which uses a second box 14, symmetrical to the first box and with the handle bars 12 meeting in the centre.

[0054] The invention as described above refers to a preferred embodiment. Naturally, while the principle of the invention remains the same, the details of construction and the embodiments may widely vary with respect to what has been described and illustrated purely by way of the example, without departing from the scope of the present invention.

Claims

1. A side-mounted fly-screen (10) comprising a part made in netting (11) which has a mesh designed to hold back mosquitoes or small insects preventing their entry through the doors, windows and other openings where the fly-screen is applied, and where at least one side of the netting (11) is applied to and held by a mobile vertical upright (12) while the other side is rolled onto a vertical roller (13), **characterised in that** it has a lower profile (16), a few millimetres in height, on which a slider (17) carrying the upright (12) slides and **characterised in that** the slider (17) carrying the handle bar profile (12) is, in turn, connected to the guide tracks (19) sliding in the lower horizontal profile (16) and inside a vertical containing profile (20) positioned to the rear of the vertical winding roller (13).
2. A side-mounted fly-screen (10) according to the foregoing claim, **characterised in that** the containing profile (20) is located behind the box (14) which contains the roller (13) and is connected to this by insertion, snap fitting or other systems designed to join two different profiles.

3. A side-mounted fly-screen according to one of the foregoing claims, **characterised in that** the guide belts (19) are made to run inside the containing profile (20).
4. A side-mounted fly-screen according to one of the foregoing claims, **characterised in that** the guide track (19) initially runs in the horizontal position and as the handle bar profile (12) is gradually pulled back it moves into a vertical position re-entering into its vertical seat (20) located to the rear of the winding roller and the box (14) and into an internal position where it is not visible.
5. A side-mounted fly-screen according to one of the foregoing claims, **characterised in that** moving the handle bar profile (12) towards the box of the winding roller (13) makes the slider (17) push the tracks (19) into the inside of the containing profile (20).
6. A side-mounted fly-screen according to one of the foregoing claims, **characterised in that** the guide track (19) passes into the inside of a head (22) positioned under the roller (13) and travels upwards inside the containing profile (20) to the rear of the winding roller.
7. A side-mounted fly-screen according to one of the foregoing claims, **characterised in that** the last track inside the containing profile, that is, the track furthest away from the slider (17) can, where necessary, be attached by means of a cord to a counterweight (23) which facilitates upward travel.
8. A side-mounted fly-screen according to one of the foregoing claims, **characterised in that** the counterweight (23) is connected to the tracks (19) by means of a cord (24) which is made to pass over a drive wheel positioned in a bracket (25) at the side of the upper head (18).
9. A side-mounted fly-screen according to one of the foregoing claims, **characterised in that** the counterweight (23) runs inside the containing profile 20.
10. A side-mounted fly-screen according to one of the foregoing claims, **characterised in that** when the handle bar profile (12) is moved towards the closing profile (15), the tracks (19) come out of the containing profile (20), positioned at 90° to the horizontal guide (16) thus forming the lower guide.
11. A side-mounted fly-screen according to one of the foregoing claims, **characterised in that** inserted in the guide track (19) there are one or more brushes (26) which hold the fly-screen netting and form a barrier against insects in general.

12. A side-mounted fly-screen according to one of the foregoing claims, **characterised in that** the guide track (19) passes into the inside of a head (22) positioned under the roller (13) and travels upwards inside the containing profile (20) to the rear of the winding roller. 5
13. A side-mounted fly-screen according to one of the foregoing claims, **characterised in that** the containing profile is a profile which is independent from the box. 10
14. A side-mounted fly-screen according to one of the foregoing claims, **characterised in that** the containing profile is an integral part of the box (14), that is, the box and the containing profile can also be a single profile. 15
15. A side-mounted fly-screen according to one of the foregoing claims, **characterised in that** for windows and/or French windows with a width larger than the standard widths up to 150 cm., there is a double version of the side-mounted fly-screen with tracks which uses a second box (14), symmetrical to the first box and where the handle bars (12) meet at the centre. 20 25

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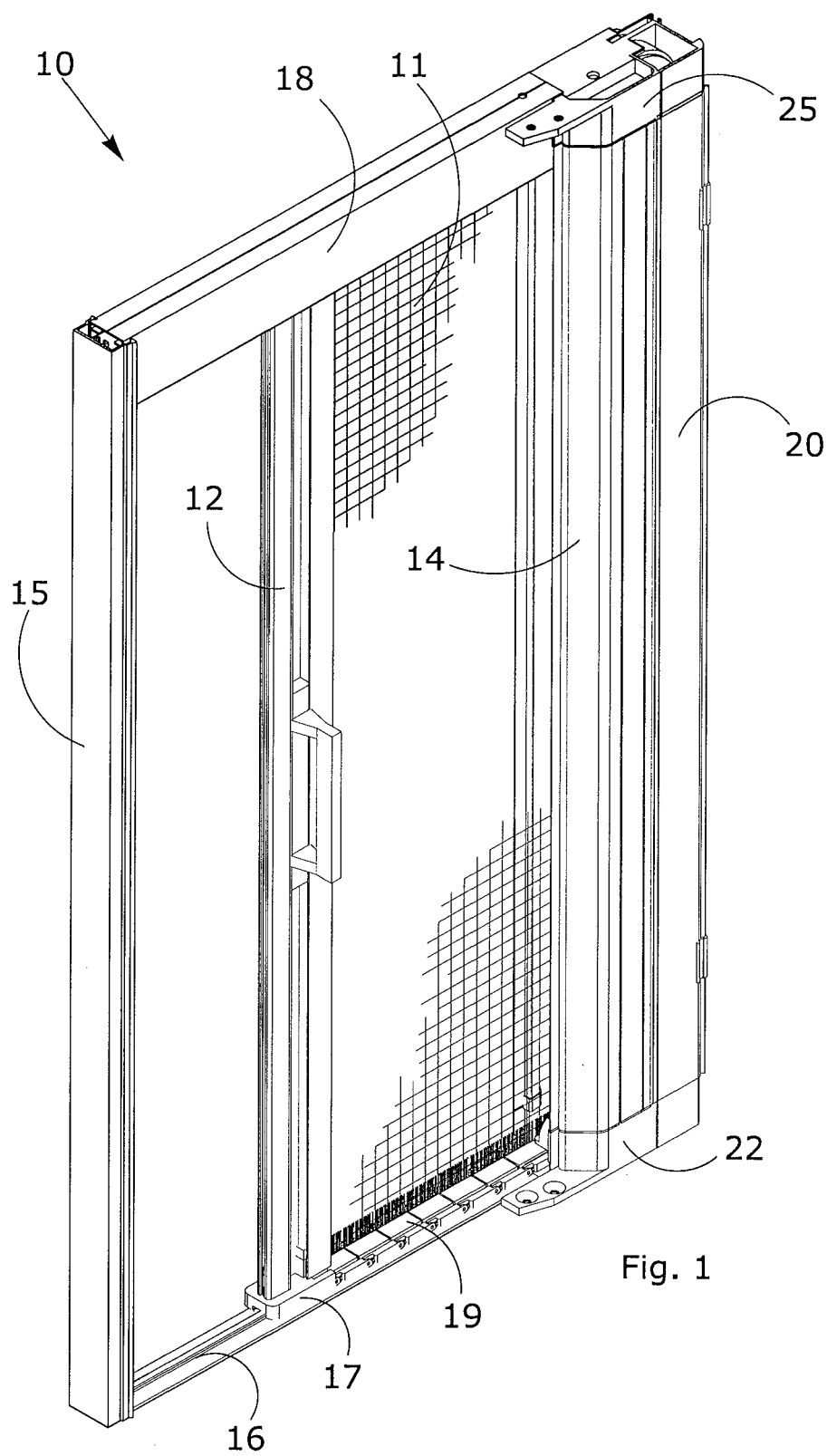


Fig. 1

