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(54) Frame for mosquito net, sun shade or the like for windows, verandas or the like

(57) The present invention relates to a frame for mosquito nets, sun shades or the like for veranda windows, balconies or similar locations, of the kind wherein a stretch of material (2) for mosquito nets or the like is mounted to slide on two frame posts (1). Both posts of the frame comprise, each: a first semi-hollow section bar (10; 100), U-shaped with parallel wings (11, 12; 110, 110), presenting internally at least one cylindrical groove (15; 150, 150) developing over the entire length of the first section bar (10; 100); at least a second section bar (5; 500), rotationally hinged within the related first section bar (10; 100) in said at least one cylindrical groove (15; 150, 150), having in the free end a seat (13; 510) for a means of retention (4); a manoeuvring organ for the rotation of said at least second section bar from a position parallel to a wing of said first section bar to a position wherein said means of retention presses against said stretch of material.

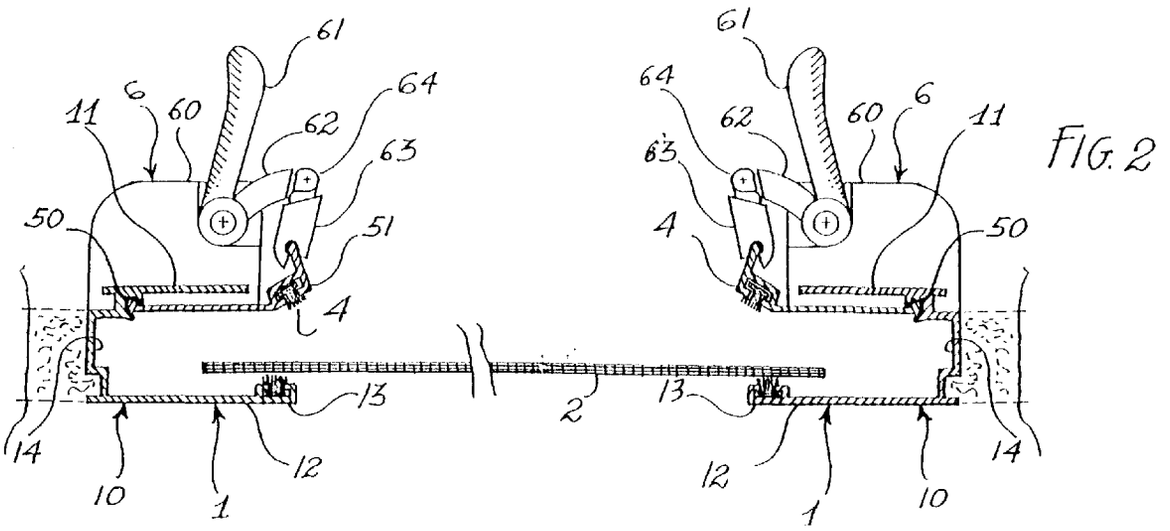

FIG. 2

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Description

The present invention relates to a frame for mosquito nets, sun shades or the like for veranda windows, balconies or similar locations, of the kind wherein a related stretch of material is mounted to slide on two frame posts. There already are frames for mosquito nets, sun shades or the like constructed with opposed U-shaped section bars, wherein the edges of the mosquito net or curtain slide in loose coupling, and on said edges, depending on the type, a strip of PVC or similar material may be secured, whereon retaining buttons are applied at intervals. Such mosquito nets or curtains are united at the bottom to a horizontal bar for fastening to the frame. The side adherence of the mosquito net to the frame is not precise and it forms open spaces not covered by the net. Moreover, because of the presence of the strip and of the retaining buttons, the stretch of material is particularly voluminous when it is completely rolled up, i.e. raised; this entails the provision for cases of suitable capacity.

There are also frames for mosquito nets again constructed with opposed U-shaped section bars, as posts of the frame, the latter fitted with materials with high friction coefficients (e.g. gaskets or brushes or longitudinal felt fixtures) so that the stretch of material is normally held by the frame. Unfortunately in this case as well, as in the solution with retaining buttons, any shocks on the frame or wind gusts or the like cause their exit from the frame, in particular from the U-shaped section bars, thereby forcing the user to a difficult reinsertion operation.

The Italian patent for utility model No. 212.157 is aimed at solving this problem with a device able to keep the edges of the mosquito net or curtain material adhering to the related frames. It entails an arresting organ that creates an essentially punctiform pressure between the net and the related frame. Such an organ, preferably mounted on both posts, is able to hold fast and retain the stretch of material against the frame, but only limited to the pressure point, thus not being able to prevent, for the aforementioned reasons, the detachment of the stretch of material upstream and/or downstream of the point whereon the device acts.

Moreover, the essentially punctiform, or anyway localised, pressure exerted by the device on the stretch of material, in practice always in the same place, over time creates a weakening in the pattern of the stretch of material, apt to lead to its progressive rupture.

The object of the present invention therefore is to eliminate the drawbacks mentioned above, allowing in particular a stretch of material for mosquito nets, sun shades or the like to be unrolled and lowered and to be held fast in this position with a simple and rapid manoeuvre.

Another object of the present invention is to allow the use of the mosquito net or the like without causing with its use any damages apt to reduce its working life.

The invention, as it is charactensed by the claims that follow, solves the problem of providing a frame for mosquito nets, sun shades and the like, of the kind wherein a stretch of material for mosquito nets or the like is mounted to slide on two frame posts, which, from a general point of view, is characterised in that both posts of the frame comprise, each:

- a first U-shaped semi-hollow section bar with parallel wings, internally presenting at least one cylindrical groove developing over the entire length of the first section bar;
- at least a second section bar, rotationally hinged inside the related first section bar in said at least one cylindrical groove, having in the free end a seat for a means of retention;
- a manoeuvring organ for the rotation of said at least one second section bar from a position parallel to a wing of said first section bar to a position wherein said means of retention presses against said stretch of material.

Additional characteristics and advantages of the present invention shall become more readily apparent zfrom the detailed description that follows, of a preferred embodiment illustrated purely by way of nonlimiting indication in the accompanying drawings, wherein:

- Figure 1 shows a schematic front view of a frame for mosquito net and the like according to the present invention.
- Figures 2 and 3 show a cross section according to line A-A of the frame in Figure 1 with the related manoeuvring organ in open and, respectively, locked position.
- Figure 4 shows a cross section of a first embodiment of a frame according to the present invention.
- Figure 5 shows a cross section of a second embodiment of a frame according to the present invention.

In accordance with the present invention, in the figures the number 1 indicates a frame comprising a pair of equal opposed U-shaped posts, with parallel wings, the number 2 indicates a stretch of material for mosquito nets to be fit in a window or other opening, for sun shades or the like, and the number 3 indicates a manoeuvring organ.

In a first embodiment shown in Figures 2 through 4, each post is constructed with a semi-hollow section bar 10 comprising a shorter wing 11, whilst the other longer wing 12 presents a C-shaped end portion 13.

The C-shaped portion 13 constitutes a seat for the holding means 4 (Figures 2 and 3), such as a brush, a felt, a rubber gasket or the like. The holding means 4 has a support base corresponding to that of the C-shaped portion 13. The base side 14 of the U-shaped section bar. opposite to the opening of the section bar, is destined to be connected to the perimeter of the open-

ing whereon the curtain is applied.

The mosquito net material or the like 2 is mounted to slide on the posts of the frame 1, where the edges of the curtain are in loose coupling.

Inside the U-shaped section bar a hinge pintle is obtained by means of a cylindrical groove 15. The groove 15 is preferably positioned on the base side 14, in particular on the side opposite to the wing 12 of the section bar 10.

Inside the section bars 10 of the posts of the frame 1 according to the first embodiment of the present invention, is present a plane section bar 5 (see also Figure 4), for instance in the shape of a bar, but possibly also curved. The section bar 5 presents, in cross section , at one end a circular pad 50 whose shape and size correspond to the groove 15 wherein it is engaged revolving coaxially. The opposite end of the section bar 5 presents a C-shaped portion 51, angled with respect to the plane of the section bar 5 so that, when the circular pad 50 of the section bar 5 is inserted in the groove 15, the C-shaped portion 51 is facing opposite to the C-shaped end portion 13 of the section bar 10, subsequent to the rotation of the section bar 5 from a position parallel to the wing 11 of the section bar 10 (Figure 2) to a position in pressure contact with the stretch of material 2, shown in Figure 3.

For the rotation of the section bar 5, on each post a manoeuvring organ 6 is provided. The manoeuvring organ 6 is mounted on a support element 60 joined with grooved couplings to the U-shaped profile 10 adjacently to the exterior of the wing 11. The manoeuvring organ 6 comprises a handle 61 for a lever 62 in a single piece therewith. The lever 62 is articulated at one end of a lever 63 by means of a cylindrical joint 64.

The other end of the lever 63 is engaged with its own recess in an extension 65 projecting orthogonally from the end of the section bar 5.

In a second embodiment shown in Figure 5, each post is constructed with a semi-hollow section bar 100 comprising two parallel wings 110, 110.

Inside the U-shaped section bar 100 is constructed a pair of hinge pintles by means of two cylindrical grooves 150. Each groove 150 is preferably positioned at the ends ofthe base side 140, in particular in the inner end part of each wing 110 of the section bar 100.

Inside the section bars 100 of the posts of the frame 1 according to the second embodiment of the present invention, is present a pair of plane section bars 500 (see Figure 5), for instance in the form of bars, but possibly also curved. The section bars 500, like the section bar 5 of the first embodiment, engage in the grooves 150, whilst the opposite ends of the section bars 500 present a C-shaped portion 510, angled with respect to the plane of the section bar 500 in such a way that, when the section bars 500 are inserted into the grooves 150, the C-shaped portions 510 are apt to be tangential and symmetncally opposite one to the other. And this, following the rotations of both section bars 500 by means of a manoeuvring organ (not shown) for locking and holding fast the interposed stretch of material.

The invention thus conceived can be subject to numerous modifications and variations, without thereby departing from the scope of the same innovative concept. Moreover, all components can be replaced with technically equivalent elements.

In practice, modifications and/or improvements are possible without thereby departing from the scope of the claims that follow.

Claims

1. Frame for mosquito nets, sun shades or the like for windows, verandas or the like, of the type wherein a stretch of material (2) of mosquito net or the like is mounted to slide between two posts of a frame (1), characterised in that both posts of the frame comprise, each:

   - a first U-shaped semi-hollow section bar (10; 100) with parallel wings (11, 12; 110, 110), presenting internally at least one cylindrical groove (15; 150, 150) developing over the entire length of the first section bar (10; 100);
   - at least a second section bar (5; 500), rotationally hinged inside the related first section bar (10; 100) in said at least one cylindrical groove (15; 150, 150), having in the free end a seat (13; 510) for a means of retention (4);
   - a manoeuvring organ for the rotation of said at least second section bar from a position parallel to a wing of said first section bar to a position wherein said means of retention presses against said stretch of material.

2. Frame according to claim 1, characterised in that both posts of the frame comprise, each:

   - said first semi-hollow section bar (10) presenting in the free end of its first wing (12), longer than its second wing (11), a seat (13) for a means of retention (4) and said cylindrical groove (15) positioned in the inner end of its second wing (11);
   - a second section bar (5) presenting said seat (51) for means of retention (4) inclined with respect to its plane of rotation, in such a way as to abut against said seat (13) for means of retention (4) presented by the first section bar (10), subsequent to its rotation;
   - a manoeuvring organ (8) for the rotation of said second section bar (5) against the related first section bar (10) in such a way that said means of retention (4) with seat (51) bears abutting against said means of retention (4) with seat (51), with the interposition of said stretch of ma-

terial (2), thereby locking the stretch of material in place.

3. Frame according to claim 1, characterised in that both posts of the frame comprise, each:

- said first semi-hollow section bar (100) essentially U-shaped with parallel wings (110, 110) presenting internally a cylindrical groove (150) positioned in the inner end of each of its wings (110, 110);
- a pair of said second section bars (500, 500) engaged in said cylindrical grooves (150) and symmetrically revolving within the first section bar (100), each second section bar (500) presenting a seat (510) for means of retention (4) inclined with respect to its plane of rotation, in such a way as to abut against the corresponding seat (510) of the other second section bar (500) subsequent to the rotations of both;
- a manoeuvring organ for the rotation of said pair of section bars (500, 500) symmetrically one against the other for locking and retaining the interposed stretch of material (2).

4. Frame according to claim 1, characterised in that said seats (51; 510) for means of retention (4) are constructed with a C-shaped section bar.

5. Frame according to claim 1, characterised in that said second section bar (5; 500) presents, in the end opposed to said seat (51; 510) for means of retention (4) a pad to be housed in said cylindrical groove (15; 150) of first section bar (10; 100).

6. Frame according to claim 2, characterised in that said manoeuvring organ (6) comprises a support element (60) coupled to said U-shaped section bar (10) adjacently to the exterior of said second wing (11), a handle (61) and an articulated lever (63) able to be engaged with said second section bar (5), by means of a cylindrical articulated joint, in proximity with its seat (51) for means of retention (4).

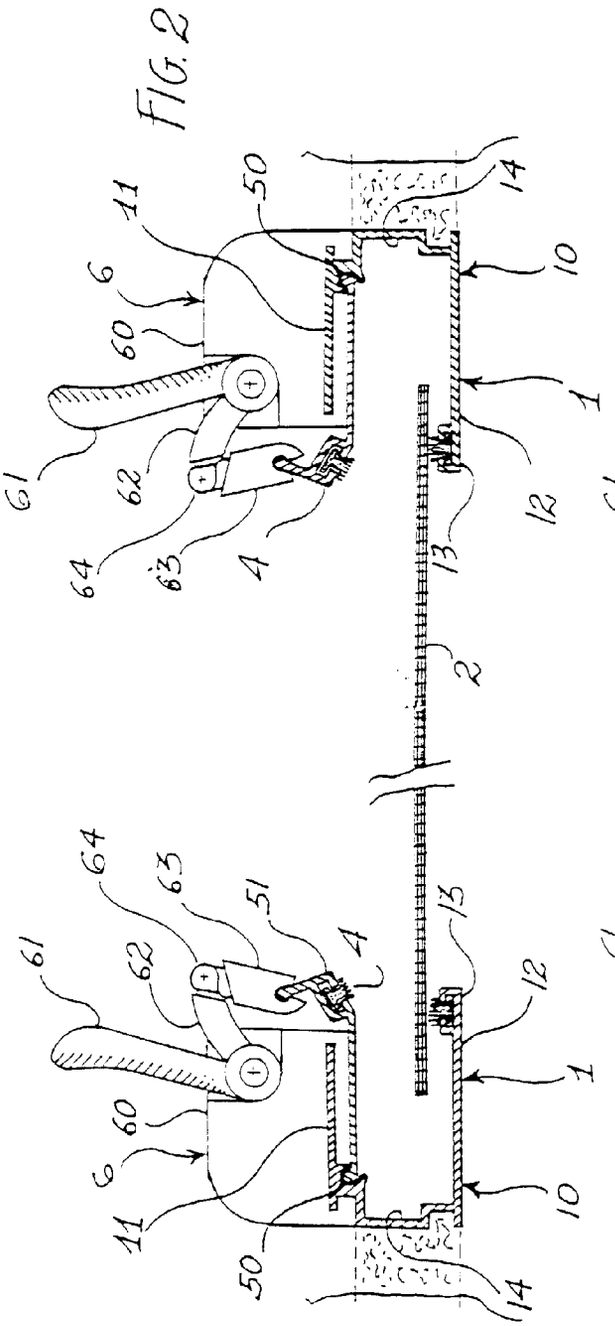
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FIG. 2

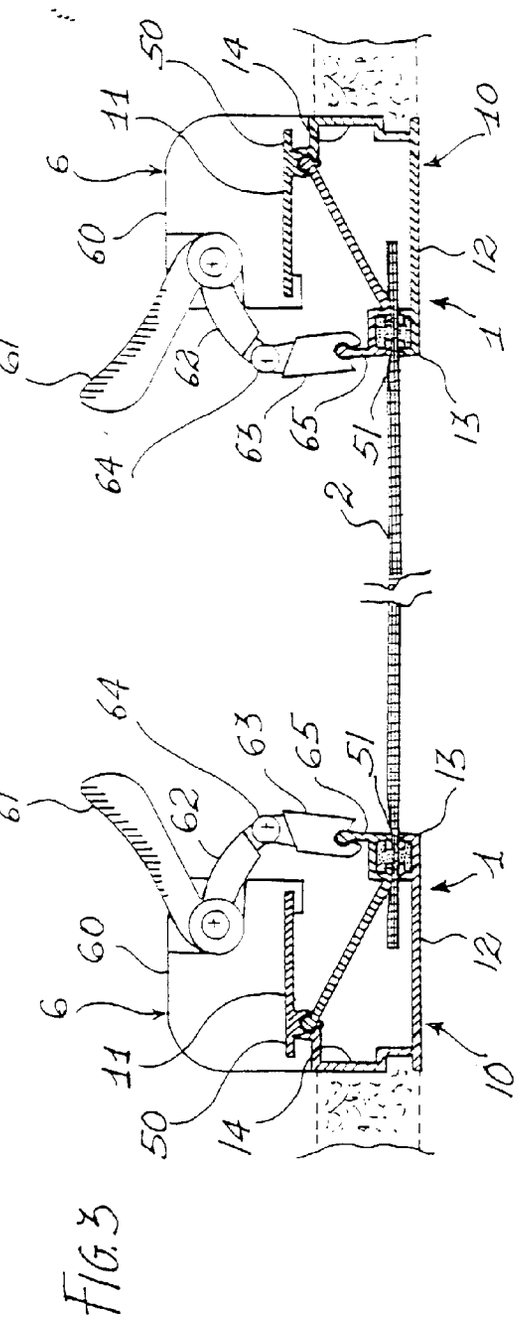
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FIG. 3

FIG. 4

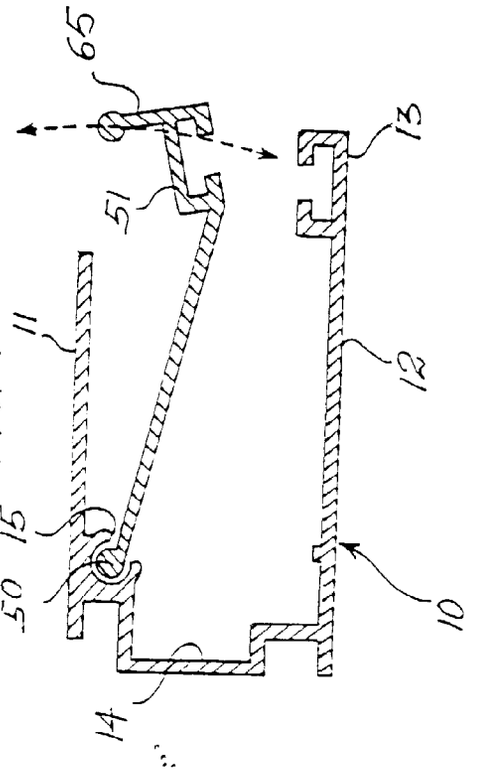

FIG. 5

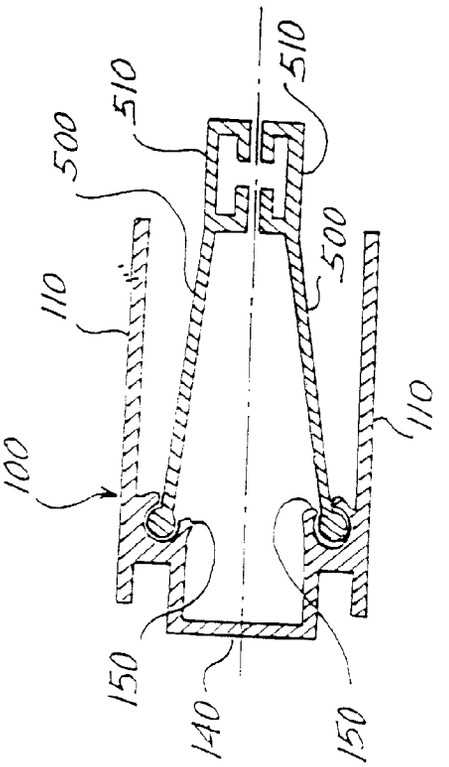

FIG. 1