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(54) **Modular reduced-encumbrance winding system and procedure for installing such system**

(57) A modular reduced-encumbrance winding system (1) is disclosed, comprising a winding module (2) of winding material (2a), two removable leading-in caps (3c), two removable upper limit stop pins (3d), two guiding modules (3), a winding module (4) of a mosquito net (4a) and two guiding modules (5). A procedure for installing of such system (1) is also disclosed.

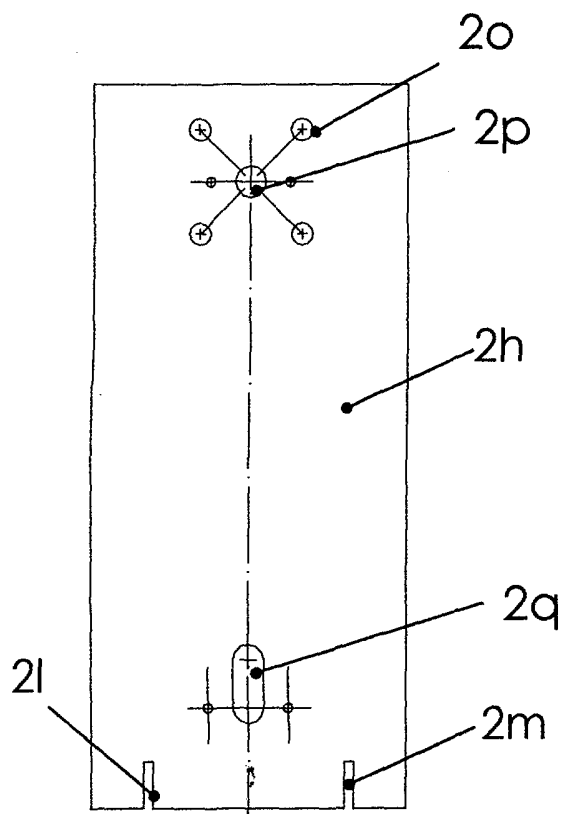


Fig. 9

Description

[0001] The present invention refers to a modular reduced-encumbrance winding system and to a procedure for installing such system for winding roller shutters and/or mosquito nets and the like in window and door frames, particularly to be applied to mobile houses, bungalows, boat-houses, campers, roulottes, trailers and caravans.

[0002] The winding systems belonging to the prior art has several problems either as regards the functional aspects or as regards the practicality of their operating laying. In fact, the winding systems with a single roll are highly bulky, which is an extremely negative aspect when they have to be installed on mobile houses, bungalows, boat-houses, campers, trailers and caravans that, due to their own nature, are characterized by main structures with limited resistance and thickness. Moreover, they require devices with as more reduced encumbrance as possible, and they require the preparation of special housings for their operating laying.

[0003] The existing reduced-encumbrance winding systems, as those disclosed by CH-A-503884, CH-A-625311 and DE-A-2024777, avoid the encumbrance of traditional devices but introduce important problems about their real operation and they still result scarcely practical for assembling.

[0004] Moreover, all existing devices allow a scarce integration with other possible devices, particularly mosquito net coilers, especially when they must be operatingly laid afterwards.

[0005] Object of the present invention is solving the above prior-art problems, by providing a reduced-encumbrance winding system that allows using cases with smaller sizes and a lower side encumbrance.

[0006] A further object of the present invention is providing a reduced-encumbrance winding system that, being dimensionally more compatible with the mobile house wall thickness, is more unobtrusive to be viewed guaranteeing a better aesthetic effect.

[0007] Another object of the present invention is providing a reduced-encumbrance winding system composed of modular elements, already arranged for assembling in special kits and that allows the contemporary or deferred integration thereof with other elements, like mosquito net coilers.

[0008] A further object of the present invention is providing a winding module of winding material able to be structurally fit to also guarantee an efficient operation when such winding material is of remarkable dimensions and/or weight, as in case of metallic shutters.

[0009] Moreover, an object of the present invention is providing an installation procedure of the parts belonging to the winding system according to the present invention, which allows their assembling and laying in a simple and fast way.

[0010] The above and other objects and advantages of the invention, as will appear from the following de-

scription, are obtained by a modular winding system as claimed in Claim 1.

[0011] Moreover, the above and other objects and advantages of the invention are obtained by a procedure for installing a modular reduced-encumbrance winding system as claimed in Claims 6, 7 and 8.

[0012] Preferred embodiments and non-trivial variations of the present invention are claimed in the dependent Claims.

[0013] The present invention will be better described by some preferred embodiments thereof, given as a non-limiting example, with reference to the enclosed drawings, in which:

- Figure 1 is a step of an embodiment of the installation procedure according to the present invention;
- Figure 2 is a detailed perspective view of an embodiment of the present invention;
- Figure 3 is another detailed perspective view of an embodiment of the present invention;
- Figure 4 is another detailed perspective view of an embodiment of the present invention;
- Figure 5 is another detailed perspective view of an embodiment of the present invention;
- Figure 6 is another detailed perspective view of an embodiment of the present invention;
- Figure 7 is another detailed perspective view of an embodiment of the present invention;
- Figure 8 is another detailed perspective view of an embodiment of the present invention;
- Figure 9 is a side view of a component of an embodiment of the present invention;
- Figure 10 is a front cut-away view of another component of an embodiment of the present invention.

[0014] With reference to the Figures, a preferred embodiment of the modular reduced-encumbrance winding system 1 and of the installation procedure of such system according to the present invention are shown and described. It will be immediately obvious that numerous variations and modifications (for example related to shape, sizes and parts with equivalent functionalities) could be made to the described system without departing from the scope of the invention as claimed in the enclosed Claims.

[0015] The modular winding system 1 of the present invention allows, with extreme rapidity and simplicity, installing, on a window or on a door 10, a reduced-encumbrance winding module 2 of winding material 2a, to which it is possible to eventually apply a winding mosquito net 4a using modules already arranged in an assembling kit.

[0016] With reference to the Figures, it is possible to note that the modular reduced-encumbrance winding system 1 is composed of:

- a winding module 2 of winding material 2a;
- a winding module 4 of mosquito net 4a belonging

to the prior art;

- two removable leading-in caps 3c;
- two removable upper limit stop pins 3d;
- two guiding modules 3;
- two guiding modules 5.

[0017] The winding module 2 is composed of a containing case 20 provided with two side walls 2h, 2i on every one of which two symmetrically disposed insertion slots 2l, 2m, a plurality of holes 2o and two holes 2p, 2q are arranged. Such slots 2l, 2m allow inserting the case on a channel that composes the lintel 10c of the frame of the door or the window 10, on which the system according to the present invention has to be installed, making its operating laying easy and fast.

[0018] Inside such case 20, two winding rods 2b, 2c of winding material 2a are rotatably contained related to their respective longitudinal axes, that are arranged mutually parallel, with their own longitudinal axes perpendicular to the walls 2h, 2i and respectively passing through such walls 2h, 2i through the holes 2p, 2q; moreover, such rods 2b, 2c are hinged on the walls 2h, 2i in order to be able to rotate around their own longitudinal axes; moreover, such rods 2b, 2c are mutually connected by at least one flexible transmission system 2d, which allows them to synchronously rotate, and an end of the winding material 2a is fixed on such transmission system 2d. In this way, the synchronized rotation of both rods 2b, 2c causes the winding material 2a to wind on both rods 2b, 2c reducing the thickness of the wound material. Moreover, each rod 2b, 2c is provided with at least two winding cylinders 2f in order to support and to enable the winding or the unwinding of the winding material 2a.

[0019] The plurality of holes 2o on the walls 2h, 2i allow fixing a winding command system 2e, well known in the art, which, connected to one of the rods 2b, 2c, commands their rotation and accordingly the winding or the unwinding of the winding material 2a. Moreover, the symmetry of such plurality of holes 2o on both walls 2h, 2i allows fixing such command system 2e indifferently to the right or to the left of such case 20, according to users' demands.

[0020] Moreover, inside the case 20, at least two sliding blocks (not shown) are fixed through elastic means (not shown); such sliding blocks are of plastic material with low friction coefficient (i.e.: teflon) which allows a greater fluency and a smaller wear of the winding material 2a during winding and unwinding operations, especially when the winding module 2 is horizontally installed, namely with the plan that intersects the axes of the two rods 2b and 2c that is horizontally arranged.

[0021] Moreover, the case 20 is provided with a safety cover (not shown) which is fixed through safety screws (not shown) in order to avoid its opening by malicious persons.

[0022] The guiding modules 3 and 5 are structurally identical but functionally different: each module 3, 5 is

provided with a sliding groove 3a, 5a (the numbers respectively refer to the module 3 and to the module 5), an insertion seat inserting one of the removable leading-in caps 3c, a clamp seat to clamp one of the removable upper limit stop pins 3d and fixing means.

[0023] The modules 3 are provided to be clamped, through their own fixing means, respectively to the jambs 10a, 10b of the window or door 10, while the modules 5 are provided to be clamped, through their own fixing means, to the respective modules 3 in case, subsequently, the winding module 4 of the mosquito net 4a is installed in union with the winding module 2.

[0024] The sliding grooves 3a of the modules 3 are destined to guide the vertical slide of the winding material 2a and to maintain it in position, when only the winding module 2 is installed, or to guide the vertical slide of the mosquito net 4a and to maintain it in position, when the winding module 2 and the winding module 4 are contemporarily installed. The sliding grooves 5a of the modules 5 are provided to guide the vertical slide of the winding material 2a and to maintain it in position, when the winding module 4 and the winding module 2 are contemporarily installed.

[0025] The removable leading-in caps 3c are provided to be inserted, according to cases, in the aforesaid insertion seats in the upper end of the modules 3 or 5 and to guide the insertion of the winding material 2a inside the respective sliding grooves 3a of the modules 3, when only the winding module 2 is installed, or to guide the insertion of the winding material 2a inside the respective sliding grooves 5a of the modules 5, when the winding module 2 and the winding module 4 are contemporarily installed.

[0026] Therefore, such two removable leading-in caps 3c are inserted in the respective insertion seat of the modules 3, when only the winding module 2 is installed, or in the respective insertion seat of the modules 5, when the winding modules 2 and the winding module 4 are contemporarily installed.

[0027] Such two removable upper limit stop pins 3d are provided, according to cases, to be fixed in the aforesaid clamp seats in the inside side end of the modules 3 or 5 and to prevent, coming in contact with a limit stop pin (not shown) positioned on the two lower side ends of the winding material 2a, an excessive rewinding of such material 2a by the user from making such material 2a come out of the sliding grooves 3a, when only the winding module 2 is installed, or of the sliding grooves 5a when the winding modules 2 and the winding module 4 are contemporarily installed.

[0028] Therefore, such two removable upper limit stop pins 3d are inserted in the respective clamp seats of the modules 3, when only the winding module 2 is installed, or in the respective clamp seats of the modules 5, when the winding modules 2 and the winding module 4 are contemporarily installed.

[0029] Moreover, such winding module 2 could be provided, depending on the length of the rods 2b, 2c

and/or on the weight of the winding material 2a, with at least one support module 30 composed of two side vertical rods 30a, 30b joined by a central, "X"-spaced rib 30c and each vertical rod 30a, 30b is provided, into its opposite ends, with rolling means 30d (i.e.: through bushes or ball bearings) with low friction action in order to allow the rotation of the rods 2b, 2c passing in them: the number of such support modules 30 installed in the winding module 2 will be such as to limit the bending of the rods 2b, 2c, which could jeopardize the efficient operation of the module 2 itself.

[0030] The aforesaid fixing means of such modules 3 and 5 include:

- a longitudinal joint groove (not shown) on each module 3;
- a longitudinal joint groove (not shown) on each module 5;
- a plurality of screwable clips 6 suitable to be inserted in the aforesaid longitudinal grooves.

[0031] Now, the modes for operatively laying the modular winding system will be described, from which the interactions among the parts composing the present invention will result in greater detail.

[0032] The procedure according to the present invention allows very easily and quickly installing either the winding module 2 only, or simultaneously the winding module 2 and the winding module 4 of the mosquito net 4a, or the winding module 4 after having already installed the winding module 2.

[0033] The installation procedure for the winding module 2 only, comprises the steps of:

- vertically and externally perforating the jambs 10a and 10b, and screwing the clips 6 in such holes;
- applying an adhesive on the jambs 10a and 10b next to the clips 6;
- fixing each module 3 on its own respective jamb 10a, 10b by inserting the respective joint groove on a respective series of clips 6;
- fixing the case 20 to the door or window 10 by inserting the slots 2l, 2m in a channel composing a lintel 10c of the frame of the door or window 10;
- fixing the case 20 to the wall through nails, screws or dowels;
- fixing the command system 2e on a suitable wall 2h or 2i;
- inserting the leading-in caps 3c in the respective insertion seats of the modules 3;
- inserting the winding material 2a in the sliding grooves 3a;
- fixing the upper limit stop pins 3d in the respective clamp seats of the modules 3;
- perforating the wall to allow a command rod 2n of the command system 2e to pass therethrough;
- fixing the cover on the case 20.

[0034] The installation procedure according to the present invention for the winding module 2 and the winding module 4 simultaneously, comprises the steps of:

- vertically and externally perforating the jambs 10a and 10b by screwing the clips 6 in such holes;
- applying an adhesive on the jambs 10a and 10b next to the clips 6;
- fixing each module 3 on its own respective jamb 10a, 10b by inserting the respective joint groove on a respective series of clips 6;
- vertically and frontally perforating the modules 3 and screwing the clips 6 in such holes;
- applying an adhesive on the modules 3 next to the clips 6;
- fixing each module 5 on its own respective module 3 by inserting the respective joint groove on a respective series of clips 6;
- fixing the case 20 to the door or window 10 by inserting the slots 2l, 2m in a channel composing a lintel 10c of the frame of the door or window 10;
- fixing the case 20 to the wall through nails, screws or dowels;
- fixing the command system 2e on a suitable wall 2h or 2i;
- fixing the winding module 4 in the remaining space between the lintel 10c and the case 20;
- inserting the mosquito net 4a in the sliding grooves 3a;
- inserting the leading-in caps 3c in the respective insertion seats of the modules 5;
- inserting the winding material 2a in the sliding grooves 5a;
- fixing the upper limit stop pins 3d in the respective clamp seats of the modules 5;
- perforating the wall to allow a command rod 2n of the command system 2e to pass therethrough;
- fixing the cover on the case 20.

[0035] The installation procedure for the winding module 4 only afterwards, namely after having already installed the winding module 2, comprises the steps of:

- removing the cover from the case 20;
- removing the upper limit stop pins 3d from the clamp seats of the modules 3;
- extracting the winding material 2a from the sliding grooves 3a;
- removing the leading-in caps 3c from the insertion seats of the modules 3;
- vertically and frontally perforating the modules 3 screwing the clips in such holes;
- applying an adhesive on the modules 3 next to the clips 6;
- fixing each modules 5 on its own respective module 3 by inserting the respective joint groove on a respective series of clips 6;
- fixing the winding module 4 in the remaining space

- between the lintel 10c and the case 20;
- inserting the mosquito net 4a in the sliding grooves 3a;
- inserting the leading-in caps 3c in the respective insertion seats of the modules 5;
- inserting the winding material 2a in the sliding grooves 5a;
- fixing the upper limit stop pins 3d in the respective clamp seats of the modules 5;
- fixing the cover on the case 20.

Claims

1. Modular reduced-encumbrance winding system (1) **characterized in that** it comprises:
 - a winding module (2) of winding material (2a), said winding module (2) comprising a containing case (20) provided with two side walls (2h, 2i), each of said walls (2h, 2i) being provided with at least two insertion slots (2l, 2m) and with a plurality of holes (2o) in order to allow fixing a winding command system (2e), and being provided with two holes (2p, 2q), two winding rods (2b, 2c) of said winding material (2a) rotating around their respective longitudinal axes and being disposed mutually parallel in said case (20) with said longitudinal axes perpendicular and hinged to said walls (2h, 2i) and respectively passing through said holes (2p, 2q) and connected by at least one flexible transmission system (2d), each of said rods (2b, 2c) being provided with at least two winding cylinders (2f) and said winding command system (2e) being connected to one of said rods (2b, 2c) in order to command its rotation, said winding material (2a) being fixed at a first end to said flexible transmission system (2d) and being provided, at a second end, opposite to said first end, with at least a limit stop pin, and a safety cover of said case (20);
 - two removable leading-in caps (3c);
 - two removable upper limit stop pins (3d); and
 - two guiding modules (3), each of said guiding modules (3) being provided with a sliding groove (3a), with fixing means for fixing each of said modules (3) to a respective external vertical jamb (10a, 10b) of a window or door opening (10), with an insertion seat of one of said removable leading-in caps (3c), with a clamp seat of one of said removable upper limit stop pins (3d), said removable upper limit stop pins (3d) being provided to come in contact with said limit stop pin of said winding material (2a) and to prevent said winding material (2a) from coming out of said sliding groove (3a).
2. Modular reduced-encumbrance winding system (1) according to Claim 1, **characterized in that** it comprises:
 - a winding module (4) of a mosquito net (4a); and
 - two guiding modules (5), each of said guiding modules (5) being provided with a sliding groove (5a), with fixing means for fixing said module (5) to a respective guiding module (3), with an insertion seat of one of said removable leading-in caps (3c), with a clamp seat of one of said removable upper limit stop pins (3d), said removable upper limit stop pin (3d) being provided to come in contact with said limit stop pin of said winding material (2a) and to prevent said winding material (2a) from coming out of said sliding groove (5a).
3. Modular reduced-encumbrance winding system (1) according to Claim 1, **characterized in that** it comprises at least one support module (30) composed of two side vertical rods (30a, 30b) joined through a central "X"-shaped rib (30c), each of said rods (30a, 30b) being provided at its opposite ends with rolling means (30d) with low friction coefficient to allow the rotation of said rods (2b, 2c), the number of said support modules (30) installed in said winding module (2) depending on a length of said rods (2b, 2c) and on a weight of said winding material (2a).
4. Modular reduced-encumbrance winding system (1) according to claim 2, **characterized in that** said fixing means comprise a plurality of screwable clips (6) suitable to be screwed on said jambs (10a, 10b) and on at least an external surface of said modules (3) parallel to said jambs (10a, 10b) and to engage themselves in at least a longitudinal joint groove on each of said modules (3, 5).
5. Modular reduced-encumbrance winding system (1) according to claim 1, **characterized in that** at least two sliding blocks in plastic material with low friction coefficient are fixed to said case (20) through elastic means, said sliding blocks being provided to support said winding material (2a) allowing it to slide.
6. Procedure for installing a modular winding system (1), **characterized in that** it comprise the steps of:
 - vertically and externally perforating said jambs (10a, 10b) and screwing said clips (6) in said holes;
 - applying an adhesive on said jambs (10a, 10b) next to said clips (6);
 - fixing each of said modules (3) on a respective jamb (10a, 10b) by inserting said joint groove

- on a respective series of clips (6);
- fixing said case (20) to said door or window (10) by inserting said slots (2l, 2m) in a channel composing a lintel (10c) of a frame of said door or window (10);
- fixing said case (20) to a wall through nails, screws or dowels;
- fixing said command system (2e) on one of said walls (2h, 2i);
- inserting said leading-in caps (3c) in said respective insertion seats of said modules (3);
- inserting said winding material (2a) in said sliding grooves (3a);
- fixing said upper limit stop pins (3d) in said respective clamp seats of said modules (3);
- perforating said wall to allow the insertion of a command rod (2n) of said command system (2e);
- fixing said cover on said case (20).

7. Procedure for installing a modular winding system (1), **characterized in that** it comprises the steps of:

- vertically and externally perforating said jambs (10a, 10b) and screwing said clips (6) in said holes;
- applying an adhesive on said jambs (10a, 10b) next to said clips (6);
- fixing each of said modules (3) on a respective jamb (10a, 10b) by inserting said joint groove on a respective series of clips (6);
- vertically and frontally perforating said modules (3) and screwing said clips (6) in said holes;
- applying an adhesive on said modules (3) next to said clips (6);
- fixing each of said modules (5) on a respective module (3) by inserting said joint groove on a respective series of clips (6) screwed on a respective one of said modules (3);
- fixing said case (20) to said door or window (10) by inserting said slots (2l, 2m) in a channel composing a lintel (10c) of a frame of said door or window (10);
- fixing said case (20) to a wall through nails, screws or dowels;
- fixing said command system (2e) on one of said walls (2h, 2i);
- fixing said winding module (4) in a space between said lintel (10c) and said case (20);
- inserting said mosquito net (4a) in said sliding grooves (3a);
- inserting said leading-in caps (3c) in said respective insertion seats of said modules (5);
- inserting said winding material (2a) in said sliding grooves (5a);
- fixing said upper limit stop pins (3d) in said respective clamp seats of said modules (5);
- perforating said wall to allow the insertion of a

command rod (2n) of said command system (2e);

- fixing said cover on said case (20).

8. Procedure for installing a modular winding system (1) according to claim 6, **characterized in that** it comprises the steps of:

- removing said cover from said case (20);
- removing said upper limit stop pins (3d) from said clamp seats of said modules (3);
- extracting said winding material (2a) from said sliding grooves (3a);
- removing said leading-in caps (3c) from said insertion seats of said modules (3);
- vertically and frontally perforating said modules (3) and screwing said clips (6) in said holes;
- applying an adhesive on said modules (3) next to said clips (6);
- fixing each of said modules (5) on a respective module (3) by inserting said joint groove on a respective series of clips (6) screwed on a respective one of said modules (3);
- fixing said winding module (4) in a space between said lintel (10c) and said case (20);
- inserting said mosquito net (4a) in said sliding grooves (3a);
- inserting said leading-in caps (3c) in said respective insertion seats of said modules (5);
- inserting said winding material (2a) in said sliding grooves (5a);
- fixing said upper limit stop pins (3d) in said respective clamp seats of the modules (5);
- fixing said cover on said case (20).

Amended claims in accordance with Rule 86(2) EPC.

1. Modular reduced-encumbrance winding system (1) comprising a winding command system (2e) and a winding module (2) of winding material (2a), said winding module (2) comprising a containing case (20) provided with two side walls (2h, 2i), two winding rods (2b, 2c) of said winding material (2a) rotating around their respective longitudinal axis and being disposed mutually parallel in said case (20) with said longitudinal axes perpendicular and hinged to said side walls (2h, 2i), connected by a flexible transmission system (2d), said winding command system (2e) being connected to one of said rods (2b, 2c) in order to command its rotation, said winding material (2a) being fixed at a first end to said flexible transmission system (2d), and two guiding modules (3), each of said guiding modules (3) being provided with a sliding groove (3a) and being provided with fixing means for fixing each of said modules (3) to a respective external vertical jamb (10a, 10b) of a window or door opening (10);

characterised in that each of said walls (2h, 2i) is provided with at least two insertion slots (21, 2m), each of said insertion slots (21, 2m) allowing insertion of the case (20) on a channel that composes a lintel (10c) of a frame of a door or window (10). 5

2. Modular reduced-encumbrance winding system (1) according to Claim 1, characterized in that:

- each of said walls (2h, 2i) is further provided with a plurality of holes (2o) in order to allow fixing a winding command system (2e), and is provided with two further holes (2p, 2q); 10
- each of said rods (2b, 2c) is provided with at least two winding cylinders (2f); 15
- said winding material (2a) is provided, at a second end, opposite to said first end, with at least a limit stop pin, and a safety cover of said case (20); 20

and **in that** said winding system (1) further comprises:

- two removable leading-in caps (3c);
- two removable upper limit stop pins (3d); and 25
- two guiding modules (3), each of said guiding modules (3) being provided with an insertion seat of one of said removable leading-in caps (3c), with a clamp seat of one of said removable upper limit stop pins (3d), said removable upper limit stop pins (3d) being provided to come in contact with said limit stop pin of said winding material (2a) and to prevent said winding material (2a) from coming out of said sliding groove (3a). 30 35

3. Modular reduced-encumbrance winding system (1) according to Claim 1, characterized in that it comprises: 40

- a further winding module (4) of a mosquito net; and
- two further guiding modules (5), each of said further guiding modules (5) being provided with a further sliding groove (5a), with fixing means for fixing said further guiding module (5) to a respective guiding module (3), with an insertion seat of one of said removable leading-in caps (3c), with a clamp seat of one of said removable upper limit stop pins (3d), said removable upper limit stop pin (3d) being provided to come in contact with said limit stop pin of said winding material (2a) and to prevent said winding material (2a) from coming out of said further sliding groove (5a). 45 50 55

4. Modular reduced-encumbrance winding system (1) according to Claim 1, characterized in that it

comprises at least one support module (30) composed of two side vertical rods (30a, 30b) joined through a central "X"-shaped rib (30c), each of said side vertical rods (30a, 30b) being provided at its opposite ends with rolling means (30d) with low friction coefficient to allow the rotation of said rods (2b, 2c), the number of said support modules (30) installed in said winding module (2) depending on a length of said rods (2b, 2c) and on a weight of said winding material (2a).

5. Modular reduced-encumbrance winding system (1) according to claim 2, characterized in that said fixing means comprise a plurality of screwable clips (6) suitable to be screwed on said jambs (10a, 10b) and on at least an external surface of said guiding modules (3) parallel to said jambs (10a, 10b) and to engage themselves in at least a longitudinal joint groove on each of said guiding modules and further guiding modules (3, 5).

6. Modular reduced-encumbrance winding system (1) according to claim 1, characterized in that at least two sliding blocks in plastic material with low friction coefficient are fixed to said case (20) through elastic means, said sliding blocks being provided to support said winding material (2a) allowing it to slide.

7. Procedure for installing a modular winding system (1), according to claim 1, 2, 4 or 6, characterized in that it comprise the steps of:

- vertically and externally perforating said jambs (10a, 10b) and screwing said clips (6) in said holes;
- applying an adhesive on said jambs (10a, 10b) next to said clips (6);
- fixing each of said guiding modules (3) on a respective jamb (10a, 10b) by inserting said joint groove on a respective series of clips (6);
- fixing said case (20) to said door or window (10) by inserting said slots (21, 2m) in a channel composing a lintel (10c) of a frame of said door or window (10);
- fixing said case (20) to a wall through nails, screws or dowels;
- fixing said command system (2e) on one of said walls (2h, 2i);
- inserting said leading-in caps (3c) in said respective insertion seats of said guiding modules (3);
- inserting said winding material (2a) in said sliding grooves (3a);
- fixing said upper limit stop pins (3d) in said respective clamp seats of said guiding modules (3);
- perforating said wall to allow the insertion of a

- command rod (2n) of said command system (2e);
- fixing said cover on said case (20).

8. Procedure for installing a modular winding system (1), according to claim 3 or 5, **characterized in that** it comprises the steps of:

- vertically and externally perforating said jambs (10a, 10b) and screwing said clips (6) in said holes; 10
- applying an adhesive on said jambs (10a, 10b) next to said clips (6);
- fixing each of said guiding modules (3) on a respective jamb (10a, 10b) by inserting said joint groove on a respective series of clips (6); 15
- vertically and frontally perforating said guiding modules (3) and screwing said clips (6) in said holes;
- applying an adhesive on said guiding modules (3) next to said clips (6); 20
- fixing each of said modules (5) on a respective guiding module (3) by inserting said joint groove on a respective series of clips (6) screwed on a respective one of said guiding modules (3); 25
- fixing said case (20) to said door or window (10) by inserting said slots (21, 2m) in a channel composing a lintel (10c) of a frame of said door or window (10); 30
- fixing said case (20) to a wall through nails, screws or dowels;
- fixing said command system (2e) on one of said walls (2h, 2i);
- fixing said further winding module (4) in a space between said lintel (10c) and said case (20); 35
- inserting said mosquito net in said sliding grooves (3a);
- inserting said leading-in caps (3c) in said respective insertion seats of said further guiding modules (5); 40
- inserting said winding material (2a) in said sliding grooves (5a);
- fixing said upper limit stop pins (3d) in said respective clamp seats of said further guiding modules (5); 45
- perforating said wall to allow the insertion of a command rod (2n) of said command system (2e);
- fixing said cover on said case (20). 50

9. Procedure for installing a modular winding system (1) according to claim 7, **characterized in that** it comprises the steps of:

- removing said cover from said case (20);
- removing said upper limit stop pins (3d) from said clamp seats of said guiding modules (3);

- extracting said winding material (2a) from said sliding grooves (3a);
- removing said leading-in caps (3c) from said insertion seats of said guiding modules (3);
- vertically and frontally perforating said guiding modules (3) and screwing said clips (6) in said holes;
- applying an adhesive on said guiding modules (3) next to said clips (6);
- fixing each of said further guiding modules (5) on a respective guiding module (3) by inserting said joint groove on a respective series of clips (6) screwed on a respective one of said guiding modules (3);
- fixing said further winding module (4) in a space between said lintel (10c) and said case (20);
- inserting said mosquito net in said sliding grooves (3a);
- inserting said leading-in caps (3c) in said respective insertion seats of said further guiding modules (5);
- inserting said winding material (2a) in said further sliding grooves (5a);
- fixing said upper limit stop pins (3d) in said respective clamp seats of the further guiding modules (5);
- fixing said cover on said case (20).

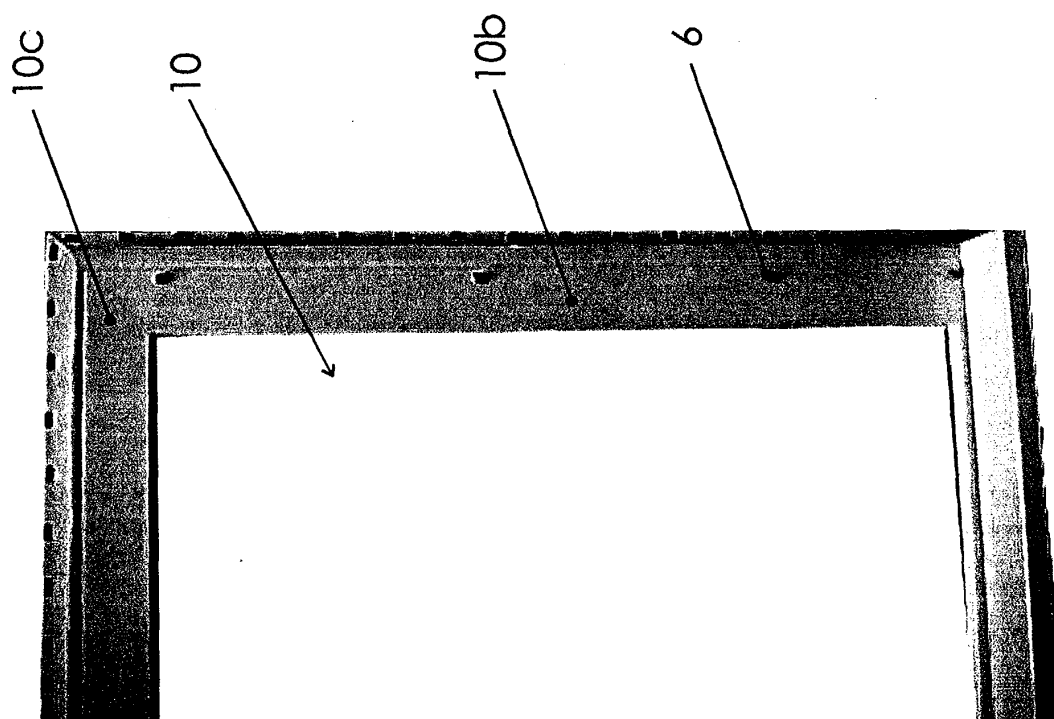


Fig. 1

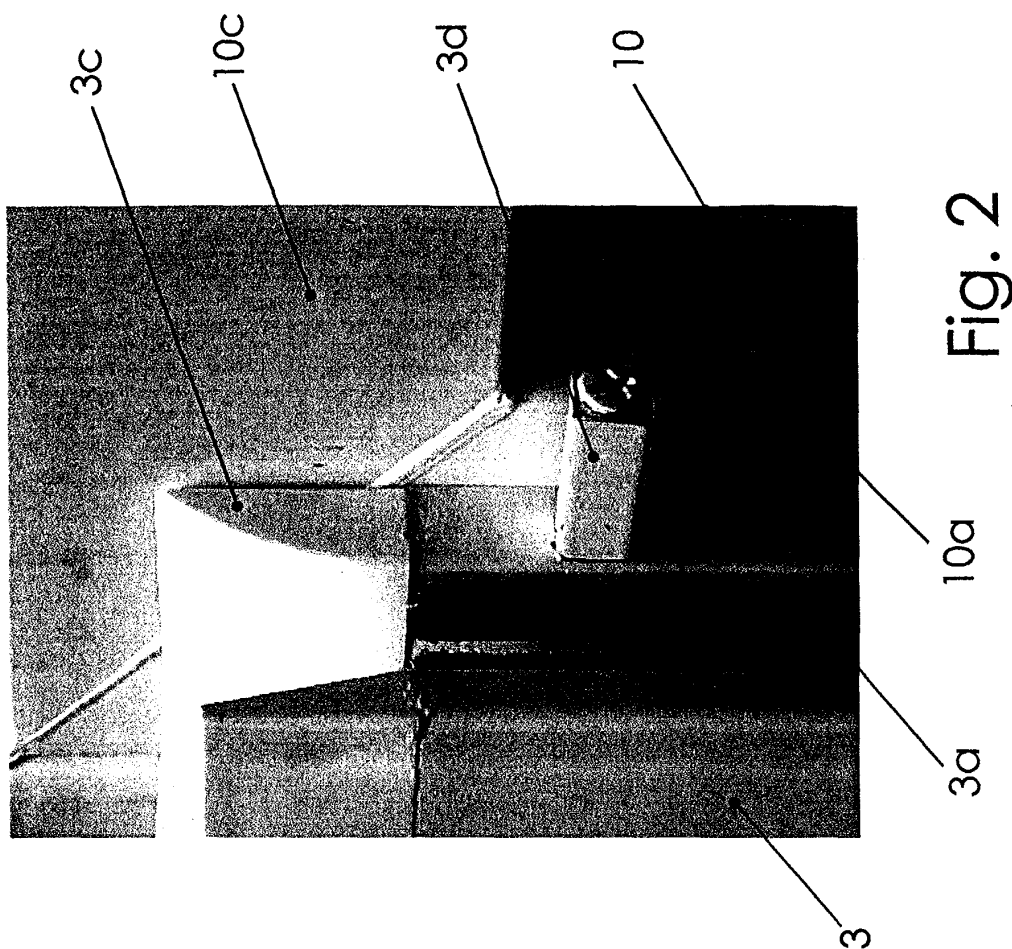
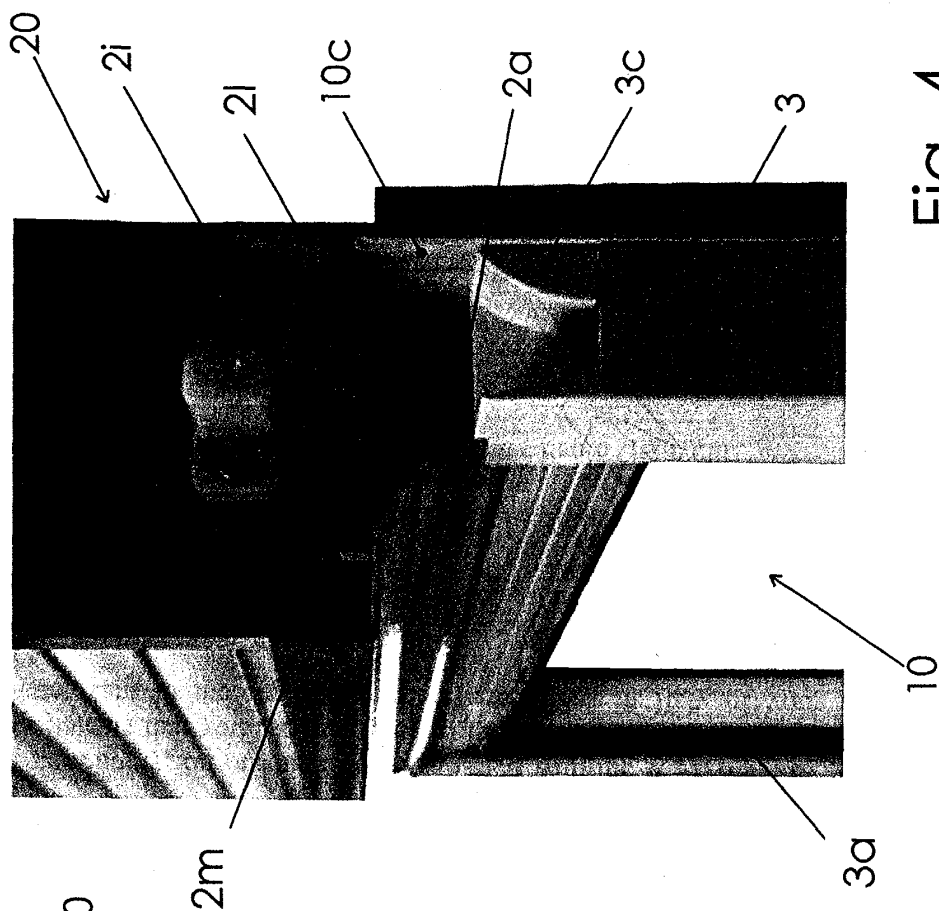
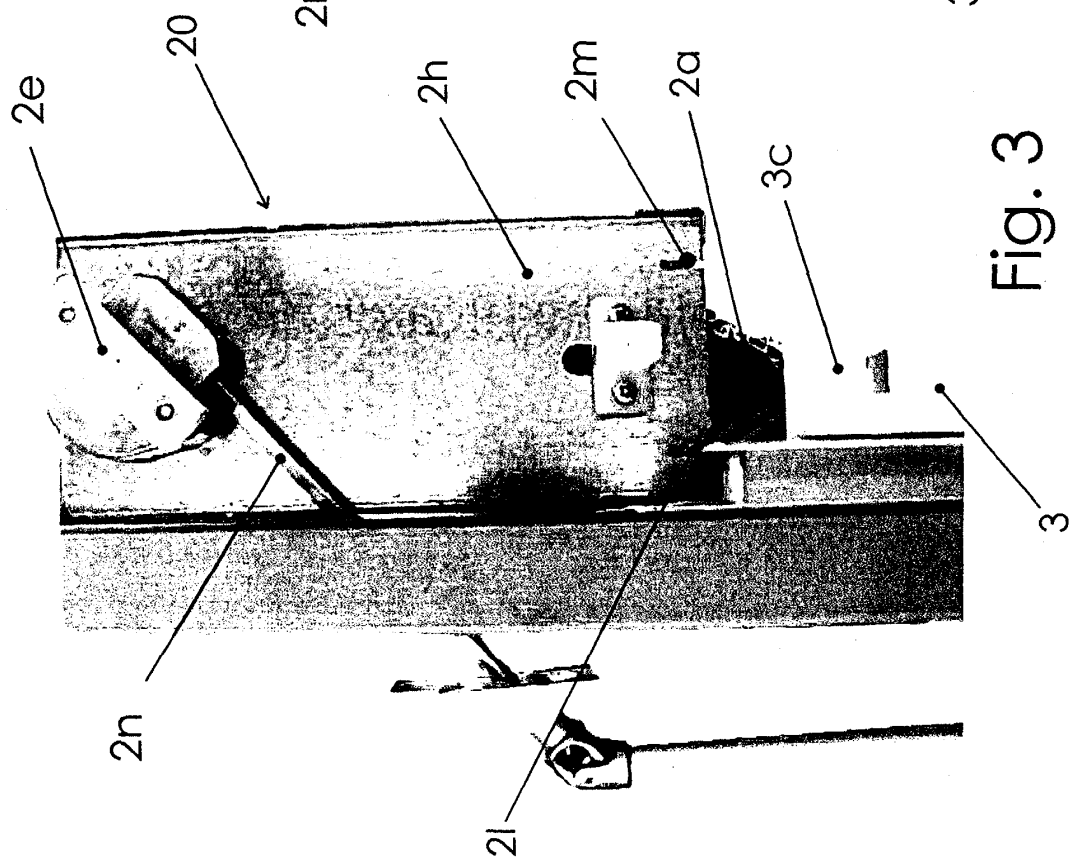
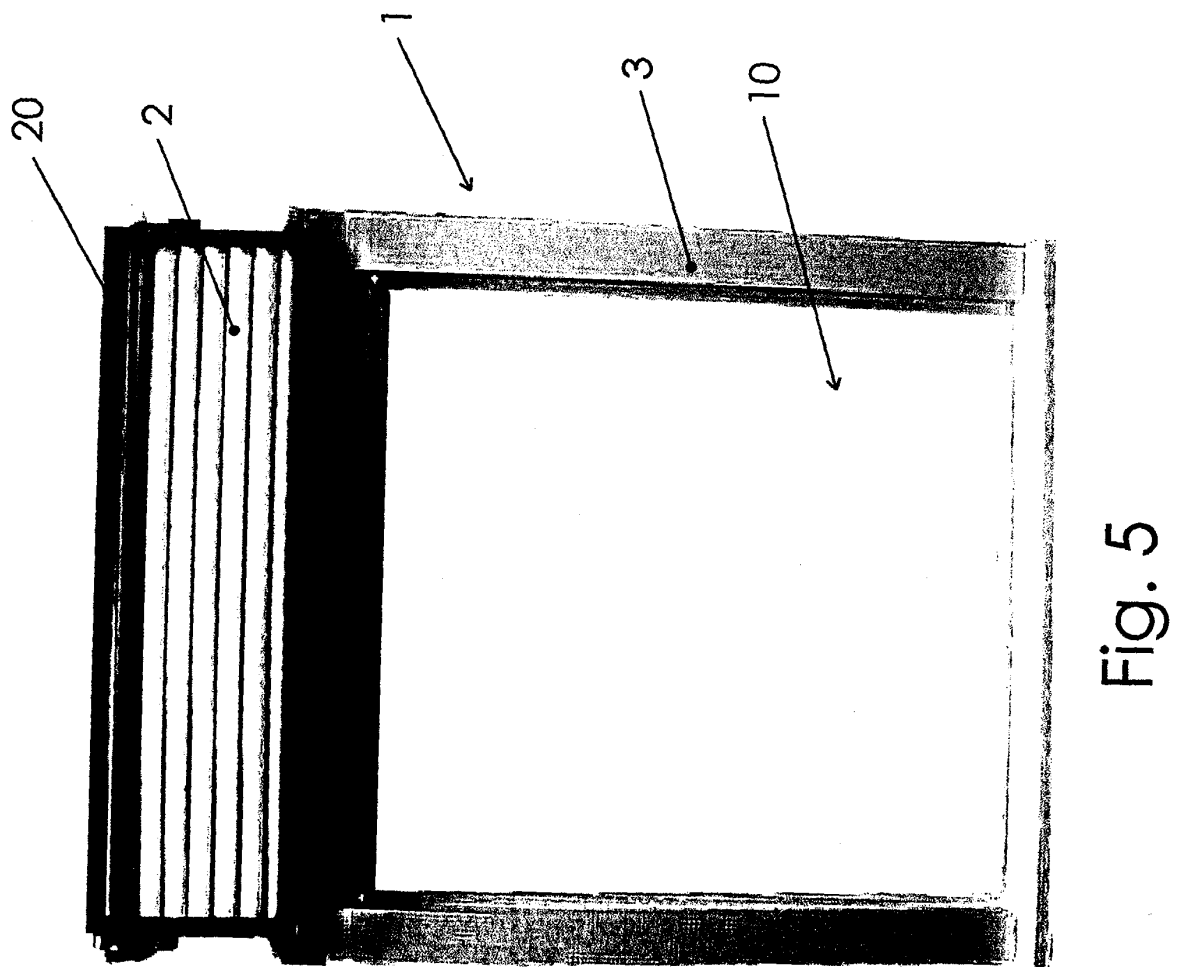
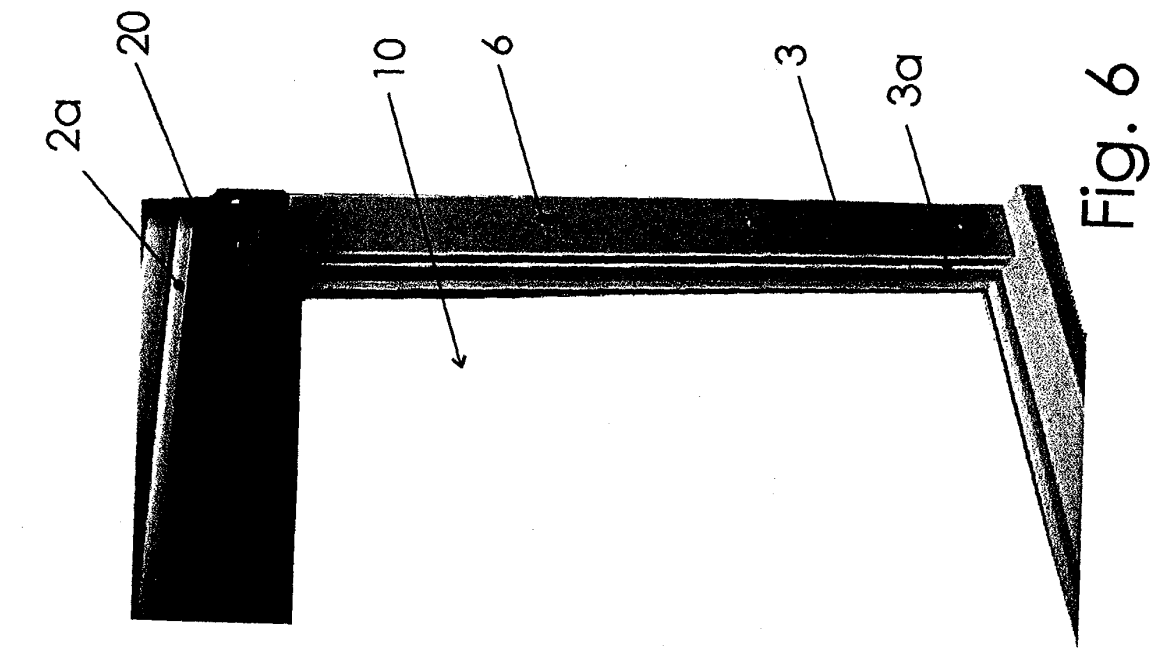


Fig. 2





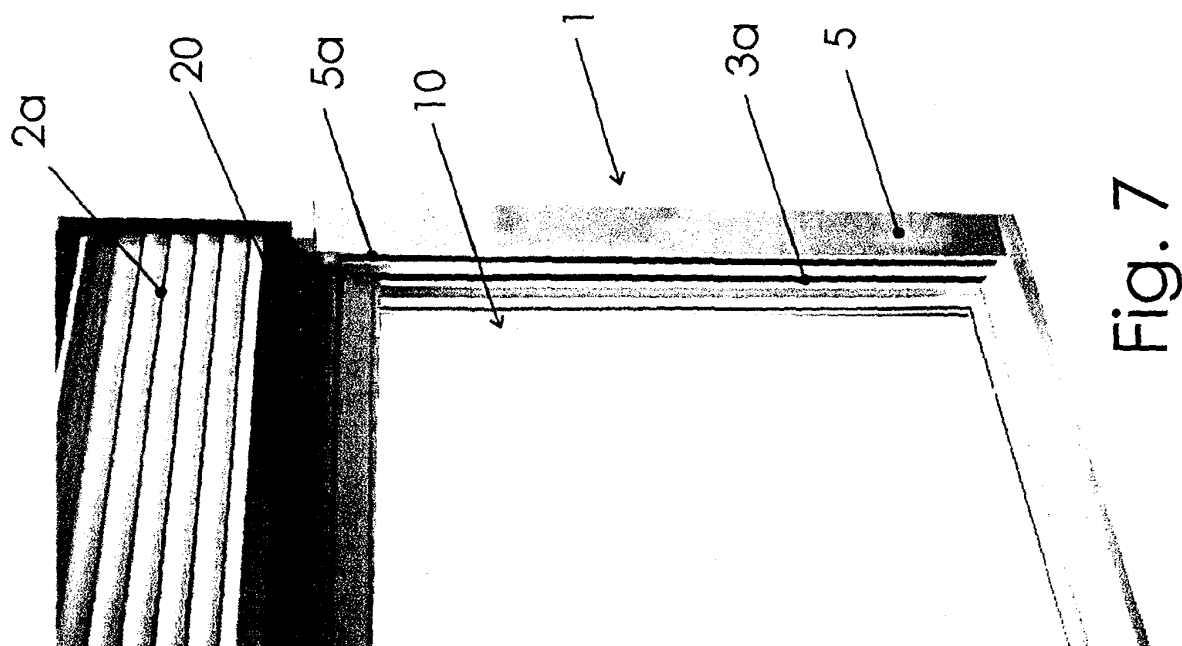


Fig. 7

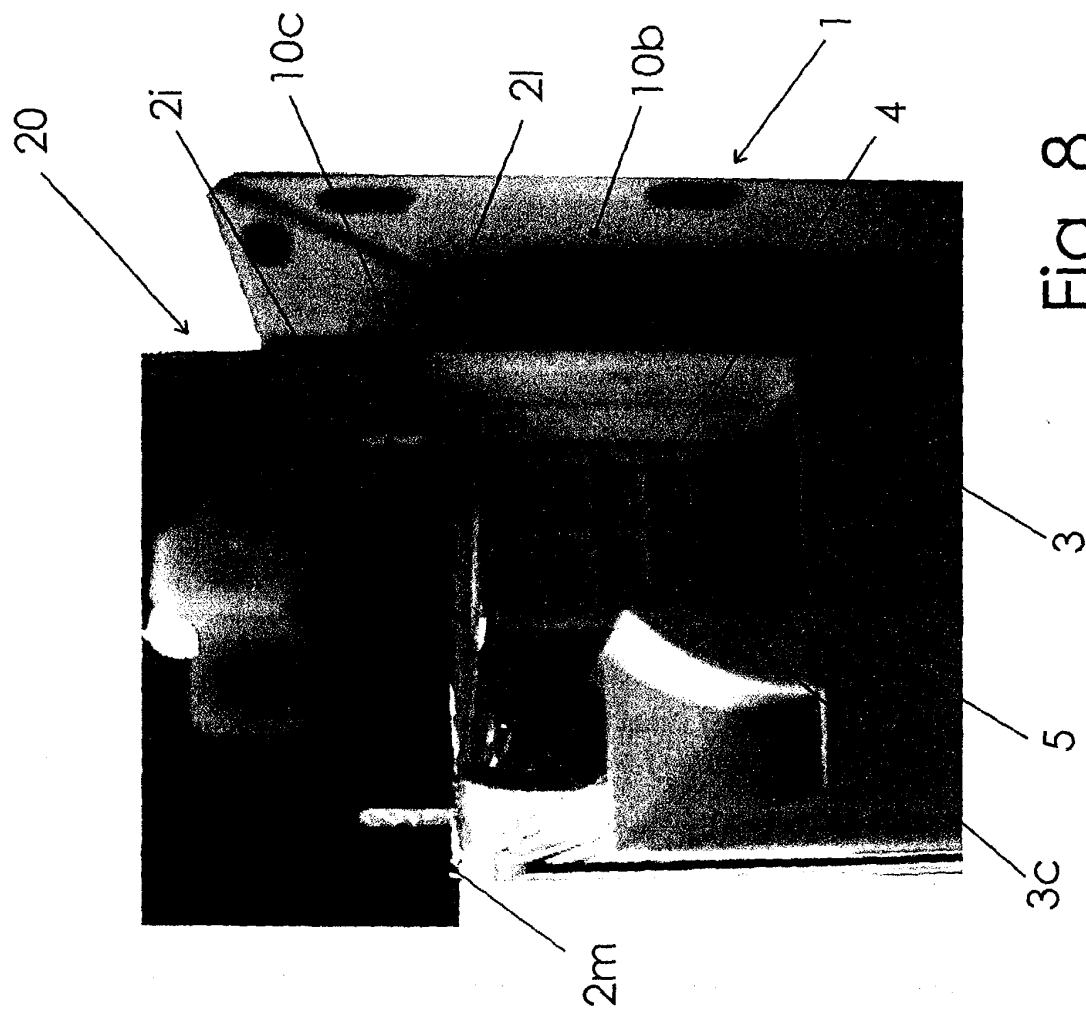


Fig. 8

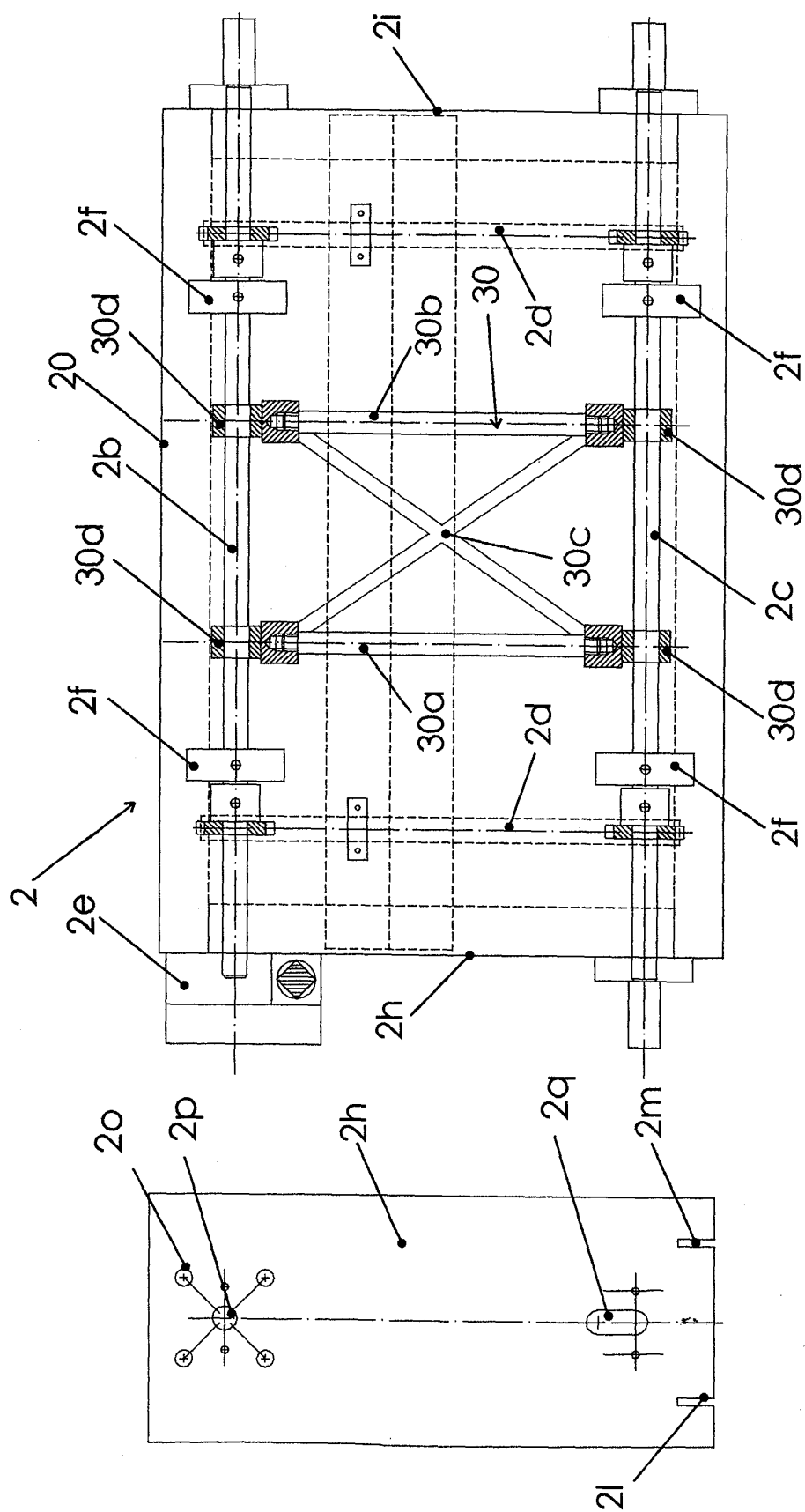


Fig. 9

Fig. 10



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 03 42 5629

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Place of search THE HAGUE		Date of completion of the search 10 March 2004	Examiner Severens, G
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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