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(54) **Motorized screen group**

Motorisierte Bildschirmgruppe

Groupe d'écran motorisé

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Description

[0001] The present invention refers to a motorized screen group.

[0002] In particular the present invention refers to an automatically, but also manually upon occurrence, movable screen for the selective separation of environments.

[0003] According to an exemplified preferred embodiment, the screen of the present invention may be an anti-mosquito net.

[0004] However, in the present description, the term screen is generally used to indicate any type of separating element whether a net or not a net.

[0005] Currently screen groups are known comprising a first and a second upright movable with respect to each other starting from a first position of mutual contact, in which the screen is closed, to a second position of maximum distance, in which the screen is open.

[0006] These screens may be opened or closed by manually operating on the uprights, on which there some handles are actually obtained, or currently it is known to provide motors for automatically opening and closing.

[0007] Getting into detail of the most common embodiments available today, the screens are mostly of the type that can be wound around a roller housed in an upright.

[0008] Most of the drive means present therein are usually associated with such roller for controlling the rotation to roll and unroll the screen.

[0009] This embodiment, which derives from the automatic movement of roller shutters, however reveals the drawback of requiring considerable time intervals for moving the screen from the closed position to the maximum opening position.

[0010] In the attempt to overcome this drawback, a second type of automatic screens where the driving means are no longer connected to the winding roller but to other elements of the screen group is currently available in the market.

[0011] In particular a motorized screen is known where a driven belt provides for directly moving the uprights or doors.

[0012] However not even this embodiment is entirely satisfactory in terms of ease of assembly and maintenance of the screen.

[0013] EP2469009 discloses a motorized screen group according to the preamble of claim 1.

[0014] An object of the present invention is to provide a motorized screen group representing an alternative to those currently available and that is efficient on the one hand and easy to assemble and maintain on the other hand.

[0015] These objects according to the present invention are attained by providing a motorized screen group as defined in claim 1. Further characteristics of a motorized screen group according to the invention are outlined by the dependent claims.

[0016] The characteristics and advantages of a motorized screen group according to the present invention

shall be more apparent from the following exemplifying and non-limiting description with reference to the attached schematic drawing which shows an exploded embodiment of a motorized screen group according to the present invention.

[0017] Such motorized screen group 10 is of the type comprising a first 11 and a second upright 12 parallel to each other and a screen 13 having opposite ends associated with the uprights 11, 12.

[0018] As shown, the uprights are substantially vertical and made in form of metal uprights while the screen may preferably, but not exclusively, be an anti-mosquito net.

[0019] Both or at least one among the first and the second upright 11, 12 are movable starting from a first position of mutual contact, in which the screen 13 is closed, to a second position of maximum distance, in which the screen 13 is open.

[0020] For a better understanding of the term movable referring to the uprights 11 12 reference should be made to the external framework, per se known, in which the screen group 10 is installed.

[0021] This external framework comprises lateral counter-frameworks 19 and at least one upper cap 20.

[0022] The uprights are defined movable with respect to the aforementioned lateral counter-frameworks 19 if, when required, they can unconstrain therefrom to reach the required positions.

[0023] Thus, according to the present invention, all uprights that are not removably constrained with the relative counter-framework are deemed movable.

[0024] The presence of selective holding means, such as magnets, hooks, bayonets and others do not jeopardise the fact that the relative upright can be freed and moved.

[0025] Thus clarified, the figure shows magnets 21 as examples of the aforementioned selective holding means of the uprights in position with respect to the counter-frameworks.

[0026] Guiding means 14 for guiding the opening and closing of the screen 13 are provided associated with at least one free side of the screen.

[0027] As shown, the guiding means 14 are configured so that when the screen 13 is closed, they are substantially internally housed in the first upright 11 and when the screen 13 is open they are at least partially outside with respect thereto.

[0028] Solely by way of example, the shown guiding means are two opposite series of rigid hinged elements 14 but they could alternatively be any other type of guide such as for example an elastic band or of any other type.

[0029] The guides 14 are usually solely required to be able to pass from the horizontal extracted configuration to the vertical containment configuration inside the upright 11.

[0030] According to the invention, a motor 15 is provided for automatically opening and closing the screen group 10 where in particular such motor 15 controls the movement of the guiding means 14.

[0031] On the contrary, according to the prior art the motors currently available in the market for such screens are associated to the roller winder or to the uprights.

[0032] Thus, according to the invention, the motor 15 automatically controls the entry and exit movement of the guide 14 with respect to the first upright 11 and, indirectly, closing and opening the screen.

[0033] Preferably the connection between the motor 15 and the guiding means 14 is realized inside the first upright 11 and comprises a belt for transmitting motion from the motor 15 to the guide 14.

[0034] By way of example of the invention, the means for driving the group comprise a driven belt 17 operating, preferably in the upright 11 or externally parallel thereto, on at least one guide 14.

[0035] However in general the innovative aspect of the present invention lies in directly controlling - in a motorized manner - the guide 14 and not the roller 16 or the uprights 11 12.

[0036] Even more advantageously, the motor 15 is integral with the first upright 11 thus making the group easy to mount and demount.

[0037] In the shown example, the screen 13 is of the type that can be wound around a roller 11 housed in the second upright 12, but it could also be of the pleated type.

[0038] Lastly, the motor 15 can be controlled in actuation by providing for the presence of remote sensors or buttons or commands, of the remote controlled type power-supplied in any manner both of the renewable and conventional type.

[0039] The substantially vertically operating motorization also allows to obtain a modular system with a high number of doors.

[0040] On the contrary, using the prior art method which provides for the horizontal motorization, the maximum possible number of doors is two. Increasing the number of doors would actually provide for superimposed path sections of the door with the ensuing increase of the thickness of the structure.

[0041] It has thus been observed that a motorized screen group according to the present invention attains the objects outlined beforehand.

[0042] Actually, such motorized screen group offers a valid alternative solution to the currently known screens with considerable advantages in terms of ease of assembly and maintenance.

[0043] The motorized screen group of the present invention thus conceived can be subjected to many modifications and variants. In practice, the materials used, as well as the dimensions thereof, may be of any type depending on the technical requirements.

Claims

1. Motorized screen group (10) of the type comprising a first upright (11) and a second upright (12) parallel to each other and a screen (13) having opposite ends

associated with said uprights (11, 12), at least one of said first and second uprights (11, 12) being mobile with respect to the other one starting from a first position of mutual contact, wherein said screen (13) is closed, to a second position of maximum distance, wherein said screen (13) is open; guiding means (14) of said screen (13) being provided, which are associated with at least one free side of said screen (13) for guiding its opening and closing wherein said guiding means (14) are configured so that when the screen (13) is closed they are substantially internally housed in said first upright (11) and when the screen (13) is open they are at least partially outside said first upright (11); a motor (15) for automatically opening and closing said screen group (10) being provided; **characterized in that** said motor (15) is directly connected to said guiding means (14) for automatically controlling its inlet and outlet movement with respect to said first upright (11), said direct connection between said motor (15) and said guiding means (14) being realized inside said first upright (11) and comprising a drive belt (17) from said motor (15) to said guiding means (14).

2. Motorized screen group (10) according to claim 1 **characterized in that** said motor (15) is integral with said first upright (11).

3. Motorized screen group (10) according to any of the preceding claims **characterized in that** said guiding means (14) comprise a first set of rigid elements hinged to each other and associated with a free end of said screen (13).

4. Motorized screen group (10) according to claim 2 **characterized in that** said guiding means (14) comprise a second set of rigid elements hinged to each other and associated with said screen (13) on the opposite side of said first set.

5. Motorized screen group (10) according to any of the preceding claims **characterized in that** said screen (13) is an anti-mosquito net.

6. Motorized screen group (10) according to any of the preceding claims **characterized in that** both said first and second uprights (11, 12) are mobile.

7. Motorized screen group (10) according to any of the preceding claims **characterized in that** said screen (13) is of the rolling type around a roller (18) housed in said second upright (12).

8. Motorized screen group (10) according to any of the preceding claims **characterized in that** it comprises remote sensors or buttons or commands for actuating said motor (15).

Patentansprüche

1. Motorisierte Schirmgruppe (10) des Typs umfassend eine erste Stütze (11) und eine zweite Stütze (12), die zueinander parallel sind, und einen Schirm (13) mit gegenüberliegenden Enden, die mit den Stützen (11, 12) verbunden sind, wobei wenigstens eine der ersten und zweiten Stützen (11, 12) beweglich in Bezug auf die andere ist, ausgehend von einer ersten Stellung von gegenseitigen Kontakt, in welcher der Schirm (13) geschlossen ist, zu einer zweiten Stellung von maximalen Abstand, in welcher der Schirm (13) geöffnet ist; wobei Führungsmittel (14) des Schirms (13) vorgesehen sind, die mit wenigstens einer freien Seite des Schirms (13) verbunden sind, um das Öffnen und Schließen desselben zu führen, wobei die Führungsmittel (14) derart ausgebildet sind, dass sie, wenn der Schirm (13) geschlossen ist, im Wesentlichen im Inneren der ersten Stütze (11) untergebracht sind, und wenn der Schirm (13) geöffnet ist, sich wenigstens teilweise außerhalb der ersten Stütze (11) befinden; wobei ein Motor (15) zum automatischen Öffnen und Schließen der Schirmgruppe (10) vorgesehen ist; **dadurch gekennzeichnet, dass** der Motor (15) direkt an die Führungsmitteln (14) angeschlossen ist, um dessen Einlass- und Auslassbewegung in Bezug auf die erste Stütze (11) automatisch zu steuern, wobei die direkte Verbindung zwischen dem Motor (15) und den Führungsmitteln (14) im Inneren der ersten Stütze (11) ausgeführt ist und einen Treibriemen (17) vom Motor (15) zu den Führungsmitteln (14) umfasst.
2. Motorisierte Schirmgruppe (10) nach Anspruch 1, **dadurch gekennzeichnet, dass** der Motor (15) einstückig mit der ersten Stütze (11) ausgebildet ist.
3. Motorisierte Schirmgruppe (10) nach einem beliebigen der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** die Führungsmittel (14) einen ersten Satz von starren Elementen umfassen, die aneinander angelenkt und mit einem freien Ende des Schirms (13) verbunden sind.
4. Motorisierte Schirmgruppe (10) nach Anspruch 2, **dadurch gekennzeichnet, dass** die Führungsmittel (14) einen zweiten Satz von starren Elementen umfassen, die aneinander angelenkt und an der gegenüberliegenden Seite des ersten Satzes mit dem Schirm (13) verbunden sind.
5. Motorisierte Schirmgruppe (10) nach einem beliebigen der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** der Schirm (13) ein Moskitonetz ist.
6. Motorisierte Schirmgruppe (10) nach einem beliebigen der vorstehenden Ansprüche, **dadurch ge-**

kennzeichnet, dass sowohl die erste als auch die zweite Stütze (11, 12) beweglich sind.

7. Motorisierte Schirmgruppe (10) nach einem beliebigen der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** der Schirm (13) des um eine Rolle (18) rollbaren Typs ist, die in der zweiten Stütze (12) untergebracht ist.
8. Motorisierte Schirmgruppe (10) nach einem beliebigen der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** sie Fernsensoren oder -tasten oder -steuerungen zum Betätigen des Motors (15) aufweist.

Revendications

1. Groupe d'écran motorisé (10) du type comprenant un premier montant (11) et un deuxième montant (12) parallèle l'un à l'autre et un écran (13) ayant des extrémités opposées associées auxdits montants (11, 12), au moins un desdits premier et deuxième montants (11, 12) étant mobiles par rapport à l'autre à partir d'une première position de contact mutuel, dans laquelle ledit écran (13) est fermé, à une deuxième position de distance maximale, dans laquelle ledit écran (13) est ouvert ; des moyens de guidage (14) dudit écran (13) étant prévus, lesquels sont associés à au moins un côté libre dudit écran (13) pour guider son ouverture et sa fermeture, dans lequel lesdits moyens de guidage (14) sont configurés de manière que, quand l'écran (13) est fermé, ils soient logés sensiblement à l'intérieur dudit premier montant (11) et, quand l'écran (13) est ouvert, ils soient au moins partiellement à l'extérieur dudit premier montant (11) ; un moteur (15) pour ouvrir et fermer automatiquement ledit groupe d'écran (10) étant prévu ; **caractérisé en ce que** ledit moteur (15) est directement connecté auxdits moyens de guidage (14) pour commander automatiquement son mouvement d'entrée et de sortie par rapport audit premier montant (11), ladite connexion directe entre ledit moteur (15) et lesdits moyens de guidage (14) étant réalisée à l'intérieur dudit premier montant (11) et comprenant une courroie d'entraînement (17) dudit moteur (15) auxdits moyens de guidage (14).
2. Groupe d'écran motorisé (10) selon la revendication 1, **caractérisé en ce que** ledit moteur (15) est solidaire dudit premier montant (11).
3. Groupe d'écran motorisé (10) selon l'une quelconque des revendications précédentes, **caractérisé en ce que** lesdits moyens de guidage (14) comprennent un premier ensemble d'éléments rigides articulés l'un à l'autre et associés à une extrémité libre dudit écran (13).

4. Groupe d'écran motorisé (10) selon la revendication 2, **caractérisé en ce que** lesdits moyens de guidage (14) comprennent un deuxième ensemble d'éléments rigides articulés l'un à l'autre et associés audit écran (13) du côté opposé par rapport audit premier ensemble. 5
5. Groupe d'écran motorisé (10) selon l'une quelconque des revendications précédentes, **caractérisé en ce que** ledit écran (13) est une moustiquaire. 10
6. Groupe d'écran motorisé (10) selon l'une quelconque des revendications précédentes, **caractérisé en ce que** lesdits premier et deuxième montants (11, 12) sont tous deux mobiles. 15
7. Groupe d'écran motorisé (10) selon l'une quelconque des revendications précédentes, **caractérisé en ce que** ledit écran (13) est du type à enroulement autour d'un rouleau (18) logé dans ledit deuxième montant (12). 20
8. Groupe d'écran motorisé (10) selon l'une quelconque des revendications précédentes, **caractérisé en ce qu'il** comprend des capteurs ou boutons ou commandes à distance pour actionner ledit moteur (15). 25

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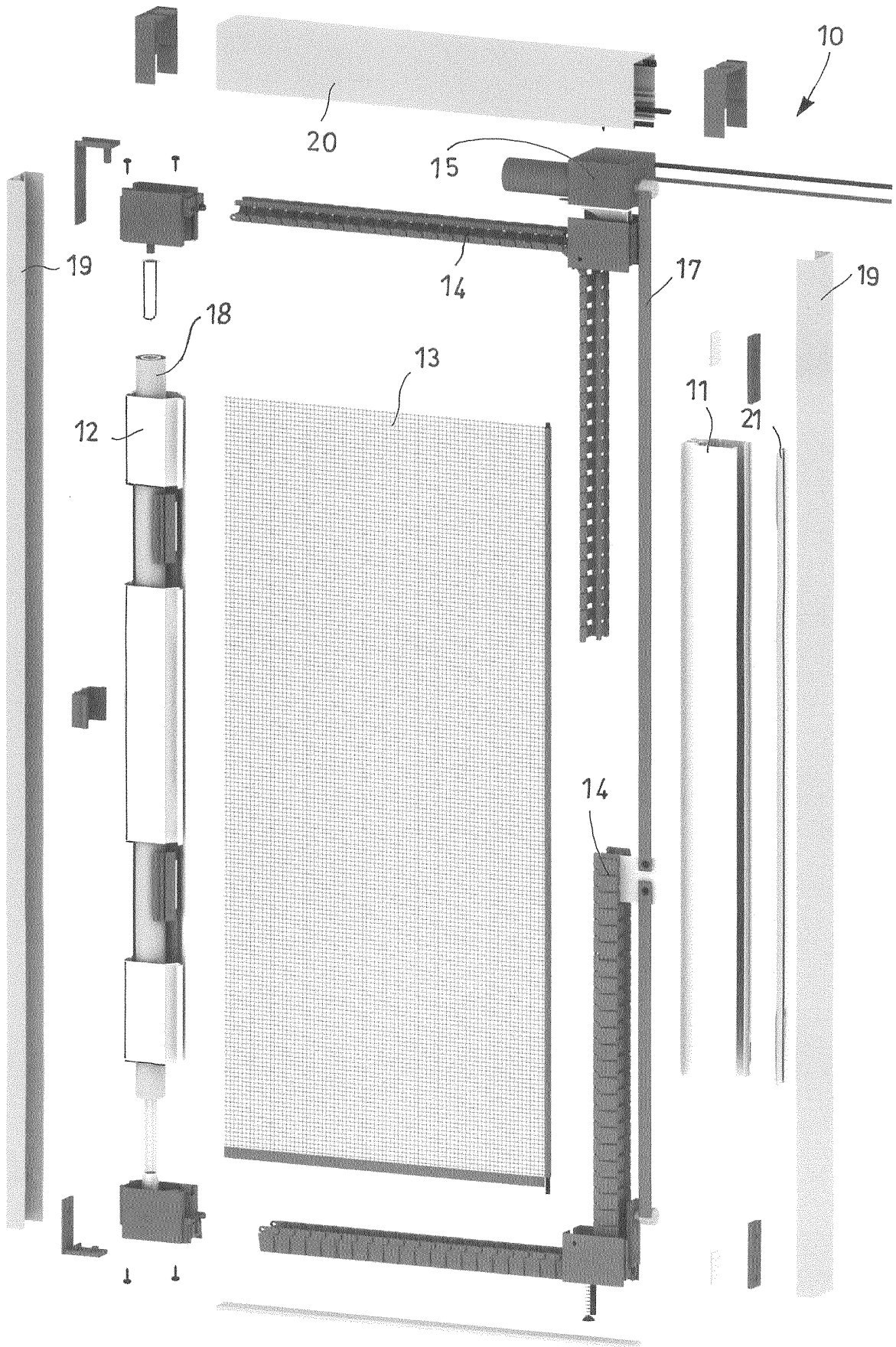
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REFERENCES CITED IN THE DESCRIPTION

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