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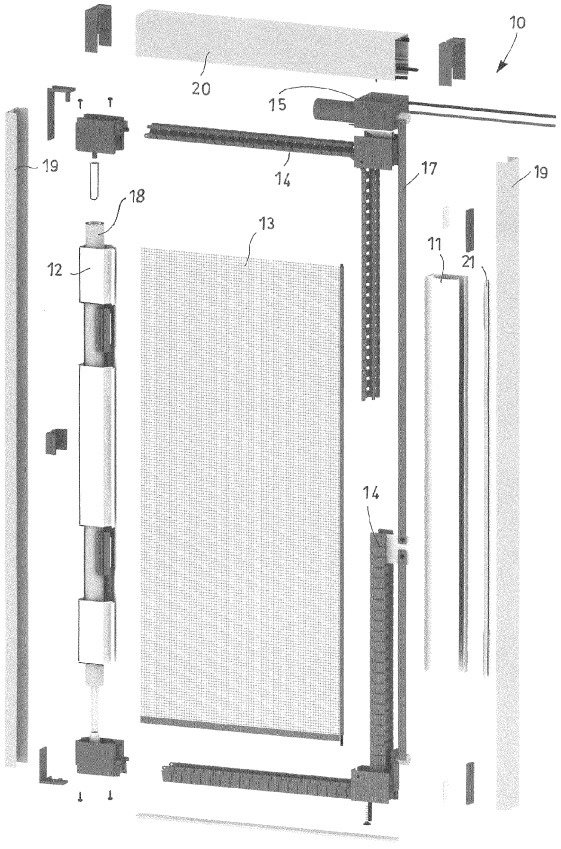
(71) Applicant: **EFFE S.r.l.**
74023 Grottaglie (TA) (IT)

(72) Inventors:
- **Donatelli, Samuele**
  74023 Grottaglie (TA) (IT)
- **Donatelli, Francesco**
  74023 Grottaglie(TA) (IT)
- **Donatelli, Ignazio**
  74023 Grottaglie(TA) (IT)
- **Tudisco, Beatrice**
  74023 Grottaglie(TA) (IT)

(74) Representative: **Martini, Gabriele**
Barzanò & Zanardo Milano S.p.A.
Via Borgonuovo, 10
20121 Milano (IT)

(54) Motorized screen group

(57) Motorized screen group (10) 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 said uprights (11, 12), at least one of said first and second upright (11, 12) being movable with respect to the other starting from a first position of mutual contact, in which said screen (13) is closed, to a second position of maximum distance, in which said screen (13) is open; means (14) for guiding said screen (13) being provided to at least one free side of said screen (13) for guiding its opening and closing in which 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) being provided for automatically opening and closing said screen group (10); characterized in that said motor (15) is connected to said guiding means (14) for automatically controlling its entry and exit movement with respect to said first upright (11).



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

[0007] 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.

[0008] 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.

[0009] In particular a motorized screen is known where a driven belt provides for directly moving the uprights or doors.

[0010] However not even this embodiment is entirely satisfactory in terms of ease of assembly and maintenance of the screen.

[0011] 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.

[0012] 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.

[0013] 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.

[0014] 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.

[0015] 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.

[0016] 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.

[0017] 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.

[0018] This external framework comprises lateral counter-frameworks 19 and at least one upper cap 20.

[0019] 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.

[0020] Thus, according to the present invention, all uprights that are not removably constrained with the relative counter-framework are deemed movable.

[0021] 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.

[0022] 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.

[0023] 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.

[0024] 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.

[0025] 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.

[0026] 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.

[0027] 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.

[0028] 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. 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.

[0029] 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.

[0030] 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.

[0031] 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.

[0032] Even more advantageously, the motor 15 is integral with the first upright 11 thus making the group easy to mount and demount.

[0033] 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. 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.

[0034] The substantially vertically operating motorization also allows to obtain a modular system with a high number of doors.

[0035] 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.

[0036] It has thus been observed that a motorized screen group according to the present invention attains the objects outlined beforehand.

[0037] 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.

[0038] The motorized screen group of the present invention thus conceived can be subjected to many modifications and variants, all falling within the same inventive concept; in addition, all details can be replaced by technically equivalent elements. 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).

2. Motorized screen group (10) according to any of the preceding claims **characterized in that** the connection between said motor (13) and said guiding means (14) is realized inside said first upright (11).

3. Motorized screen group (10) according to claim 2 **characterized in that** said connection between said motor (13) and said guiding means (14) realized inside said first upright (11) comprises a drive belt (17) from said motor (15) to said guiding means (14).

4. Motorized screen group (10) according to any of the preceding claims **characterized in that** said motor (15) is integral with said first upright (11).

5. 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).

6. Motorized screen group (10) according to claim 4 **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.

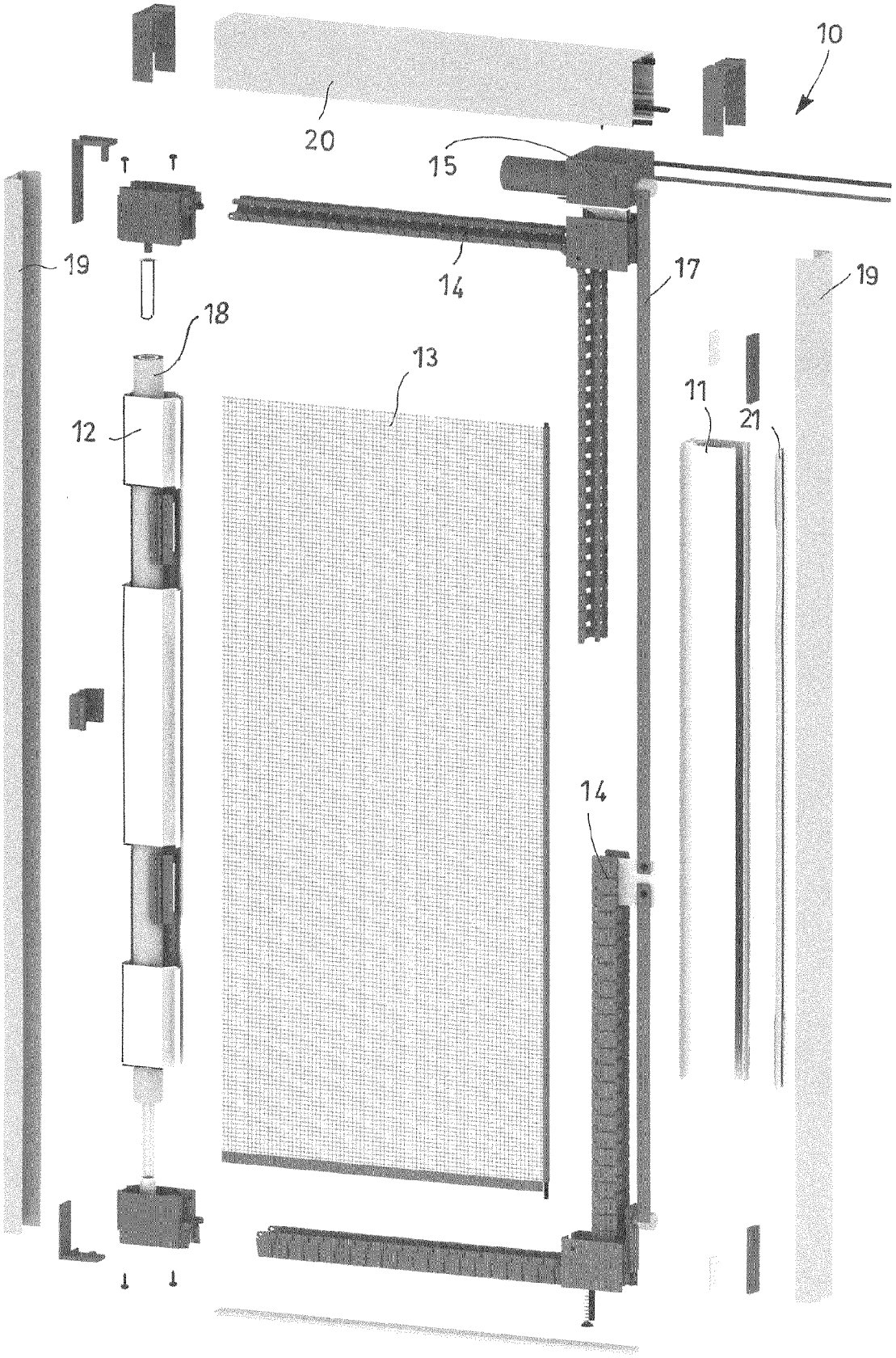
7. Motorized screen group (10) according to any of the preceding claims **characterized in that** said screen (13) is an anti-mosquito net.

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

9. 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).

10. 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).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EUROPEAN SEARCH REPORT

Application Number
EP 13 19 8547

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y A	EP 2 469 009 A1 (EFFE S R L [IT]) 27 June 2012 (2012-06-27) * abstract; figure 1 * * paragraphs [0008], [0009], [0015], [0029] * -----	1,2,4-7, 9,10 8 3	INV. E06B9/42 E06B9/54 E06B9/58
X A	EP 2 333 229 A2 (EFFE S R L [IT]) 15 June 2011 (2011-06-15) * abstract; figure 1 * * paragraph [0007] * -----	1,2,4-7, 9,10 3	
Y	JP 2003 082960 A (SEIKI HANBAI KK) 19 March 2003 (2003-03-19) * figure 10 * -----	8	
A	EP 2 085 562 A2 (BETTIO SERVICE SPA [IT]) 5 August 2009 (2009-08-05) * the whole document * -----	1-10	
A	EP 2 085 563 A1 (BETTIO SERVICE SPA [IT]) 5 August 2009 (2009-08-05) * the whole document * -----	1-10	

TECHNICAL FIELDS SEARCHED (IPC)

E06B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	26 March 2014	Cornu, Olivier

CATEGORY OF CITED DOCUMENTS

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EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 13 19 8547

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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26-03-2014

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 2469009 A1	27-06-2012	NONE	
EP 2333229 A2	15-06-2011	EP 2333229 A2	15-06-2011
		IT TO20090181 U1	05-06-2011
JP 2003082960 A	19-03-2003	JP 3949410 B2	25-07-2007
		JP 2003082960 A	19-03-2003
EP 2085562 A2	05-08-2009	NONE	
EP 2085563 A1	05-08-2009	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82