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(54) **Sliding screen with brush guide**

(57) Sliding screen for a door or window opening, comprising a meshed gauze screen which can be wound on or off a winding mechanism and with two opposite guides for cooperation with opposite longitudinal edges of the gauze screen. The guides are provided with brushes (5) extending longitudinally along said guides and

have brush filaments (6) for cooperation with the meshes of the gauze screen. Each brush (5), as seen in its longitudinal direction, is alternately provided with first regions with brush filaments (6) engaging the gauze screen and second regions without brush filaments engaging the gauze screen.



Fig. 3

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Description

[0001] The invention firstly relates to a sliding screen for a door or window opening, comprising a meshed gauze screen which can be wound on or off a winding mechanism and with two opposite guides for cooperation with opposite longitudinal edges of the gauze screen, wherein the guides are provided with brushes extending longitudinally along said guides and having brush filaments for cooperation with the meshes of the gauze screen.

[0002] Such a sliding screen for example is known from DE-A-196 39 478. The filaments of the brushes cooperate with the longitudinal edge regions of the gauze screen in such a manner that, on one hand, a longitudinal movement of the gauze screen relative to the guides (and, thus, relative to the brushes) is allowed, whereas however, on the other hand, a movement of the gauze screen perpendicularly thereto (and, thus, out of the guides) will be prevented because, then, the filaments of the brushes will penetrate into the meshes of the gauze screen and therefore will oppose such a movement of the gauze screen.

[0003] Although such a sliding screen operates in an effective manner, it is a disadvantage that the engagement between the multiplicity of brush filaments and the gauze screen causes a considerable amount of friction.

[0004] It is an object of the present invention to provide an improved sliding screen of the type referred to above.

[0005] Thus, in accordance with a first aspect of the present invention the gauze screen is characterized in that each brush is provided with localised regions without brush filaments engaging the gauze screen. Preferably, in one embodiment, each brush, as seen in its longitudinal direction, is alternatingly provided with first regions with brush filaments engaging the gauze screen and second regions without brush filaments engaging the gauze screen.

[0006] By the provision of such alternating first and second regions a brush is obtained which engages the gauze screen with reduced friction. This reduced friction not only reduces the effort required for moving the gauze screen longitudinally (with its evident beneficial effects on the construction of the sliding screen in its entirety or parts thereof, such as for example the winding mechanism) but also will reduce wear of the gauze screen and the guides.

[0007] In a surprising manner the provision of such alternating first and second regions does not have a detrimental effect on the effectivity of the brush in preventing a movement of the edge regions of the gauze screen out of the guides. In contrast, it seems that this effectivity even is increased slightly, perhaps because now the filaments are less constrained to move laterally towards a position in which they can more easily penetrate into the meshes of the gauze screen.

[0008] It is noted, that the first regions and second regions may or may not have the same length in the lon-

gitudinal direction of the brush.

[0009] In an other preferred embodiment of the sliding screen according to the invention the second regions are not provided with brush filaments. Thus, in a longitudinal direction of the brush first regions with brush filaments and second regions without brush filaments are provided alternatingly.

[0010] However, it is possible too that the second regions are provided with brush filaments with a shorter length than the brush filaments of the first regions. This means that both the first and second regions are provided with brush filaments, but that the brush filaments of the second regions have a short length, such that they will not engage the gauze screen. A particular advantage of this embodiment is, that the brush can be manufactured starting from a standard brush with brush filaments provided everywhere along its entire length by simply cutting the brush filaments to a reduced length at the second regions.

[0011] Although the advantages obtained by the present invention are elucidated above by reference to the previously mentioned preferred embodiment, such advantages also will apply to the general aspect of the invention, i.e when each brush is provided with localised regions without brush filaments engaging the gauze screen (that means regions without brush filaments at all or with shorter brush filaments).

[0012] Although generally each guide of the sliding screen will be provided with a single brush, it is also possible that each guide is provided with two brushes of which the filaments substantially extend towards each other. Then, at least one of said brushes will be provided with the said first and second regions. An example of a sliding screen having two brushes in each guide is shown in EP-A-1.318.267.

[0013] When, indeed, the two brushes of each guide each have first and second regions, it is possible that these first and second regions are positioned in a corresponding manner. This means, that the first regions of the two brushes are opposite each other, as are the second regions of both brushes.

[0014] However, when the two brushes of each guide each have first and second regions, it also is possible that these first and second regions are positioned in a staggered manner. This means, that the first regions of one brush are positioned opposite the second regions of the other brush, and vice versa.

[0015] The invention secondly relates to a guide presenting all the features of the guide disclosed herein and being thus constructed and evidently intended for use in the sliding screen as claimed herein.

[0016] Thirdly, the invention relates to a brush presenting all the features of the brush disclosed herein and being thus constructed and evidently intended for use in the sliding screen as claimed herein.

[0017] Hereinafter the invention will be elucidated while referring to the drawing in which embodiments of the gauze screen are illustrated. Herein:

Figure 1 shows, schematically, a sliding screen;
 Figure 2 shows a cross-section according to II-II in figure 1;
 Figure 3 shows a first embodiment of a brush;
 Figure 4 shows a second embodiment of a brush;
 Figure 5 shows an amended cross-section according to II-II in figure 2;
 Figure 6 shows an embodiment with two brushes, and
 Figure 7 shows an alternative embodiment with two brushes.

[0018] Firstly referring to figure 1, a sliding screen comprises a meshed gauze screen 1 which can be wound on or off a winding mechanism 2 (such as a cylinder which can rotate around an axis 3). Two opposite guides 4 are provided for cooperation with opposite longitudinal edges of the gauze screen 1. Said guides 4 may be attached at opposite sides of a door or window opening.

[0019] As illustrated in figure 2 (showing a cross section of the guide 4), the guides 4 are provided with brushes 5 extending longitudinally along said guides 4 and having brush filaments 6 for cooperation with the meshes of the gauze screen 1.

[0020] Referring to figure 3, a first embodiment of a brush 5 is illustrated which, as seen in its longitudinal direction, is alternatingly provided with first regions A with brush filaments 6 engaging the gauze screen (not illustrated) and second regions B without brush filaments.

[0021] Figure 4 shows a second embodiment of a brush 5' which, as seen in its longitudinal direction, is alternatingly provided with first regions A with brush filaments 6 engaging the gauze screen (not illustrated) and second regions B' with brush filaments 6' having a reduced length and therefore not engaging the gauze screen.

[0022] Although, as illustrated in figures 3 and 4, regions A and B (B') substantially have the same length, they also could have different lengths. Further it is noted, that it is also possible that the length of the regions A (or B) does differ. There also could be more mutually different regions than two.

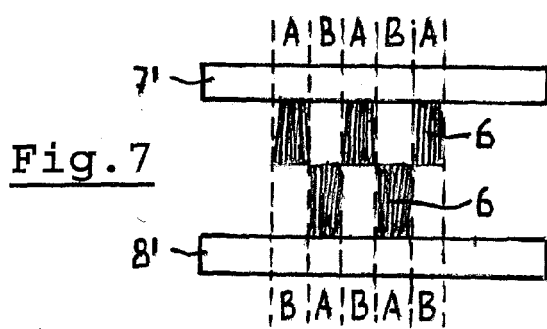
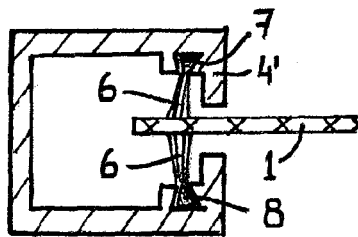
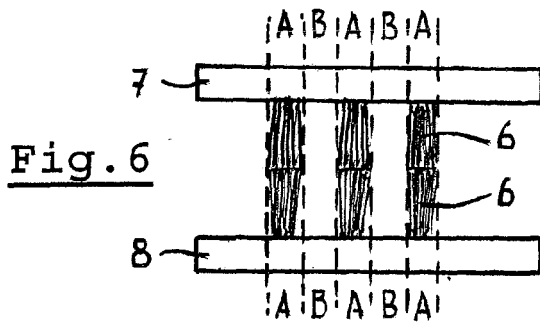
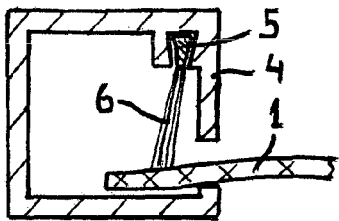
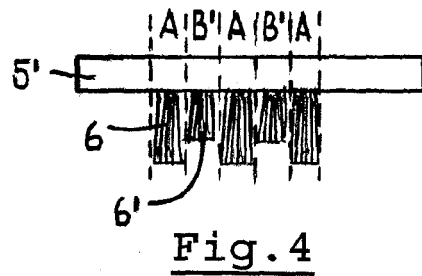
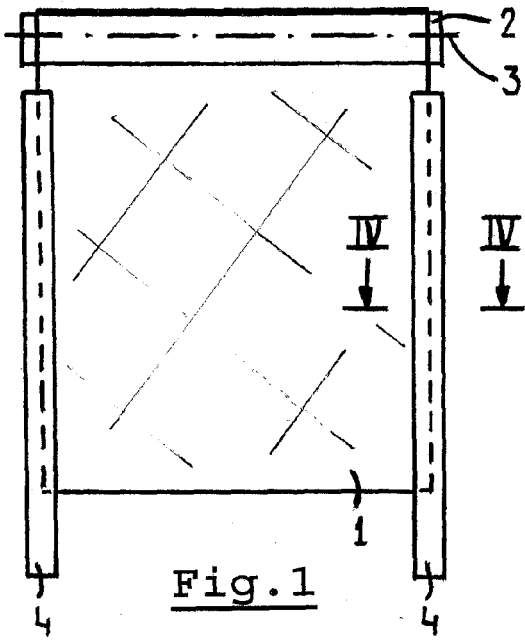
[0023] Figure 5 shows a cross section of a different guide 4', in which two brushes 7 and 8 are positioned of which the brush filaments 6 extend towards each other while enclosing therebetween the gauze screen 1. In a first embodiment of such a guide as represented in figure 6 the regions A and B of the brushes 7 and 8 are positioned correspondingly (regions A opposite each other, and regions B opposite each other), whereas in a second embodiment according to figure 7 the regions A of brush 7' are positioned opposite the regions B of brush 8' and vice versa. However, it should be noted, that it is also possible that the regions are staggered differently, or that only one of said brushes is provided with regions A and B, whereas the other brush is shaped as a standard brush.

[0024] The invention is not limited to the embodiments

described before which may be varied widely within the scope of the invention as defined by the appending claims.

Claims

1. Sliding screen for a door or window opening, comprising a meshed gauze screen which can be wound on or off a winding mechanism and with two opposite guides for cooperation with opposite longitudinal edges of the gauze screen, wherein the guides are provided with brushes extending longitudinally along said guides and having brush filaments for cooperation with the meshes of the gauze screen, **characterized in that** each brush is provided with localised regions without brush filaments engaging the gauze screen.
2. Sliding screen according to claim 1, wherein each brush, as seen in its longitudinal direction, is alternatingly provided with first regions with brush filaments engaging the gauze screen and second regions without brush filaments engaging the gauze screen.
3. Sliding screen according to claim 2, wherein the second regions are not provided with brush filaments.
4. Sliding screen according to claim 2, wherein the second regions are provided with brush filaments with a shorter length than the brush filaments of the first regions.
5. Sliding screen according to any of the previous claims, wherein each guide is provided with two brushes of which the filaments substantially extend towards each other.
6. Sliding screen according to claim 5, wherein the two brushes of each guide each have first and second regions positioned in a corresponding manner.
7. Sliding screen according to claim 5, wherein the two brushes of each guide each have first and second regions positioned in a staggered manner.
8. Guide presenting all the features of the guide disclosed in any one of the previous claims and being thus constructed and evidently intended for use in the sliding screen as claimed in any one of the previous claims.
9. Brush presenting all the features of the brush disclosed in any one of the previous claims and being thus constructed and evidently intended for use in the sliding screen as claimed in any one of the claims 1-7.





European Patent Office

PARTIAL EUROPEAN SEARCH REPORT

Application Number

which under Rule 45 of the European Patent Convention EP 06 11 3195 shall be considered, for the purposes of subsequent proceedings, as the European search report

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
D,X	EP 1 318 267 A (REDDIPLEX GROUP PLC) 11 June 2003 (2003-06-11) * the whole document *	1	INV. E06B9/58 E06B9/54
A	EP 0 874 125 A (DATE SYSTEM DI C. D'ANIELLO & C. S.A.S) 28 October 1998 (1998-10-28) * the whole document *	1	ADD. E06B7/16
			TECHNICAL FIELDS SEARCHED (IPC)
			E06B
INCOMPLETE SEARCH			
<p>The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC to such an extent that a meaningful search into the state of the art cannot be carried out, or can only be carried out partially, for these claims.</p> <p>Claims searched completely :</p> <p>Claims searched incompletely :</p> <p>Claims not searched :</p> <p>Reason for the limitation of the search: see sheet C</p>			
Place of search		Date of completion of the search	Examiner
The Hague		22 September 2006	Geivaerts, Dirk
CATEGORY OF CITED DOCUMENTS		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	
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			

3
EPC FORM 1503 03.02 (P04C07)



Claim(s) not searched:
8,9

Reason for the limitation of the search:

Claims 8 and 9 do not contain features and is thus indefinite in scope

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 11 3195

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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22-09-2006

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