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(71) Applicant: **Dorado Garrido, Ivan**
41015 Sevilla (ES)

(72) Inventor: **Dorado Garrido, Ivan**
41015 Sevilla (ES)

(74) Representative: **Bartrina Diaz, José María**
Aseslema Patentes y Marcas
PISA, C/ Industria, 3, Edf. Metropol 2, 2^o 7
41927 Mairena del Aljarafe (Sevilla) (ES)

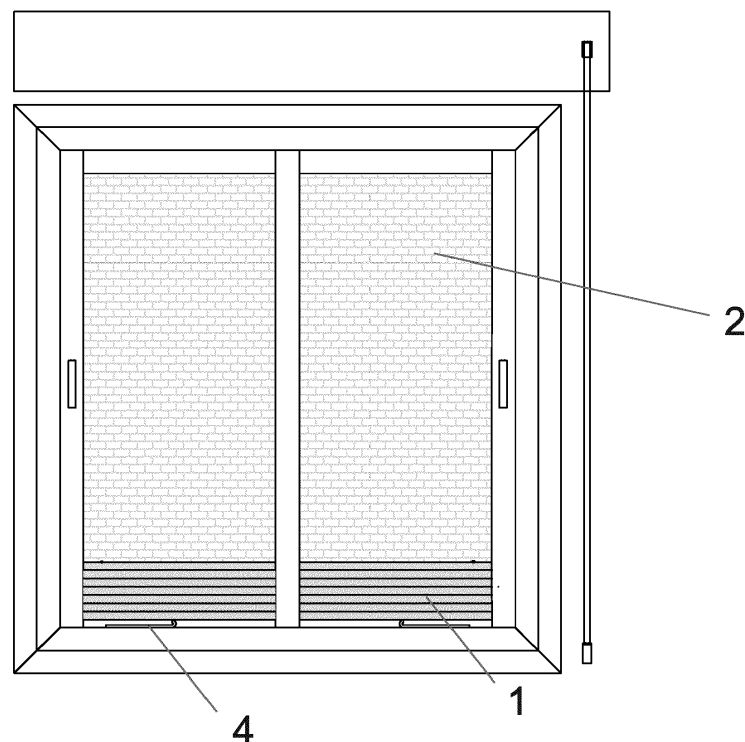
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(54) **A FOLDING GRILLE SYSTEM FOR WINDOWS AND DOORS**

(57) This is a folding grille system for windows and doors consisting of a set of horizontal bars that unfolds below the conventional shutter on its guide protecting the

door or window opening, where the shutter is wholly or partially folded to avoid people or items falling outside or entrance of people or insects.

FIG. 1



Description

Object of the invention

[0001] This invention is a system that complements the conventional shutter that is installed below the apparatus as an extension, protecting the door or window opening where the shutter is wholly or partially folded to avoid people or items falling outside or entrance of people or insects.

[0002] This invention is part of the metalwork area, specializing in the manufacture of doors and windows.

Background of the invention

[0003] Considering the state of art of the subject, there are other folding solutions to protect window and door openings based on separate installations and therefore require its own set of guides that are more costly and heavy. In addition, they are not integrated in door and window enclosures that have already been installed in the house.

[0004] However, the 'folding grille system for windows and doors' is a solution that integrates shutter systems, blade and mosquito net into one, bringing to the state of the art in the area the following benefits:

- ✓ Substantial reduction of manufacturing costs to improve measurement of required materials.
- ✓ Designed set for installation, prior to any dimensional adjustment on any window or door, thus reducing the installation costs.
- ✓ It doesn't require any work or drilling works on walls for any installation.
- ✓ Simple and immediate locking or unlocking system facilitating cleaning, window repair, wall painting or even to carry out an escape route in case of emergency.
- ✓ Being adaptable and almost invaluable, it eliminates the need to follow a particular design approved by homeowners or similar, in order to maintain the aesthetics of the building.
- ✓ Thanks to the complementary system of mosquito net, it will be easier and cheaper than ever to protect homes from insects.

EXPLANATION OF THE INVENTION

[0005] As an explanation, the 'folding grille system for windows and doors' is a set of horizontal bars designed for attachment from the lower end of the shutter, and inside the guides of the shutter so that when folded, they stay on the horizontal surface or door or window base in which they are installed, whereas in the deployed position, they form a grille based on equidistant horizontal bars joined at their respective ends by two profiles provided with angular movement based on their hinge-type binding that passes from a horizontal folded position to

another extreme position of vertically aligned deployment.

[0006] From the described system, its installation consists of selecting standard length bars adapted to the gap that is intended to protect, then installing the the end of the bars in the two guides to displace the blind and, finally, fix the bar above the first slat of the blind, until both systems are fully integrated.

[0007] Alternatively, through the provision of a mesh that is fully integrated into the gaps between the bars once deployed, it will work as a mosquito net and an additional protection.

[0008] Finally, to ensure a choice of open space by folding drag of the assembly described, it would have to coordinate two separate symmetrical hooks to the axis of vertical symmetry of the assembly, equivalent length to the bar height when folded, provided with rotating movement around an end that is fixed to the bar that remains lower, while the other end of each of the two hooks, will have a horizontal position on the gap sill to protect when it is desired that those bars work as protection. The opening position of the gap is done by folded dragging of the assembly, done with the shutter in its lowest position, by manually rotating each of the two inner ends of each hook until the vertical position, where it is fixed with a ring to leave the bar higher.

[0009] That is, when the two hooks are not operating, the bars are deployed freely as we raise the shutter, while a vertical position or active of the hooks, causes the folded bars to move integrally with the shutter when it is raised.

DESCRIPTION OF THE DRAWINGS

[0010] To complement this description, and provide a better understanding of the characteristics of the invention, according to a preferred practical embodiment thereof, it is attached, and as an integral part of this description, a set of drawings that is illustrative and non-restrictive as follow:

Figure 1 - shows a view in elevation of the main 'folding grille system for windows and doors' in the closed position.

Figure 2 - shows a main elevation of the 'folding grille system for windows and doors' in the open shutter position and protected opening.

Figure 3 - shows a main elevation of the 'folding grille system for windows and doors' in the open shutter position and protected opening.

[0011] In the above figures, it is highlighted the following elements:

1. Bars
2. Existing shutter

3. Hinge-type union between successive bars by two profiles for each of the extremities of two bars to be joined together on a common pivot axis that moves from an inner position of the folding bars to another end position in abutment near the shutter guide, where the maximum distance between bars or deployed position is obtained.

4. Hook of gap opening.

SAMPLE OF PREFERENTIAL EMBODIMENT SUPPORTED BY THE FIGURES

[0012] Based on the figures, it can be seen as a preferred embodiment, as it is possible to install the 'folding grille system for windows and doors' in a window opening provided with conventional shutter (2) and two-blade sliding window.

[0013] To this end, it was used horizontal aluminum bars (1) with the same width of the shutter designed to be installed below the shutter and between the guides thereof, joined at their ends successively by hinge-type joints (3) folded towards the internal part of the window, forming a fully folded position as shown in the Figure 1 when the shutter (2) is fully closed to a maximum open position as it is shown in the Figure 2 for protection according to its conception.

[0014] Additionally, to ensure the position of free space as shown in Figure 3, it was arranged a hook (4) usually horizontally if there is need to open a window gap without deploying the shutter arranged vertically on a ring that, when lifting the shutter (2) also moves the grid.

[0015] It is obviously possible to conceive the connection between bars (1) by hinge mechanisms (3) and subsequent fixation over the end of the bars (1) in a standardized manner, making the choice of the set to access the appropriate grid only to the length of the bars (1).

[0016] Alternatively, if the application requires, successive bars may house a mesh that covers the gaps between the bars once deployed, as a mosquito net.

[0017] It is not considered necessary to extend this specification for anyone skilled in the subject to understand the scope of the invention and the advantages derived from its use.

[0018] The materials selected to making different elements described, using additional latches not described herein for the attachment of the assembly from the inside, the arrangement, shapes and sizes or the techniques used for their production, are susceptible of modification provided that this does not change the essence of the invention.

The terms in which it was written this report should be understood in a wide sense.

Claims

1. Folding grille system for windows and doors' designed to integrate a window or door opening with

shutter by fixing the lower end of the shutter to a set of horizontal bars that moves within the shutter guides, so that in the folded position they are grouped and overlapping bars, whereas in the deployed position, they form a grille with equidistant horizontal bars joined at their respective ends by two profiles provided with angular movement based on its hinge-type joint that passes from a horizontal folded position to another extreme deployed position in which these profiles are aligned vertically.

2. A 'folding grille system for windows and doors' according to claim 1, because in the folded position, it incorporates retention elements based on which it is possible to manually activate an opening position of the shutter gap without folding the grilles, dragging the bars in its position relatively closer when raising the shutter.

3. A 'folding grille system for windows and doors' according to claims 1 and 2, because it alternatively can house a mesh that covers the gaps between the bars once deployed, as a mosquito net between successive bars.

FIG. 1

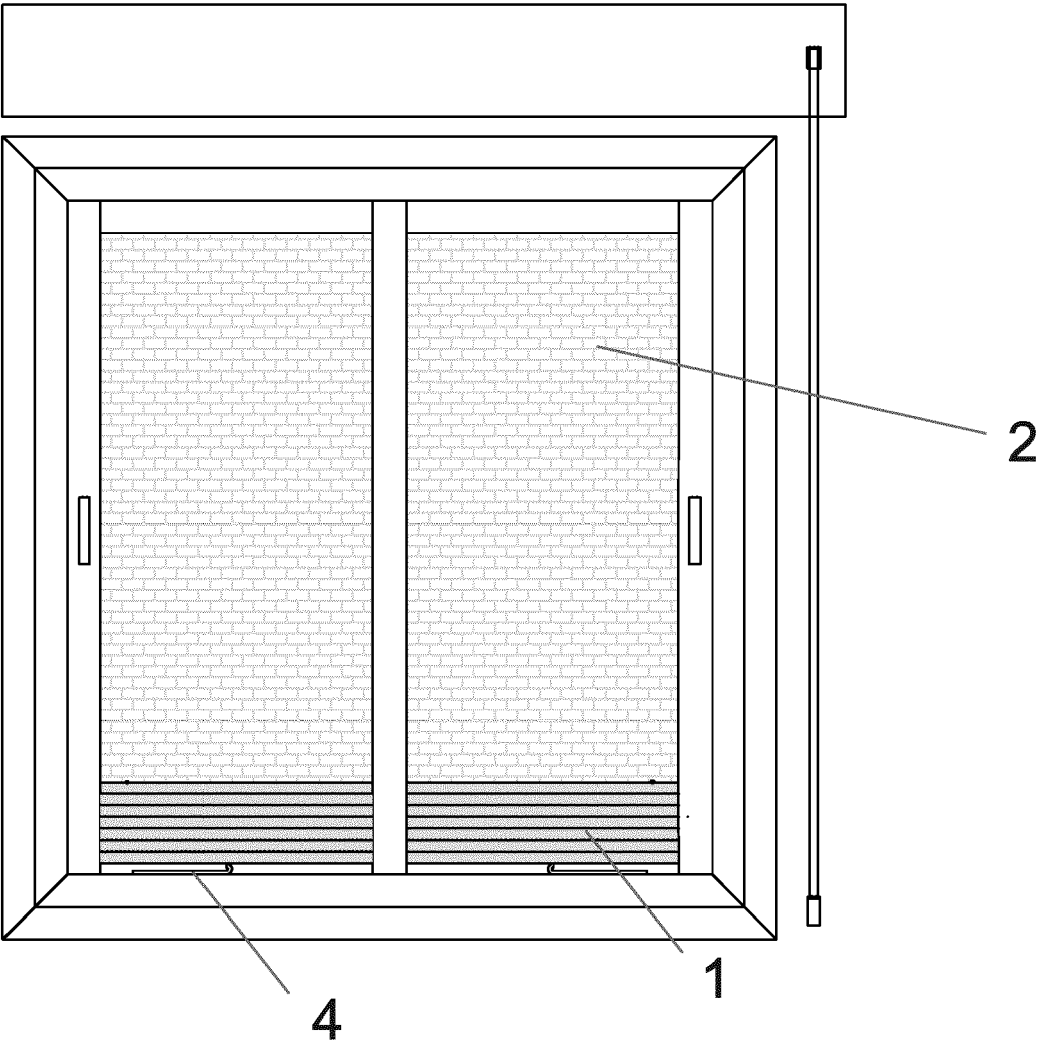


FIG. 2

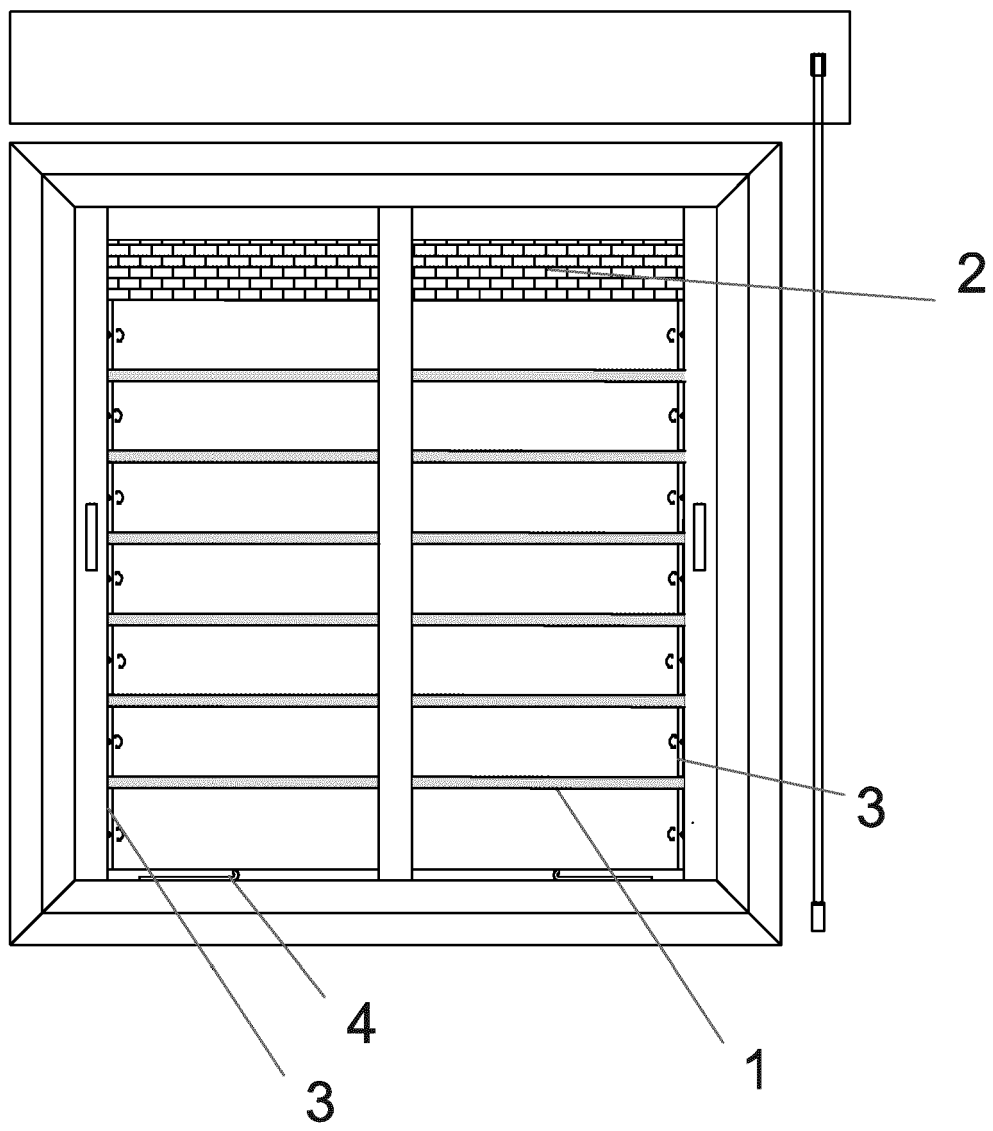
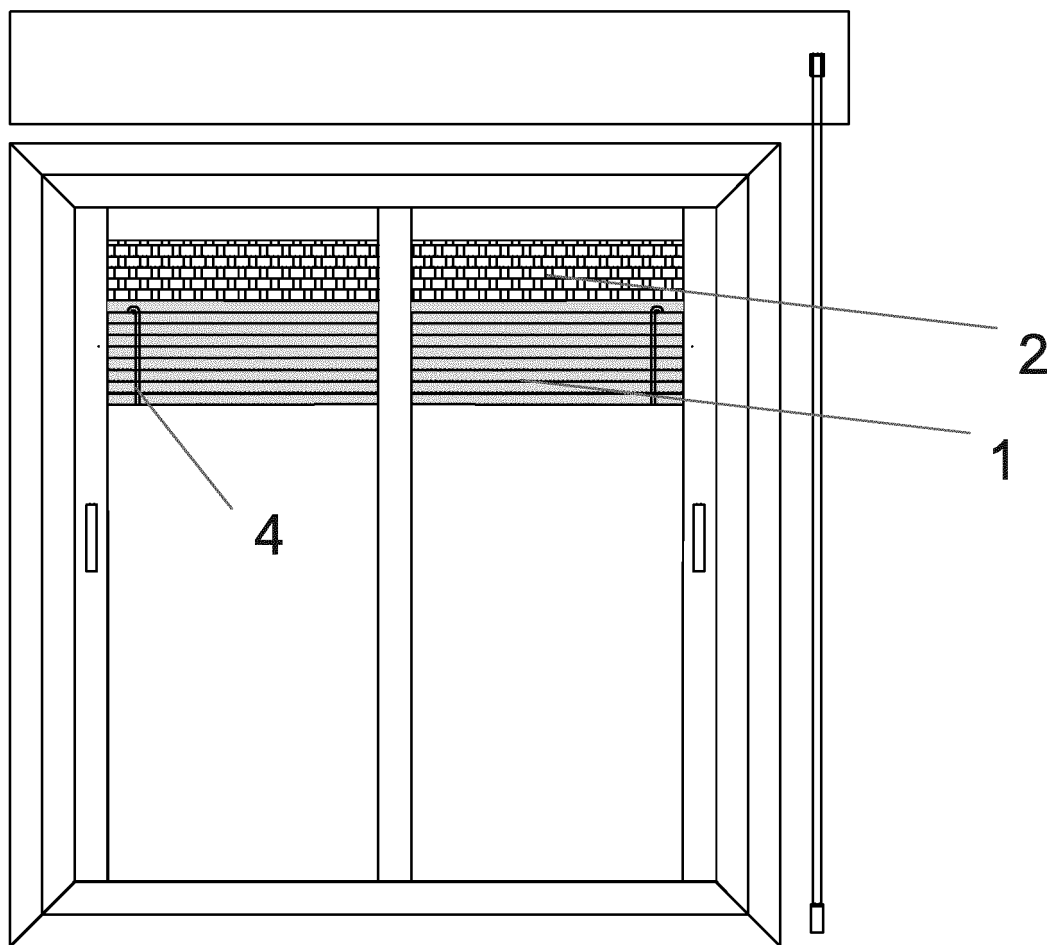


FIG. 3





EUROPEAN SEARCH REPORT

Application Number
EP 15 19 4191

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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	FR 1 314 328 A (RASUMOFF) 4 January 1963 (1963-01-04) * the whole document * -----	1-3	INV. E06B9/06 E06B9/17
			TECHNICAL FIELDS SEARCHED (IPC)
			E06B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 15 April 2016	Examiner Peschel, Gerhard
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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FR 1314328	A	04-01-1963	NONE

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