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(11)

**EP 1 736 080 A1**

(12)

## EUROPEAN PATENT APPLICATION

(43) Date of publication:  
**27.12.2006 Bulletin 2006/52**

(51) Int Cl.:  
**A47G 29/126 (2006.01)**

(21) Application number: **06115341.7**

(22) Date of filing: **13.06.2006**

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR  
HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI  
SK TR**  
Designated Extension States:  
**AL BA HR MK YU**

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(30) Priority: **23.06.2005 FI 20055341**

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(54) **Slot-type letterbox**

(57) In an embodiment according to the invention, a small gap remains between the inner surface of the inner flap (5) and the inner section (3), allowing a thin leaflet

to be pushed inside the door with ease. The inner section (3) comprises projections (6) that hold the inner flap (5) slightly open when it is in the closed position.

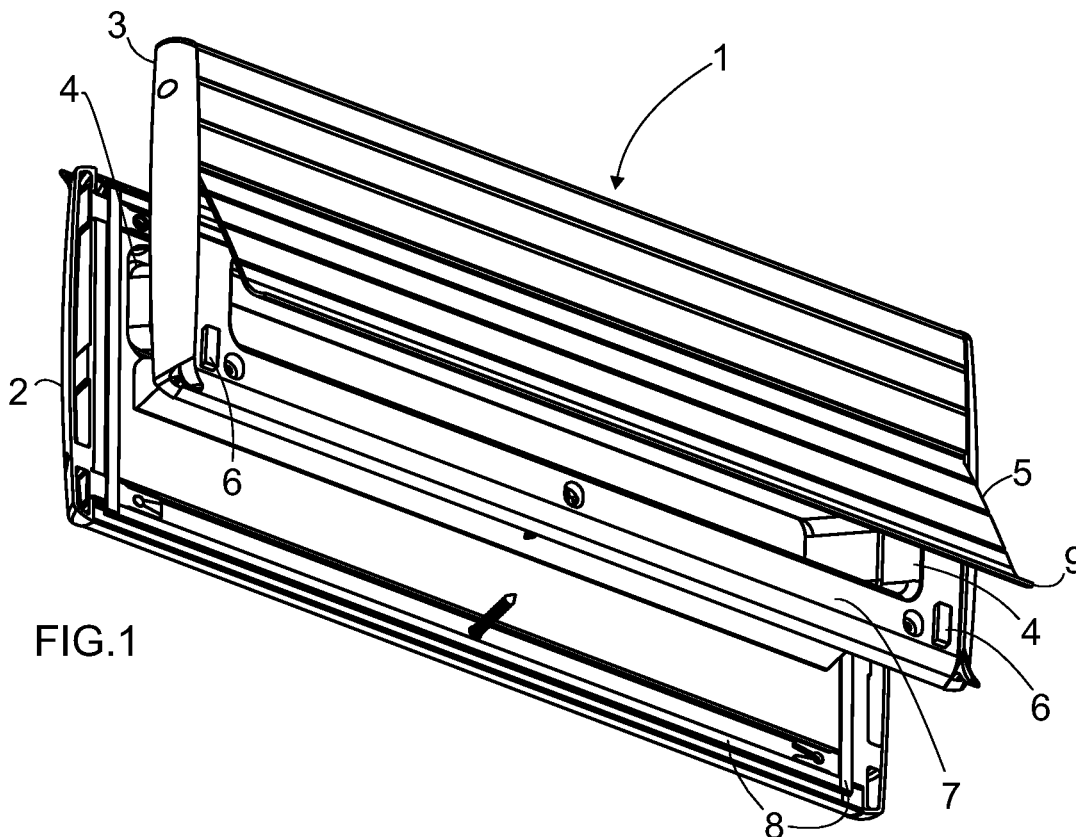


FIG.1

EP 1 736 080 A1

## Description

### Field of technology

**[0001]** The present invention relates to slot-type letterboxes. In particular, the invention relates to slot-type letterboxes for mounting on doors. However, the mounting base can also be a wall structure.

### Prior art

**[0002]** Prior art letterboxes with springs holding the flaps in the closed position or flaps that are otherwise heavy to open make it difficult to insert thin sheets such as advertising leaflets or various notices. A thin leaflet is not rigid enough to push the inner flap open; the leaflet will become kinked. In order to push the leaflet to the inside of the door through the slot, one must try to open the inner flap slightly with fingers, for example.

On the other hand, fire protection regulations require that a letterbox must fulfil certain criteria for preventing the spreading of fire. In the closed position, the inner flap of a prior art letterbox serves as a fire-protection structure.

### Short description of invention

**[0003]** The objective of the invention is to create a letterbox through which a thin leaflet can be pushed with ease. Furthermore, the letterbox must fulfil the regulatory criteria for fire protection. The objectives will be achieved as described in the independent claim. The dependent claims describe various embodiments of the invention.

**[0004]** In an embodiment according to the invention, a small gap remains between the inner surface of the inner flap 5 and the other structures of the inner section 3, allowing a thin leaflet to be pushed inside the door with ease. The inner section 3 comprises projections 6 that hold the inner flap 5 slightly open when it is in the closed position. In order to improve control of the tightness properties of the inner section, the inner section 3 comprises a bezel surface 7 surrounding the letterbox opening. The bezel surface is parallel to the inner surface of the flap 5 in the inner section 3.

**[0005]** The outer section 2 also comprises a corresponding bezel surface 7 surrounding the letterbox opening. The outer section 2 also comprises a sealing strip or strips 8 that are fitted or can be fitted on the surfaces of the outer section facing the mounting base upon installation and that form a closed loop. Furthermore, the inner surface of the outer flap 21 in the outer section 2 comprises an insulation layer 22 that covers the opening surrounded by the bezel surface 7 when the outer flap is closed.

### List of figures

**[0006]** In the following, the invention is described in more detail by reference to the enclosed drawings, where

Figure 1 illustrates an example of a letterbox according to the invention,

Figure 2 illustrates an example of the outer section of a letterbox according to the invention,

Figure 3 illustrates an example of a letterbox according to the invention, and

Figure 4 shows an enlarged view of a detail in Figure 3.

### Description of the invention

**[0007]** Figure 1 illustrates an example of a letterbox 1 according to the invention. The letterbox comprises an outer section 2 and an inner section 3. Both sections contain flaps. Furthermore, the example in Figure 1 comprises a telescopic shaft 4 connecting the outer and inner sections. However, it should be noted that the invention is also applicable to letterboxes that have no telescopic shaft but comprise separate outer 2 and inner 3 sections. In Figure 1, the inner flap 5 in the inner section 3 is open, showing the bezel surface 7 surrounding the letterbox opening and the projections 6. The letterbox opening refers to the opening through which mail can be pushed in. The projections 6 hold the inner flap slightly open when it is in the closed position. In the example of Figure 1, the projections are fitted or can be fitted on the bezel surface 7 of the inner section. A good position for the projections is on the bezel surface 7 of the inner section 3 on the side of the opening edge 9 of the inner flap 5. The projections can also be fitted on the inner surface of the inner flap 5. Also in this case, the side of the opening edge 9 of the inner flap 5 is a good position. A good size of gap is one that allows a single A4 sheet or a sheaf of sheets to be pushed in with ease.

The inner section 3 and its bezel surface 7 provide better control of tightness compared to direct mounting of the inner flap on the inside of the door as known from prior art. The main air flows go through the letterbox opening, the size of which can be influenced by the shape and interoperation of the inner section 3 and the flap 5 fitted to it. Thus the gap formed using the projections 6 is created in a controlled manner and only allows a certain permissible air flow. In principle and in practice, the gap reduces tightness, but good control of tightness and the structures of the front section 2 still make it possible to achieve the required level of tightness. Minor leakage air flow can occur through the gap between the inner section 3 and the mounting base but this is not as significant as the flow through the gap created by the projections. Both the front section 2 and the back section 3 have a bezel surface 7 surrounding the letterbox opening. The bezel surface is also parallel to the inner surface of the flap 5, 21, making the flap settle against the bezel surface as evenly as possible. It is also preferable that the bezel surface is at least essentially parallel to the mounting

base. This makes the structure of the sections flat, and they will not protrude from the surface of the mounting base by any great amount.

**[0008]** Sealing strip or strips 8 are fitted or can be fitted on the back surface of the outer section 2 — that is, the surface that faces the mounting base upon installation — so that they form a closed loop. The loop of sealing strips prevents leak air flow through the gap between the outer section and the mounting base. Furthermore, the outer section 2 comprises an insulation layer 22 on the inner surface of the outer flap 21 that covers the opening surrounded by the outer section's bezel surface 7 when the outer flap is closed. Figure 2 illustrates the insulation layer 22. The purpose of this is to prevent air flow through the letterbox. The example in Figure 2 also illustrates a telescopic shaft section 4A included in the outer section 2. An expanding fire insulation strip 23 can be fitted parallel to the long edge of the telescopic shaft.

**[0009]** Figure 3 illustrates an example of a letterbox according to the invention in which the bezel surface 7 of the outer section 2 comprises a ridge 31 surrounding the letterbox opening. The ridge improves the tightness properties of the front section as the insulation layer 22 of the front flap 21 settles very tightly against the ridge 31 when closed. Figure 4 shows an enlargement of Figure 3.

In the examples, the opening sector of the outer flap 21 in the outer section 2 is upwards and, correspondingly, the opening sector of the inner flap 5 in the inner section 3 is downwards. The opening edges 9 of both the outer and inner flaps are bent to facilitate opening. The outer and inner flaps are held in the closed position by flap-specific springs (not shown in the figures). The springs will also return the flaps to the closed position after being opened. However, it should be noted that the invention is not limited to these examples but the embodiment specified in Claim 1 is essential as regards the invention. For example, the inner section 3 may comprise sealing strips 8 that are fitted or can be fitted on the surfaces of the inner section facing the mounting base upon installation of the inner section 3 and that form a closed loop. Springs or other means are used for the purpose of holding the flaps in the closed position and returning them to that position. The invention is applicable for use on mounting bases with a straight or inclined machined opening.

Even though the concept of tightness has been used in the above mostly to refer to tightness against air flows, tightness also has other effects. The structures and the materials used in them also block the conveyance of fire, heat, sounds and smells. Sealants are significant for blocking such conveyance. All materials are suitable for the purpose. For example, the structures of the inner and outer sections are manufactured of a suitable plastic and/or metal, such as aluminium. If and when the projections 6 are made of an elastic material, they are more efficient in reducing the noise arising from the closure of the inner flap. The projections can also be machined di-

rectly on the base (the bezel surface or the flap); thus, they are of the same material as the base.

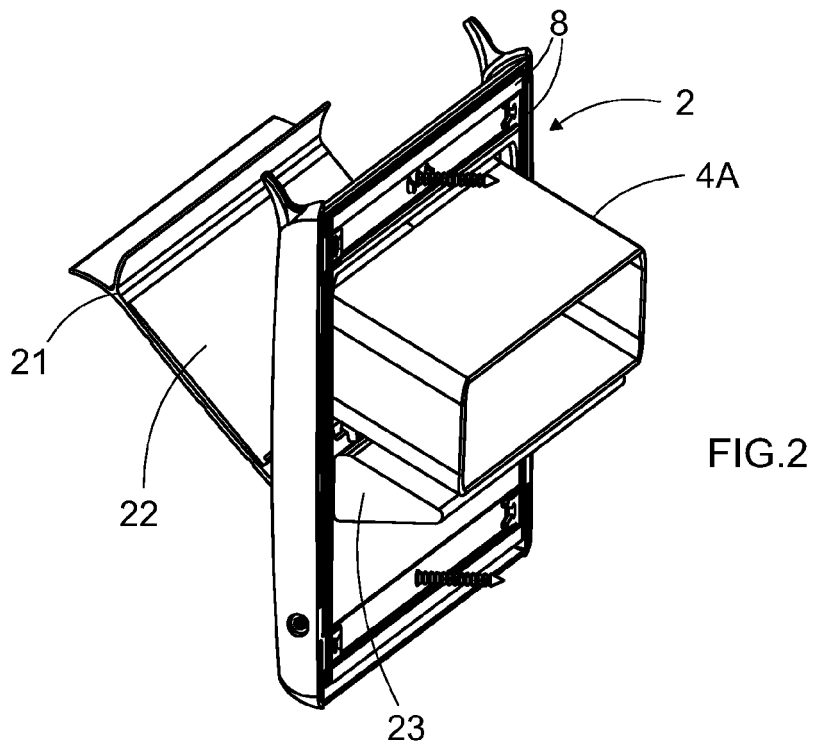
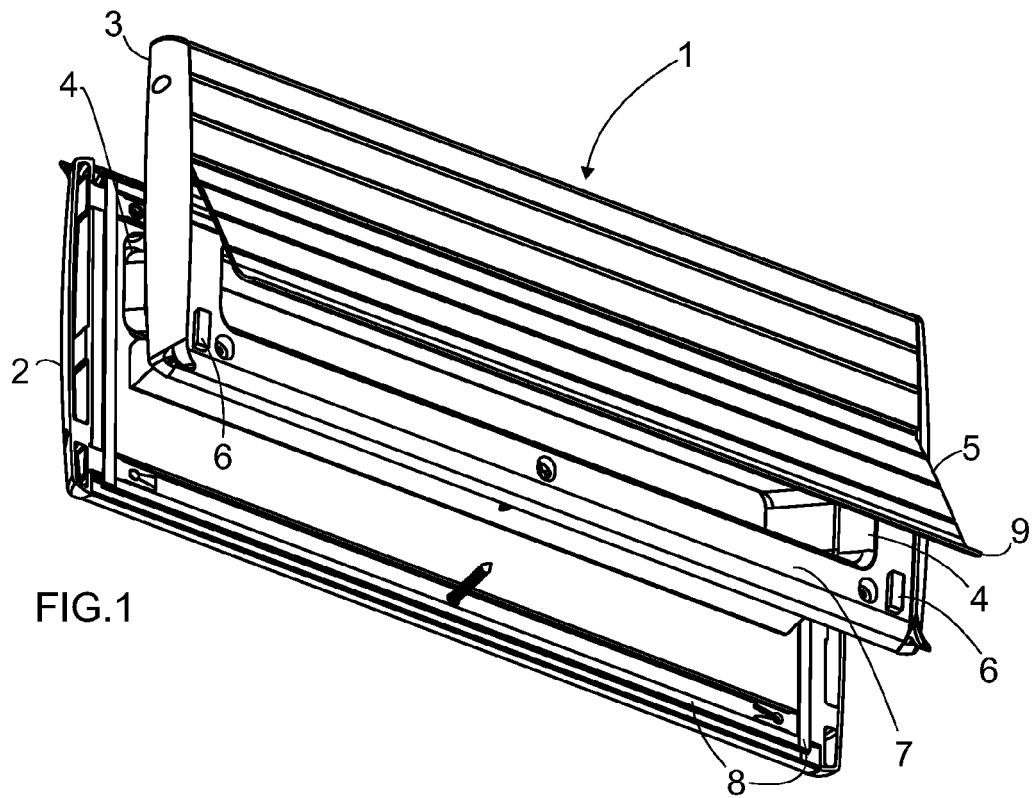
**[0010]** It is evident from the examples presented above that an embodiment of the invention can be created using a variety of different solutions. It is evident that the invention is not limited to the examples mentioned in this text. Therefore any inventive embodiment can be implemented within the scope of the inventive idea.

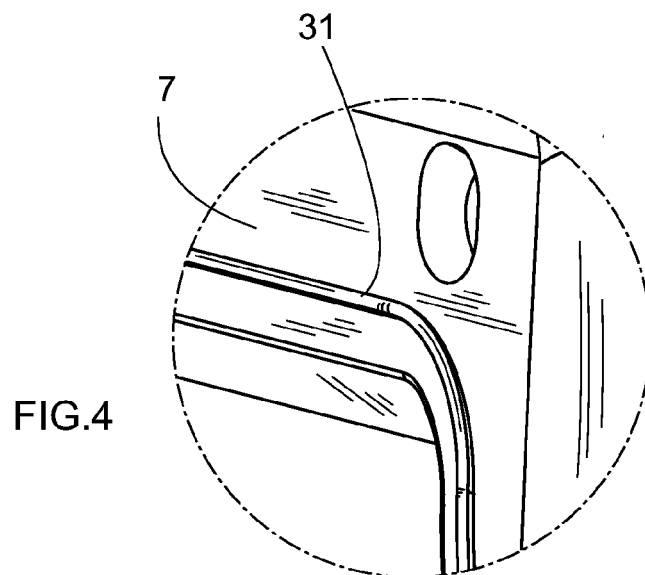
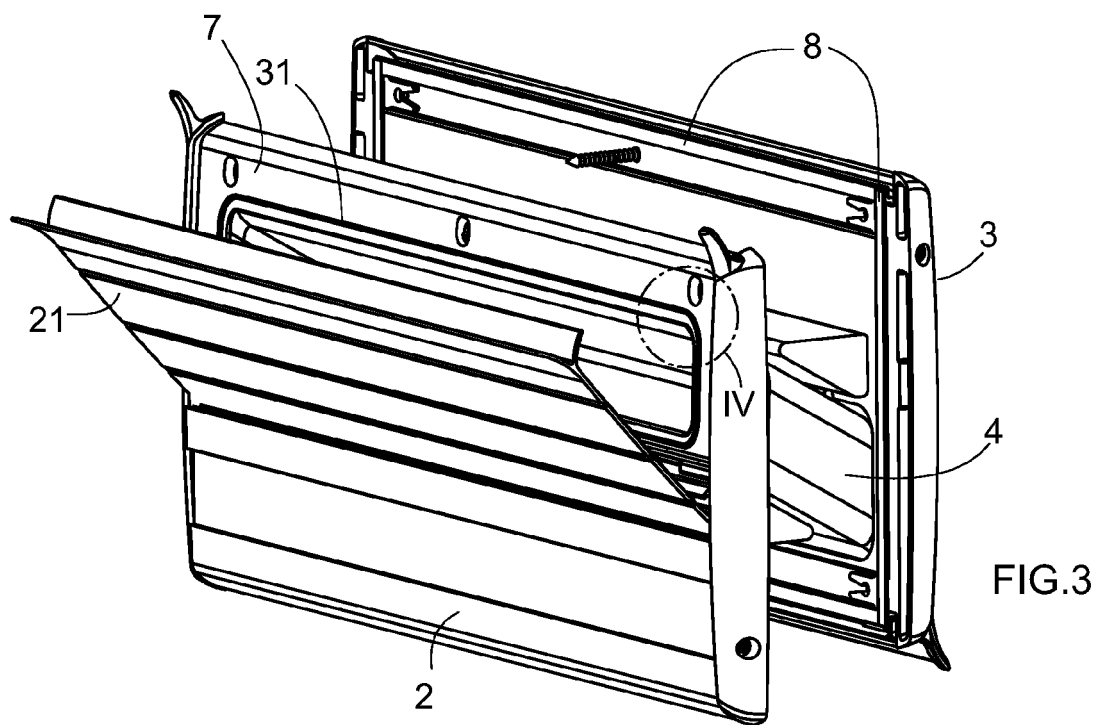
## Claims

1. A letterbox comprising an outer section (2) containing an outer flap (21) and an inner section (3) containing an inner flap (5), **characterised in that** the inner section (3) and the outer section (2) comprise a bezel surface (7) surrounding the letterbox opening, said bezel surface being parallel to the inner surface of the flap contained in the corresponding section;  
at least the outer section (2) comprises a sealing strip or strips (8) that are fitted or can be fitted on the surfaces of the outer section facing the mounting base upon installation of the outer section and that form a closed loop;  
the outer section (2) additionally comprises an insulation layer (22) on the inner surface of the outer flap (21), covering the opening surrounded by the bezel surface (7) when the outer flap is closed; and  
the inner section (3) additionally comprises projections (6) holding the inner flap (5) slightly open when it is in the closed position.
2. A letterbox according to Claim 1, **characterised in that** the bezel surface (7) of the outer section (2) comprises a ridge (31) surrounding the letterbox opening.
3. A letterbox according to Claim 1 or 2, **characterised in that** the projections (6) are located on the bezel surface (7) of the inner section (3) on the side of the opening edge (9) of the inner flap (5).
4. A letterbox according to Claim 1 or 2, **characterised in that** the projections (6) are located on the inner surface of the inner flap (3) on the side of its opening edge (9).
5. A letterbox according to Claim 3 or 4, **characterised in that** the projections (6) are made of an elastic material.
6. A letterbox according to any of the Claims 1, 2, 3, 4 and 5, **characterised in that** the inner section (3) comprises sealing strips (8) that are fitted or can be fitted on the surfaces of the inner section facing the mounting base upon installation of the inner section (3) and that form a closed loop.

7. A letterbox according to any of the Claims 1 to 6,  
**characterised in that** it comprises a telescopic  
shaft.
8. A letterbox according to any of the Claims 1 to 7, *5*  
**characterised in that** the letterbox can be installed  
in a straight machined opening or in an inclined ma-  
chined opening.
9. A letterbox according to any of the Claims 1 to 8, *10*  
**characterised in that** it comprises springs to hold  
the outer and inner flaps in the closed position and  
return them to said position.

*15**20**25**30**35**40**45**50**55*







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# EUROPEAN SEARCH REPORT

Application Number  
EP 06 11 5341

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	GB 2 291 680 A (PADDOCK FABRICATIONS LIMITED) 31 January 1996 (1996-01-31) * page 5, paragraph 1; figure 2 *	1-9	INV. A47G29/126
Y	CA 1 241 624 A1 (SAINT PIERRE) 6 September 1988 (1988-09-06) * figure 2 *	1-9	
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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 27 September 2006	Examiner Beugeling, Leo
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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EPO FORM 1503 03.82 (P04C01)

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

EP 06 11 5341

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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27-09-2006

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