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(54) Door closer housing

(57) The invention relates to a door closer housing. The invention comprises a plastic subframe (3) arranged for fitting into the inside of a separate metal housing (2). The subframe comprises end pieces (4) that fit into the ends of the metal housing. The subframe comprising the end pieces is easy to install.

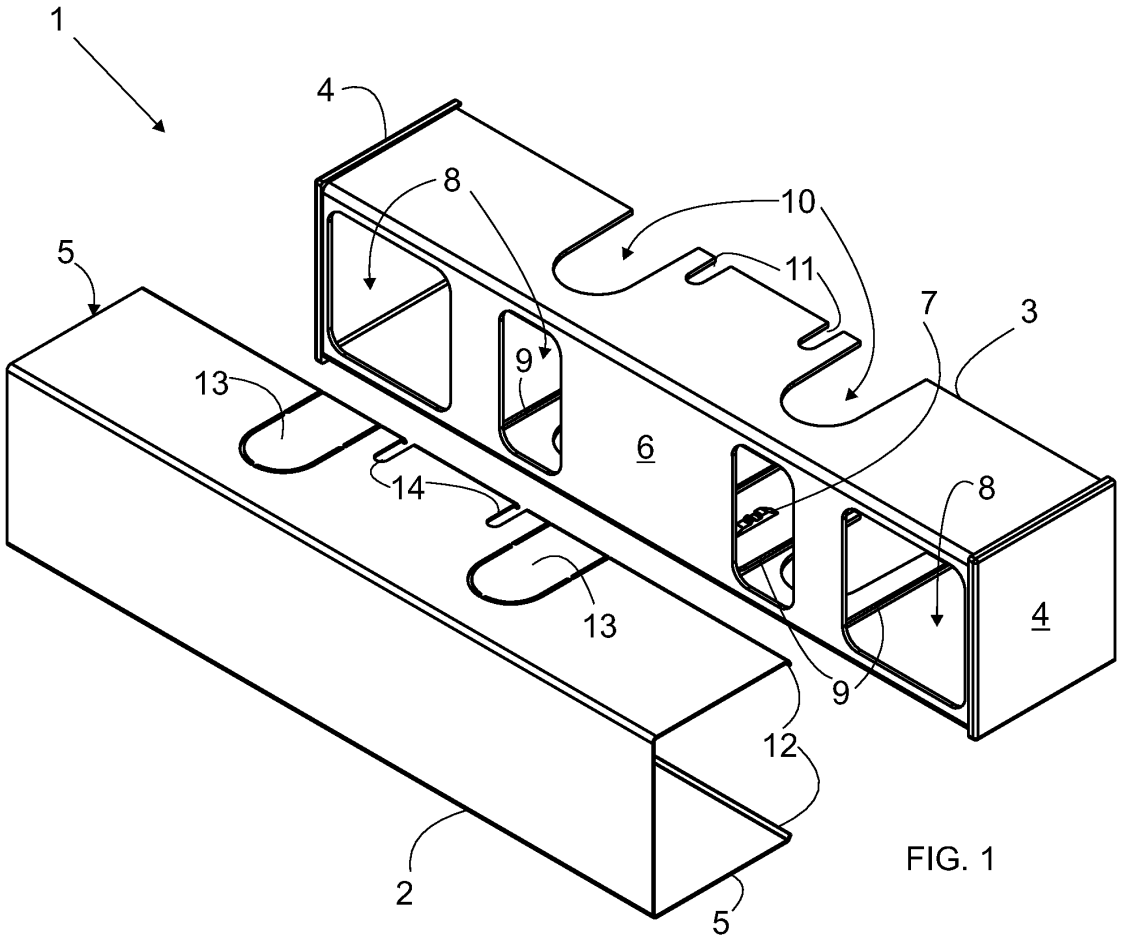

FIG. 1

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Description

Field of technology

[0001] The present invention relates to a door closer housing.

Prior art

[0002] Door closers often have a plastic housing that can be fitted to the door closer body with a snap-on coupling. The housing is installed simply by pushing it onto the door closer. Housing solutions also exist where the door closer housing is open at both ends, and the ends are covered with separate end pieces. WO 2005071204 illustrates such a solution.

[0003] A plastic housing is not appropriate for installation in some countries / regions, for example due to different regulations and other circumstances. For this reason, a metal housing with open ends has often been used in these regions. The ends are covered with separate plastic end pieces. Thus, such solutions correspond to the method illustrated in said WO publication.

[0004] Grooves, cut-outs etc. are required for fitting the ends and the housing. Due to separate parts, the installation stage is more cumbersome than the installation of an ordinary plastic housing (that also covers the ends). It is relatively difficult to install the end pieces in practice because the tolerances are not generally very precise, the parts can be slightly distorted etc. A corner often remains slightly loose, and the parts do not fit neatly in place. The costs of manufacture become relatively high if effort is put into very precise and delicate production of the end pieces.

Short description of invention

[0005] The objective of the invention is to create a door closer housing that would eliminate the problems with a metallic open-ended housing. The objective will be achieved as described in the independent claim. The dependent claims describe various embodiments of the invention.

[0006] The invention comprises a plastic subframe arranged for fitting into the inside of a metal frame. The subframe comprises end pieces that fit into the ends of the metal frame. The subframe comprising the end pieces is easy to install.

List of figures

[0007] In the following, the invention is described in more detail by reference to the enclosed drawings, where

Figure 1 illustrates an example of a door closer housing according to the invention,

Figure 2 illustrates a cross-section of the metal frame according to the invention,

Figure 3 illustrates a cross-section of the subframe according to the invention, and

Figure 4 illustrates a door closer housing according to the invention with the metal frame over the subframe.

Description

[0008] Figure 1 illustrates an example of a door closer housing 1 according to the invention. The housing comprises an open-ended metal housing 2 and a plastic subframe 3. The subframe is arranged for fitting into the inside of the metal frame. The subframe comprises end pieces 4 that fit into the ends 5 of the metal frame 2, as well as a body part 6 connecting the end pieces together.

[0009] The subframe 3 has attachment elements 7 for attaching the subframe to the door closer body. Furthermore, the body part 6 of the subframe may have lightening holes 8. The subframe may also have reinforcement parts 9 to provide sufficient rigidity. The lightening holes 8, reinforcement parts 9 and/or changes to the wall thickness of the body part 6 can be used to keep the cost of the subframe 3 low/reasonable. The frame also has openings 10 for the door closer functions. The frame may also have openings 11 for the necessary fittings.

[0010] The metal housing 2 may comprise specific attachment elements 12 for fitting the metal housing on the subframe 3. The metal housing also has provisions for openings 13 for the door closer functions. The metal housing may also have openings 14 for the necessary fittings.

[0011] Figure 2 illustrates a cross-section of the metal housing 2 shown in Figure 1. The cross-section shows said fastening elements 12 more clearly. In this embodiment, the fastening elements 12 are formed of the edges of the housing 2, which are bent inwards. Figure 3 illustrates a cross-section of the subframe 3 shown in Figure 1. The cross-section is taken at the position of said fastening elements 7 in the subframe. In this embodiment, the fastening elements 7 are inward-pointing projections of the frame, containing a recess/several recesses. The fastening elements in both the subframe and the metal housing can also be implemented in ways other than the example illustrated here.

[0012] The subframe 3 may be readily fitted into the metal frame 2 at the factory, in which case on-site installation of the housing onto the door closer will be similar to that of a plastic housing. Figure 4 illustrates a readily fitted combination. Installation may also be completely carried out at the installation site. Furthermore, an installation plate known from prior art can be used. An integrated plastic subframe comprising the ends is easy to install and manufacture. The installation result is neat because the corners do not remain loose.

[0013] It is evident from the embodiments 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 but can be implemented in many other different embodiments within the scope of the presented claims.

Claims

1. A door closer housing comprising an open-ended metal housing (2), **characterised in that** it comprises a plastic subframe (3) that is arranged to be fitted into the inside of the metal housing, said subframe comprising end pieces (4) that fit into the ends of the metal housing, as well as a body part (6) connecting the end pieces together.

2. A housing according to Claim 1, **characterised in that** the subframe (3) has fastening elements (7) for fitting the subframe to the door closer body.

3. A housing according to Claim 2, **characterised in that** the body part (6) has lightening holes (8).

4. A housing according to Claim 2, **characterised in that** the body part (6) has reinforcement parts (9).

5. A housing according to Claim 3, **characterised in that** the body part (6) has reinforcement parts (9).

6. A housing according to any of the Claims 2 to 5, **characterised in that** the metal housing (2) comprises a second set of fastening elements (12) for fitting the metal housing on the subframe (3).

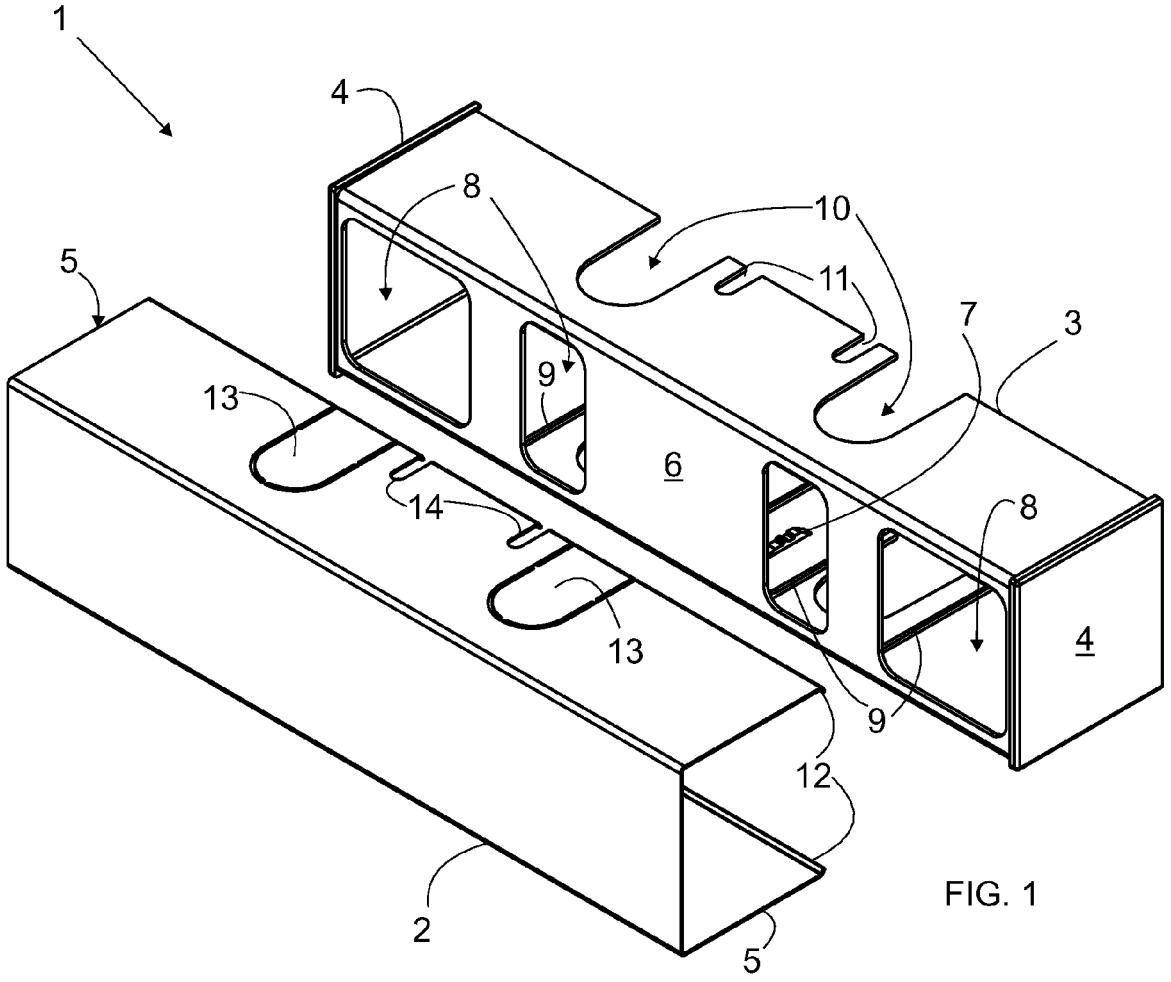

FIG. 1

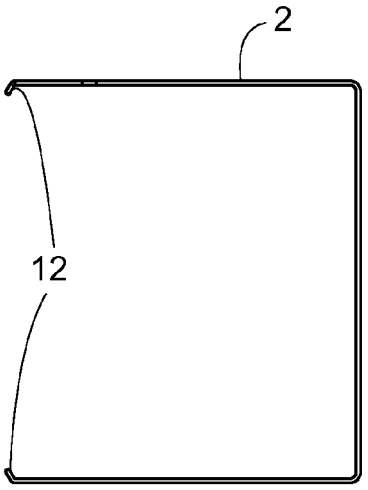

FIG. 2

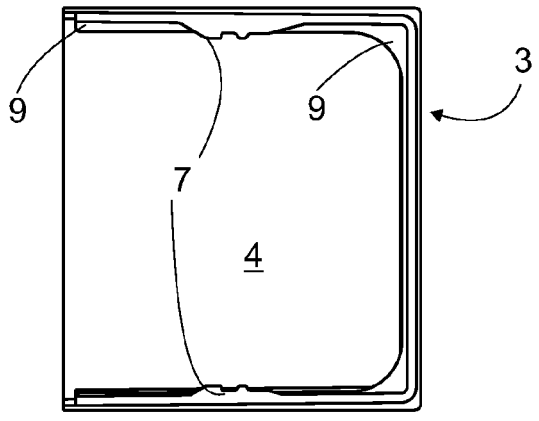

FIG. 3

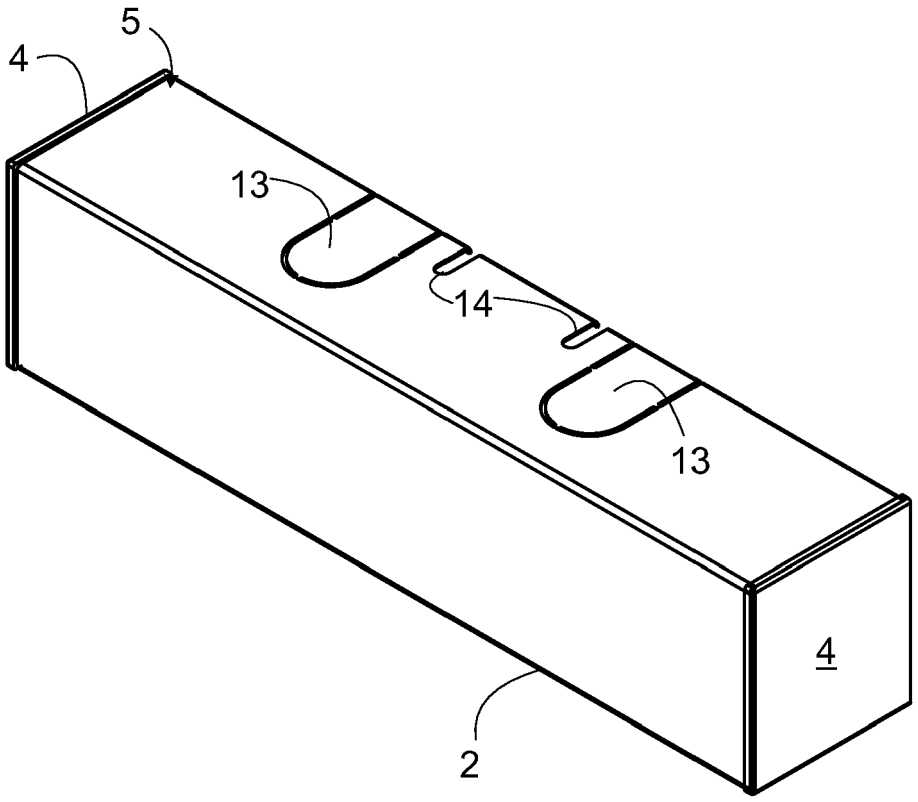

FIG. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 10 17 2114

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	EP 1 727 956 A1 (DORMA GMBH & CO KG [DE]) 6 December 2006 (2006-12-06) * paragraphs [0027] - [0031] * * paragraph [0042] * * figures 1-4, 8-10 *	1-6	INV. E05F3/22
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			TECHNICAL FIELDS SEARCHED (IPC) E05F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	17 November 2010	Mund, André

CATEGORY OF CITED DOCUMENTS

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A : technological background
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 10 17 2114

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17-11-2010

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REFERENCES CITED IN THE DESCRIPTION

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