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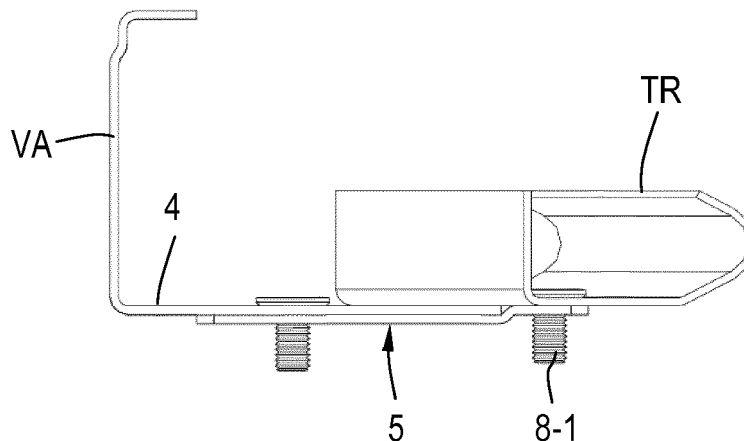
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(54) **FASTENING SYSTEM FOR OVERHEAD DOORS**

(57) A description is given of a fastening system comprising a profile strip, having a profile wall, which is to be fastened to a surface, as well as a rail plate a first plate portion of which is to be fastened to the profile wall, and the second plate portion, in the fastened state, projects at least partly beyond the edge of the profile wall. A recess

for partially accommodating a fastening member is provided at the dividing line between the two plate portions. By virtue thereof, it is not necessary to provide a recess in the edge of the profile wall, thus reducing machining operations and installation time.



**Fig.4b**

## Description

**[0001]** The present invention relates to a fastening system comprising a profile strip, having a profile wall, which is to be fastened to a surface, as well as a rail plate a first plate portion of which is to be fastened to the profile wall, and the second plate portion, in the fastened state, projects at least partly beyond the edge of the profile wall.

**[0002]** Such a fastening system is known from practice in which, for example, overhead doors are installed. At the location of the usually vertically mounted profile strip in an access opening of a garage or warehouse, where the runner profile to be mounted to said profile strip recedes with respect to said strip, means must be provided to enable the tilting, spaced apart runner profile to be fastened in a low-vibration and firm manner.

**[0003]** A drawback thereof is that it requires, at the worksite, that a recess is formed at the edge of the profile wall, in a position determined by local conditions and therefore uncertain, by means of a suitable tool, in which recess at least a part of a recessed portion of a rail plate will be accommodated, which rail plate comprises a raised portion which is separated from the recessed portion by a dividing line and which is secured to the profile wall.

**[0004]** The runner profile is subsequently fastened to the profile wall of the profile strip by means of the rail plate and/or the fastening member.

**[0005]** It is an object of the present invention to provide a fastening system which does not require the formation, at the worksite, of a recess at the edge of the profile wall.

**[0006]** To achieve this, the fastening system according to the invention is characterized in that a recess for accommodating a fastening member is provided at the dividing line between the two plate portions.

**[0007]** This has the advantage that said recess at the dividing line between the two plate portions is provided in advance in the relevant rail plate. By virtue thereof, time-consuming operations or the tools therefor are not necessary.

**[0008]** An embodiment of the fastening system according to the invention is characterized in that the dividing line is a bending line, wherein the second plate portion is recessed with respect to the first plate portion over a distance which corresponds to the thickness of the profile wall.

**[0009]** This has the advantage that without the need to provide spacing shims between the runner profile and the profile wall, the part of the runner profile mounted to the profile wall through the rail plate is located in the same plane of the profile wall as the lower part of the runner profile which is mounted directly to the profile wall.

**[0010]** A further embodiment of the fastening system according to the invention is characterized in that the recess has the shape of a mushroom the head of which offers room to partially accommodate the fastening member.

**[0011]** This has the advantage that, by virtue of the fact

that the head of the mushroom offers room to partially accommodate the fastening member, the latter can be mounted, if necessary, up to the edge of the profile wall, without a recess in the profile wall. In this case, the distance between the profile strip and the runner profile is only small.

**[0012]** Further detailed, possible embodiments, which are set forth in the remaining claims, are mentioned together with the associated advantages in the following description.

**[0013]** The fastening system according to the present invention will now be explained in greater detail with reference to the figures mentioned below, in which corresponding components are indicated by the same reference numerals.

In the figures:

Figure 1 shows a representation of a part of a fastening system according to the invention which is attached with its profile strip to a building structure; Figure 2 shows a detail of a profile strip and a runner profile which are interconnected through a rail plate; Figures 3a and 3b show the rail plate of figure 2 in a plan view and a side view, respectively; and Figures 4a, 4b, 4c and 4d show further detail views of the manner in which the profile strip and the runner profile are connected to one another by means of the rail plate of figure 2.

**[0014]** Figure 1 shows part of a system 1 which is used to rest with its substantially U-shaped profile strip VA on a surface 2. The profile strip VA, which is attached to a building structure 3 shown in figure 1, comprises at least one profile wall 4.

**[0015]** The system further comprises a rail plate 5, which is also shown in figure 2, a first plate portion 5-1 of which is attached to the profile wall 4. The second plate portion 5-2, in the attached state shown in figure 2, protrudes at least partially beyond the edge 4-1 of the profile wall 4. A dividing line 6 runs between the plate portions 5-1, 5-2. A recess 7 for partially accommodating a fastening member 8, such a bolt 8-1, is provided between the two plate portions 5-1, 5-2, said fastening member being used to secure a runner profile TR of the system 1 to the profile wall 4 of the profile strip VA by means of the rail plate 5 and the fastening member 8-1. Also shown are corresponding slotted holes 9, into which a further bolt B can be inserted on which a nut is provided to fasten the first plate portion 5-1 to the profile wall 4. The fastening member 8 is situated in the vicinity of the edge 4-1 of the profile wall 4, which does not have to be provided with a recess, in spite of the fact that, at this position in relation to the surface 2, the runner profile TR, which recedes at the top, is only at a small distance from the profile strip VA. Between the profile strip VA shown in figure 1 and the mirror image of said profile strip VA (not shown), there is a well known swing door, sectional door or overhead door which is movable between said profile

strips. The sides of the electrically or manually operable door are provided with rollers which, when opening and closing the door, run in runner profiles TR attached onto the two profile strips VA.

**[0016]** The rail plate 5 shown in figures 3a and 3b, which, in principle, could be entirely flat, has a dividing line 6 forming a bending line, such that the second plate portion 5-2 is recessed with respect to the first plate portion 5-1 over a distance corresponding to the thickness of the profile wall 4. As a result, the recessed plate portion 5-2 is flat and connects to the profile wall 4, so that the part which is centrally located within the U-shaped runner profile TR is situated horizontally on the combination of the profile wall 4 and the second plate portion 5-2 which is flush with said profile wall and which extends beyond the edge of said profile wall, which is shown in detail in figure 4b. This ensures a firm and low-vibration load-bearing fastening.

**[0017]** Figure 3a further shows an embodiment in which the recess 7 is in the shape of a mushroom whose head offers room to partially accommodate the fastening member 8, i.e. the nut 8-2 thereof on the respective bolt 8-1. If required, this can be used to press the fastening member 8 against the edge 4-1, wherein the bearing nut 8-2 ensures a good fastening result. This is achieved, in particular, because the stem of the said mushroom forms a slot 10 onto which the remaining part of the nut 8-2 is clamped, which is represented as ring nut 8-2 in figures 3a and 4d.

**[0018]** Figures 4a, 4b, 4c and 4d comprise the details described hereinabove of the manner in which the profile strip VA and the runner profile TR are interconnected by means of the rail plate 5. Figures 4b and 4d further show that in this case the two fastening members comprise a screwed bolt with flat head and the nut 8-2. By virtue thereof, the rollers running through the profile TR and fitted to the side of the tilt-up door are not hindered.

**[0019]** The profile strip VA, the rail plate 5 on the runner profile TR are preferably made of sheet material, such as sheet steel.

## Claims

### 1. A fastening system comprising:

- a profile strip (VA), having a profile wall, which is to be fastened to a surface, and
- a rail plate a first plate portion of which is to be fastened to the profile wall, and the second plate portion, in the fastened state, projects at least partly beyond the edge of the profile wall, **characterized in that** a recess for partially accommodating a fastening member is provided at the dividing line between the two plate portions.

### 2. The fastening system according to claim 1, **characterized in that** the dividing line is a bending line,

wherein the second plate portion is recessed with respect to the first plate portion over a distance which corresponds to the thickness of the profile wall.

3. The fastening system according to claim 1 or 2, **characterized in that** it forms part of a swing door, sectional door or overhead door which is movable in a runner profile (TR), the runner profile (TR) being fastened, in the vicinity of the profile strip, to the profile wall of the profile strip (VA) by means of the rail plate and/or the fastening member.

4. The fastening system according to any one of claims 1 to 3, **characterized in that** the recess has the shape of a mushroom the head of which offers room to partially accommodate the fastening member.

5. The fastening system according to claim 4, **characterized in that** the stem of the said mushroom forms a slot onto which the remaining part of the fastening member is clamped.

6. The fastening system according to any one of claims 1 to 5, **characterized in that** the fastening member comprises a screwed bolt with flat head and a nut.

7. The fastening system according to any one of claims 1 to 6 **characterized in that** the profile strip (VA), the rail plate and the runner profile (TR) are made of sheet material, such as sheet steel.

8. The use of the fastening system according to any one of claims 1 to 7 to fasten runner profiles (TR) for a swing door, sectional door or overhead door which is movable therein.

9. A swing door, sectional door or overhead door which is provided with a fastening system according to any one of claims 1 to 7.

10. A rail plate which can suitably be used in the fastening system according to any one of claims 1 to 7, which rail plate comprises a first plate portion and a second plate portion, which is separated from the first plate portion by a dividing line, **characterized in that** a recess for a fastening member is provided on the dividing line between the two plate portions.

11. The rail plate according to claim 10, wherein the dividing line is a bending line, and the second plate portion is recessed with respect to the first plate portion.

12. The rail plate according to claim 10 or 11, wherein the recess has the shape of a mushroom the head of which offers room to partially accommodate the fastening member.

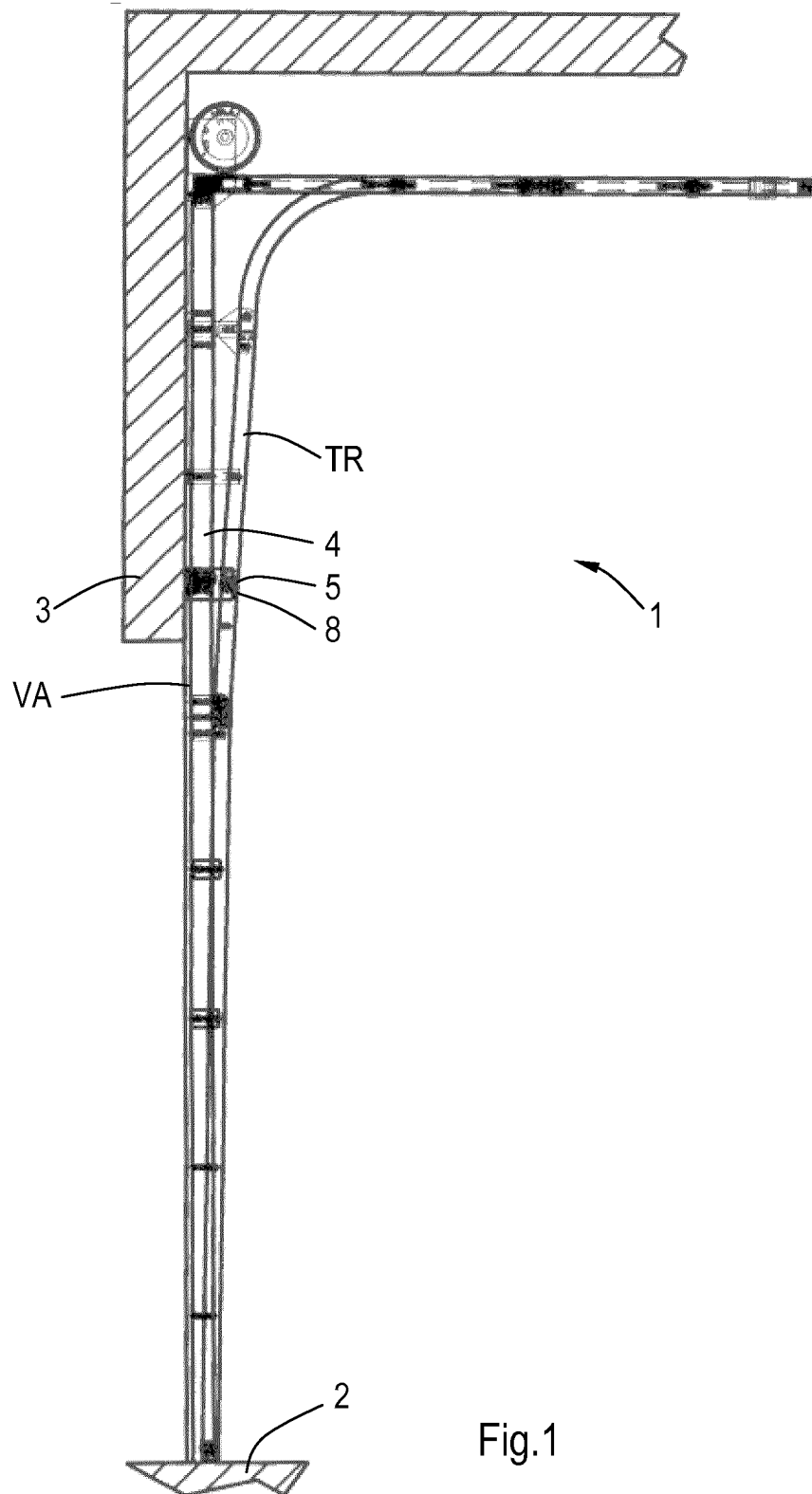


Fig.1

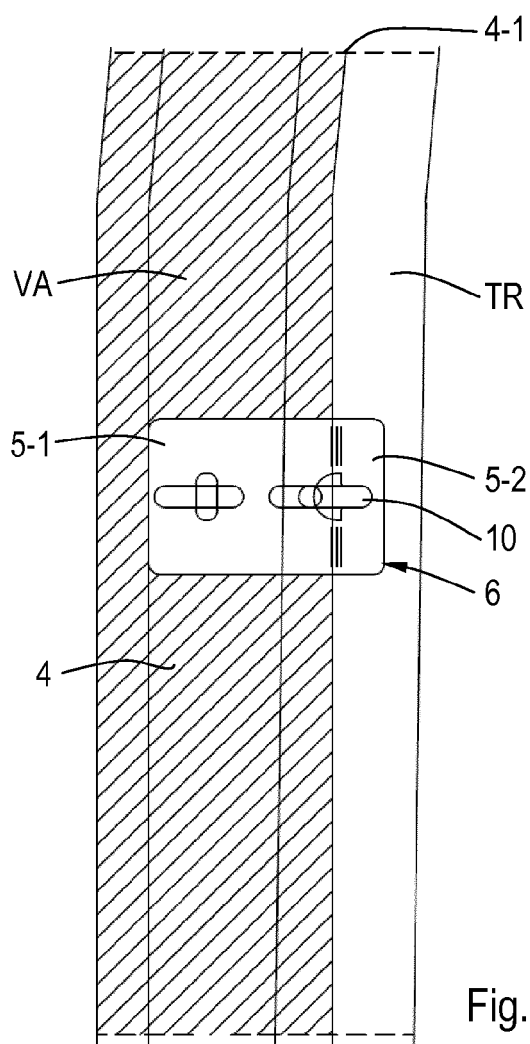


Fig.2

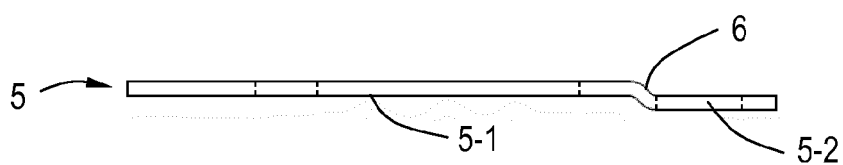


Fig.3b

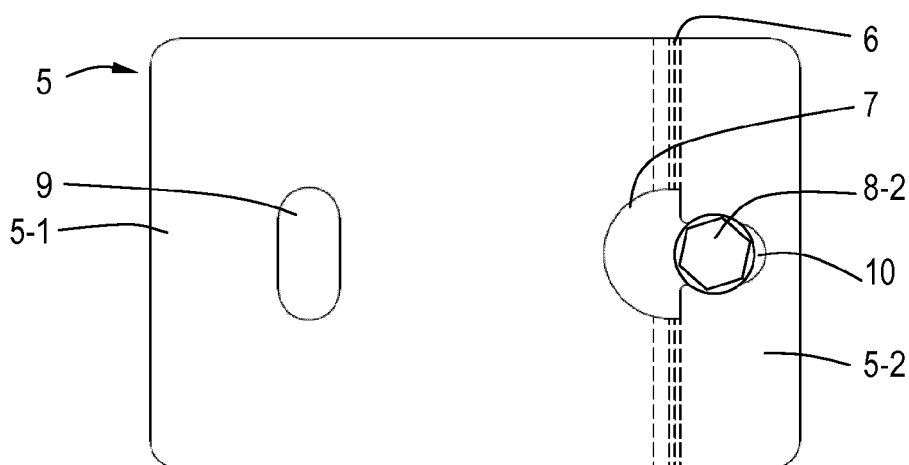


Fig.3a

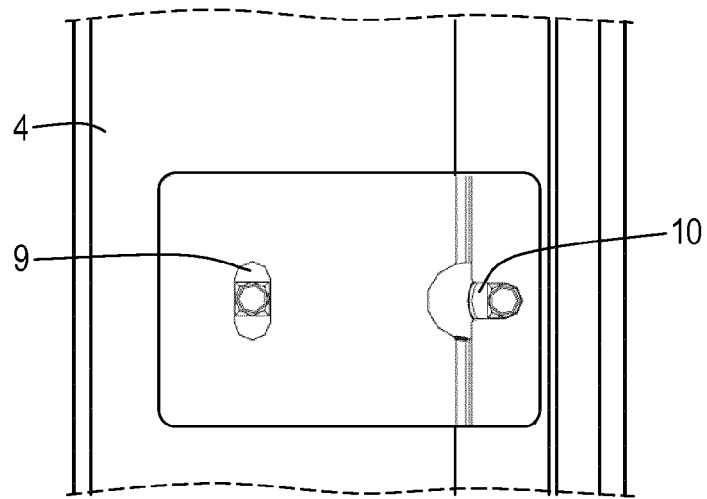


Fig. 4a

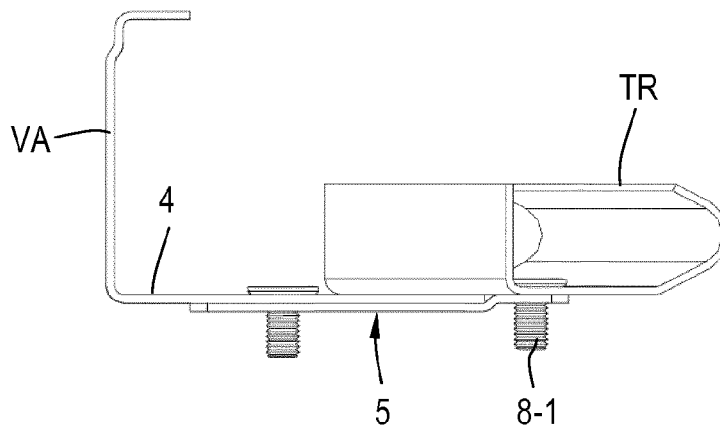


Fig. 4b

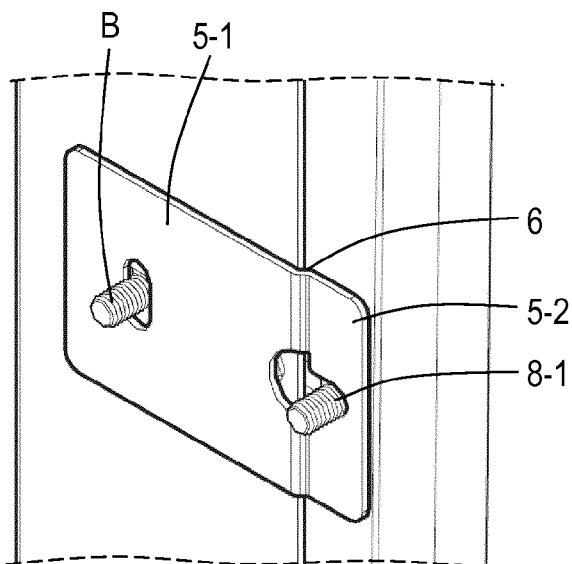


Fig. 4c

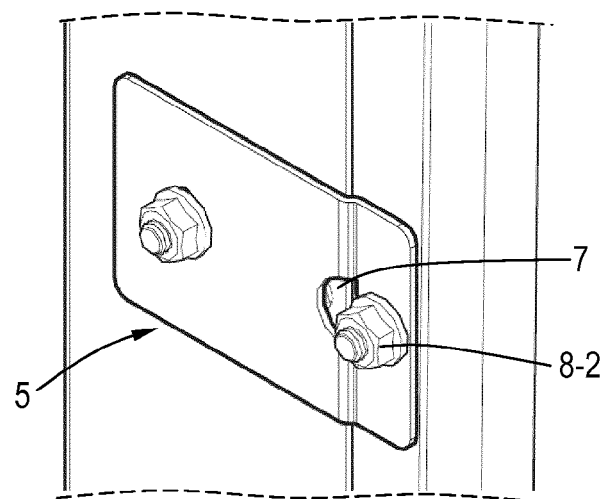


Fig. 4d



## EUROPEAN SEARCH REPORT

Application Number  
EP 16 19 3294

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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			E05D E06B E04F
Place of search		Date of completion of the search	Examiner
The Hague		15 February 2017	Guillaume, Geert
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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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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EP 16 19 3294

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
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15-02-2017

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