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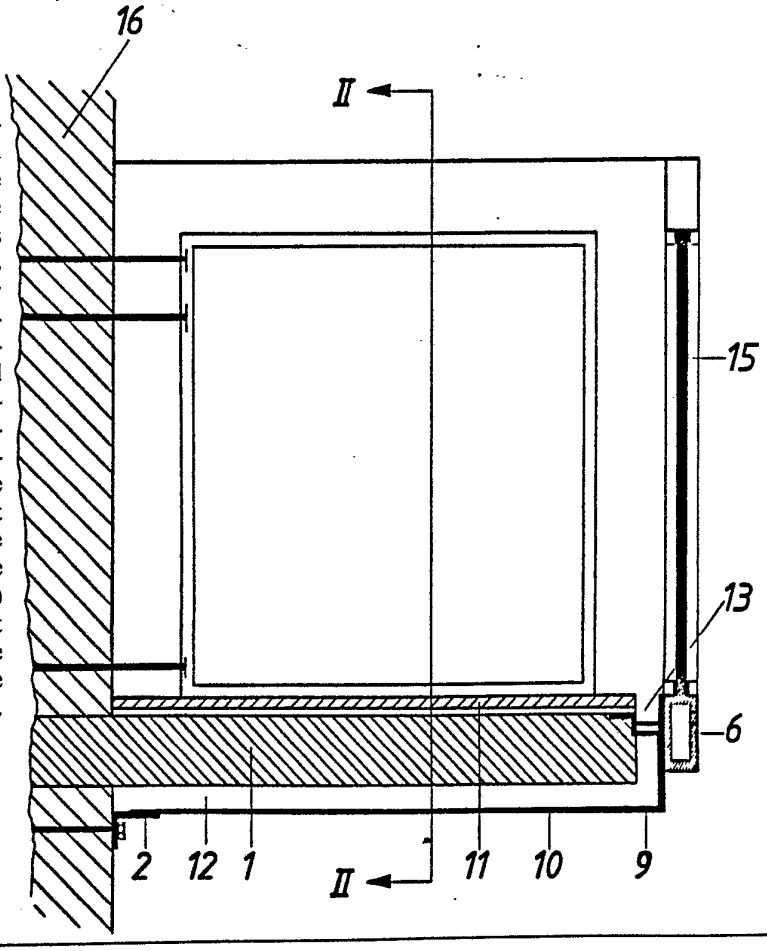
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(54) Title: A METHOD AND A MEANS FOR CONSTRUCTING A BALCONY

(57) Abstract

By building up a new balcony on the outside of an already existing balcony plate (1) a simplified method is achieved compared to the hitherto known method of repair work. The mentioned known method of repairs comprises repair work of damaged parts, but the method is very troublesome and consequently extremely expensive to execute. Furthermore a balcony repaired in this way requires to be checked at intervals. At first two side units (4, 5) are fastened to the unit (16) at both sides of a possibly already existing balcony plate (1). To the mentioned side units (4, 5) a side edge unit (9) is bolted. This forms the gable of the balcony. At the end at the front of the balcony a side edge unit (9) and a front unit (6) are mounted between the units (4, 9) of the gable. At its bottom the side unit has a flange to which a bottom plate (10) with reinforcement ribs (3) can be mounted. At the top a cover plate (11) which constitutes the covering unit, is placed. Subsequently all the cavities (12) of the balcony are filled up, e.g. with foamed polyurethan.



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A METHOD AND A MEANS FOR CONSTRUCTING A BALCONY.

This invention relates to a method for constructing a balcony and a means for executing the method.

Hitherto known balcony constructions have mostly been based on reinforcing iron which projects from the wall and is casted round with concrete for the formation of a balcony plate.

Balconies of the prior mentioned art have in some cases turned out to be highly dangerous, since the concrete and the reinforcing iron can be demolished due to the weather. For instance pop-outs of the concrete over the reinforcements or formation of cracks in the concrete can occur. The carrying capacity of the balcony plate will consequently be reduced and this will result in a falling down of the balcony.

Corroded balconies have so far been repaired by cutting off or by removing bad concrete, or they have been demolished. The mentioned repair work depends on a sufficient strength of the reinforcing iron in order to carry out a satisfactory repair of the concrete slab. The repair work can amount to app. dkr. 30.000,- in materials and cost of labour. In case a balcony cannot be repaired in this way, it must, as already mentioned above, be removed and replaced by a new one. However, such balconies must be checked at intervals, e.g. every five years.

This is an expensive as well as a troublesome way of repairing. It is the object of the present invention to provide an improvement of these defects by constructing new and replacing old corroded and dange-

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rous balconies, and this is achieved by using a method according to which two outriggers are fastened to the construction whereafter an edge unit is fastened to the sides facing each other of the outriggers, whereafter another edge unit is mounted between the mentioned units in such a way that a cover plate and a bottom plate can be fastened to the upper respectively to the lower edges of the edge units. By applying the mentioned method it is possible to construct a balcony around a possibly already existing balcony and without letting this already existing balcony constitute a carrying part of the construction. Furthermore the hitherto known defects are quite removed by constructing the new balcony in this way, since it can be made free of maintenance by an adequate choice of materials. The fact is that concrete does not form part of the construction. The balcony can be constructed of prefabricated sections which simplifies and reduces the price of the production.

By filling up the whole cavity of the balcony, as referred to in claim 2, with e.g. foamed polyurethan, accumulations of water are avoided and an expedient sound absorption is achieved.

By using steel sections preferably of stainless steel, as a carrying unit at the sides and enclose these in a closed section, e.g. of aluminium, as referred to in claim 3, a reliable carrying construction free of maintenance is achieved.

By providing the edge units mounted along the sides with a groove, as referred to in claim 4, a built-

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in drain for rainwater, which can be connected with the drainpipe system, if desired, is achieved.

Finally it is adequate, as referred to in claim 5, to provide the bottom plate with inside ribs to make the plate sufficiently stiff and stable of shape.

The invention will now be elucidated further in detail with reference to the drawing in which

Fig. 1 shows a section through a balcony taken along the line I-I in Fig. 2,

Fig. 2 shows a partial section through the balcony taken along the line II-II in Fig. 1,

Fig. 3 shows a sectional view of the side gable of the balcony, and

Fig. 4 shows a sectional view of the front of the balcony.

In Fig. 1 and 2 an embodiment of a balcony is shown, which is constructed according to the method of the present application and with an already existing balcony plate 1 enclosed in the balcony.

Before constructing the balcony, old rails and similar things must be removed from the old balcony plate.

Subsequently side units 4 are fastened to the construction 16 in any adequate way. They can be fast-

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ened to the walling e.g. by a screwing on with rustproof bolts, a fastening to the steel pilaster strip in the horizontal division of the construction, or they can be suspended between pillars at the outside of the construction. The mentioned side units are shown on an enlarged scale in Fig. 3. They are constituted by U-shaped stainless steel sections 5, the projected length of which correspond to the length of the balcony. When the U-sections 5 have been fastened, a closed section 4 is inserted to enclose the mentioned sections. The closed section can adequately be made of aluminium.

The side edge unit 9 is fastened to the two mentioned side units 4, 5 by means of rustproof bolts. The side edge units are also adequately made of aluminium with the shown cross sectional shape.

Between the ends of the side edge units 9 of the gables another side edge unit 9 is mounted, which runs along the front of the balcony as shown in Fig. 1 and 4.

The side edge unit can be assembled by means of fitted connecting angles 7 and fish-bolts 8, which are preferably made of stainless steel.

A front unit 6 is also screwed on to the front-side edge unit 9, as shown in Fig. 4.

At the bottom of the balcony a bottom plate 10 is placed, which at convenient intervals is provided with ribs 3 riveted on in order to stiffen the plate. Plates and ribs are also made of aluminium. The bottom

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plate is placed in such a way that it rests at the bottom flange of the side edge units and is fastened to this in an adequate way.

Likewise a cover plate 11 is placed at the top side of the units, as shown in the figure. The plate 11 can be of any adequate type.

Subsequently the cavity 12 between the side edge units, the bottom plate and the cover plate is filled up with a fitted material, e.g. foamed polyurethan, so that free air-filled spaces within the balcony will not occur.

The balcony plate having been built up the railing can be mounted, as shown in Fig. 1 and 2. The railing is at the bottom fastened at the side units 4, 6 and in a fitted way to the construction.

As it appears from this description the balcony can be built up on the outside of an already existing balcony plate.

The method simplifies the construction of balconies considerably, since there will hardly be any inconveniences for the inmates involved, as the mounting takes place from the outside without intervention in the appartment. By applying a mobile lift two men can build the balcony.

The method described above can be modified in diffrent ways, as large or small parts of the balcony can be prefabricated. The bottom plate can for instance be inserted in between the side units of the

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gable, and the angle plate 2 can thereafter be fastened to the walling. Subsequently the front can be mounted.

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C L A I M S

1. A method for constructing a balcony, c h a r a c t e r i z e d in that two outriggers (4, 5) are fastened to the construction (16), whereafter an edge unit (7, 9) is fastened to the sides facing each other of the outriggers (4, 5), whereafter another edge unit (8, 9) is mounted between the mentioned units (7, 9) in such a way that a cover plate (11) and a bottom plate (10) can be fastened to the upper respectively to the lower edges of the edge units (9).

2. A method according to claim 1, c h a r a c t e r i z e d in that the cavity (12) between the edge units (9), the cover plate (11) and the bottom plate (10) is quite filled up with a light material.

3. A means for carrying out the method according to claim 1 and 2, c h a r a c t e r i z e d in that the outriggers consist of a U-shaped steel beam (5) which is enclosed in a closed section.

4. A means for carrying out the method according to claim 1 and 2, c h a r a c t e r i z e d in that the edge unit (9) at its top side is provided with a longitudinal groove (13).

5. A means for carrying out the method according to claim 1 and 2, c h a r a c t e r i z e d in that the bottom plate (10) at its top side is provided with ribs (3).

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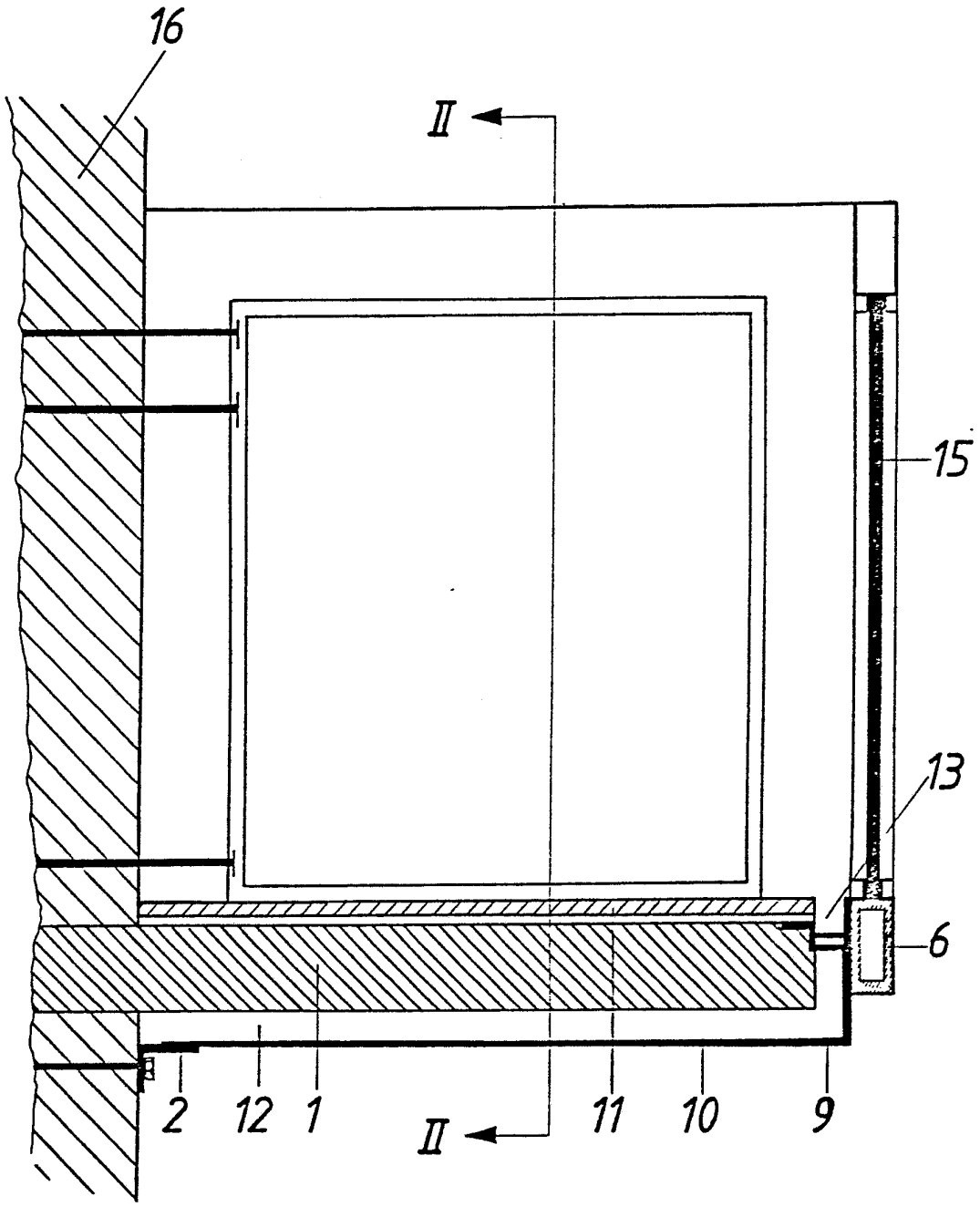


Fig. 1

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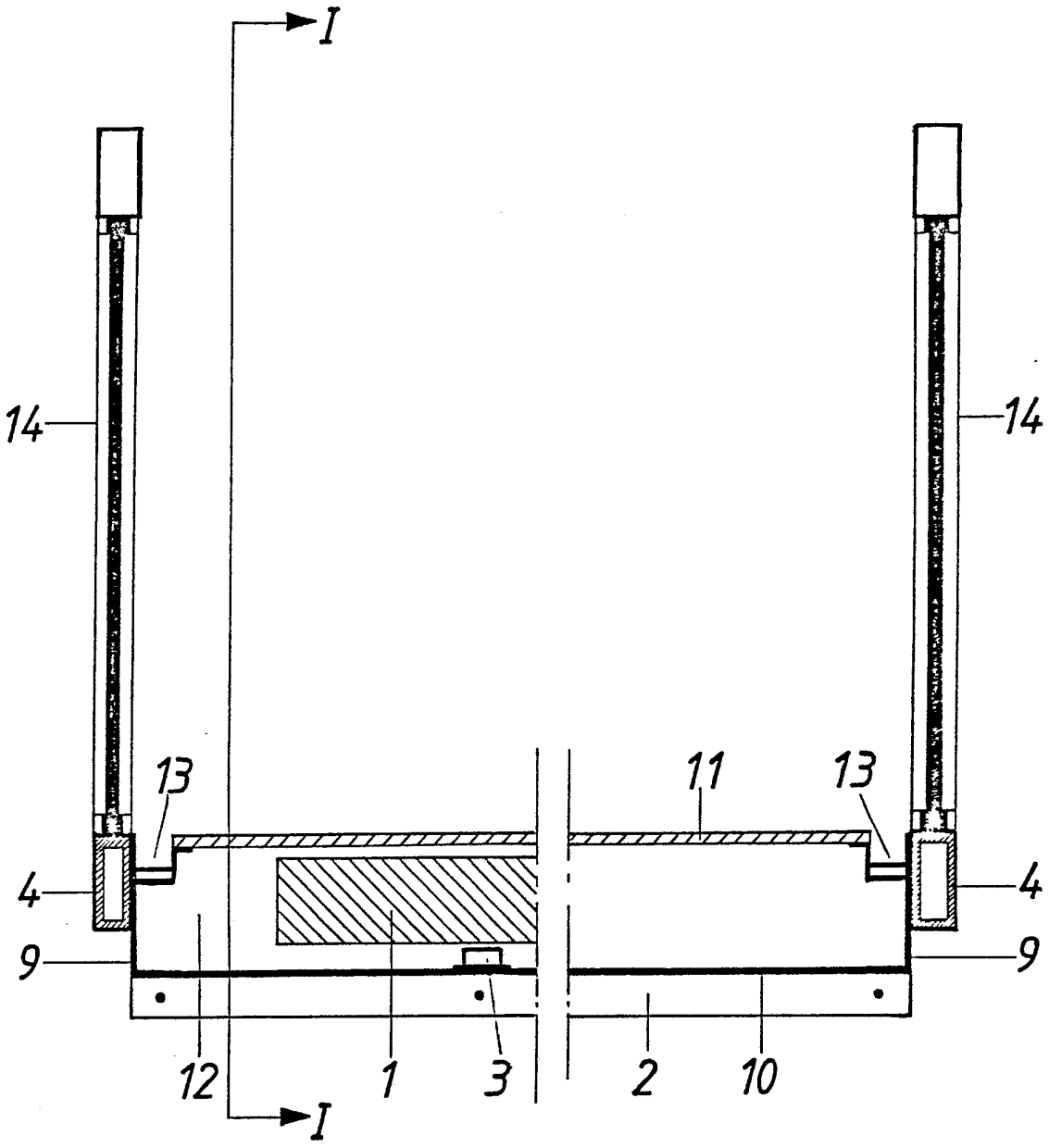


Fig. 2

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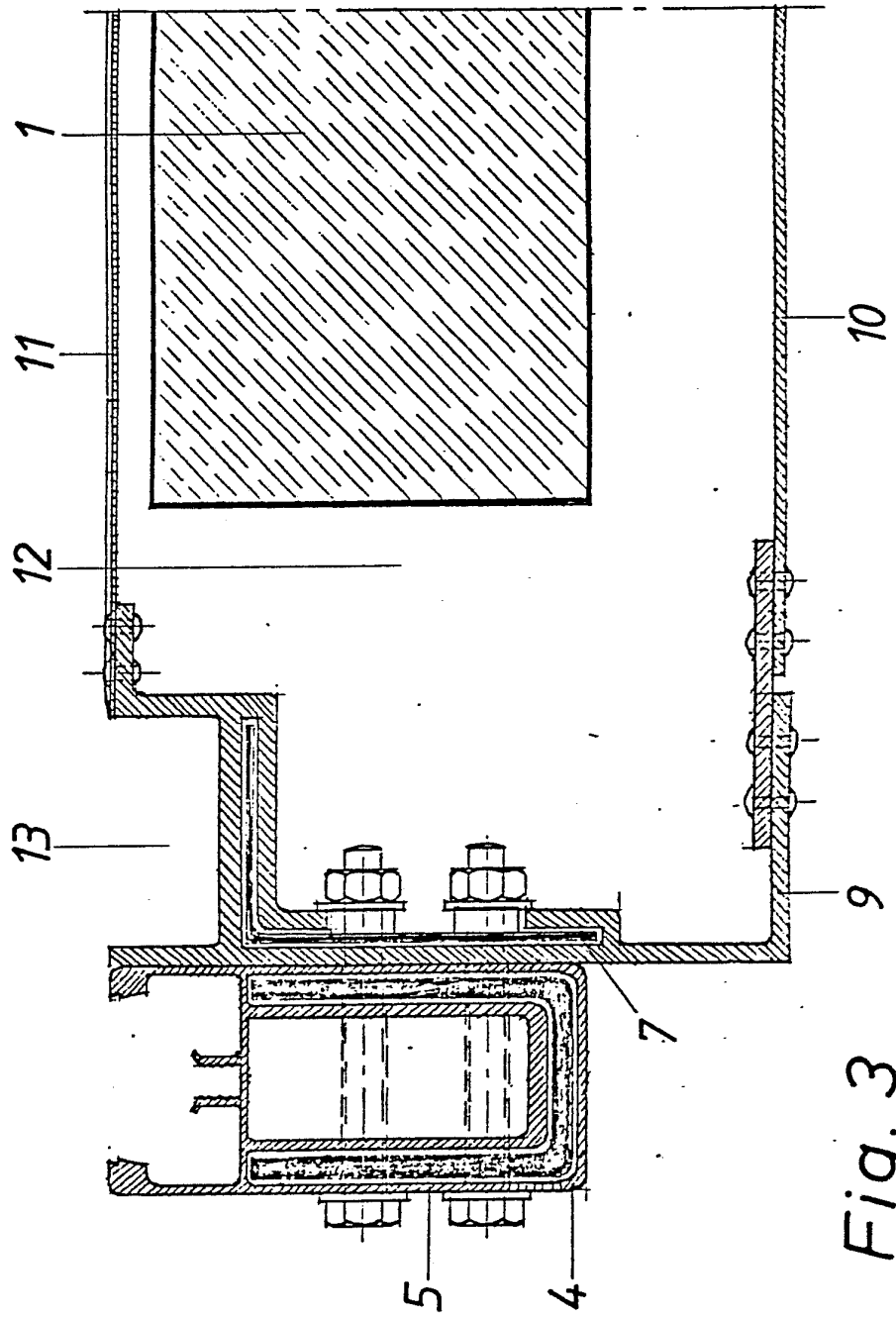


Fig. 3

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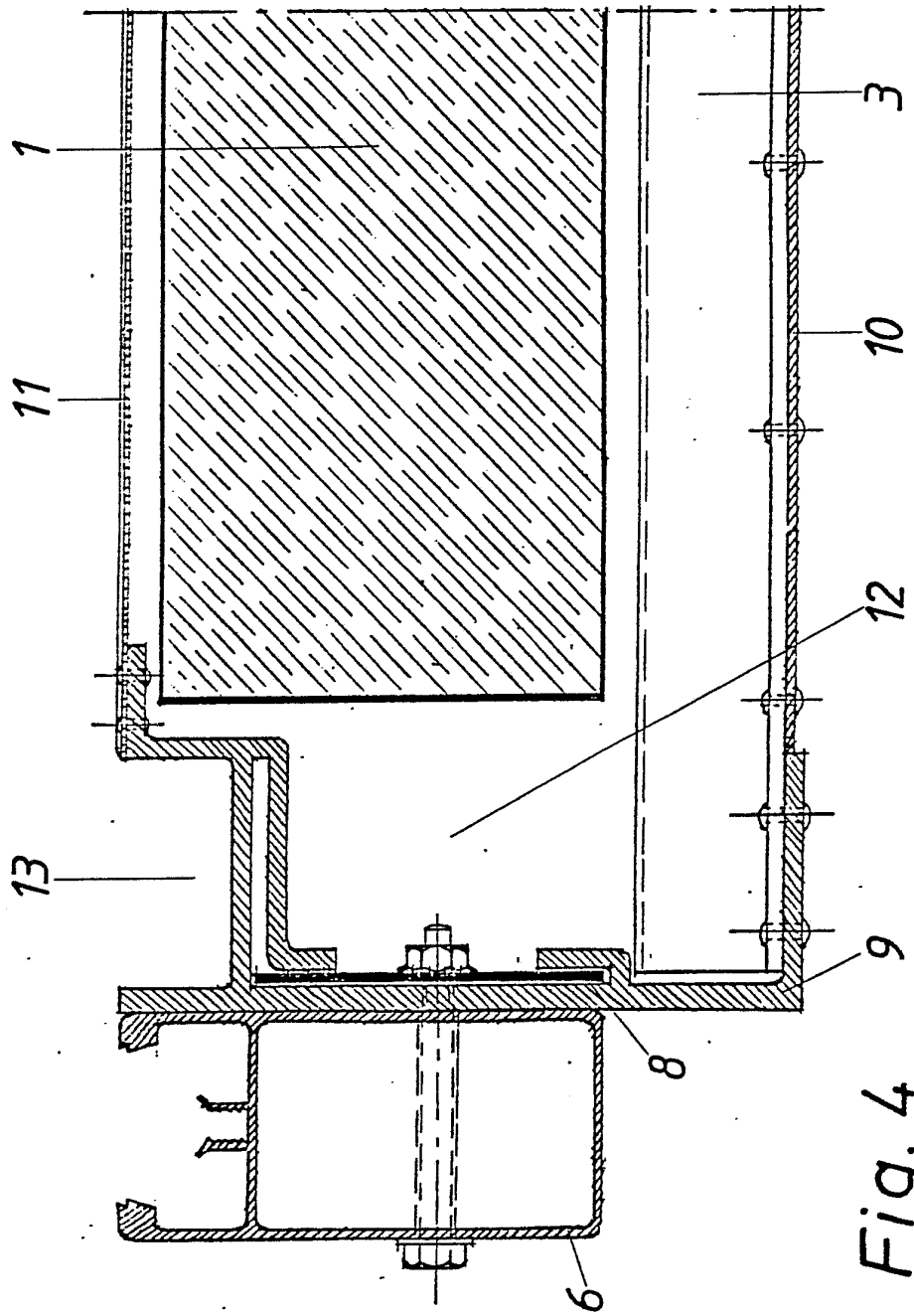


Fig. 4

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INTERNATIONAL SEARCH REPORT

International Application No PCT/DK82/00035

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [3]

According to International Patent Classification (IPC) or to both National Classification and IPC 3

E 04 G 23/02; E 04 B 1/00

II FIELDS SEARCHED

Minimum Documentation Searched [4]

Classification System	Classification Symbols
IPC 3	E 04 G 23/00-23/08; E 04 B 1/00, 1/34
US Cl	52:73, 79, 127, 221, 514

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched [5]

SE, NO, DK, FI classes as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT [14]

Category *	Citation of Document, [16] with indication, where appropriate, of the relevant passages [17]	Relevant to Claim No. [18]
P	EP, A1, 0 045 731 (FOGA SYSTEM BYGG AB) 10 February 1982 & SE, B, 421 140	1
A	SE, C, 168 698 (AB SVENSKA SERIEHUS) 22 September 1959	1
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IV. CERTIFICATION

Date of the Actual Completion of the International Search [2]	Date of Mailing of this International Search Report [2]
1982-06-18	1982-07-01
International Searching Authority [1]	**Signature of Authorized Officer [20]**
Swedish Patent Office	Leif Törn

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