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(54) **CORNER PROFILE FOR FASTENING CLADDING STRUCTURES**

(57) The invention relates to the field of building and is intended for finishing off the external corners of buildings and structures. A corner profile for fastening cladding structures comprises two load-bearing members (1), which are joined by one lateral face at an angle corresponding to the angle formed by the walls of the corner of the building or premises that is to be clad. At the other lateral face (2), the load bearing members (1) are provided with a flange (3) in the form of a plate that is offset toward the inside of the corner and lies parallel to the plane of its corresponding load-bearing member (1). The corner profile further comprises spacers (5), which are connected to the load-bearing members (1) such as to be connectable to the plates (3), and mounting cups (7), situated on the outer side of the load-bearing members (1) to permit the attachment of cladding structures (8).

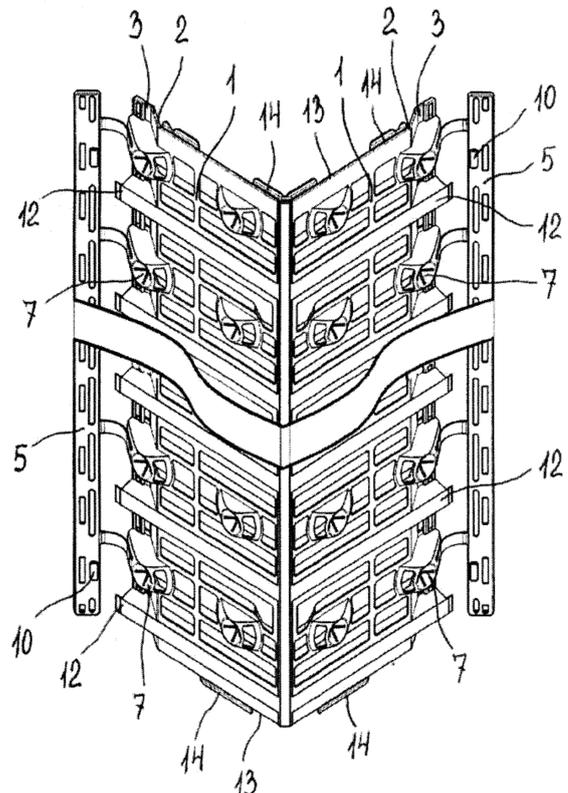


Fig. 1

## Description

**[0001]** The invention relates to the field of construction and is intended for fastening cladding structures, for example cladding panels of different thickness, at the outer corners of buildings and installations.

**[0002]** An L-shape element for cladding external corners of buildings is known. The L-shape element is made of injection molded plastic - RF patent for utility model N2 74408, cl. E04F, 13/00 2008. The L-shape element is made with a decorative front surface and mounting pads placed around its perimeter and shifted relative to its decorative surface to form grooves for flush mounting of panels on the lateral faces and other L-shape elements on the top and bottom faces, the side mounting pads featuring the oblong holes for fixing an L-shape element with a gap to the structure surface.

**[0003]** The closest analogue is the outer L-shape element for cladding external corners of buildings - RF patent for utility model Ns 89566, cl. E 04 F 13/00, 2009. The external L-shape element for cladding external corners of buildings comprises a vertically oriented mounting pad located along the perimeter of the upper part of the L-shape element and displaced relative to the decorative front surface; at least one vertically oriented stiffening rib located on each rear side of the corner and configured to contact with the surface of the building; at least one horizontally oriented stiffening rib located at each rear side of the corner; link beams located between the vertically oriented stiffening ribs and the rear sides of the corner configured to fix the attachable cladding panels; holes in the vertically oriented mounting pad configured to fix the L-shape element to the surface of the building; a horizontally oriented mounting pad located along the perimeter of the upper part at the rear side of the corner, with tenons, configured to fix other L-shape element to be mounted on the top; and at least one mounting bracket with a hole configured to mount the L-shape element to the surface of the building being fixed to each vertically oriented stiffening rib.

**[0004]** The imperfection of the known constructions is that they are intended for joining the cladding panels of a strictly defined thickness, which limits the scope of their application.

**[0005]** The present invention aims to provide a corner profile to fasten cladding structures that would retain the positive qualities of the known construction, but at the same time the profile structure would become more cross functional, which would allow the cladding of walls simultaneously with cladding structures, for example, panels of different thicknesses.

**[0006]** The specified technical result is achieved by the fact that the corner profile for fastening of cladding structures comprises two load-bearing members connected by one lateral end side at an angle corresponding to the angle formed by the walls of the corner of the building or premises that is to be clad; at the other lateral face, the load-bearing members are provided with a flange in the

form of a plate that is offset toward the inside of the corner and lies parallel to the plane of its corresponding load-bearing member; spacers, which are connected to the load-bearing members such as to be connectable to the plates; and mounting cups situated on the outer side of the load-bearing members to permit the attachment of cladding structures.

**[0007]** The spacers have protrusions configured to be attached to the plates through the holes located thereon. On the lateral end sides of the load-bearing members, there are battens configured to attach cladding structures, and on the upper and lower end faces of the load-bearing members, there are protrusions with an offset toward the inside of the corner configured to attach other corner profiles. The advantage of such profile improvements is that, for example, to clad the corner forming walls, panels can be used simultaneously, for example, cladding panels of different thicknesses, i.e. the proposed profile design is cross-functional.

**[0008]** Fig. 1 shows a general view of the corner profile. Fig. 2 shows a top view of the profile with spacers. Fig. 3 shows a top view of the profile with spacers connected to the plates. Fig. 4 shows a connection of two profiles with spacers connected to the plates. Fig. 5 shows a connection of two profiles with spacers located inside the corner. Fig. 6 shows a connection of the cladding panel to the profile. Fig. 7 shows a view of the profile attached to the corner of the building when cladding panels of different thicknesses are used. Fig. 8 shows a view of the profile attached to the corner of the building with special mounting bolts allowing to place an insulant between the profile and the building wall, when the cladding panels of different thicknesses are used.

**[0009]** The corner profile (Fig. 1) for fastening of the cladding structures comprises two load-bearing members 1 connected by one lateral end side at an angle corresponding to the angle formed by the walls of the corner of the building or premises that is to be clad. On the other lateral side 2, the load-bearing members 1 are formed with a flange 3 offset toward the inside of the corner (Fig. 2, 3) ending with a plate 4 parallel to the plane of the corresponding load-bearing member 1.

**[0010]** The profile comprises spacers 5 (Fig. 2) connected to the load-bearing members 1 configured to connect them with the plates 4 (Fig. 4).

**[0011]** If necessary, when using the cladding structures of the same thickness, the spacers are located inside the corner (Fig. 5). On the outer side 6 of the load-bearing members 1, there are mounting cups 7, due to which the profile (Fig. 6) is fastened to the cladding structures 8 having a special pin 9.

**[0012]** The spacers 5 have protrusions 10 (Fig. 2), due to which they are connected to the plates 4 through the holes 11 located thereon (Fig. 5). On the side end faces 2 of the load-bearing members 1, the battens 12 (Fig. 1) are located, which close the joints when connecting the cladding structures 8, and on the upper and lower 13 end faces of the load-bearing members 1, there are projec-

tions 14 with an offset inward the corner providing the connection of the two corner profiles (Fig. 4, 5).

**[0013]** The profile is mounted as follows. First, the corner profile is mounted on the corner of the building. Then, the cladding panels 8 are installed. In this case, the end parts of the panels 8 are mounted with a small gap to the lateral mounting pads of the corner, for thermal expansion, under the projecting parts of the decorative pads. Then, decorative panels 8 are mounted on the corner profile overlapping the joint between the cladding panels and the corner profile. In this case, the corner profile can be directly attached to the walls 15 of the building (Fig. 7). Moreover, due to the presence of flanges 3, a necessary ventilated gap is formed between the profile and the wall 15. The corner profile, using special mounting bolts 16 (Fig. 8), can also be attached to the walls 15 of the building with a gap to place the insulation between the profile and the building wall 15, when using the cladding panels 8 of different thicknesses.

**[0014]** The invention can be produced from modern materials based on the existing technology and can be most effectively used for finishing and cladding of the external corners of buildings, structures and premises.

## Claims

1. The corner profile for fastening of cladding structures comprises two load-bearing members connected by one lateral end side at an angle corresponding to the angle formed by the walls of the corner of the building or premises that is to be clad; at the other lateral face, the load-bearing members are provided with a flange in the form of a plate that is offset toward the inside of the corner and lies parallel to the plane of its corresponding load-bearing member; spacers, which are connected to the load-bearing members such as to be connectable to the plates; and mounting cups situated on the outer side of the load-bearing members to permit the attachment of cladding structures.
2. The profile according to claim 1, **characterized in that** the spacers have protrusions configured to be attached to the plates through the holes located thereon.
3. The profile according to claim 1, **characterized in that** on the lateral end sides of the load-bearing members, there are battens configured to attach cladding structures.
4. The profile according to claim 1, **characterized in that** on the upper and lower end faces of the load-bearing members, there are protrusions with an offset toward the inside of the corner configured to attach other corner profiles.

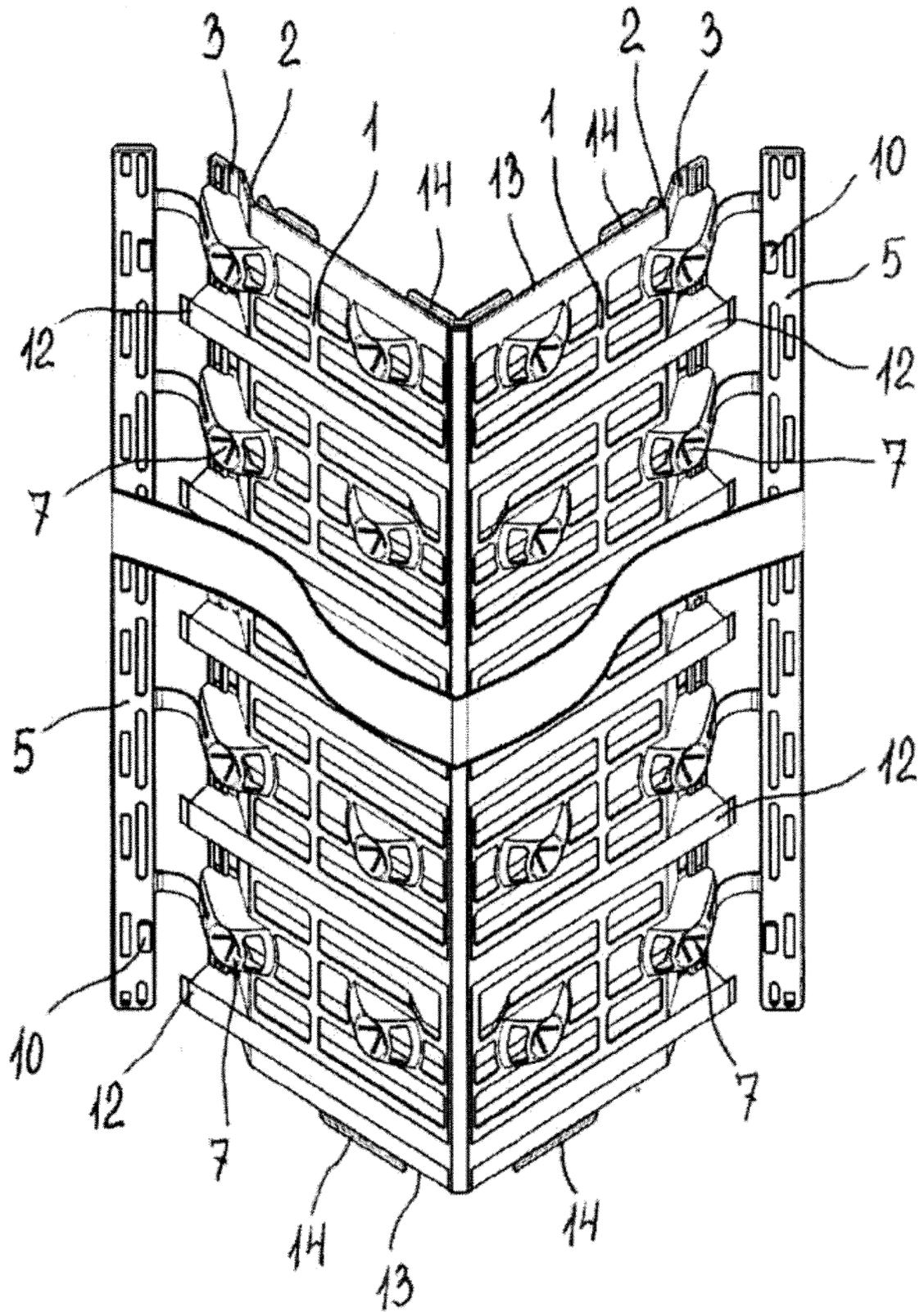


Fig. 1

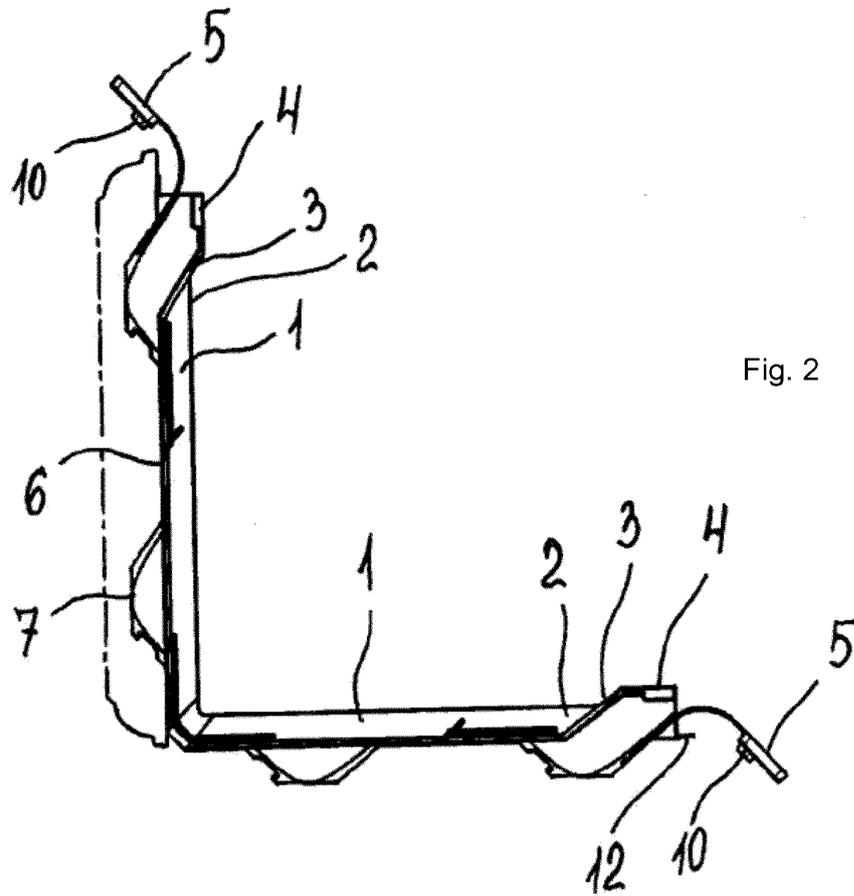


Fig. 2

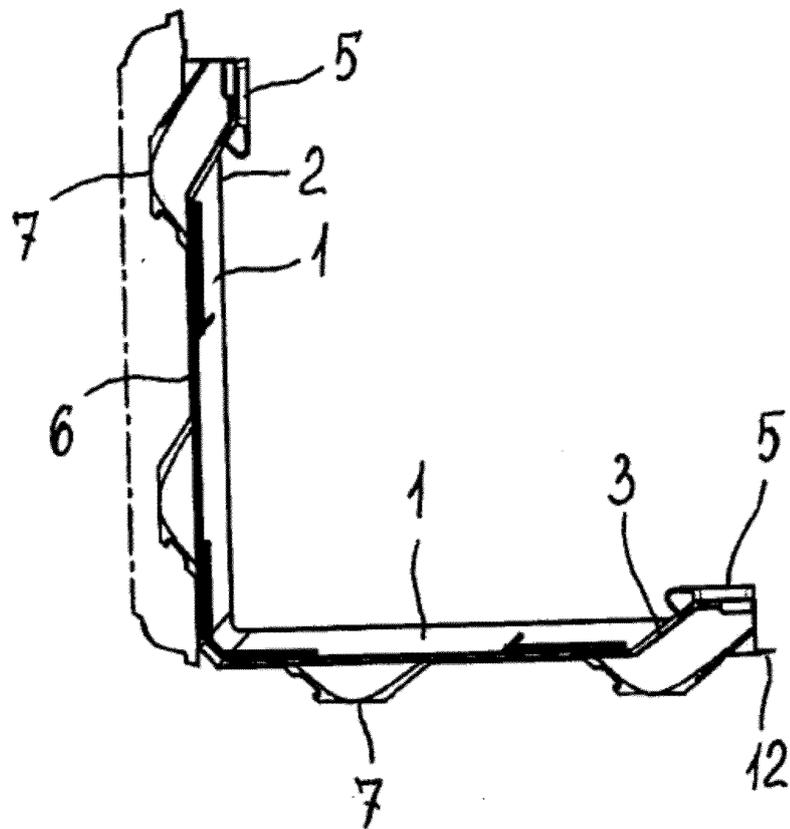


Fig. 3

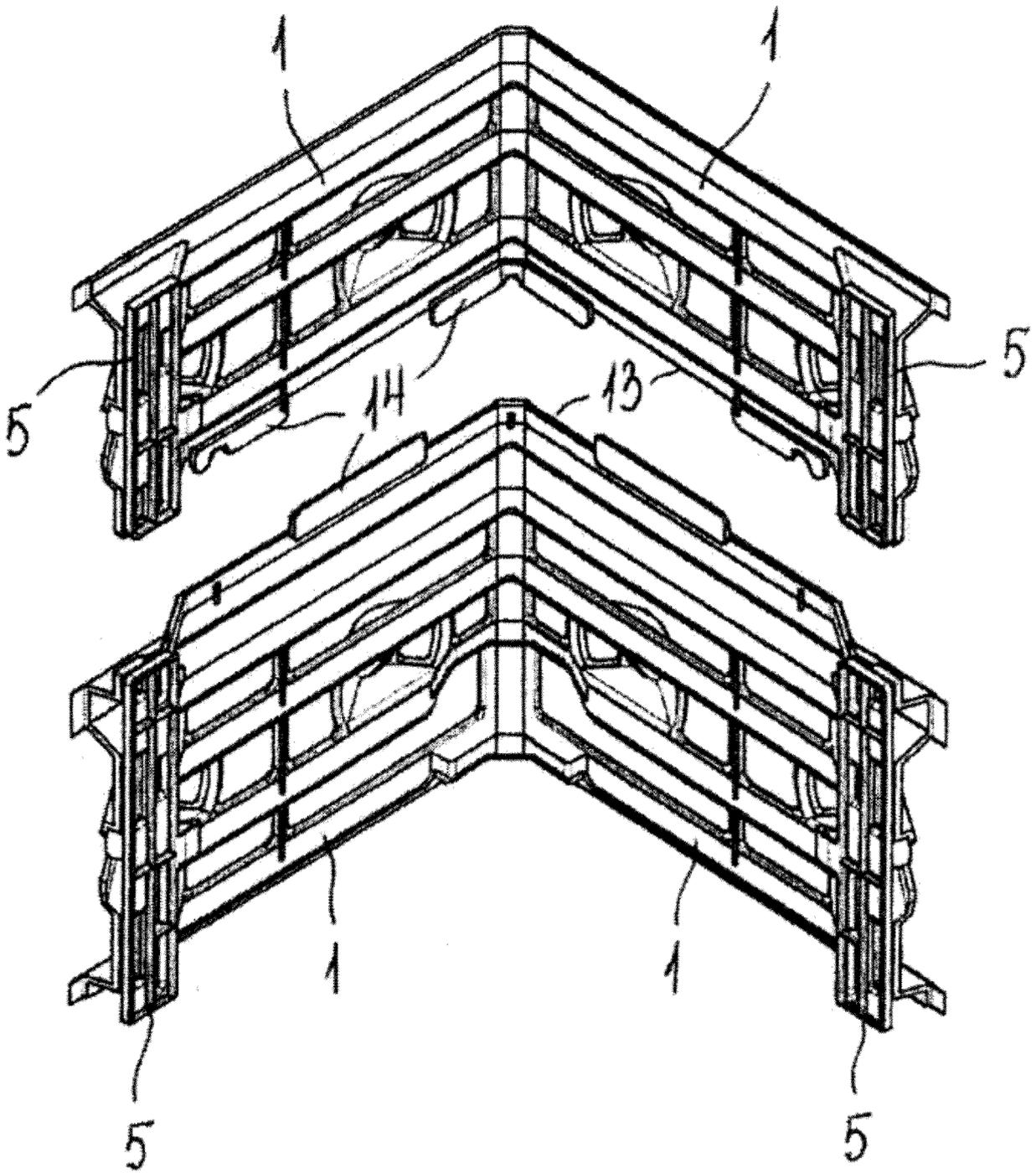


Fig. 4

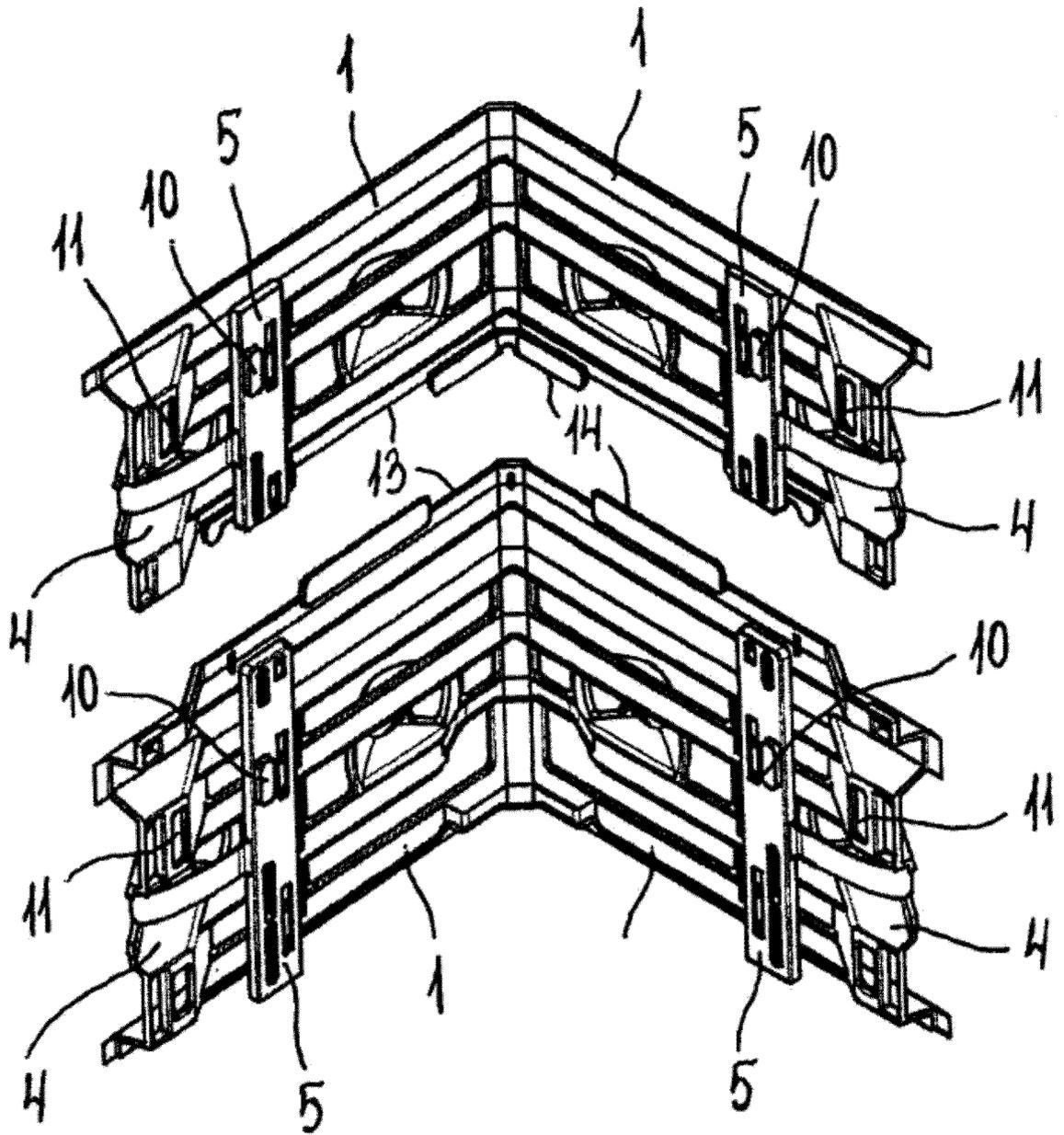


Fig. 5

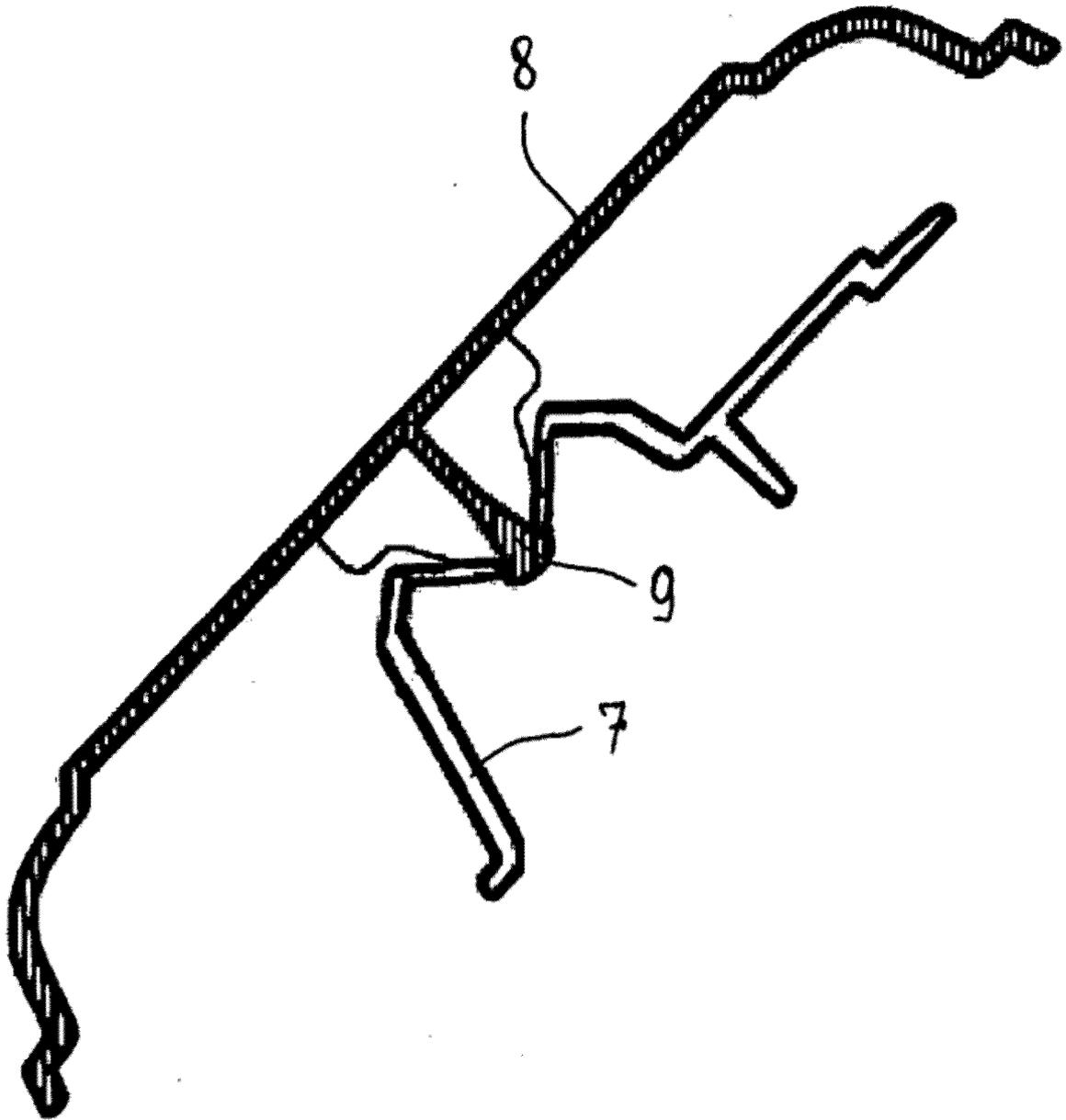


Fig. 6

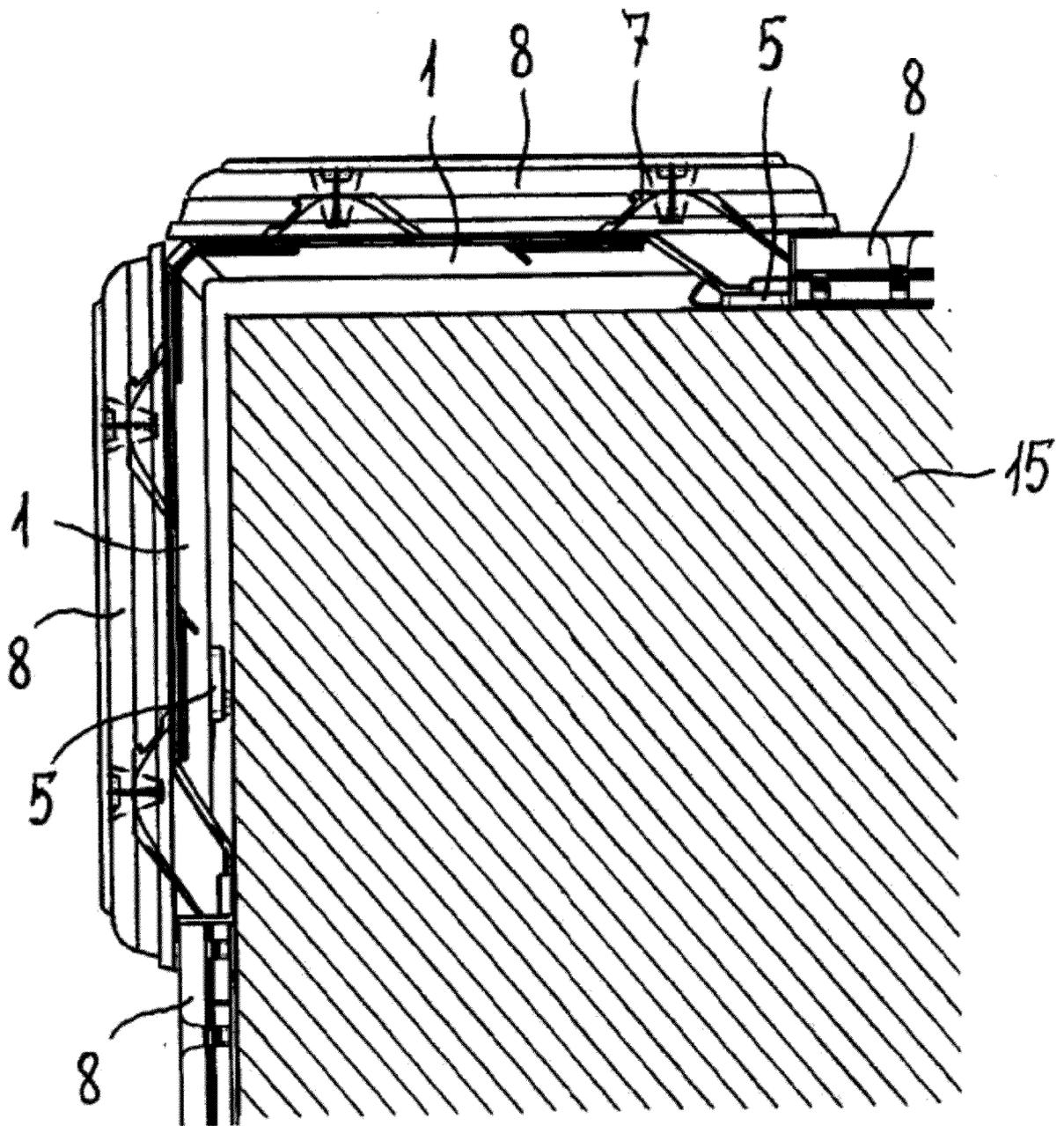


Fig. 7

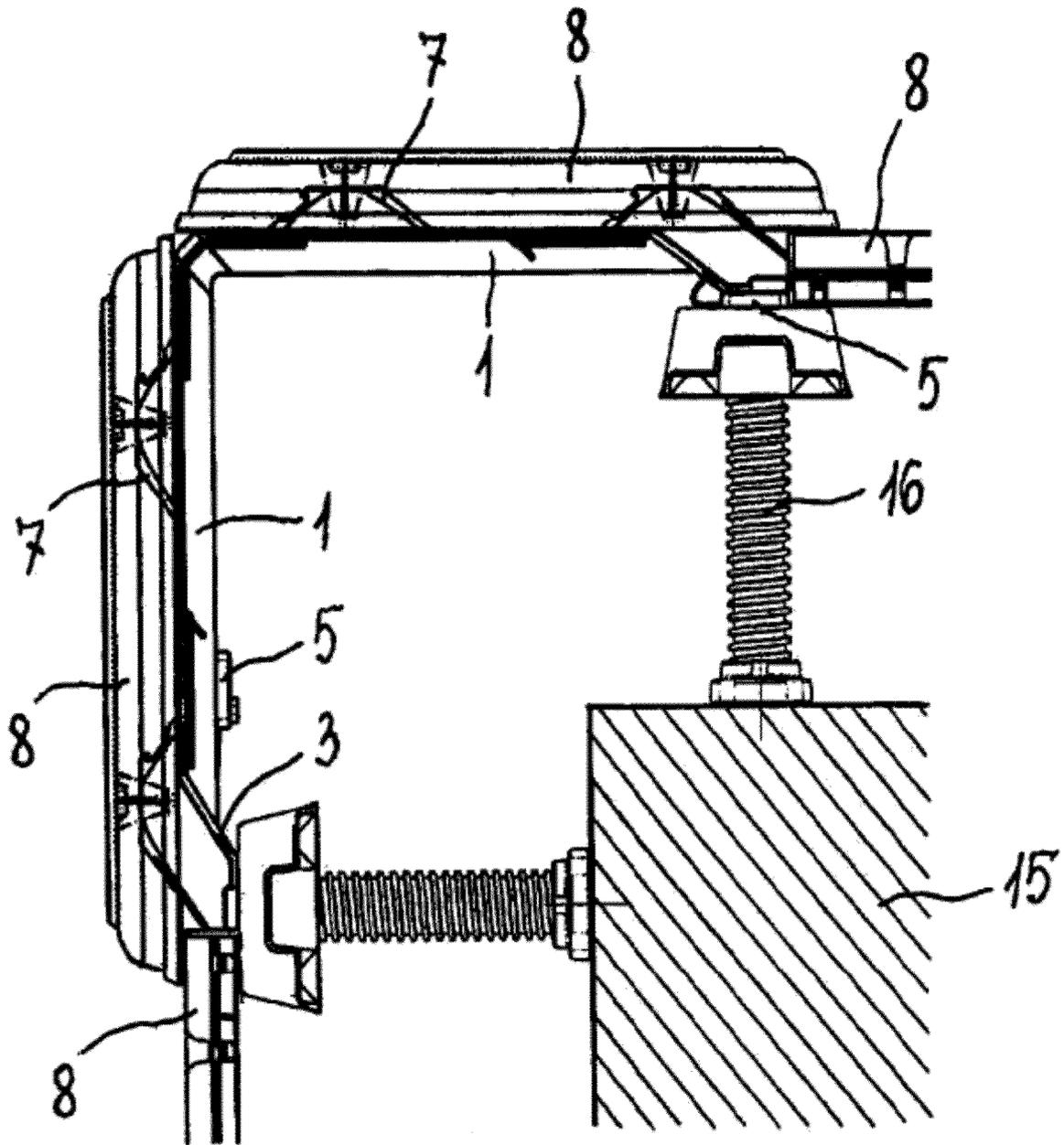


Fig. 8

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/RU 2017/000162

5	A. CLASSIFICATION OF SUBJECT MATTER	
	E04F 13/00 (2006.01)	
	According to International Patent Classification (IPC) or to both national classification and IPC	
	B. FIELDS SEARCHED	
10	Minimum documentation searched (classification system followed by classification symbols)	
	E04F 13/00, 13/08, 13/21, 13/26, E04C 21/00, 21/165, 2/00	
	Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched	
15	Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)	
	PatSearch (RUPTO internal), USPTO, PAJ, Esp@cenet, DWPI, EAPATIS, PATENTSCOPE	
	C. DOCUMENTS CONSIDERED TO BE RELEVANT	
20	Category*	Citation of document, with indication, where appropriate, of the relevant passages
		Relevant to claim No.
25	D, A	RU 89566 U1 (OBSHCHESTVO S OGRANICHENNOI OTVETSTVENNOSTIU "PROIZVODSTVENNAIA FIRMA "ALTA-PROFIL") 10.12.2009
		1-4
	A	RU 40067 U1 (LITUNENKO GENNADII ILICH) 27.08.2004
		1-4
	A	RU 124284 U1 (DOLINEEV VLADIMIR BORISOVICH) 20.01.2013
		1-4
30	A	RU 136469 U1 (MOTIAEV MIKHAIL ALEKSANDROVICH et al.) 10.01.2014
		1-4
	A	EP 0373727 A1 (DINGEMANS BEHEER B.V.) 20.06.1990
		1-4
35		
40	<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.	
45	* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family	
50	Date of the actual completion of the international search	Date of mailing of the international search report
	07 July 2017 (07.07.2017)	14 August 2017 (14.08.2017)
	Name and mailing address of the ISA/ RU	Authorized officer
55	Facsimile No.	Telephone No.