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(54) **Awnings, pergolas and the like for conveying rainwater**

Markisen, Pergolas und ähnliche zur Förderung von Regenwasser

Bâches, pergolas et similaires pour le transport d'eau de pluie

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(56) References cited:
EP-A- 0 167 500 FR-A- 596 727
FR-A- 2 885 925 GB-A- 383 392
GB-A- 191 012 979

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Description

[0001] The present invention relates to awnings, pergolas and the like.

[0002] Outdoor structures such as pergolas and awnings have undergone, over the years, a rapid evolution, becoming full-fledged coverings for any kind of weather and not only protections against the sun.

[0003] In practice, an appropriately designed awning or pergola excellently perform the function of a covering which is adapted not only against the sun but also against the rain and in some cases against snow (and the load associated with it).

[0004] These new applications have made it necessary to provide for the installation, on the supporting structures of these particular coverings, of gutters and channels for conveying rainwater.

[0005] Since these structures are the subject of particular care in terms of aesthetics and design, the presence of these additional elements for conveying water entails a worsening of the overall appearance.

[0006] FR-A-596727, GB-A-12979 and GB-A-383392 disclose a unit as defined in the preamble of claim 1.

[0007] The aim of the present invention is to provide awnings, pergolas and the like having a structure adapted to convey effectively rainwater which runs off the covering surface without altering their aesthetic appearance.

[0008] Within this aim, an object of the present invention is to provide awnings, pergolas and the like which have low cost, are relatively simple to provide in practice and are safe in application.

[0009] This aim and these and other objects which will become better apparent hereinafter are achieved by the present awning, pergola or the like, as defined in claim 1.

[0010] Further characteristics and advantages of the invention will become better apparent from the following detailed description of a preferred but not exclusive embodiment of awnings, pergolas and the like, adapted to convey effectively rainwater, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a partially sectional side view of an enlarged-scale detail of an awning, pergola and the like, according to the invention;

Figure 2 is a perspective view of a structure of awnings, pergolas and the like according to the invention;

Figure 3 is a side view of a structure of awnings, pergolas and the like according to the invention;

Figure 4 is a perspective view of a channel of a union for conveying rainwater in awnings, pergolas and the like according to the invention;

Figure 5 is a side view, with some portions shown in phantom lines, of a first type of channel of a union for conveying rainwater in awnings, pergolas and the

like according to the invention;

Figure 6 is a partially sectional side view of a second type of channel of a union for conveying rainwater in awnings, pergolas and the like according to the invention;

Figure 7 is a perspective view of an upper detail of the structure of awnings, pergolas and the like according to the invention;

Figure 8 is a perspective view of a lower detail of the structure of awnings, pergolas and the like according to the invention.

[0011] With reference to the figures, the reference numeral 1 generally designates a union for conveying rainwater in a structure of awnings, pergolas and the like,

[0012] The awnings, pergolas and the like suitable for fitting the union 1 comprise a fixed supporting structure 2 for at least one movable cross-member 3 which is rigidly coupled at least to the end of a covering dome 4.

[0013] The terminal cross-member 3a, i.e., the one associated with the end of the covering dome 4, is rigidly coupled to a collecting channel 5.

[0014] The channel 5 is open in an upper region and is provided with at least one protruding spout 6 for the outflow of the water that reaches the channel 5 from the covering dome 4: when the dome 4 is stretched, the rain that falls on its surface in fact runs on it until it falls into the channel 5, which collects it, and then flows away through the protruding spouts 6.

[0015] The fixed structure 2 comprises suitable substantially vertical tubular bodies 8 for collecting and conveying rainwater to the ground which are associated with respective front columns 7.

[0016] The tubular bodies 8 are provided with holes 9 which are aligned and proximate to the protruding spouts 6 of the channel 5.

[0017] In particular, the spouts 6 are accommodated within the holes 9 and convey the rainwater directly into the tubular bodies 8 when the cross-member 3a is in the configuration in which it is moved fully forward toward the front columns 7 and the covering dome 4 is completely extended.

[0018] According to an embodiment of particular interest in application, the tubular bodies 8 are accommodated within respective axial seats 10 of the front columns 7.

[0019] In order to optimize their use, the tubular bodies 8 are accessible from outside through a respective upper opening 11, through the hole and through a lower drainage passage 12.

[0020] The structure 2 comprises upper beams 13 which are provided with suitable concave covering profiled elements 14.

[0021] When the profiled elements 14 are fitted on the beams 13, the concavity is directed upward so as to convey the rainwater toward the upper opening 11 of the

tubular body 8 of the column 7 that is aligned with the beam 13 to which it is rigidly coupled.

[0022] The collecting channel 5 comprises at least one concave portion 15 and at least one coupling 16, which can be mated stably with one end of the portion 15 provided with the protruding spout 6.

[0023] In particular, the portions 15 can be a plurality in order to provide channels 5 of any length suitable for any kind of structure 2. In this case, the couplings 16 are divided into end couplings 16, which are closed at one end with an end wall 18 and are adapted to close the end of the portion 15 with which they are associated, and intermediate couplings 16, which are suitable for mating with two facing and proximate ends 19 of two contiguous portions 15.

[0024] The operation of the invention is as follows. By making the cross-member 3a advance, the correct arrangement of the covering dome 4 is provided.

[0025] As a consequence of this arrangement, the protruding spouts 6 are inserted within the openings 9 of the tubular bodies 8.

[0026] Accordingly, the rainwater runs over the surface of the dome 4 to fall into the channel 5.

[0027] From there (through the spouts 6), it is conveyed into the tubular bodies 8 and discharged onto the ground through the lower drainage passages 12.

[0028] Advantageously, the rainwater that falls onto the top of the beams 13 also is conveyed by the profiled elements 14 toward the upper opening 11 of the tubular body 8, ensuring its optimum draining.

[0029] In this manner it is possible to provide a structure 2 which has an appreciable aesthetic appearance, since all the ducts for conveying rainwater are not visible because they are contained within the structure 2.

[0030] It has thus been shown that the invention achieves the intended aim and objects.

[0031] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0032] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. An awning, pergola and the like, comprising at least one movable cross-member (3, 3a), a collection channel (5), and a fixed supporting structure (2) for the at least one movable cross-member (3, 3a), the cross-member (3 a) being adapted to be rigidly coupled at least to the end of a covering dome (4), said cross-member (3a) being rigidly coupled to the collection channel (5) which is open in an upper region

and the collection channel (5) being provided with at least one protruding spout (6) for the outflow of the water that reaches the channel (5) from said covering dome (4), said fixed structure (2) comprising substantially vertical tubular bodies (8) for collecting and conveying rainwater to the ground which are associated with respective front columns (7) of the fixed structure (2), **characterized in that** said tubular bodies (8) comprise holes (9) which are aligned and proximate to said protruding spouts (6) of said channel (5), said spouts (6) being accommodated within said holes (9) and conveying the rainwater directly into the tubular bodies (8) when said cross-member (3a) is fully advanced toward said front columns (7) and the covering dome (4) is completely extended.

2. The awning according to claim 1, **characterized in that** said tubular bodies (8) are accommodated within respective axial seats (10) of said front columns (7) and can be accessed from the outside through a respective upper opening (11), through said hole (9) and through a lower draining passage (12).
3. The awning according to one or more of the preceding claims, **characterized in that** said structure (2) comprises upper beams (13) which are provided with suitable concave covering profiled elements (14), said concavity being directed upward when the profiled elements are fitted on the beams (13) in order to convey the rainwater toward the upper opening (11) of the body (8) inside the column (7) aligned with the beam (13) to which it is rigidly coupled.
4. The awning according to one or more of the preceding claims, **characterized in that** said collecting channel (5) comprises at least one concave portion (15) and at least one coupling (16) which can be mated stably with an end of said portion (15) which is provided with said protruding spout (6).
5. The awning according to claim 4, **characterized in that** said portions (15) are a plurality and said couplings (16) comprise end couplings (16), which are closed at one end and are adapted to close the end (18) of the portion (15) with which they are associated, and intermediate couplings (16), which are suitable for mating with two facing and proximate ends (19) of two contiguous portions (15).

Patentansprüche

1. Markise, Pergola und desgleichen, die zumindest ein bewegliches Querglied (3, 3a), einen Sammelkanal (5) und eine feststehende Tragkonstruktion (2) für das zumindest eine bewegliche Querglied (3, 3a) aufweist, wobei das Querglied (3a) darauf abgestimmt ist, um zumindest mit dem Ende einer Ab-

deckhaube (4) fest verbunden zu sein, und das Querglied (3a) mit dem Sammelkanal (5) starr verbunden ist, der in einem oberen Bereich offen ist, und wobei der Sammelkanal (5) zumindest eine abstehende Ausgußstülle (6) für das Abfließen des Wassers aufweist, das von der Abdeckhaube (4) in den Sammelkanal (5) gelangt ist, und wobei die feststehende Konstruktion (2) im Wesentlichen vertikale Hohlkörper (8) zum Sammeln und Leiten des Regenwassers zum Boden aufweist, die mit entsprechenden Frontstützen (7) der feststehenden Konstruktion (2) verbunden sind, **dadurch gekennzeichnet, dass** die Hohlkörper (8) Löcher (9) aufweisen, die zu den abstehenden Ausgußstülle (6) des Sammelkanals (5) benachbart und auf diese ausgerichtet sind, wobei die Ausgußstülle (6) in den Löchern (9) angeordnet sind und das Regenwasser direkt in die Hohlkörper (8) leiten, wenn das Querglied (3a) vollkommen gegen die Frontstützen (7) vorgerückt ist und die Abdeckhaube (4) vollständig ausgefahren ist.

2. Markise nach Anspruch 1, **dadurch gekennzeichnet, dass** die Hohlkörper (8) in entsprechende, mit-
tig angeordnet Aufnahmen (10) der Frontstützen (7) eingelassen sind und von der Außenseite durch eine entsprechende obere Öffnung (11), durch das Loch (9) und durch einen unteren Ablasskanal (12) genutzt werden können.
3. Markise nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Konstruktion (2) obere Balken (13) aufweist, an denen passend vertiefte, abdeckende Profilelemente (14) angeordnet sind, wobei die Vertiefung ansteigend ausgerichtet ist, während die Profilelemente an den Balken (13) derart festgelegt sind, dass das Regenwasser zu der oberen Öffnung (11) des Hohlkörpers (8) innerhalb der Stütze (7) geleitet wird, die auf den Balken (13) ausgerichtet ist, mit dem sie starr verbunden ist.
4. Markise nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der Sammelkanal (5) zumindest einen konkaven Abschnitt (15) und zumindest ein Verbindungsstück (16) aufweist, das dauerhaft in ein Kopfende des Abschnitts (15) eingreifen kann, und an dem die Ausgußstülle (6) angeordnet ist.
5. Markise nach Anspruch 4, **dadurch gekennzeichnet, dass** die Abschnitte (15) in einer Mehrzahl vorhanden sind und dass die Verbindungsstücke (16) Endstücke (16), die an einem Kopfende geschlossen sind und ausgebildet sind, um das Kopfende (18) der Abschnitte (15), mit denen sie verbunden sind, zu schließen, und Zwischenverbindungsstücke (16) umfassen, die ausgebildet sind, um an zwei zuge-

wandten und angrenzenden Kopfenden (19) von zwei benachbarten Abschnitten (15) einzugreifen.

5 Revendications

1. Marquise, pergola et similaire, comprenant au moins une traverse mobile (3, 3a), un canal de collecte (5), et une structure de support fixe (2) pour la au moins une traverse mobile (3, 3a), la traverse (3a) étant adaptée pour être rigidement couplée au moins à l'extrémité d'un dôme de recouvrement (4), ladite traverse (3a) étant rigidement couplée au canal de collecte (5) qui est ouvert dans une région supérieure et le canal de collecte (5) étant prévu avec au moins une goulotte en saillie (6) pour l'écoulement sortant de l'eau qui atteint le canal (5) à partir dudit dôme de recouvrement (4), ladite structure fixe (2) comprenant des corps tubulaires (8) sensiblement verticaux pour collecter et transporter l'eau de pluie jusqu'au stol, qui sont associés à des colonnes avant (7) respectives de la structure fixe (2), **caractérisée en ce que** lesdits corps tubulaires (8) comprennent des trous (9) qui sont alignés et à proximité desdites goulottes en saillie (6) dudit canal (5), lesdites goulottes (6) étant logées à l'intérieur desdits trous (9) et transportant directement l'eau de pluie dans les corps tubulaires (8) lorsque ladite traverse (3a) est complètement avancée vers lesdites colonnes avant (7) et que le dôme de recouvrement (4) est complètement étendu.
2. Marquise selon la revendication 1, **caractérisée en ce que** lesdits corps tubulaires (8) sont logés à l'intérieur de sièges axiaux (10) respectifs desdites colonnes avant (7) et auxquels on peut accéder à partir de l'extérieur par une ouverture supérieure (11) respective, par ledit trou (9) et par un passage de drainage inférieur (12).
3. Marquise selon une ou plusieurs des revendications précédentes, **caractérisée en ce que** ladite structure (2) comprend des poutres supérieures (13) qui sont prévues avec des éléments profilés de recouvrement concaves (14) appropriés, ladite concavité étant dirigée vers le haut lorsque les éléments profilés sont montés sur les poutres (13) afin de transporter l'eau de pluie vers l'ouverture supérieure (11) du corps (8) à l'intérieur de la colonne (7) alignée avec la poutre (13) à laquelle elle est rigidement couplée.
4. Marquise selon une ou plusieurs des revendications précédentes, **caractérisée en ce que** ledit canal de collecte (5) comprend au moins une partie concave (15) et au moins un raccord (16) qui peut être couplé de manière stable avec une extrémité de ladite partie (15) qui est prévue avec ladite goulotte en saillie (6).

5. Marquise selon la revendication 4, **caractérisée en ce que** lesdites parties (15) sont une pluralité et lesdits raccords (16) comprennent des raccords d'extrémité (16) qui sont fermés à une extrémité et sont adaptés pour fermer l'extrémité (18) de la partie (15) à laquelle ils sont associés, et des raccords intermédiaires (16), qui sont appropriés pour se coupler avec deux extrémités en vis-à-vis et proximales (19) des deux parties contiguës (15).

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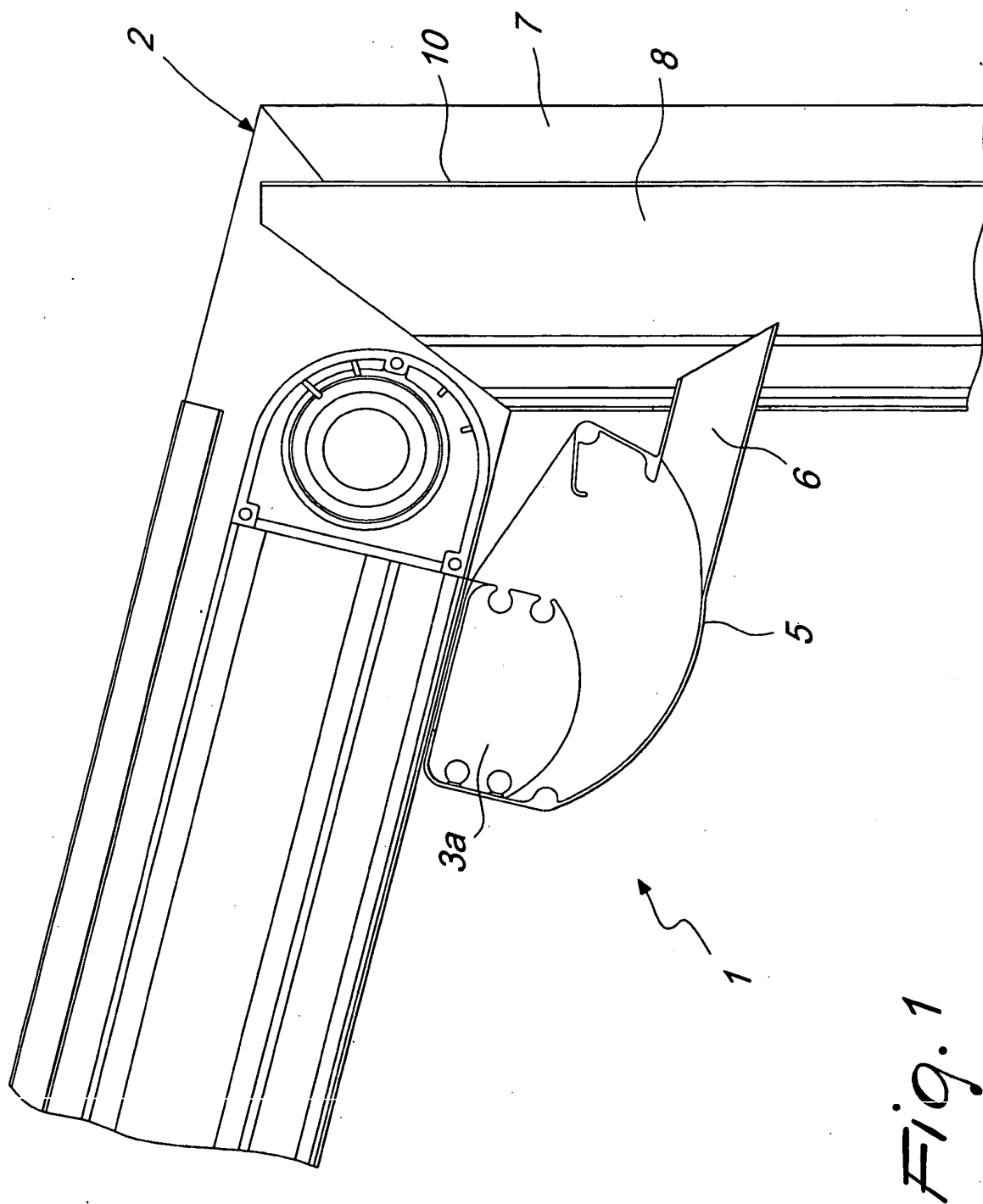
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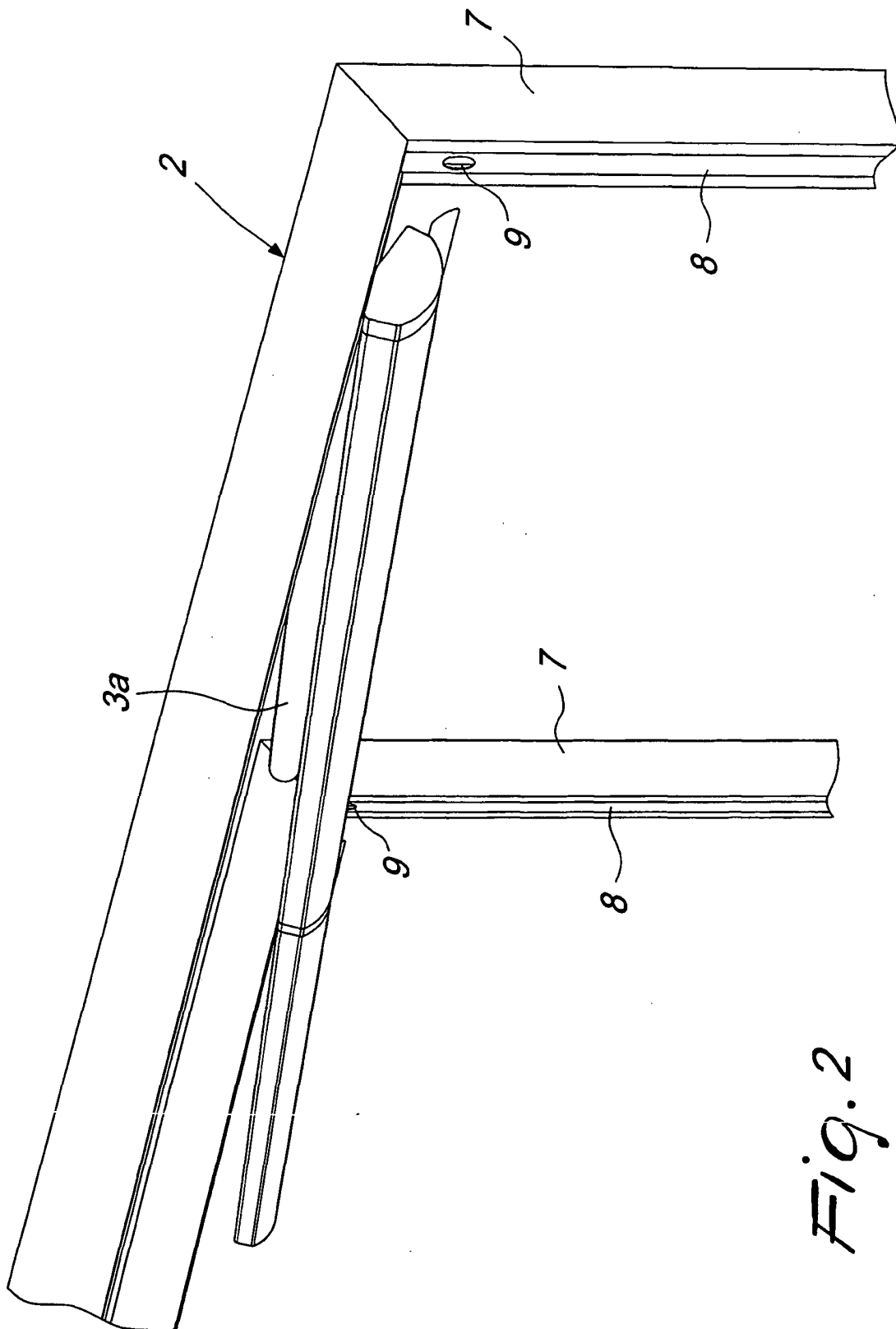


Fig. 2

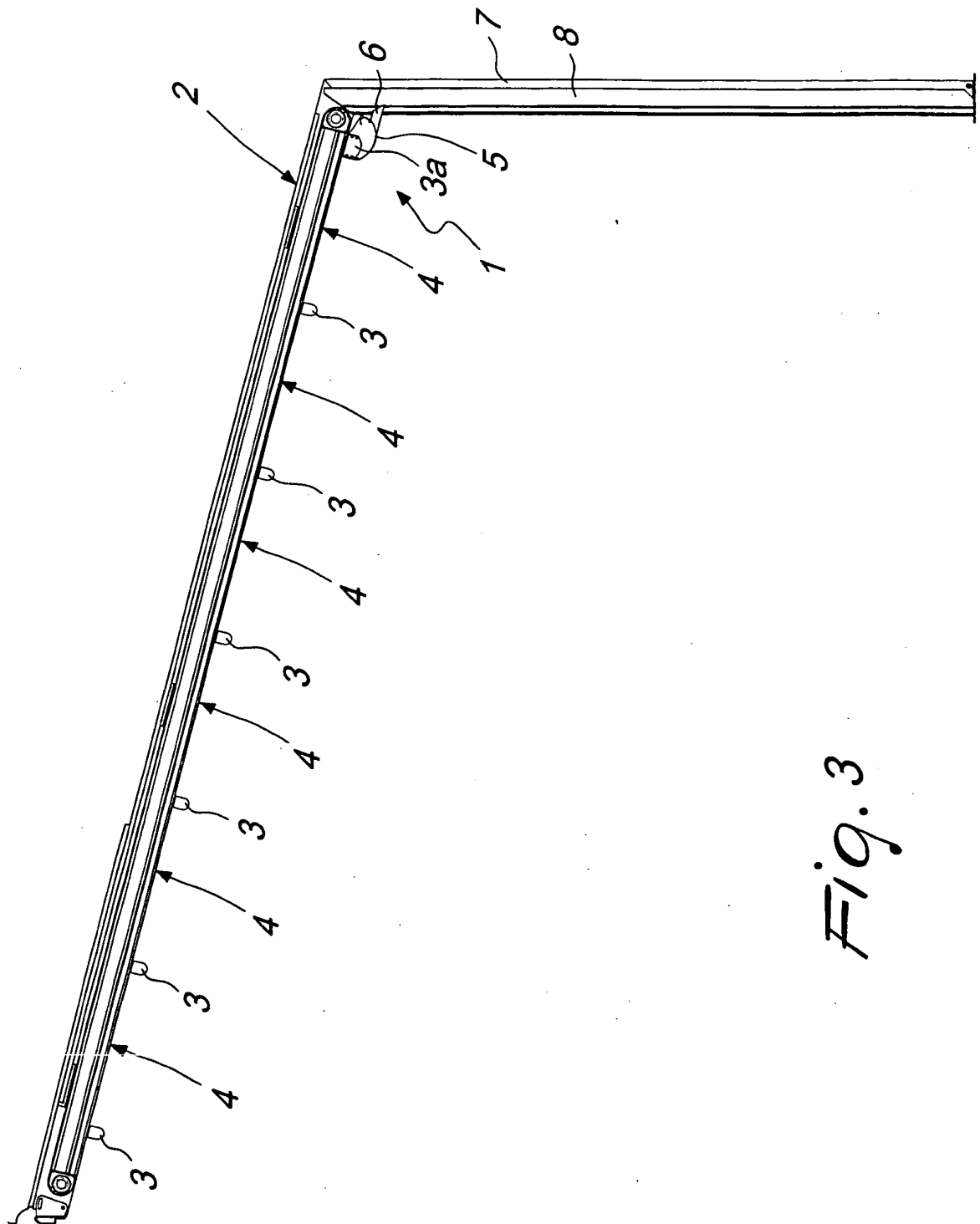


Fig. 3

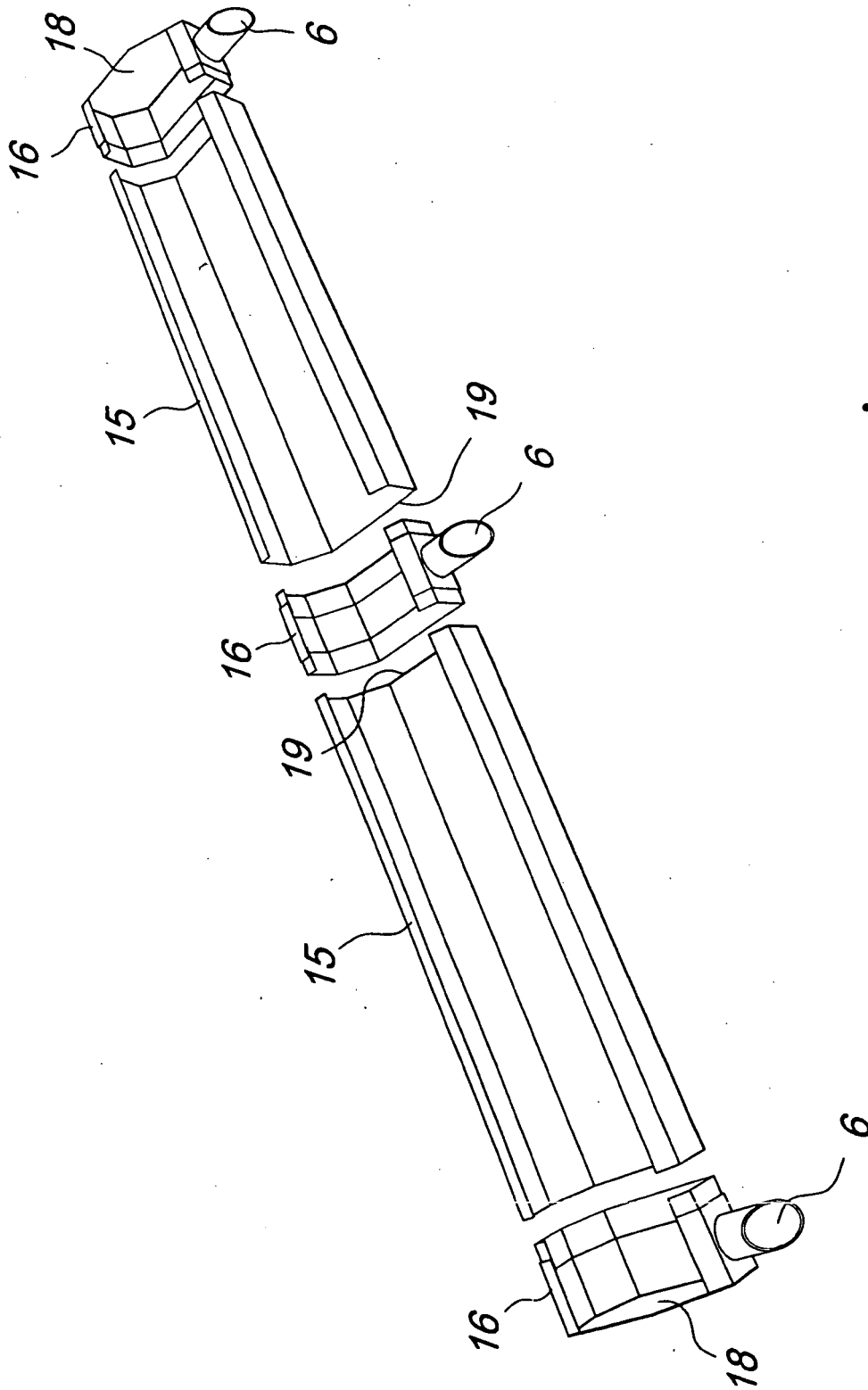
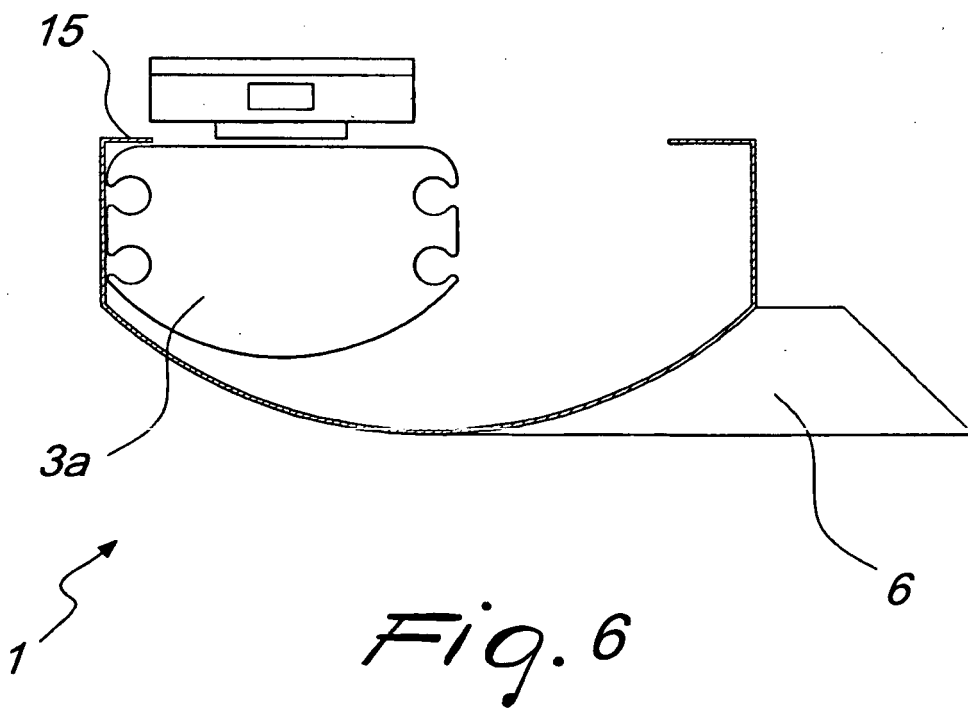
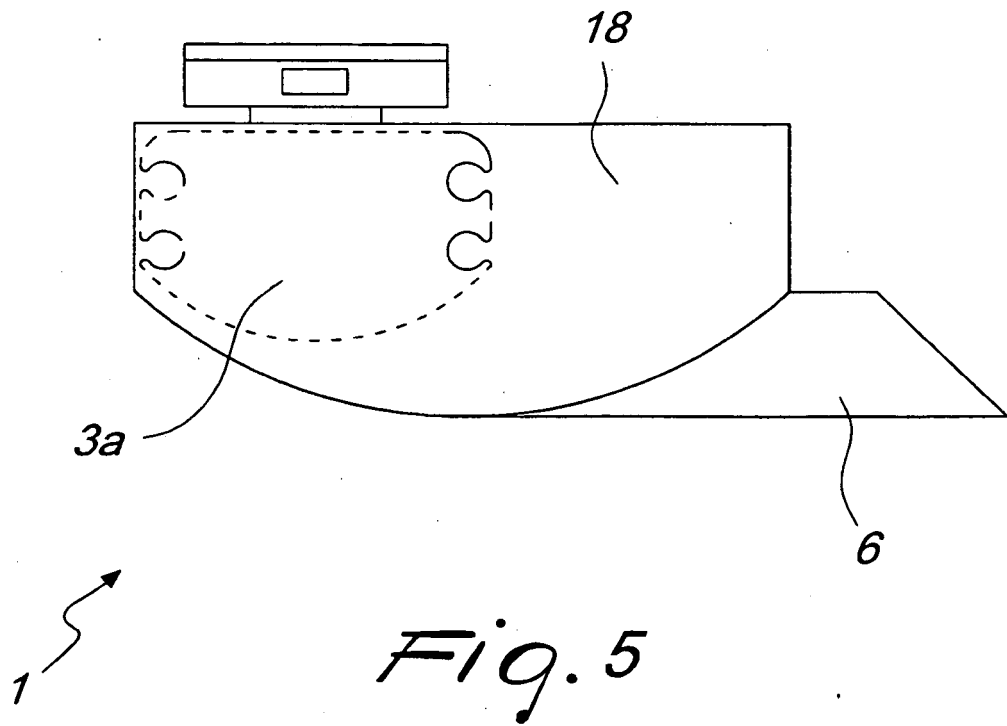


Fig. 4



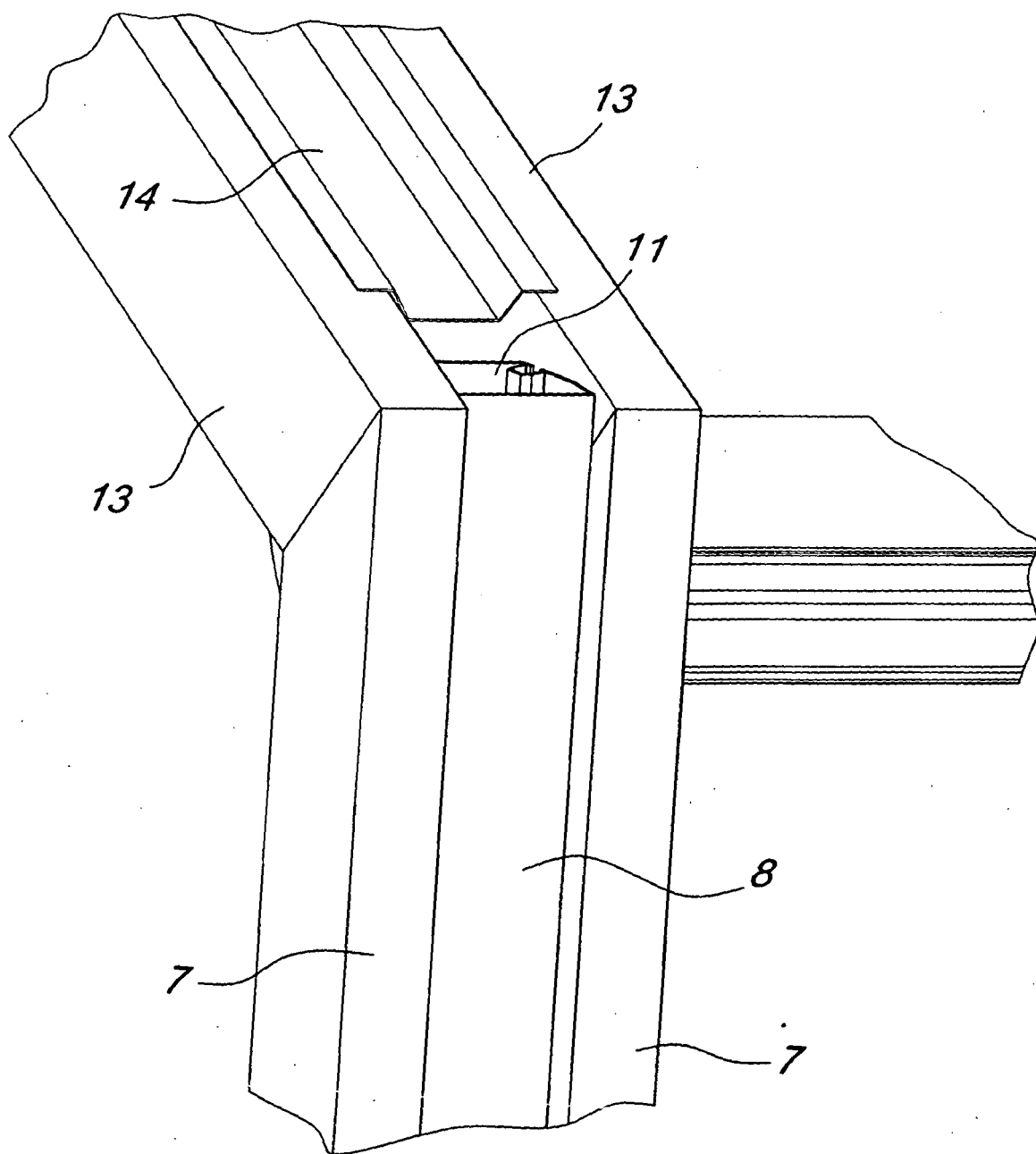


Fig. 7

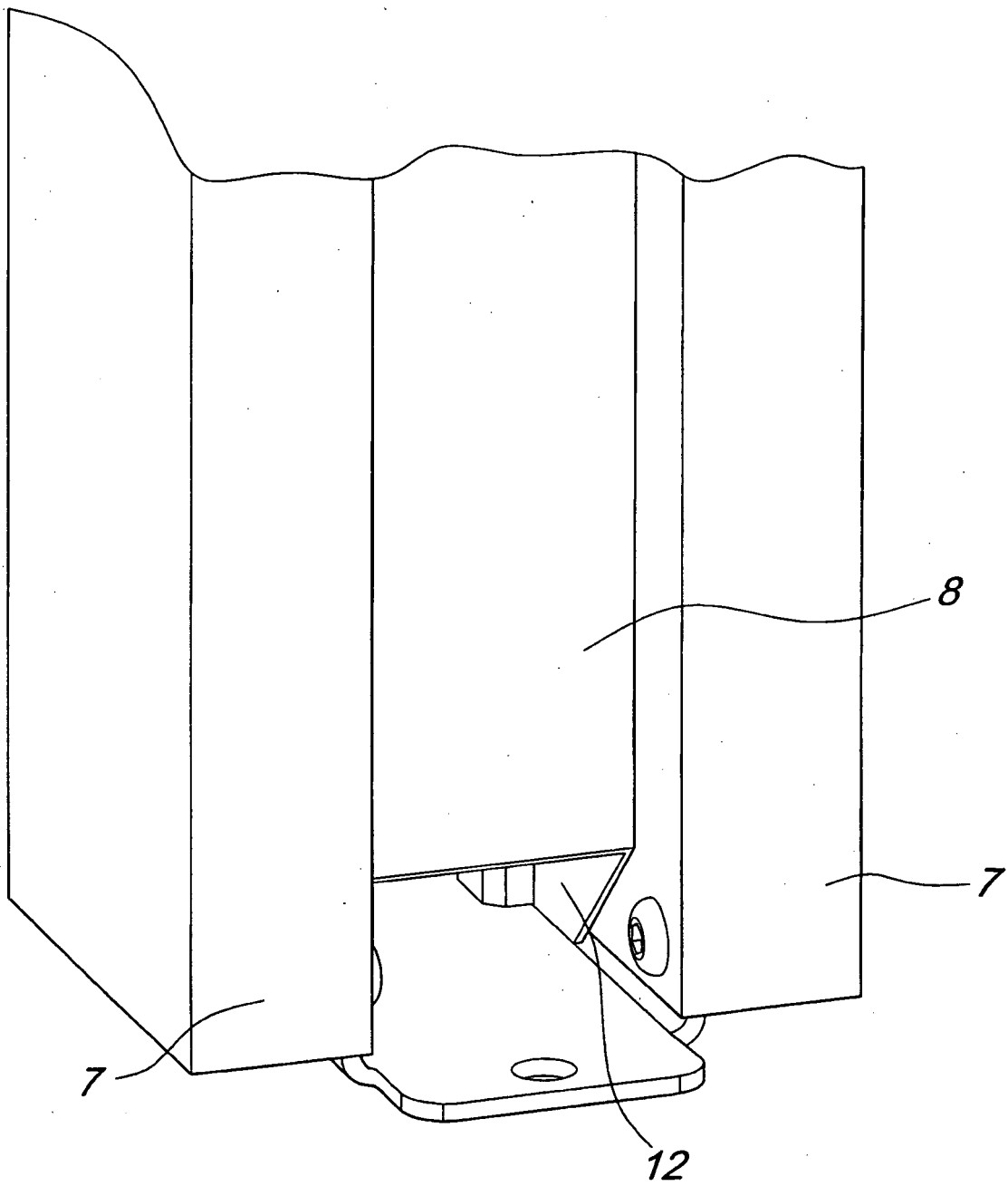


Fig. 8

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- FR 596727 A [0006]
- GB 12979 A [0006]
- GB 383392 A [0006]