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(54) **COVER CONSTRUCTION**

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COUVERTURE

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Description

[0001] The present invention relates to a cover construction, such as e.g. a weather protection device for building sites or the like, comprising a number of beam members arranged to be assembled into a frame construction by means of lockable, rigid or hinged connecting pieces, said frame construction consisting of a number of frame bows formed by upright lateral beam members, the lower ends of which are supported on a supporting surface and the upper ends of which support roof beam members extending across said building site or the like, the frame bows being retained in spaced-apart relationship by means of spacer poles extending between the frame bows and being arranged to support covering means, such as e.g. flexible cloth, extending between and along said spacer poles. However, the cover construction may be used for a wide variety of other uses or applications, such as for storage buildings, industrial buildings, aeroplane sheds, vehicle garages, or in other connections where people congregate and weather protection is required.

[0002] Such a construction is disclosed in US-A-3030973.

[0003] The main object of the invention is to provide an easily manageable cover structure of the above kind, which despite its simple construction is comparatively flexible to allow adaptation thereof to the spatial requirements at the place of erection of the cover construction. Another object is to provide a cover construction, the span of which may be adjusted within comparatively wide limits without requiring re-dimensioning being required.

[0004] This object is achieved by means of a cover construction which is characterised in that between the upright lateral beam members and the roof beam members there are provided connecting pieces for hinged interconnection of these beams, and in that the supporting surface on which said lateral beam members rest is formed by a rail extending transversely relative to the frame bows, and in that at their lower ends, said lateral beam members are formed with runner wheels the periphery of which at least partly enclose the track-forming face of said rail, i.e. the upper face thereof. By the provision of a rail and runner wheels enclosing said rail, the adaptability of the span to various space requirements becomes considerable, owing to the possibility that the construction offers to vary, within wide limits, the inclination of the lateral beam members and consequently the axis inclination of the runner wheels, which becomes possible since the runner wheels remain in steady abutment against the rail, also when the beam members assume a steeply oblique position.

[0005] Preferably, the upper face of said rail has a rounded configuration and said runner wheel is formed with a peripheral groove having a round cross-sectional configuration adapted to the roundness/curvature of the rail, for the purpose of allowing abutment of said runner wheel against said rail with variable axis inclination. Owing to this roundness, the abutment of the runner wheel against be rail becomes extremely stable, and is independent of the inclination of the runner wheel 1 and of the lateral beam member and consequently of the axis inclination of the runner wheel.

[0006] Preferably, the runner wheel is mounted in a fastener member which may be telescopically connected to the lateral beam member. This arrangement makes the mounting of the construction very simple and the runner wheel can easily be replaced by other equipment.

[0007] Preferably, the fastener member is formed with an insert portion the shape of which is adapted to the internal cavity of the lateral beam member. This allows the lateral beam member to be manufactured with an uninterrupted external profile, which in turn means that grooves for reception of a cloth-like covering means may run freely along the entire frame bow.

[0008] Preferably, the fastener member is adapted to and arranged to be connected to a base member. Also, preferably, the fastener member is formed with a centrally located cavity extending along said lateral beam member, and the base member is formed with an insert rod to be telescopically received in said cavity. This arrangement offers considerable possibilities of adaptation of the handling of the lateral beam members relative to the supporting surface, both during the erection and the subsequent handling.

[0009] Further characteristic features and advantages will appear from the following description, the drawing figures and the appended claims.

[0010] One embodiment of the invention will be described in the following in more detail with reference to the accompanying drawings, wherein:

Fig 1 is a partly cut perspective view of one entire section of a cover construction in accordance with the invention;

Fig 2 is a perspective view of a beam member forming part of the cover construction of Fig 1;

Fig 3 illustrates a connecting piece intended for coupling together two roof beam members to form a roof-ridge;

Fig 4 is a corresponding connecting piece intended for linear coupling-together of two beam members;

Fig 5 is a perspective view of a connecting piece intended for hinged interconnection of two beam members;

Fig 6 is a perspective view of a strut fastener forming part of the cover construction;

Fig 7 is an end view of the strut fastener of Fig 6 in a position wherein said strut fastener is connected to a strut and a beam member;

Fig 8 illustrates devices for supporting lateral beam members forming part of the cover construction on ground;

Fig 9 illustrates a detail component forming part of

the device in accordance with Fig 8;

Fig 10 illustrates a detail component for interconnection therewith;

Fig 11 illustrates a detail component forming part of the cover construction, and

Figs 12-16 are a sequence of views showing the various steps of a suitable manner of erecting the frame members forming part of the cover construction.

[0011] Fig 1 shows one section of a cover construction in accordance with the invention. The cover construction illustrated in the drawings is intended primarily to be used for instance as a weather protection means to form a shield around a working site, such as a building site. The cover construction section illustrated in Fig 1 is designated generally by numeral reference 1. A plurality of sections of the illustrated kind may be coupled together according to need, depending on the size of the area of the covered. The illustrated section is formed by two frame bows, designated by numeral reference 2, which are interconnected by means of spacer poles, designated by numeral references 3 and 4, respectively. Each frame bow comprises upright lateral beam members 5, roof beam members 6, joints 7 hingedly holding together the lateral and the roof beam members, and straight and angled connecting pieces 8 and 9, respectively, which hold together the various beam members. In addition to the spacer poles 3, 4, a number of strut wires extend obliquely between the frame bows. In accordance with the shown embodiment, these strut wires cross one another. The purpose of the wires is to rigidify the frame construction and to maintain the frame bows 2 in a mutual parallel relationship and the spacer poles 3, 4 in a position at right angles to the bows. Numeral reference 11 designates a covering means extending across the frame construction and being anchored thereto in a manner to be described in more detail in the following. Numeral reference 12 designates a locking strut which, as a result of suitable length and suitable positioning of its end attachment fittings 13 on the associated beam member, is arranged to maintain the associated lateral and roof beam members 5 and 6, respectively, in a relative position wherein the desired angle α is maintained. Numeral reference 14 designates a rail extending along the sides of the cover construction to support runner wheels mounted at the lower ends of the lateral beam members 5. The section illustrated in Fig 1 comprises spacer poles, which extend between its frame bows but obviously such spacer poles may, if desired, be arranged on the opposed sides of each frame bow and extend to additional frame bows, whereby said latter frame bows are firmly connected to the frame bows shown in the drawing to prolong the cover construction. Obviously, any desired number of frame bows and spacer struts may be assembled in a successive row according to wish, depending on the dimensions of the intended the cover construction. Numeral reference 16 designates a separate base member, by means of which a runner wheel 15 is mounted on its associated lateral beam member 5. Reference U designates the area on which the rails 14, and consequently the cover construction, are supported. This area could be the joists of a building, the ground or a similar support face.

[0012] As is most clearly apparent from Fig 2, in accordance with the shown embodiment the lateral beam members and the roof beam members 6 are constructed as hollow profile sections. In accordance with Fig 2, the profile sections have an essentially rectangular cross-sectional configuration, presenting an interior rectangular cavity 17. The beam member is formed with undercut grooves 18, which open towards the opposite vertical sides of the member and which in accordance with the shown embodiment are provided at the upper as well as the lower edges of the beam member. However, it is within the scope of protection of the invention to provide the beam member with a larger or a smaller number of similar grooves. The grooves 18 are intended to receive therein leach edges, i.e. edge beads, with which is formed the covering means 11, which preferably is in the form of a flexible cloth. Numeral reference 19 designates fastening ledges extending along the upper and lower faces of the beam member and having undercut lateral edge flanges 19a forming the mouths of engagement grooves 20. As appears from Fig 2, the lateral edge flanges 19a of the fastening ledges are configured as a hook-shaped means as seen in the cross-sectional direction of the profile section. It is easily understood that it is within the scope of protection of the invention to arrange similar hook-shaped means on other locations on the profile section, should this be desired, for instance for equipment attachment purposes. In accordance with the shown embodiment the roof beam members 6 that together form each one of the roof beams that determine the roof angle are interconnected by means of a linear connecting piece 8, which is indicated in Fig 1 but which appears most clearly from Fig 4. The connecting piece shown in Fig 4 is configured as a hollow profile section the external shape of which is adapted to the shape of the interior cavity 17 of beam members 5, 6, and consequently the connecting piece may be slid into the beam member cavity from the member ends. Reference 20 indicate a jacket part the profile configuration of which corresponds to that of the beam members 5, 6, i.e. it comprises grooves 18' for reception and fastening therein of the covering means, as well as fastening ledges 19' for attachment of other equipment, for instance. When the connecting piece 8 is slid into two beam members, the grooves 18' and the ledge 19' together with the adjoining undercut grooves form a continuation of the corresponding grooves with which said beam members are formed. The insert portions of the connecting piece 8 is designated in Fig 4 by numeral reference 8a. Numeral reference 20a designate fastening holes with the aid of which equipment may be fastened, such as e.g. fastening loops for securing the

wires 10, attachment fittings to fasten the spacer poles 3, 4 or other equipment as will be described in more detail in the following. The connecting piece 8 may, of course, be used also to couple together lateral beam members 5 when higher heights are desired or when short beam members are used.

[0013] The roof-ridge connecting piece 9 designated by reference 9 in Fig 1 is shown separately in Fig. 3. Like the connecting piece 8 the connecting piece 9 is formed with two insert portions 9a the external configuration of which is adapted to the shape of the inner cavity 17 of the beam members 5, 6. Reference 21 designates a centrally located jacket part which like the jacket part 20 of the connecting piece 8 has an external configuration matching that of the external configuration of the beam members 5, 6, i.e. it is formed with fastening grooves 18" and fastening ledges 19". In this manner the jacket part 20 of connecting piece 8 and the jacket part 21 of connecting piece 9 form an continuation of the beam members 6 across the entire extension of the roof. Numeral references 21a designate fastening holes with the aid of which may be secured equipment similar to that mentioned with respect to the corresponding fastening holes 20a on connecting piece 8. The jacket part 21 on the connecting piece 9 is suitable for forming the continuation of the roof beam members across the roof-ridge while simultaneously forming a suitable attachment means in which to secure e.g. the transverse beams. The corresponding jacket part 20 of connecting piece 8 is suitable for securing e.g. the spacer poles, but when no such spacer pole is required at this point or when it is suitable to attach the distance pole in the roof beam members themselves, jacket part 20 may be omitted and the roof beam members be allowed to abut one against the other butt end to butt end. Preferably, the beam members are joined to the connecting pieces by means of cotters, screws, bolts or other fastening means.

[0014] The above-mentioned connecting pieces 8 and 9 are rigid and are either straight or bent at a predetermined angle. The connecting piece designated in Fig 1 by numeral reference 7 does, however, form a joint between one roof beam member 6 and one lateral beam member 5. This joint is shown in more detail in Fig. 5. The joint is formed with two insert or leg portions 7a and 7b which are hingedly interconnected by means of a pivot pin 22 which is formed on the rear face of the joint, not shown in the drawings, with an enlarged head and on the front, shown in the drawings, is anchored by means of a cotter pin 23. The joint is formed by two hinge lugs 24 projecting outwards from leg portion 7a and a hinge lug 25 projecting from leg portion 7b so as to nest between hinge lugs 24. Like the insert portions of the other connecting pieces, the external profile configuration of the legs or insert portions 7a and 7b, respectively, is designed to match that of the interior cavity 17 of the beam members, whereby these portions may simply be slid into said members in a shape-matching, nesting relationship therein and preferably be secured to the beam members by means of cotter pins, screws, bolts or similar fastening means. Like the other connecting pieces also the joint 7 is formed on one of its sides with a guide portion 26 with guide grooves 18"' which like guide grooves 18' and 18" are intended to form a continuation of the corresponding guide grooves of the beam members beyond the connecting pieces or joint.

[0015] The configuration of the locking strut referenced in Fig 1 by numeral 12 and the strut attachment fittings 13 associated therewith are shown in closer detail in Figs 6 and 7. In accordance with the shown embodiment the locking strut is designed as a stretching screw comprising a sleeve 27 formed at its ends with internal threads. Into each one of the threaded end portions of the sleeve is screwed a rod 28 formed with matching external threads. One of the ends of the rod 28 is secured in a transverse bearing/mounting sleeve 29, which is pivotally mounted on a pivot pin 30, which passes through the sleeve. The strut attachment fitting 13 is in the form of a profile rail having a U-shaped cross-sectional configuration comprising a web 31 and two lateral legs 32 formed integrally therewith. The pivot pin 30 extends through the bearing/mounting sleeve 29 as well as through the lateral legs 32. The pivot pin 30 preferably is detachable from the bearing/mounting sleeve and from the lateral rail legs to allow the locking strut 12 to be removed from its attachments. Fig 7 shows only a lateral part of the associated beam member 5, 6 in cross-section. As illustrated, hook-shaped engagement means 33 protrude from the lower face of the web 31 for hook-like engagement with the border edges of the fastening ledges 19 of the undercut grooves of the associated beam member. Numeral reference 34 designates an abutment plate, which is supported on the bottom of the U-shaped profile rail and into which is screwed, in accordance with the shown embodiment, two screws formed with a rounded head and with an internal key-engagement socket. The screws, the number of which obviously could exceed two, extend through apertures formed in the beam member 5, 6 and the web 31, respectively, and the portion of the screws that projects beyond the abutment plate 34 is adjustable by screw-adjustment of the screws, owing to associated threads formed in the abutment plate 34. The U-shaped rail of the strut attachment fitting 13 is wider in the area closest to the rail bottom, i.e. the web 31, and the transition between said wider section and the rest of the rail legs forms an abutment shoulder which forms a stop means restricting the movement of the abutment plate 34 in the direction indicated by arrow A. The locking strut 12 is omitted from Fig 7. The protruding length of the locking pin, which is formed by the screw 35, beyond the abutment plate, i.e. into corresponding apertures formed in the web 31 and the beam member wall is adapted to ensure that the locking pin 35 assumes a position wherein it is extracted from the beam member but still projects into the wider recessed portion of the

web 31, when the abutment plate 34 abuts against the abutment shoulder 36 in the removed position of the locking strut 12.

[0016] If one wishes that the position of displacement of the strut attachment fitting 13 along the beam member be adjustable and that the various set positions of displacement be lockable, the beam member preferably is provided with a number of suitably located apertures for reception therein of the locking pin 35. When the locking strut is removed from the attachment fitting, the latter may be displaced along the beam member, with the abutment plate 34 assuming an upper position in abutment against the shoulder 36, and be removed from the beam member. When the strut has been removed from the beam member, the locking pins 35 do, however, retain the abutment plate 34 inside the strut attachment fitting in a permanent way, which means that these parts cannot be lost but are always in position when a beam assembly operation is again to take place. In the mounted position of the locking strut 12, the abutment plate is maintained depressed against the web 31 owing to its abutment against the bearing/mounting sleeve 29,, i.e. in a position wherein the locking pins 35 are inserted into the wall of the beam member and consequently the strut attachment fitting safely secured in its intended position on the beam member, also when under heavy load. The angular position of the lateral beam member relative to the roof beam member 6, i.e. angle α, may be varied in accordance with the shown embodiment by altering the length of the locking strut as well as by changing the position of the strut attachment fitting 13 on the respective beam member. In accordance wit the shown embodiment the strut attachment fitting is in the form of a continuous profile section but it is within the scope of the invention to configure the engagement means 33 thereof differently than in the form of longitudinally extending ledges. For example, it is within the scope of the invention to configure these grip means as short hook members spaced suitable intervals apart along the strut attachment fitting.

[0017] The base member and the runner wheel, designated in Fig 1 by numeral references 16 and 15, respectively, are shown in more detail in Figs 8-10. The base member 16 is formed with an insert portion 16a the external configuration of which matches the shape of the recess 17 in the lateral beam member 5 so that it may be slid into the latter in nesting relationship therewith. Numeral reference 37 designates a jacket part, the external shape of which conforms with that of the beam member in the same manner as the jacket parts 20 and 21 described above with respect to the two connecting pieces 8 and 9, respectively. Numeral reference 38 designates two depending mounting lugs formed with mutually coaxial shaft-receiving borings 39. By means of a shaft 40, not illustrated in the drawing figures and extending through said borings, a runner wheel 15 is rotationally journalled in said base member 16. As appears from Fig 8, the runner wheel is formed with a peripheral track having a rounded cross-sectional configuration. The rail 14, on which the wheel travels and which is deposited on the supporting face U, is formed with a track head 41 of similarly rounded configuration. In consequence of this rounded shape of the peripheral track of the runner wheel 15 and of the track head 41 of the rail, the base member 16 may be placed on and displaced along the rail 14 while assuming various positions of inclination. Because the runner wheel is configured to abut against the rail with different axis inclination, one and the same cover construction may be adapted to a comparatively large extent to the area one wishes to be at disposal underneath the cover construction, which area is determined by the spacing between the rails 14. Adaptation thus may be effected by changing the position of inclination of the lateral beam members 5.

[0018] In accordance with the embodiment illustrated in Fig 9 the base member 16 is formed with a centrally located cavity 42 intermediate the lugs 38. With the runner wheel removed, an insert portion 43 of matching configuration may be pushed into said cavity in nesting relationship therewith, said insert portion 43 preferably having a non-round configuration, like also preferably cavity 42. A foot plate 45 is journalled to the insert portion 43 via a pivot 44. Preferably, the insert portion is formed with a number of transverse attachment holes 46 to allow variation of the depth of penetration of the insert portion 43 into the base member 16. Setting of the height position may be effected by introduction of a pin 40 through the holes 39 formed in the lugs 38 and a suitable one of holes 46 in the insert portion. Preferably, the insert portion of the base member 16 that projects into the beam member is adapted to allow it to be turned over 90° relative to the direction illustrated in Fig 8, viz the runner wheel will in this case be directed at an angle of 90° relative to that illustrated in the drawing. In this position of the base member, instead of the foot plate 45 shown to the right in drawing figure 8, the runner wheel may be supported on the ground or other supporting surface during the erection of the frame construction, and instead of the supporting plate 45 sliding along the supporting surface in the direction indicated in Fig 8 by arrow B, the runner wheel 15 may roll on the supporting surface. In this case, the runner wheel 15 may be replaced by a runner wheel that is well suited to the supporting surface, for instance one having a soft periphery. To allow this movement a further rail 14 may be deposited on the supporting surface so as to extend in the direction of the movement, i.e. at right angles to the rail 14, to be used during the very erection of the construction. In this case a rail 14 is not required, the foot plate 45 may be secured directly to the supporting surface by means of cotter pins or similar fasteners inserted through the apertures 47 formed in the plate. In order to counteract lifting forces exerted on the construction, a safety device 53 may be attached to the base member, for instance as indicated by broken lines in Fig 8 and preferably in the manner of a hook devised

to grip a flange on the rail 14, or in any other manner holding the base member and the rail in a coupled-together relationship. The safety device and/or the base member preferably are provided with a number of apertures for passage therethrough of bolts for the purpose of adaptation of the position of assembly of the safety device on the base member relative to the rail, independently of the inclination and any height position of the lateral beam and thus of the base member.

[0019] Fig 11 illustrates the manner of attaching the spacer poles 3, 4 between the lateral beam and roof beam members 5 and 6, respectively. Numeral reference 48 designates fastener pieces which by means of bolts 49 or the like are attached to the beam member sides or to connecting pieces located therebetween. The fastener pieces are formed with a centrally located undercut groove 50 and with laterally projecting fastening lugs 48a in which hooks 51 or the like may engage to secure the tightening wires 10. Numeral reference 52 indicates the end wall at either end of the spacer poles 3, 4, said end walls formed centrally with a flange 53 the extreme end of which presents an enlarged rim 54 which may be inserted into the undercut groove 50. It goes without saying that the fastener pieces 48 may be secured in any desired location on the frame bows, i.e. also on the strut attachment fittings 13 as shown in Fig 1.

[0020] With reference to Figs 12-16, a suitable mode of operation for erection of the frame construction in accordance with the invention will be described. In Fig 12 the various beam members forming part of the frame construction are shown coupled together by means of the corresponding connecting pieces, joints, spacer poles, tightening wires, and so on. However, the locking struts 12 are not yet fastened. In this position, the mounting and assembly work is easy, since the height of the construction is low at this stage and the assembly and mounting operation may be effected with the aid of comparatively simple equipment without requiring high-reaching cranes or similar lifting equipment. It is likewise possible to position the cover by sliding the leach edges thereof into the fastening grooves 18 extending along the various members. In Fig 13 lifting tools 55, preferably one at each frame bow, have been arranged in the vicinity of one of the joints between the roof beam members and the lateral beam members, viz. at the left-hand joint as seen in Figs 12-16. From the position in Fig 12, wherein the beam members are angled downwards, the beam members have been lifted so as to be angled upwards. When a tightening force is applied intermediate the opposite joint 7 and the base member 16 it becomes possible, while the base member 16 is sliding on the supporting surface, to continue the lifting movement until the base member has reached a position adjacent the corresponding rail 14. After the base member having been lifted onto said rail, following mounting of the runner wheel 15 on the base member, should the latter not be provided with such a wheel from the start, the locking strut 12 may be applied in order to lock the roof beam members and the lateral beam members in their relative angular position. Thereafter, the same procedure may be repeated with respect to the opposite side, as appears from Fig 16, it thereafter becoming possible to apply the locking strut also at this side.. After the erection, the length of the locking struts preferably is adjusted by rotation of the stretching screws. Should a building crane or similar equipment be available on the site, it may of course be used for the erection. In this case, suitable lifting fittings may be applied on the central grip ledges of the roof beams by means of grip edges engaging the ledge edges and projecting into the undercut grooves formed there. The method of assembling the different components forming part of the frame construction becomes obvious to the expert in the field by study of the design of the various components, for which reason this assembly method need not be described herein.

[0021] The invention has been described by way of a preferred embodiment but obviously it could be modified in a variety of ways within the scope of the appended claims without departing from the basic concept of the invention. For instance, the cross-sectional configuration of the profile sections could differ from that shown in the drawing figures as could also the locations of the engagement grooves. Instead of being designed as means for reception into the beam members, the insert portions could be designed to enclose the latter. In the description the expression "frame bows" is used, but this expression should not be construed to necessarily relate to components having the configuration illustrated in the drawing but these could equally well have an arcuately curved shape. Thus, some of the roof beam members and the lateral beam members could be curved whereas others are straight. The elements referred to as "frame bows" need not either have a symmetrical configuration but their shape could be adapted to suit the needs expressed by the user, without departing from the basic concept of the invention. Additional modifications are possible within the scope of the appended claims. For instance, the joint 7 may be used in other positions than to interconnect a lateral beam member and a roof beam member, for instance to couple together two adjoining roof beam members to form an adjustable roof-ridge or other roof angle. It is likewise possible to place it between two mutually interconnected lateral beam members. In addition, the rigid connecting pieces could be used within wide limits in other positions than the one shown in the drawing figures. If desired, the covering means could be rigid, such as in the form of roofing sheets or the like. The screws 35 may be replaced by pins welded to or in any other way attached to the abutment plate 34. In addition, the beam members need not have a hollow profile configuration that is completely closed circumferentially. One side thereof could for instance be wholly or partly open.

Claims

1. A cover construction, such as e.g. a weather protection device for building sites or the like, comprising a number of beam members (5, 6) arranged to be assembled into a frame construction by means of lockable, rigid or hinged connecting pieces (7, 8, 9), said frame construction consisting of a number of frame bows (2) formed by upright lateral beam members (5), the lower ends of which are supported on a supporting surface (U) and the upper ends of which support roof beam members (6) extending across said building site or the like, the frame bows (2) being retained in spaced-apart relationship by means of spacer poles (3, 4) extending between the frame bows and being arranged to support covering means (11), such as e.g. a flexible cloth, extending between and along said spacer poles, whereby the supporting surface on which said lateral beam members rest is formed by a rail (14) extending transversely relative to the frame bows, said lateral beam members (5) are at their lower ends formed with runner wheels (15) the periphery of which at least partly enclose the track-forming face of said rail, i.e. the upper face thereof, **characterised in that** between the upright lateral beam members (5) and the roof beam members (6) there are provided connecting pieces (21) for hinged interconnection of these beams and **in that** said runner wheels (15) are adapted to bear against said rails at adjustable angular position corresponding to varying axial inclination of the associated lateral beam members (5) as a result of a bending within the connecting pieces while the cover construction is being assembled.

2. A cover construction as claimed in claim 1, **characterised in that**, the upper face of said rail (14) has a rounded configuration and said runner wheel (15) is formed with a peripheral groove having a round cross-sectional configuration adapted to the roundness/curvature of the rail, for the purpose of allowing abutment of said runner wheel against said rail with variable axis inclination.

3. A cover construction as claimed in claim 1 or 2, **characterised in that** the runner wheel (15) is mounted in a fastener member (16) which may be telescopically connected to the lateral beam member (5).

4. A cover construction as claimed in claim 3, **characterised in that** the fastener member (16) is formed with an insert portion (16a) the shape of which is adapted to the internal cavity (17) of the lateral beam member (5).

5. A cover construction as claimed in any one of the preceding claims, **characterised in that** the fastener member is adapted to and arranged to be connected to a base member (45).

6. A cover construction as claimed in claim 5, **characterised in that** the fastener member (16) is formed with a centrally located cavity (42) extending in the longitudinal direction of said lateral beam member (5), and **in that** said base member is formed with an insert rod (43) to be telescopically received in said cavity.

7. A cover construction as claimed in claim 6 or 7, **characterised in that** the insert rod (43) is pivotallly mounted on a foot plate (45).

8. A cover construction as claimed in claim 6 or 7, **characterised in that** the insert rod and the corresponding cavity (42) in the fastener member (16) are formed with matching non-round cross-sectional configurations.

9. A cover construction as claimed in any one of the preceding claims, **characterised in that** the means in which is mounted the axis of the runner wheel (15) may be turned between at least two mutually perpendicular directions about the longitudinal median line of the lateral beam member (5).

10. A cover construction as claimed in claim 9, **characterised in that** the fastener member (16) is configured to so match the configuration of the lateral beam member (5) that said changed direction of the axist of the runner wheel (15) is produced by removing the fastener member from the lateral beam member (5) and re-inserting it in another angular position.

11. A cover construction as claimed in any one of the preceding claims, **characterised in that** the shaft (40) of the runner wheel (15) is mounted in two depending mounting lugs (38), one on either side of the runner wheel.

12. A cover construction as claimed in claims 6 - 8, **characterised in that** the cavity (42) formed in the fastener member for reception therein of said insert rod is positioned intermediate said mounting lugs (38), and **in that** said insert rod (43) is provided with transverse attachment holes (46), which may be placed in alignment with the shaft passage holes (39) formed in said mounting lugs (38) for the purpose of interlocking the fastener member (16) and the insert rod (43) by means of a bolt which may pass through both said member and said rod.

13. A cover construction as claimed in claim 9 or 10, **characterised in that** the runner wheel (15) travel-

ling on said rail is replaceable by a runner wheel of ground-travelling type.

Patentansprüche

1. Abdeckkonstruktion wie zum Beispiel eine Wetterschutzvorrichtung für Baustellen und dergleichen, eine Anzahl von Balkenelementen (5, 6) umfassend, die so eingerichtet sind, dass sie mit verriegelbaren, starren oder klappbaren Verbindungsstücken (7, 8, 9) zu einer Rahmenkonstruktion zusammengebaut werden können, wobei die Rahmenkonstruktion aus einer Anzahl von Rahmenbögen (2) besteht, die aus aufrechten seitlichen Balkenelementen (5) gebildet werden, deren untere Enden auf einer tragenden Fläche (U) ruhen und deren obere Enden Dachbalkenelemente (6) tragen, die sich über den Bauplatz oder dergleichen hinweg erstrecken, und wobei die Rahmenbögen (2) voneinander durch Distanzstangen (3, 4) beabstandet gehalten werden, die sich zwischen den Rahmenbögen erstrecken und dafür eingerichtet sind, abdeckende Mittel (11) wie zum Beispiel geschmeidiges Tuch zu halten, die sich zwischen den und entlang der Distanzstangen erstrecken, wobei die tragende Fläche, auf der die seitlichen Balkenelemente ruhen, aus einer Schiene (14) gebildet wird, die sich quer zu den Rahmenbögen erstreckt, wobei die seitlichen Balkenelemente (5) an ihren unteren Enden mit Laufrädern (15) ausgebildet sind, deren Umfang zumindest teilweise die bahnbildende Seite der Schiene, d.h. deren Oberseite, umschliesst, **dadurch gekennzeichnet, dass** zwischen den aufrechten seitlichen Balkenelementen (5) und den Dachbalkenelementen (6) Verbindungsteile (21) für eine klappbare Verbindung dieser Balken zur Verfügung stehen, und dadurch, dass die Laufräder (15) dafür geeignet sind, an den Schienen in einer einstellbaren Winkelstellung zu ruhen, die der variablen Achsneigung der zugehörigen seitlichen Balkenelemente (5) entspricht, die sich aus der Biegung innerhalb der Verbindungsteile ergibt, während die Abdeckkonstruktion zusammengebaut wird.

2. Abdeckkonstruktion nach Anspruch 1, **dadurch gekennzeichnet, dass** die Oberseite der Schiene (14) eine gerundete Konfiguration besitzt und das Laufrad (15) mit einer peripheren Nut ausgebildet ist, die eine runde Querschnittskonfiguration besitzt, die an die Rundung/Krümmung der Schiene angepasst ist, um dem Laufrad ein Aufliegen auf der Schiene bei variabler Achsneigung zu ermöglichen.

3. Abdeckkonstruktion nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** das Laufrad (15) in ein Befestigungselement (16) montiert ist, das teleskopisch mit dem seitlichen Balkenelement (5) verbunden werden kann.

4. Abdeckkonstruktion nach Anspruch 3, **dadurch gekennzeichnet, dass** das Befestigungselement (16) mit einem eingefügten Abschnitt (16a) ausgebildet ist, dessen Gestalt dem inneren Hohlraum (17) des seitlichen Balkenelements (5) angepasst ist.

5. Abdeckkonstruktion nach einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** das Befestigungselement dafür geeignet und eingerichtet ist, mit einem Fusselement (45) verbunden zu werden.

6. Abdeckkonstruktion nach Anspruch 5, **dadurch gekennzeichnet, dass** das Befestigungselement (16) mit einem zentral gelegenen Hohlraum (42) ausgebildet ist, der sich in Längsrichtung des seitlichen Balkenelements (5) erstreckt, und dadurch**,** dass das Fusselement mit einem teleskopisch im Hohlraum aufzunehmenden Einsetzstab (43) ausgebildet ist.

7. Abdeckelement nach Anspruch 6 oder 7, **dadurch gekennzeichnet, dass** der Einsetzstab (43) drehbar auf eine Fussplatte (45) montiert ist.

8. Abdeckkonstruktion nach Anspruch 6 oder 7, **dadurch gekennzeichnet, dass** der Einsetzstab und der entsprechende Hohlraum (42) im Befestigungselement (16) mit zusammenpassenden nichtrunden Querschnittskonfigurationen ausgebildet sind.

9. Abdeckkonstruktion nach einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** die Organe, in die die Achse des Laufrades (15) montiert ist, zwischen mindestens zwei zueinander senkrechten Richtungen um die zentrale Längslinie des seitlichen Balkenelements (5) gedreht werden können.

10. Abdeckkonstruktion nach Anspruch 9, **dadurch gekennzeichnet, dass** das Befestigungselement (16) konfiguriert ist, so mit der Konfiguration des seitlichen Balkenelements (5) zusammenzupassen, dass die Richtungsänderung der Achse des Laufrades (15) durch Abnahme des Befestigungselements vom seitlichen Balkenelement (5) und sein Wiedereinsetzen in einer anderen Winkelstellung erzeugt wird.

11. Abdeckkonstruktion nach einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** die Achse (40) des Laufrades (15) in zwei herabhängende Laschen (38) montiert ist, je eine auf den beiden Seiten des Laufrades.

12. Abdeckkonstruktion nach Ansprüchen 6 bis 8, **dadurch gekennzeichnet, dass** sich der im Befestigungselement zur Aufnahme des Einsetzstabes ausgebildete Hohlraum (42) in der Mitte zwischen den Montagelaschen (38) befindet, und dadurch, dass der Einsetzstab (43) mit durchgehenden Anbringungslöchern (46) versehen ist, die mit den Achsdurchlasslöchem (39) ausgefluchtet werden können, die in den Montagelaschen (38) ausgebildet sind, um das Befestigungselement (16) und den Einsetzstab (43) miteinander durch einen Bolzen zu verriegeln, der durch das Element wie auch durch den Stab gesteckt werden kann.

13. Abdeckkonstruktion nach Anspruch 9 oder 10, **dadurch gekennzeichnet, dass** das auf der Schiene rollende Laufrad (15) durch ein auf dem Boden rollendes Laufrad ersetzt werden kann.

Revendications

1. Construction d'une couverture, telle que par exemple un dispositif de protection contre le temps destiné à des chantiers ou autres, comprenant un certain nombre d'éléments de poutres (5, 6) agencés pour être assemblés en une construction de structure au moyen de pièces de raccordement verrouillables, rigides ou articulées (7, 8, 9), ladite construction de structure étant constituée d'un certain nombre de montants de structure (2) formés par des éléments de poutres latéraux dressés (5) dont les extrémités inférieures sont supportées sur une surface de support (U) et dont les extrémités supérieures supportent des éléments de poutres de toit (6) s'étendant en travers dudit chantier ou autre, les montants de structure (2) étant maintenus dans une relation espacée au moyen de poteaux d'écartement (3, 4) s'étendant entre les montants de structure et étant agencés pour supporter le moyen de couverture (11), tel que par exemple une étoffe souple s'étendant entre et le long desdits poteaux d'écartement, grâce à quoi la surface de support sur laquelle lesdits éléments de poutres latéraux reposent est formée par un rail (14) s'étendant transversalement par rapport aux montants de structure, lesdits éléments de poutres latéraux (5) sont munis à leurs extrémités inférieures de roues de déplacement (15), dont la périphérie recouvre au moins partiellement la face formant la voie dudit rail, c'est-à-dire la face supérieure de celui-ci, **caractérisée en ce que** entre les éléments de poutres latéraux dressés (5) et les éléments de poutres de toit (6), il est prévu des pièces de raccordement (21) pour une connexion mutuelle articulée de ces poutres et **en ce que** lesdites roues de déplacement (15) sont conçues pour porter contre lesdits rails à une position angulaire réglable correspondant à une inclinaison axiale variable des éléments de poutres latéraux associés (5) par suite d'une flexion à l'intérieur des pièces de raccordement alors que la construction de la couverture est assemblée.

2. Construction de couverture selon la revendication 1, **caractérisée en ce que** la face supérieure dudit rail (14) présente une configuration arrondie et **en ce que** ladite roue de roulement (15) est formée avec une gorge périphérique présentant une configuration ronde en coupe transversale adaptée à la rotondité/courbure du rail, dans le but de permettre l'appui de ladite roue de roulement contre ledit rail avec une inclinaison d'axe variable.

3. Construction de couverture selon la revendication 1 ou 2, **caractérisée en ce que** la roue de roulement (15) est montée sur un élément de fixation (16) qui peut être relié de manière télescopique à l'élément de poutre latéral (5).

4. Construction de couverture selon la revendication 3, **caractérisée en ce que** l'élément de fixation (16) est doté d'une partie d'insertion (16a) dont la forme est adaptée à la cavité interne (17) de l'élément de poutre latéral (5).

5. Construction de couverture selon l'une quelconque des revendications précédentes, **caractérisée en ce que** l'élément de fixation est conçu et agencé pour être relié à un élément de base (45).

6. Construction de couverture selon la revendication 5, **caractérisée en ce que** l'élément de fixation (16) est formé avec une cavité située en son centre (42) s'étendant dans la direction longitudinale dudit élément de poutre latéral (5), et **en ce que** ledit élément de base est formé avec une tige d'insertion (43) devant être reçue de manière télescopique dans ladite cavité.

7. Construction de couverture selon la revendication 6 ou 7, **caractérisée en ce que** la tige d'insertion (43) est montée de manière pivotante sur une semelle (45).

8. Construction de couverture selon la revendication 6 ou 7, **caractérisée en ce que** la tige d'insertion et la cavité correspondante (42) dans l'élément de fixation (16) sont formées avec des configurations en coupe transversale non circulaires qui correspondent.

9. Construction de couverture selon l'une quelconque des revendications précédentes, **caractérisée en ce que** le moyen, dans lequel est monté l'axe de la roue de roulement (15), peut être tourné entre au moins deux directions mutuellement perpendiculai-

res autour de l'axe médian longitudinal de l'élément de poutre latéral (5).

10. Construction de couverture selon la revendication 9, **caractérisée en ce que** l'élément de fixation (16) est configurée de manière à correspondre à la configuration de l'élément de poutre latéral (5) de sorte que ladite direction modifiée de l'axe de la roue de roulement (15) est produite en ôtant l'élément de fixation de l'élément de poutre latéral (5) et en le réinsérant dans une autre position angulaire.

11. Construction de couverture selon l'une quelconque des revendications précédentes, **caractérisée en ce que** l'arbre (40) de la roue de roulement (15) est placé dans deux pattes de montage qui pendent (38), une de chaque côté de la roue de roulement.

12. Construction de couverture selon les revendications 6 à 8, **caractérisée en ce que** la cavité (42), formée dans l'élément de fixation en vue de la réception dans celle-ci de la tige d'insertion, est positionnée à mi-chemin entre lesdites pattes de montage (38), et **en ce que** ladite tige d'insertion (43) est dotée de trous de fixation transversaux (46) qui peuvent être placés en alignement avec les trous de passage d'arbre (39) formés dans lesdites pattes de montage (38) dans le but de bloquer mutuellement l'élément de fixation (16) et la tige d'insertion (43) au moyen d'un boulon qui peut traverser à la fois ledit élément et ladite tige.

13. Construction de couverture selon la revendication 9 ou 10, **caractérisée en ce que** la roue de roulement (15) se déplaçant sur ledit rail peut être remplacée par une roue de roulement du type se déplaçant sur le sol.

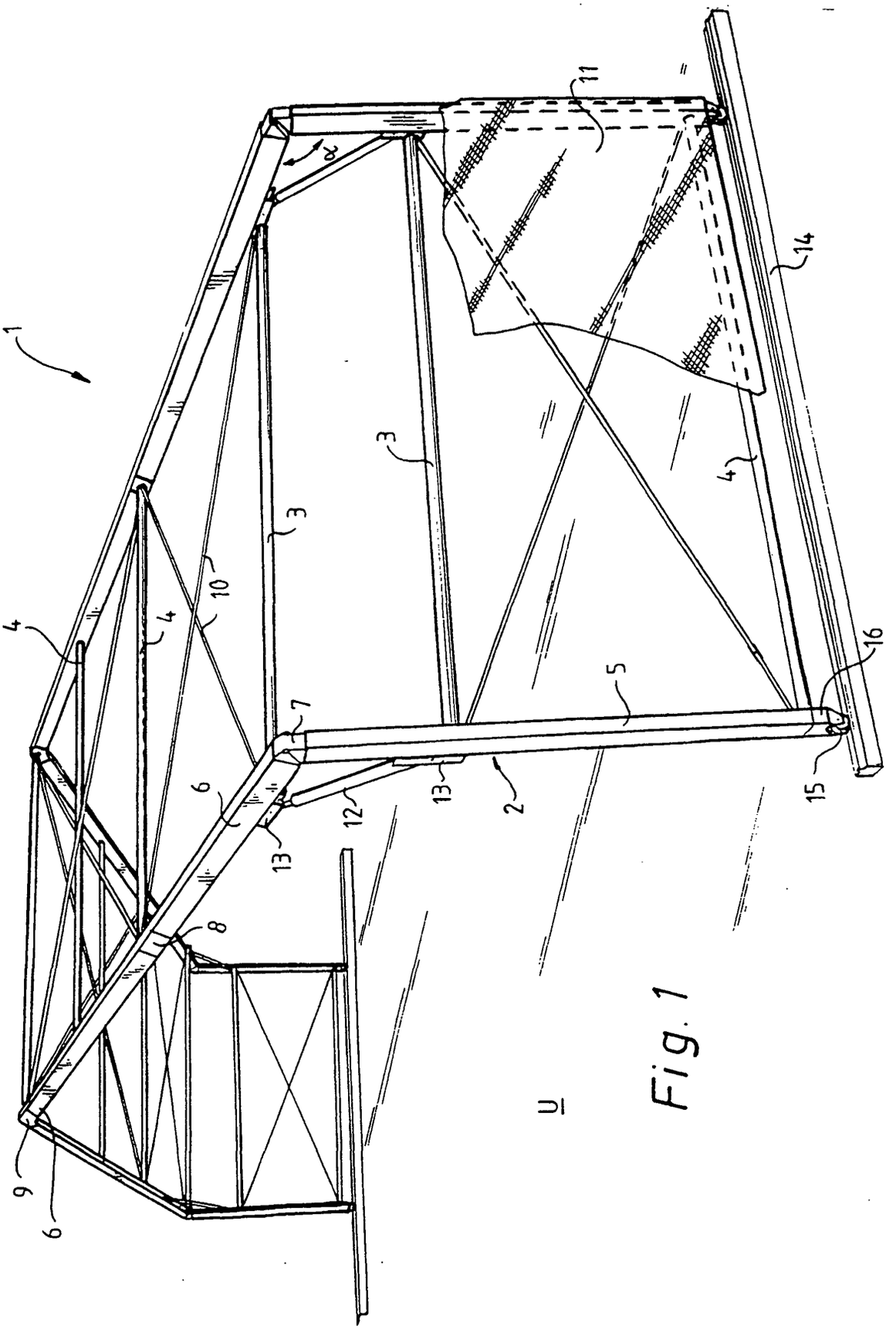


Fig. 1

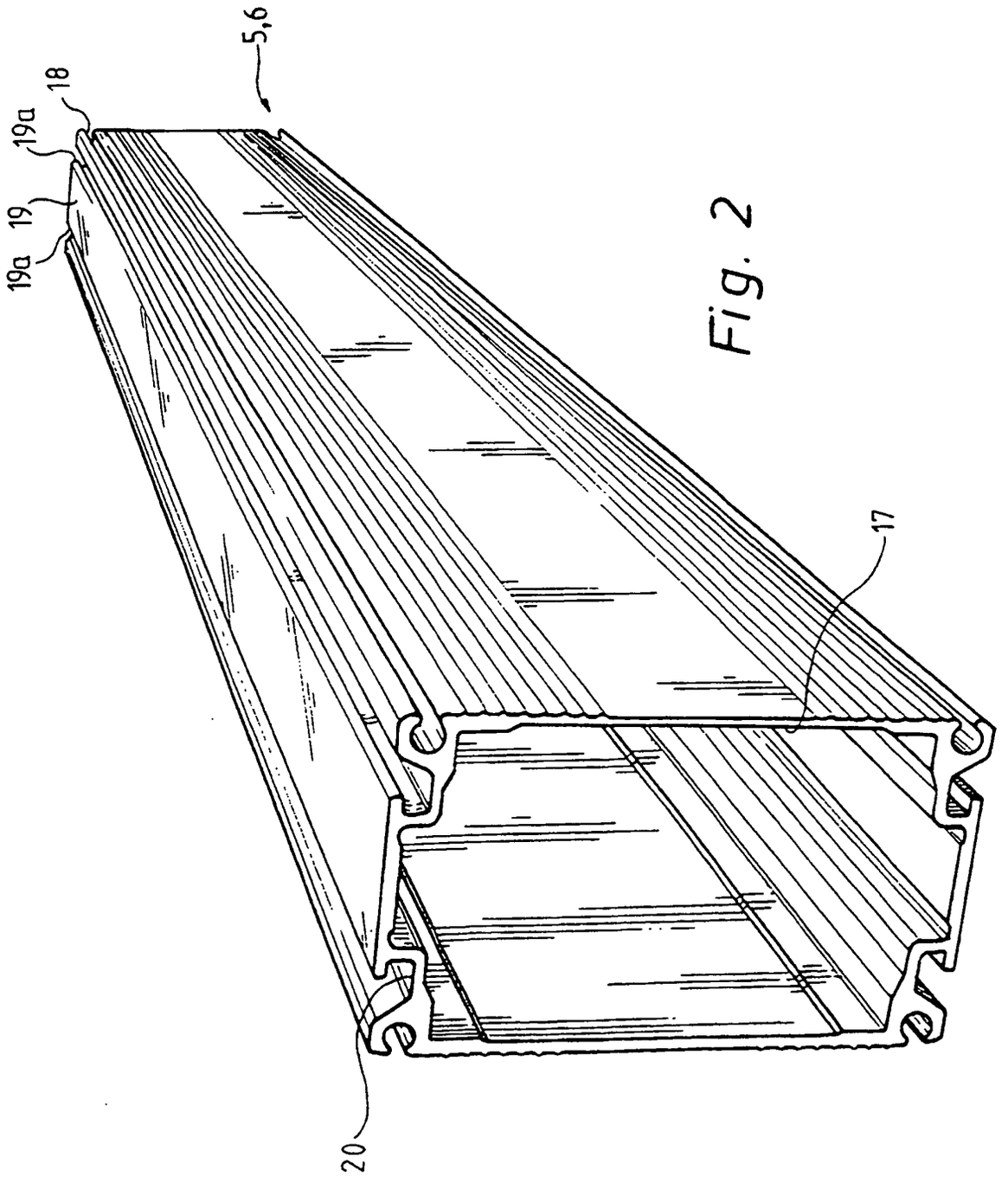


Fig. 2

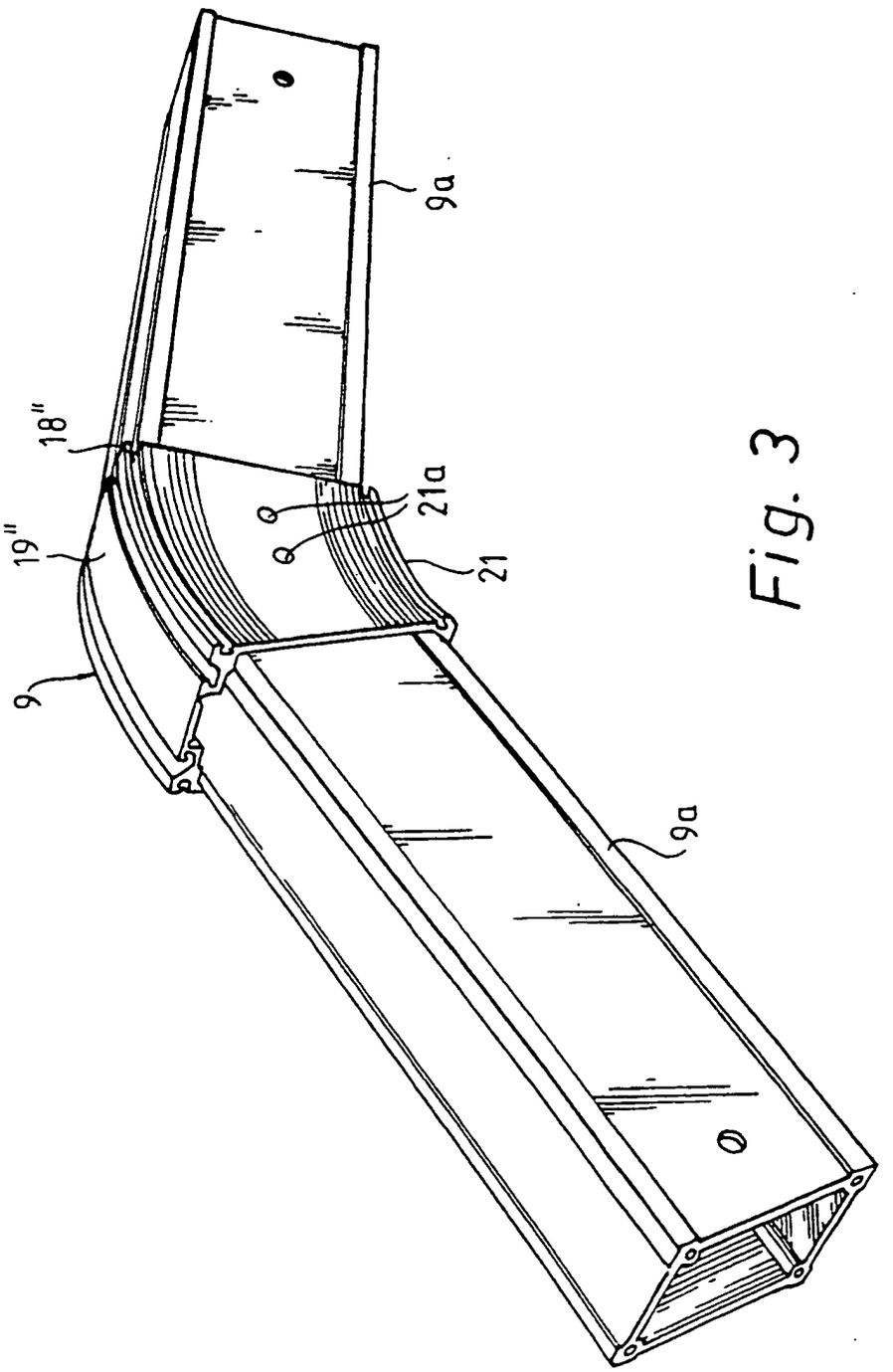


Fig. 3

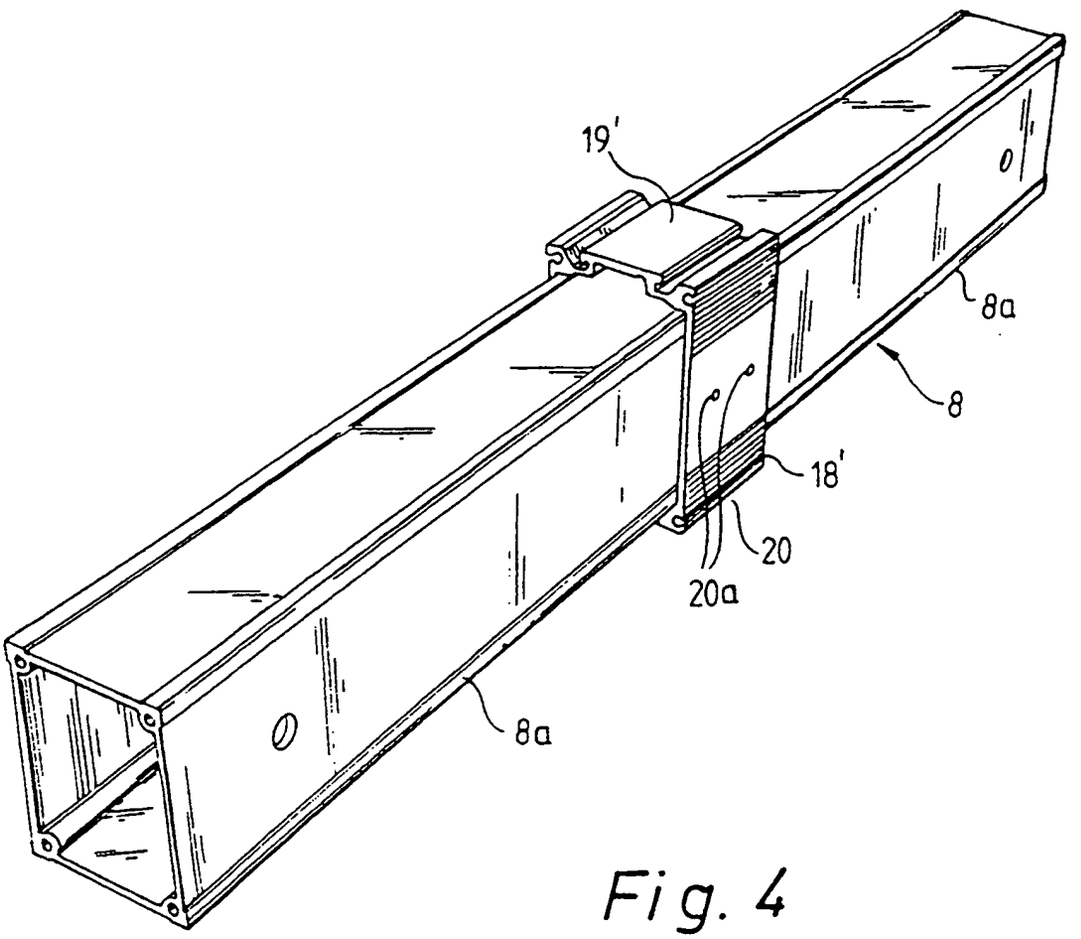


Fig. 4

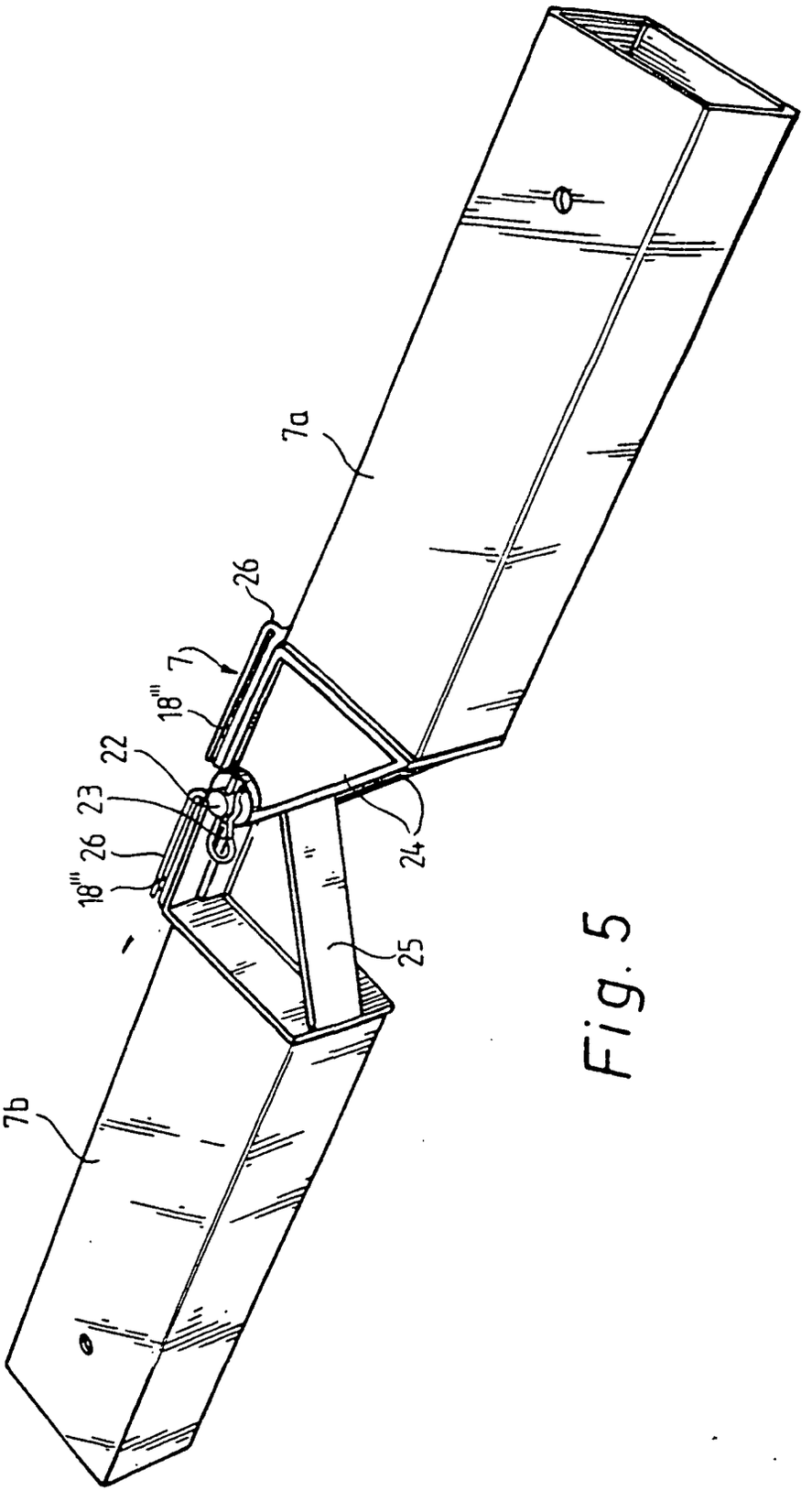


Fig. 5

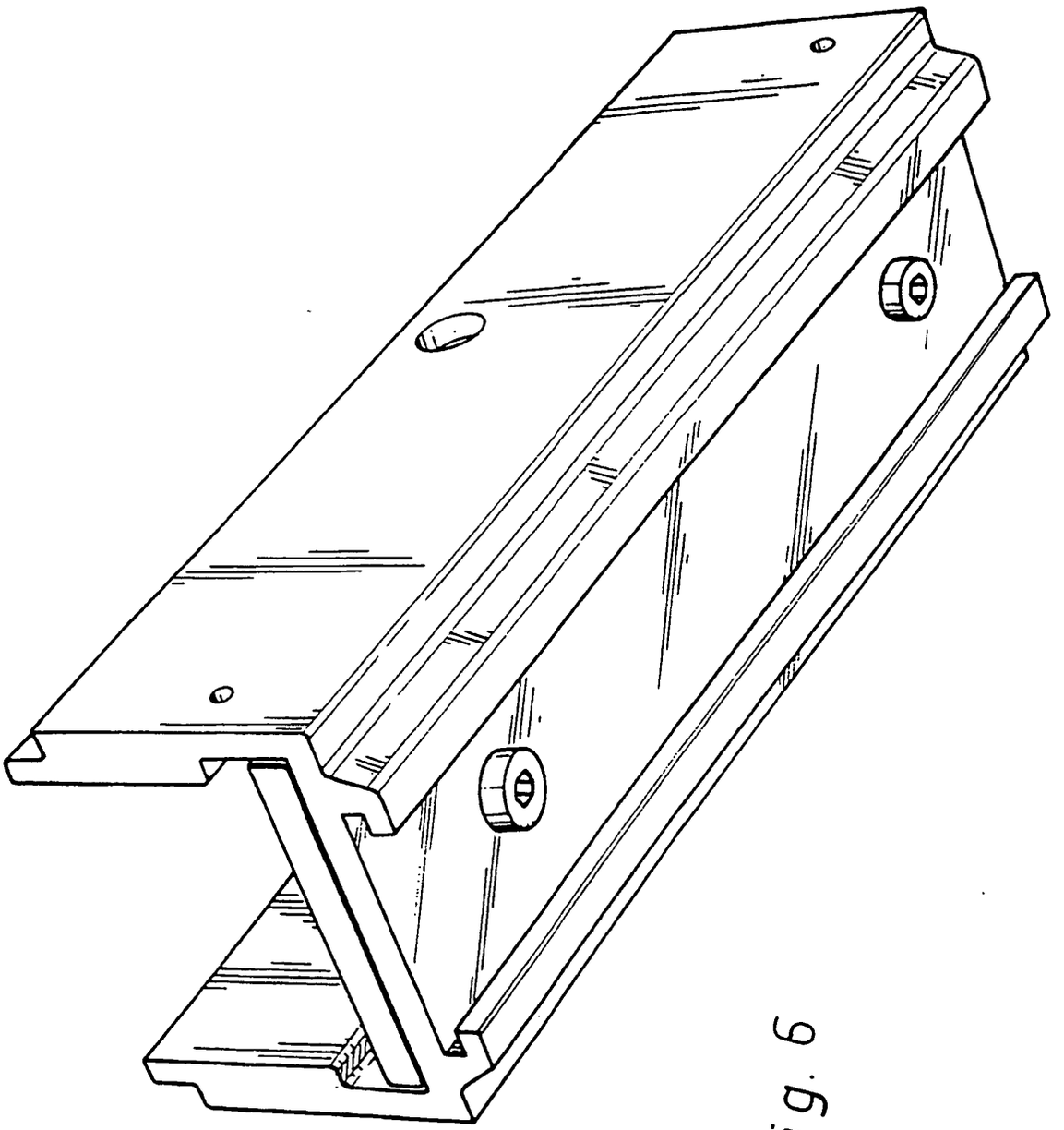


Fig. 6

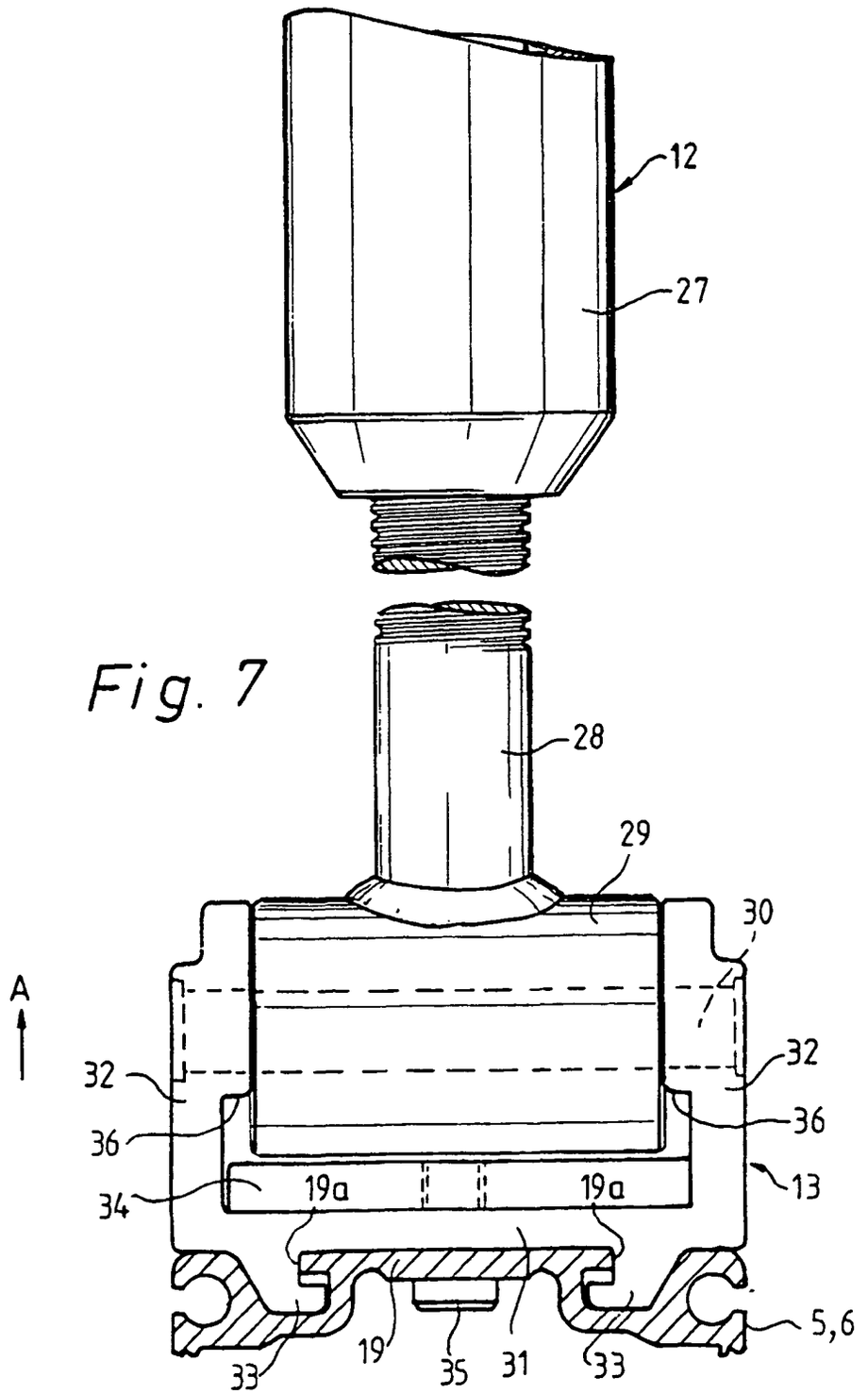
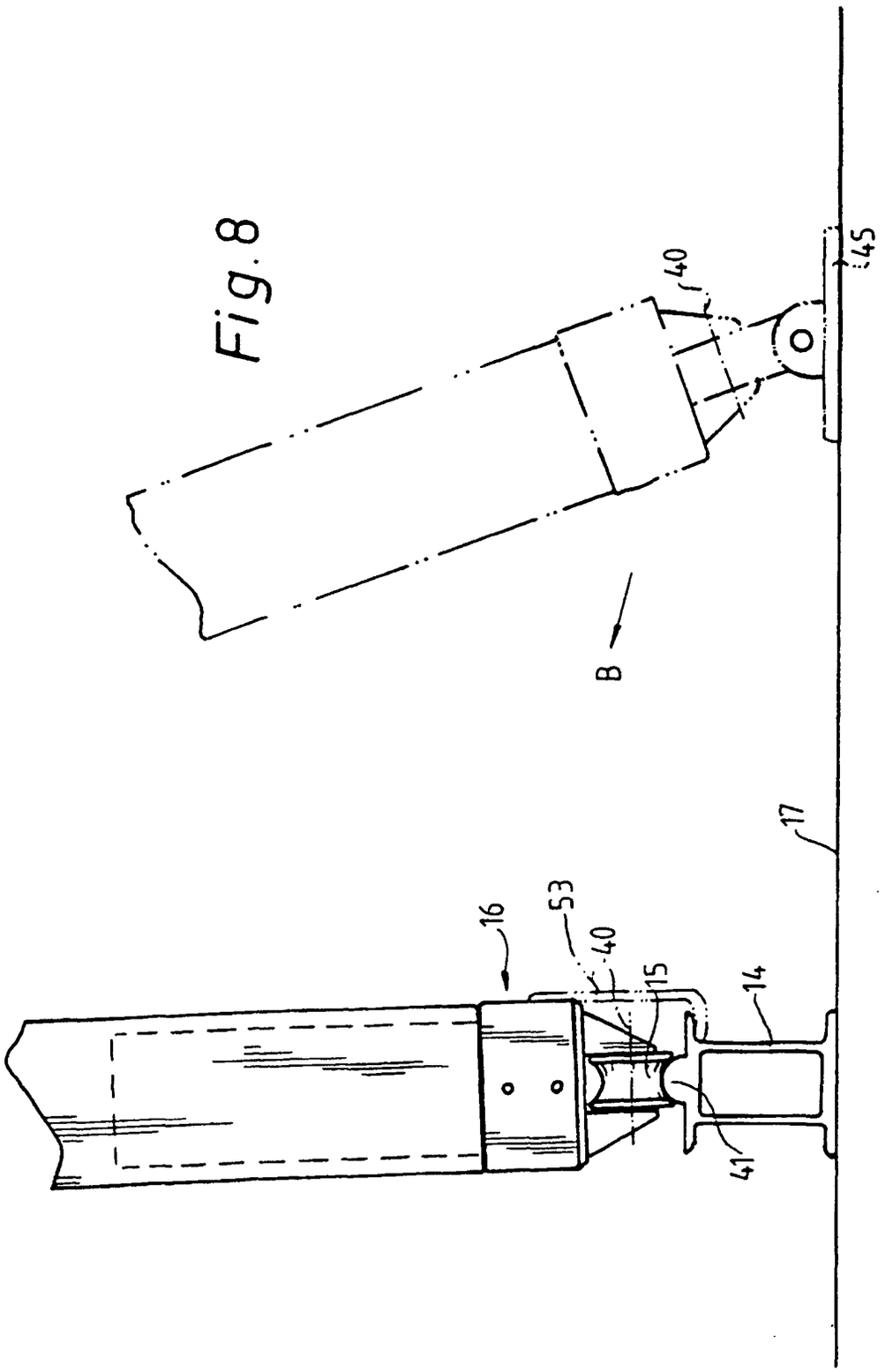


Fig. 7

Fig.8



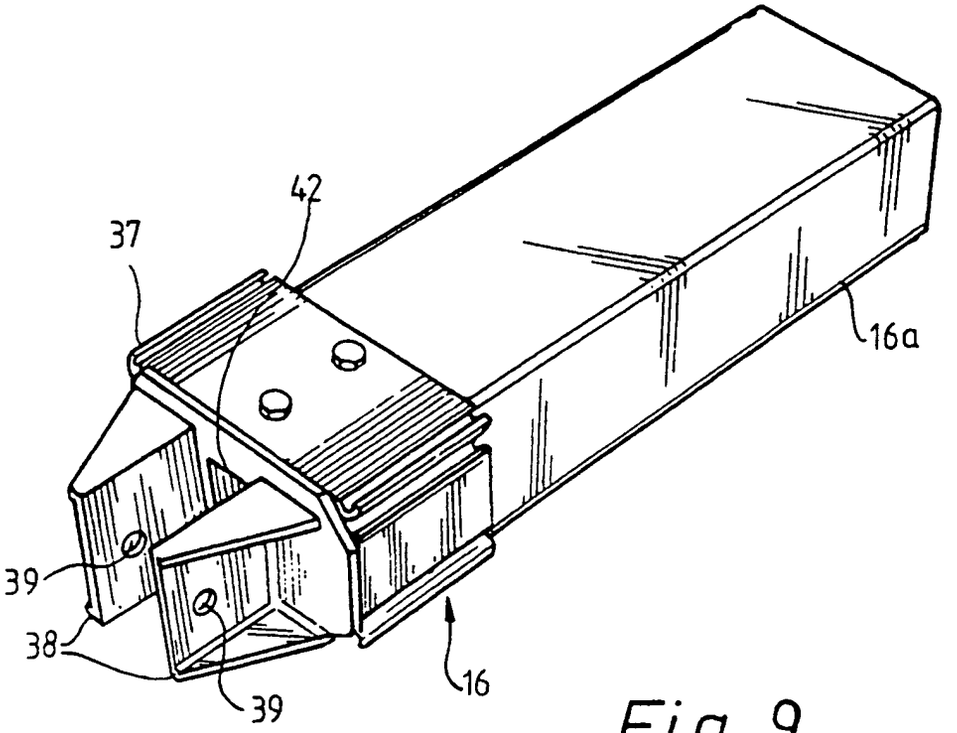


Fig. 9

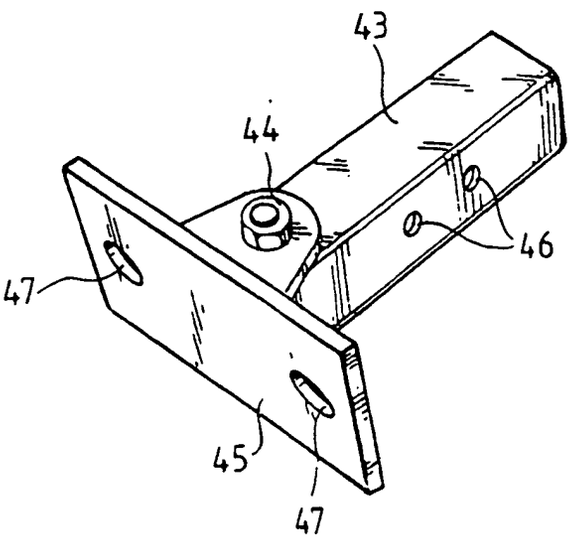


Fig. 10

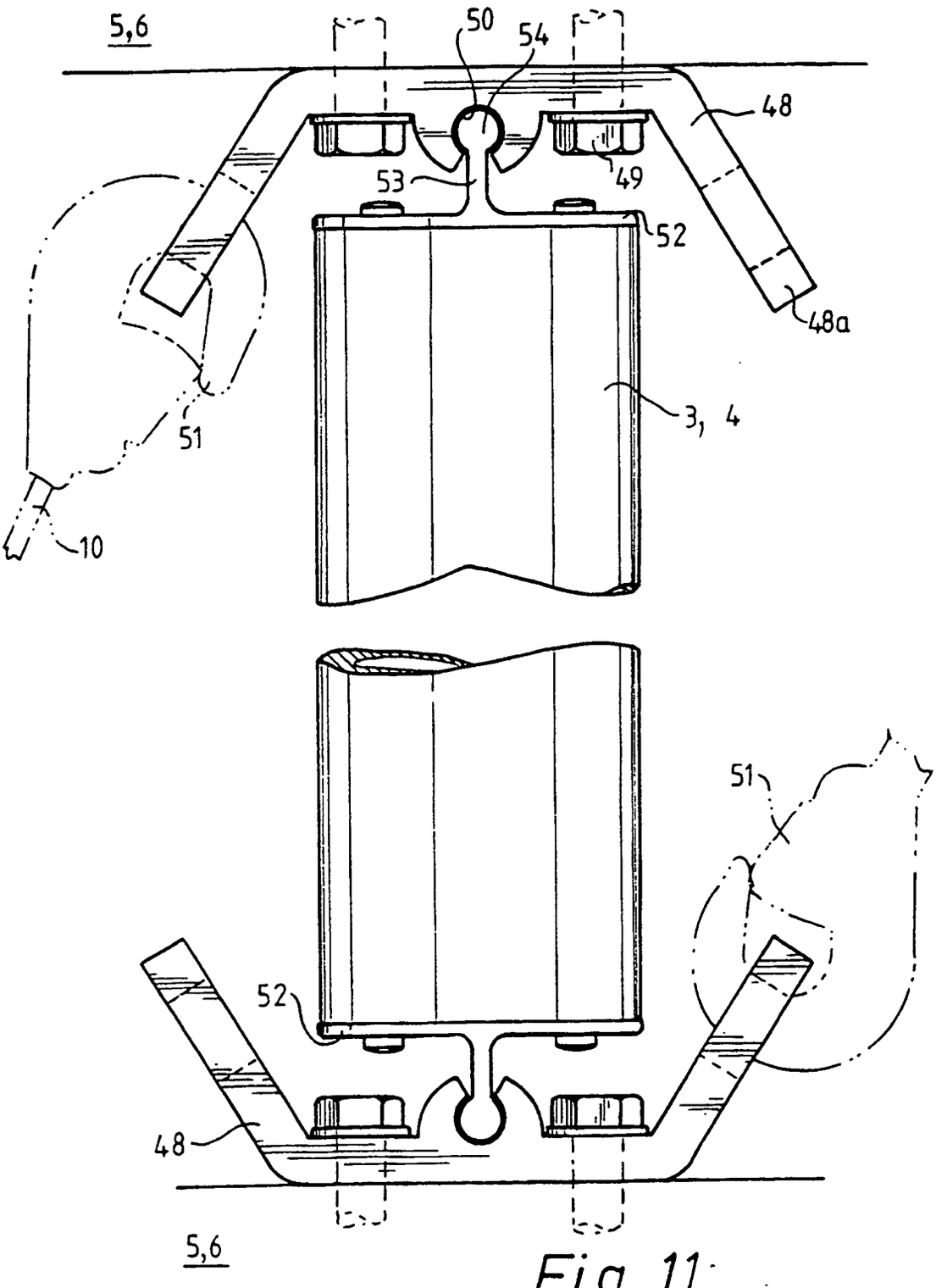


Fig. 11

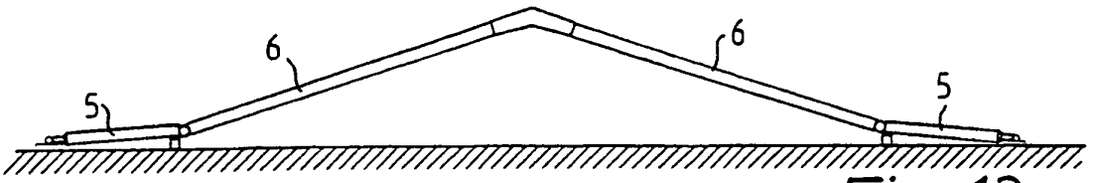


Fig.12

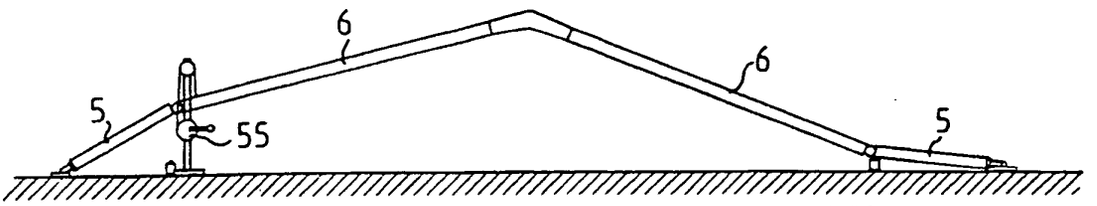


Fig.13

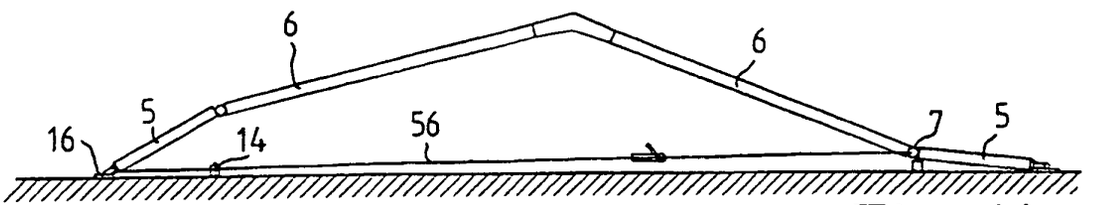


Fig.14

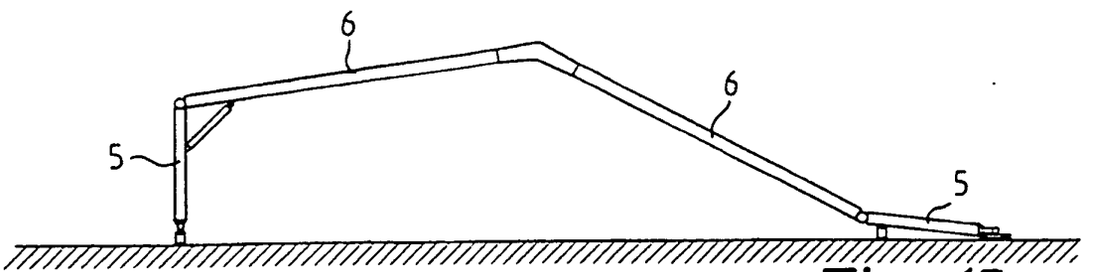


Fig.15

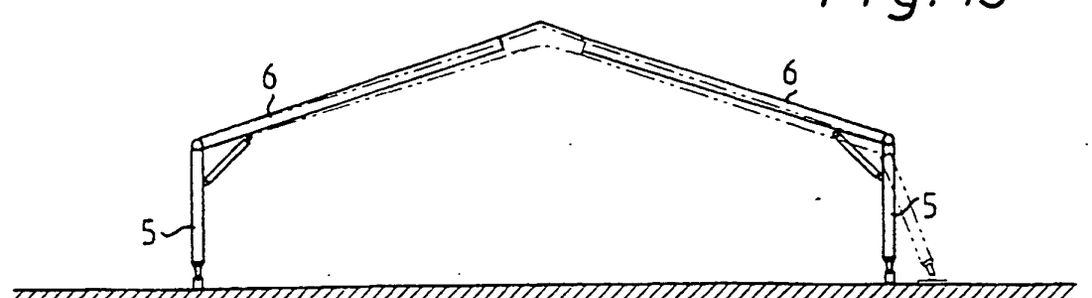


Fig.16