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(54) **Trimmer construction for a floor built up from plate-shaped elements, and a trimmer accessory to be used therewith**

Wechselbauweise für aus Plattenelementen hergestellte Decken und dazu verwendete Wechselzusatzvorrichtung

Enchevêtrement pour plancher composé de panneaux et pièce accessoire utilisée à cet effet

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## Description

**[0001]** The invention relates to a trimmer construction for a floor which is built up from plate-shaped elements which rest on supporting elements, such as supporting walls, the construction being provided with a trimming joist which is provided with at least one bearing surface for at least one trimmed plate-shaped element and which transmits bearing forces applied thereto by a trimmed plate-shaped element to a support element.

**[0002]** With such a known trimmer construction for, for instance, providing a stairwell in a floor, the trimming joist is lengthened at its two ends with, each time, a bearing element with a supporting surface, while each supporting surface is laid on the upper side of an adjoining plate-shaped element, the trimming joist, and thus the trimming joist forms, as it were, a suspended bridge, serving as a bearing part for at least one trimmed plate-shaped element, i.e. a plate-shaped element which is shorter than the span. The bearing forces applied by the trimmed plate-shaped element to the trimming joist are transmitted to the supporting wall via the adjoining trimmed plates on which the bearing elements rest. In particular with large openings to be provided in a floor, such a trimmer construction may lead to forces on the trimmed plates such that to that end, particularly heavily constructed trimmed plates must be used.

**[0003]** In US patent number 3,613,327, a trimmer construction is described that is provided with a trimming joist with a bearing surface for a plate-shaped element, wherein the trimming joist is equipped with provisions for fastening a longitudinal girder.

**[0004]** In UK patent number 410982, a trimmer accessory is disclosed, with a concrete trimming joist having recesses for trimmed beams. At its extremities, the trimming joist is connected to main beams, abutting in the form of a T, by means of tenons. The main beams have flanges for engaging with adjacent beams.

**[0005]** It is an object of the invention to enable the trimmed plates to be made of relatively light design, also when relatively large openings are to be provided in a floor.

**[0006]** This is achieved according to the invention when the trimming joist is provided, at at least one of its extremities, with a longitudinal girder, abutting in T-shape, having, each time, a bearing end resting on a supporting element and a supporting end which is provided with a stop element, directed substantially towards the trimming joist, with a stop surface, while a trimmed plate-shaped element rests on the bearing surface by an edge area of a first plate side, and, at a distance from that edge area, abuts against the stop surface of the stop element by a second plate side opposite the first plate side. Due to these features, a self-supporting construction is obtained which is independent of adjoining plate-shaped elements and therefore does not load them. This is effected by designing the longitudinal girder, as it were, as two aligned lever arms which are fixedly connected

to the trimming joist functioning as the rotary axis, while the trimming joist is prevented from pivoting downwards by the pressing down of the plate-shaped elements resting thereon, by the stop surfaces of the stop elements contacting the upper side of the trimmed plates. In this manner, a relatively simple and light but reliably supporting trimmer construction is obtained, while further not only the trimmed edge is formed by a profile, viz. by the trimming joist, but also the contiguous edges of the opening formed in the floor, viz. by the longitudinal girders. This latter holds when the trimming joist is provided with two longitudinal girders abutting against it in T-shaped configuration, which design will generally be preferred. However, it is also conceivable to provide the trimming joist on one side with a known bearing or suspending element as discussed hereinabove. In particular, such a solution could be opted for when a side edge of the opening to be formed adjoins a transverse wall on which the bearing or suspending element can rest.

**[0007]** As the trimmer construction no longer rests on an adjoining trimmed plate, this could even be omitted entirely. When an adjoining trimmed plate is indeed present, in a further advantageous manner, without problems, a weakening such as a longitudinal groove can be provided in the area of the trimmed plate where, in the known construction, the bearing elements rested on the trimmed plate. This also holds for transverse grooves, provided that the trimmed plate is constructed to that end in a suitable manner by giving, for instance, in accordance with a previous proposal of the present applicant, the reinforced lower shell of a hollow-core plate a thickness such that the transverse forces and bending forces to be absorbed by the lower shell at the location of the grooves can be transmitted to the supporting wall without problems. Thus, with the trimmer construction according to the invention, in contrast with the earlier discussed known construction, pipes to be concealed in the floor can be laid around and adjacent to the opening provided in that floor.

**[0008]** Floors as referred to are often formed from standard prefab elements such as hollow-core plates. The desired width of a stairwell will often not correspond to a width-size defined by one or a number of prefab elements. In order to obtain the desired size, it is known to form an opening which is wider than the desired opening and to reduce the thus obtained opening to the desired size by providing a filling piece in the opening in a more or less floating manner. With such a trimmer construction having a width which is smaller than the total of the widths of the trimmed plate-shaped elements, it is proposed according to a further embodiment of the invention, that the trimming joist has a length which corresponds to the width referred to, and at least one of the trimmed plates adjoining a longitudinal girder is reduced in width over at least the length over which the longitudinal girder extends along that plate, the arrangement being such that the total of the then remaining widths of the trimmed plates at the location of the trimmer con-

struction is substantially equal to the length of the trimming joist, while a space between the longitudinal girder and an adjacent non-trimmed plate-shaped element is filled up. This can be done by, for instance, a filling piece. This construction has the further advantage that the filling piece can be included in a surrounding frame and thus can be better fitted and secured all around. Also, the edges of the opening formed in the floor then remain bounded by smooth profiles.

**[0009]** The trimmer construction according to the invention further makes it possible, in an advantageous manner, to provide an opening which is not contiguous to a supporting wall, but is provided at a distance therefrom in the floor surface. According to a further embodiment of the invention, this can be realized when the bearing end is fixedly connected to a second bearing end forming part of a second longitudinal girder, abutting, T-shaped, against a second trimming joist with a second bearing surface and having a second supporting end opposite the second bearing end, which supporting end is provided with a second stop element, directed substantially towards the second trimming joist, with a second stop surface, while a second trimmed plate-shaped element rests on the second bearing surface by an edge area of a first plate side, and, at a distance from that edge area, abuts against the second stop surface of the second stop element by a second plate side located opposite the first plate side. Thus, a double-design construction is obtained, while two trimmed plates in alignment with each other with, between them, the double-design construction, form, so to speak, a continuous floor plate with an opening situated at a distance from both ends. Here, again, it is possible to situate the trimmer construction along a sidewall extending in the direction of the plate, thus enhancing the design flexibility when constructing standard prefab elements, since an opening which is independent of the walls supporting the floor and independent of the direction in which the plates extend can be provided with the advantages associated with the invention. In this construction too, in a similar manner to that described hereinabove, it is possible to have the width of the opening deviate from the total of the widths of the trimmed plates.

**[0010]** Although two longitudinal girders, with or without an accessory profile, can be mutually coupled and fixedly connected, so that the starting point could be two equal elements, it is further preferred, with such a construction, that the first and the second longitudinal girder consist of a one-piece, continuous girder.

**[0011]** The invention also relates to a trimmer accessory to be utilized with a trimmer construction as described hereinabove and provided with a trimming joist with a bearing surface for at least one plate-shaped element, the trimming joist being equipped at at least one of its extremities with provisions for attaching a longitudinal girder, abutting, in T-shape, having, each time, a bearing end and a supporting end with provisions for fastening a stop element, directed substantially towards the

trimming joist, with a stop surface for a trimmed plate-shaped element. These provisions can have any suitable form and design and be industrially fitted and form a permanent connection, for instance be welding connections, or consist of an industrially or otherwise prepared connection to be fitted on the building site and which is detachable, for instance mountable coupling means. Naturally, welding can also take place on the building site or the respective connection can be provided in a different manner. Further, as a rule, it will be preferred that the trimming joist supports a longitudinal girder at both ends. When a longitudinal girder is present at one end of the trimming joist only, then, preferably, the other end of the trimming joist is provided with provisions for supporting the trimming joist, through provisions suitable to that end, such as a bearing element or a suspension lug, on an adjacent element, such as a side wall or a plate.

**[0012]** As already noted, the trimmer construction according to the invention does not need to rest on an adjacent floor plate. However, in order to obtain a good abutment between the trimmer construction and the adjacent floor plate, it may be preferred according to a further embodiment of the invention, that the longitudinal girders consist of U-profiles, having their open U-side facing away from the trimming joist. This construction also has its advantages when using filling pieces, as discussed hereinabove.

**[0013]** In order to, on the one hand, place a trimmed plate on the bearing surface of the trimming joist without many problems and, on the other hand, to provide a bending-stiff trimming joist, it is proposed, according to a further embodiment of the invention, that the trimming joist be formed by an L-shaped profile of which one leg forms the bearing surface and the other leg is provided with a reinforced head.

**[0014]** When mounting the trimmer construction, first, the trimmer accessory can be placed and supported before the trimmed plate-shaped element is provided. If, however, according to a further embodiment of the invention, at least one of the longitudinal girders carries a locking element at its supporting end, at a distance from the stop element, the trimmer accessory can first be slid onto the trimmed plate-shaped element, i.e. between stop element and locking element as far as on the bearing surface of the trimming joist, and thereupon this structure can be placed on the supporting walls in the manner of a non-trimmed plate-shaped element. The locking element can then be fitted in such a way that it can be removed after the trimmed plate with the trimmer accessory slipped onto it has been placed, because this locking element is only an assembling accessory and has no more function in the final construction.

**[0015]** When an opening in a floor built up from plates is not to be arranged in a manner so as to be contiguous to a supporting wall, but at a distance therefrom, this can be realized with a trimmer accessory according to the invention when a bearing end is connected to a bearing end of a second trimmer accessory, of mirror-symmetri-

cal design, with the longitudinal girders of both trimmer accessories extending in line and functioning as one whole or being designed as one whole. Thus, a trimmer accessory can be formed which, in fact, consists of two longitudinal girders connected by two trimmed girders for determining the opening to be created in the floor, while the parts of the longitudinal girders extending beyond the trimmed girders ensure the desired strength and stability by means of the stop elements resting on the trimmed plates. When, for instance, abutment against a sidewall is involved, a longitudinal girder suffices Which extends along both trimmed girders, which are further provided with fastening provisions for resting on a neighboring element such as a sidewall.

**[0016]** With reference to embodiments represented in the Figures, the trimmer construction and the trimmer accessory according to the invention will presently be further elucidated, albeit exclusively by way of non-limitative example. In the drawing:

Fig. 1 schematically shows, in perspective, an elevational view of a first embodiment of the trimmer construction according to the invention;

Fig. 2 schematically shows a cross section of the trimmer construction according to Fig. 1;

Fig. 3 schematically shows, in perspective, a detailed view of the trimmer construction of Fig. 1 with grooves provided in the floor for pipes, ducts and the like; and

Fig. 4 schematically shows, in perspective, a further variant embodiment of the trimmer construction according to the invention.

**[0017]** In Fig. 1, a trimmer construction 1 is represented with which it is possible to create an opening 20 in a floor 2 for, for instance, the provision of a stairwell. Generally, the floor is formed by prefabricated plate-shaped elements 3 laid side by side, resting, by extremities 3a and 3b on supporting walls (not shown). Preferably, the plate-shaped elements 3, as shown, are designed as hollow-core plates manufactured from concrete.

**[0018]** The opening 20 is formed by three trimmed plate-shaped elements 7, deviating from the plate-shaped element 3 only in that they have been shortened over the required length for forming the opening 20. At the location of the opening 20, the front edges of the trimmed plate-shaped elements 7 are covered by a trimming joist 5. As shown in Fig. 2, the trimming joist 5 is in the form of a substantially L-shaped profile with a leg 6 forming a bearing surface for the trimmed plate-shaped elements 7, and a leg 17 provided with a reinforced head 18. The reinforced head 18 gives the profile rigidity, but also allows the trimmed plate-shaped element 7 to be positioned on the leg 6 without much maneuvering, the element 7 then resting with the plate side 14, the bottom side, on the leg 6 of the trimming joist 5.

**[0019]** Further, at its two extremities, the trimming joist 5 is connected to longitudinal girders 8 extending trans-

versely thereto, which, thus, each abut, T-shaped, against the trimming joist 5 and which, as shown in Fig. 1, substantially consist of a U-profile, whose open U-side faces away from the trimming joist 5. The connection between the trimming joist 5 and the longitudinal girders 8 is not shown in detail but can be realized in any suitable manner. For instance, a welding connection can be considered, or detachable coupling means. The longitudinal girders 8 each have a bearing end 9 for resting on a supporting wall and a supporting end 10 provided with a plate-shaped stop element 11. With its plate surface, the plate-shaped stop element 11 extends substantially at right angles to the longitudinal girder 8 and parallel to the leg 6, and is further situated such that it stops against the plate side 15, the upper side, of a trimmed plate-shaped element 7, when this is borne on the leg 6 of the trimming joist 5. The stop element 11 can be connected to the supporting end fixedly as well as detachably. The whole of trimming joist 5 and longitudinal girders 8 with stop elements 11 forms a trimmer accessory 21.

**[0020]** When the trimmer accessory 21 has been fitted, with the longitudinal girders 8 resting by their bearing ends 9 on the supporting walls and the trimmed plate-shaped elements 7 resting on the trimming joist 5, the force applied by the trimmed plate-shaped elements 7 to the trimming joist, which force wants the trimmer accessory 21 to pivot downwards about its which force wants the trimmer accessory 21 to pivot downwards about its bearing ends 9, is absorbed by the stop elements 11 contacting against the plate side 15, so that the trimmed plate-shaped elements 7 together with the trimmer accessory 21 in the fitted condition continue to form a rigid horizontal arrangement. Thus, with the aid of the trimmer accessory 21, a self-supporting trimmer construction 1 is obtained which is independent of the plate-shaped elements 3 adjoining the trimmer construction 1. Further, the plate edges bounding the opening 20 are smoothly finished with profiles.

**[0021]** As the trimmer construction 1 is independent of the adjoining plate-shaped element 3, i.e. for absorbing the forces, no use needs to be made of those adjoining plate-shaped elements 3, when designing these latter, it does not need to be taken into account whether a trimmer construction 1 is present or not. These elements can therefore be designed in a standard manner and be equipped in the usual manner with provisions such as grooves for accommodating pipes to be concealed in the floor 2, more in particular also in the direct proximity of the opening 20 provided in the floor 2 with the trimmer construction 1, as shown in the exemplary embodiment represented in Fig. 3. Here, the adjoining plate-shaped element 3 is provided with a recess in the shape of a cross groove 24 near the end edge, which, at the location of the opening 20, merges into a longitudinal groove 25, to which a cross groove 27 is contiguous, terminating in the longitudinal edge at the location of the trimming joist 5, all this in a manner such that a cross groove 28 provided in the end edge of the trimmed plate-shaped ele-

ment 7 is situated in alignment with the cross groove 27 as also shown in Fig. 2. Thus, by providing a suitable passage 29 in the body part of the longitudinal girder 8, a pipe channel extending all around the opening 20 can be formed.

**[0022]** It is noted that in the exemplary embodiments represented a trimmed plate-shaped element 7 along which a longitudinal girder 8 extends, is provided over its length with a recess 22 for receiving the longitudinal girder 8, which, hence, comes to lie with its top surface in the upper plane of the floor 2. By opting for a differently designed longitudinal girder or by selecting the U-shape of the longitudinal girder such that it can be slid onto the plate-shaped element, if desired, the required space can be designed such that the provision of a recess in a plate-shaped element can be dispensed with.

**[0023]** On the other hand, this recess can also be enlarged, thus creating the possibility to obtain an opening 20 having a width smaller than the total of the widths of a number of trimmed plate-shaped elements 7, as will be further elucidated with reference to Fig. 4. The length of the trimming joist 5 is then geared to the desired width of the opening 20, which is larger than the total of the widths of the two trimmed plate-shaped elements 7 but smaller than the total of the widths of the three trimmed plate-shaped elements 7. By now providing one of the trimmed plate-shaped elements 7 with a recess 22 of a width substantially equal to the difference between the total of the widths of the three trimmed plate-shaped elements 7 and the length of the trimming joist 5, the trimmer accessory 21 can be placed in the manner proposed by the invention with its longitudinal girders 8 along the edges of the trimmed plate-shaped elements 7. The thus created space 30 between a longitudinal girder 8 and an adjoining plate-shaped element 3 can then be filled by, for instance, pouring concrete or placing a prefab element.

**[0024]** Additionally, it is noted here that also a recess can be provided in the other trimmed plate-shaped element 7 placed in the other extremity of the trimming joist 5. This, in turn, gives more freedom in positioning the opening 20 in a floor built up from standard elements according to a fixed pattern.

**[0025]** For realizing the trimmer construction 1, the trimmer accessory 21 can be placed at the location provided to that end with its bearing ends 9 on the supporting wall and further be horizontally supported or shored-up, whereupon the trimmed plate-shaped element 7 can be laid on the one side on the supporting wall and on the other side on the trimming joist 5. Due to the stop element 11 contacting against the top surface of the trimmed plate-shaped element 7, a stable construction is obtained, whereupon the support or shore can be removed. Providing a support or shore can be dispensed with when at least one of the longitudinal girders 8 is provided at its supporting end 10 with a plate-shaped locking element 12, represented in Fig. 2, extending parallel to the stop element 11 and connected to the U-leg of the longitudinal

girder 8 located opposite the U-leg bearing the stop element 11. The trimmer accessory 21 can then be slid onto the trimmed plate-shaped element 7 until the front edge of that trimmed plate-shaped element 7 rests on the leg 6 of the trimming joist 5. Hereafter, the trimmed plate-shaped element 7 with slid-on trimmer accessory 21 can be taken up in the manner of a non-trimmed plate-shaped element and be laid on the provided place on the supporting walls, whereupon the trimmer construction 1 can be finished without a shore or support being necessary.

**[0026]** In the exemplary embodiments, providing an opening adjoining a supporting wall and at a distance from a sidewall is represented. In the event an opening is contiguous to a sidewall, at that location, the longitudinal girder can be dispensed with and be replaced with a suspending or bearing provision on the trimming joist, with which it bears on or against this sidewall. When the opening is not situated contiguous to the wall, this can be realized by designing the construction doubly, in a mirror symmetrical manner. In that situation, Fig. 1 or Fig. 4 could be viewed as a cross section halfway the opening provided in the floor at a distance from the supporting wall. Naturally, such an opening can again be contiguous to a sidewall, while, then, one of the longitudinal girders can be dispensed with through replacement by bearing or suspending provisions on the, in that case, two trimming joists.

**[0027]** It is self-evident that, within the framework of the invention as defined in the accompanying claims, the exemplary embodiments discussed hereinabove and represented in the drawings can be modified and varied in many ways. For instance, both the stop element and the locking element can be designed differently, for instance L-shaped or Z-shaped, while then, the longitudinal girder could consist of an L-profile, whose horizontal leg could extend below the adjoining plate-shaped part. Also, several stop elements can be provided on a longitudinal girder, which, if desired, could form a long, one-part continuous covering plate. What can be considered, further, is to connect the generally H-shaped trimmer accessory between the bearing ends forming the extremities by a further profile, so that the opening in the floor would be surrounded entirely by smooth profiles. In addition, it could be considered to replace two oppositely located stop elements with a plate-shaped strip extending over the full width of the trimmer accessory.

## Claims

1. A trimmer accessory (21) to be utilized in a trimmer construction (1) and provided with a trimming joist (5) with a bearing surface (6) for at least one plate-shaped element (7), wherein at least one of its extremities, the trimming joist (5) is provided with a longitudinal girder (8) abutting in the form of a T, and equipped with provisions for fastening the longitudinal girder (8), the or each girder (8) having a bearing

- end (9) and a supporting end (10), **characterized in that** the or each girder (8) has provisions for fastening a stop element (11), directed substantially towards the trimming joist (5), with a stop surface for the trimmed plate-shaped element (7). 5
2. A trimmer accessory (21) according to claim 1, **characterized in that**, at both extremities, the trimming joist (5) is provided with provisions for fastening the longitudinal girder (8) abutting in the form of a T, having, each time, a bearing end (9) and a supporting end (10) with provisions for fastening a stop element (11), directed substantially towards the trimming joist (5), with a stop surface for a trimmed plate-shaped element (7). 10
3. A trimmer accessory (21) according to claim 1 or 2, **characterized in that** the provisions consist of previously provided and/or prepared welding connections and/or mountable coupling means. 20
4. A trimmer accessory (21) according to any one of claims 1-3, **characterized in that** the longitudinal girders (8) consist of U-profiles having their open U-side facing away from the trimming joist. 25
5. A trimmer accessory (21) according to any one of claims 1-4, **characterized in that** the trimming joist (5) is formed by an L-shaped profile whose one leg (6) forms the bearing surface and whose other leg is provided with a reinforced head (18). 30
6. A trimmer accessory (21) according to any one of claims 1- 5, **characterized in that** at least one of the longitudinal girders (8), at its supporting end (10), bears a locking element (12) at a distance from the stop element (11). 35
7. A trimmer accessory (21) according to any one of claims 1-6, **characterized in that** a bearing end (9) is connected to a bearing end (9) of a second trimmer accessory (21) of mirror-symmetrical design, while the longitudinal girders (8) of both trimmer accessories (21) extend in line with each other and function as one whole or are designed as one whole. 40 45
8. A trimmer construction (1) for a floor (2) which is built up from plate-shaped elements (3), which rest on supporting elements, such as supporting walls, the construction (1) being provided with a trimming joist (5), provided with at least one bearing surface (6) for at least one trimmed plate-shaped element (7) and which transmits bearing forces applied thereto by one of the trimmed plate-shaped elements (7) to the supporting element, wherein the trimming joist (5) is provided at at least one of its extremities with a longitudinal girder (8) abutting in a T-shape, the or each girder (8) having one bearing end (9) resting on the supporting element and one supporting end (10), **characterized in that** the or each girder (8) is provided with a stop element (11) with a stop surface, directed substantially towards the trimming joist (5), while one of the trimmed plate-shaped elements (7) rests on the bearing surface (6) by an edge area of a first plate side (14), and, at a distance from that edge area, abuts against the stop surface of the stop element (11) by a second plate side (15) located opposite the first plate side (14). 50
9. A trimmer construction (1) according to claim 8, **characterized in that** with a trimmer construction (1) having a width which is smaller than the total of the widths of the trimmed plate-shaped elements (7), the trimming joist (5) has a length which corresponds to the width referred to, and at least one of the trimmed plates (7) adjoining a longitudinal girder (8) is reduced in width over at least the length along which the longitudinal girder (8) extends along said plate (7), the arrangement being such that the total of the widths of the trimmed plates (7) then remaining at the location of the trimmer construction (1) is substantially equal to the length of the trimming joist (5), while a space between the longitudinal girder (8) and an adjoining, non-trimmed plate-shaped element (7) has been filled up. 55
10. A trimmer construction (1) according to claim 8 or 9, **characterized in that** the bearing end (9) is fixedly connected with a second bearing end (9) which forms part of a second longitudinal girder (8) abutting in T-shape against a second trimming joist (5) having a second bearing surface (6) and, located opposite the second bearing end (9), a second supporting end (10) which is provided with a second stop element (11) with a second stop surface, directed substantially towards the second trimming joist (5), while a second trimmed plate-shaped element (7) rests on the second bearing surface (6) by an edge area of a first plate side (14) and at a distance from that edge area, abuts against the second stop surface (15) of the second stop element (11) by a second plate side located opposite the first plate side (15). 60
11. A trimmer construction (1) according to claim 10, **characterized in that** the first and the second longitudinal girder (8) consist of a one-part continuous girder. 65

#### Patentansprüche

1. Wechselbalken-Zubehörsatz (21) zur Verwendung in einer Wechselbalkenkonstruktion (1) und versehen mit einem Wechselbalken (5) mit einer Anlagefläche (6) für zumindest ein plattenförmiges Element (7), wobei zumindest einer seiner Endpunkte, der

- Wechselbalken (5), mit einem Längsträger (8) versehen ist, der in der Form eines T auftritt und mit Einrichtungen zur Befestigung des Längsträgers (8) ausgestattet ist, wobei der oder jeder Balken (8) ein Anlageende (9) und ein Halteende (10) aufweist, **dadurch gekennzeichnet, dass** der oder jeder Balken (8) Einrichtungen zum Befestigen eines im Wesentlichen zum Wechselbalken (5) gerichteten Anschlagelements (11) mit einer Anschlagfläche für das getrimmte plattenförmige Element (7) aufweist.
2. Wechselbalken-Zubehörsatz (21) nach Anspruch 1, **dadurch gekennzeichnet, dass** der Wechselbalken (5) an beiden Endpunkten mit Einrichtungen zum Befestigen des Längsträgers (8), der in der Form eines T auftritt, versehen ist und jedes Mal ein Anlageende (9) und ein Halteende (10) mit Einrichtungen zum Befestigen eines im Wesentlichen zum Wechselbalken (5) gerichteten Anschlagelements (11) mit einer Anschlagfläche für ein getrimmtes plattenförmiges Element (7) aufweist.
3. Wechselbalken-Zubehörsatz (21) nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** die Einrichtungen aus vorher bereitgestellten und/oder angefertigten Schweißverbindungen und/oder anbringbaren Kopplungsmitteln bestehen.
4. Wechselbalken-Zubehörsatz (21) nach einem der Ansprüche 1 bis 3, **dadurch gekennzeichnet, dass** die Längsträger (8) aus U-Profilen bestehen, deren offene U-Seite vom Wechselbalken weg gerichtet ist.
5. Wechselbalken-Zubehörsatz (21) nach einem der Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** der Wechselbalken (5) durch ein L-förmiges Profil gebildet ist, dessen einer Schenkel (6) die Anlagefläche bildet, und dessen anderer Schenkel mit einem verstärkten Kopf (18) versehen ist.
6. Wechselbalken-Zubehörsatz (21) nach einem der Ansprüche 1 bis 5, **dadurch gekennzeichnet, dass** zumindest einer der Längsträger (8) an seinem Halteende (10) in einem Abstand vom Anschlagelement (11) ein Sperrelement (12) trägt.
7. Wechselbalken-Zubehörsatz (21) nach einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet, dass** ein Anlageende (9) mit einem Anlageende (9) eines zweiten Wechselbalken-Zubehörsatzs (21) von spiegelsymmetrischer Gestaltung verbunden ist, während sich die Längsträger (8) beider Wechselbalken-Zubehörsätze (21) in einer Linie miteinander erstrecken und als ein Ganzes wirken oder als ein Ganzes gestaltet sind.
8. Wechselbalkenkonstruktion (1) für einen Boden (2), der aus plattenförmigen Elementen (3) aufgebaut ist, die auf Halteelementen wie etwa Haltewänden ruhen, wobei die Konstruktion (1) mit einem Wechselbalken (5) versehen ist, der mit zumindest einer Anlagefläche (6) für zumindest ein getrimmtes plattenförmiges Element (7) versehen ist und Tragkräfte, die darauf durch eines der getrimmten plattenförmigen Elemente (7) ausgeübt werden, zum Halteelement überträgt, wobei der Wechselbalken (5) an zumindest einem seiner Endpunkte mit einem Längsträger (8) versehen ist, der in einer T-Form auftritt, wobei der oder jeder Längsträger ein auf dem Halteelement ruhendes Anlageende (9) und ein Halteende (10) aufweist, **dadurch gekennzeichnet, dass** der oder jeder Träger (8) mit einem Anschlagelement (11) mit einer Anschlagfläche versehen ist, die im Wesentlichen zum Wechselbalken (5) gerichtet ist, während eines der getrimmten plattenförmigen Elemente (7) durch einen Randbereich einer ersten Plattenseite (14) auf der Anlagefläche (6) ruht und in einem Abstand von diesem Randbereich durch eine zweite Plattenseite (15), die sich entgegengesetzt zur ersten Plattenseite (14) befindet, auf die Anschlagfläche des Anschlagelements (11) trifft.
9. Wechselbalkenkonstruktion (1) nach Anspruch 8, **dadurch gekennzeichnet, dass** der Wechselbalken (5) bei einer Wechselbalkenkonstruktion (1) mit einer Breite, die kleiner als die Summe der Breiten der getrimmten plattenförmigen Elemente (7) ist, eine Länge aufweist, die der genannten Breite entspricht, und zumindest eine der getrimmten Platten (7), die an einen Längsträger (8) angrenzt, über zumindest die Länge, entlang der sich der Längsträger (8) entlang der Platte (7) erstreckt, eine verringerte Breite aufweist, wobei die Anordnung derart ist, dass die Summe der Breiten der getrimmten Platten (7), die dann an der Stelle der Wechselbalkenkonstruktion (1) verbleiben, im Wesentlichen der Länge des Wechselbalkens (5) gleich ist, während ein Raum zwischen dem Längsträger (8) und einem angrenzenden nicht getrimmten plattenförmigen Element (7) aufgefüllt wurde.
10. Wechselbalkenkonstruktion (1) nach Anspruch 8 oder 9, **dadurch gekennzeichnet, dass** das Anlageende (9) fest mit einem zweiten Anlageende (9) verbunden ist, das einen Teil eines zweiten Längsträgers (8) bildet, der in einer T-Form auf einen zweiten Wechselbalken (5) mit einer zweiten Anlagefläche (6) auftritt, und gegenüber dem zweiten Anlageende (9) befindlich ein zweites Halteende (10) aufweist, das mit einem zweiten Anschlagelement (11) mit einer zweiten Anschlagfläche versehen ist, die im Wesentlichen zum zweiten Wechselbalken (5) gerichtet ist, während ein zweites getrimmtes plattenförmiges Element (7) durch einen Randbereich einer ersten Plattenseite (14) auf der zweiten Anlagefläche (6) ruht und in einem Abstand von diesem Randbereich durch eine zweite Plattenseite (15), die sich entgegengesetzt zur ersten Plattenseite (14) befindet, auf die Anschlagfläche des Anschlagelements (11) trifft.

gefläche (6) ruht und in einem Abstand von diesem Randbereich durch eine zweite Plattenseite, die sich entgegengesetzt zur ersten Plattenseite (15) befindet, auf die zweite Anschlagfläche (15) des zweiten Anschlaglements (11) trifft.

11. Wechselbalkenkonstruktion (1) nach Anspruch 10, **dadurch gekennzeichnet, dass** der erste und der zweite Längsträger (8) aus einem einteiligen fortlaufenden Träger bestehen.

### Revendications

1. Accessoire pour enchevêtrement (21) à utiliser dans une construction d'enchevêtrement (1) et pourvu d'une solive d'enchevêtrement (5) avec une surface d'appui (6) destinée à au moins un élément configuré en panneau (7), dans lequel au niveau d'au moins l'une de ses extrémités, la solive d'enchevêtrement (5) est prévue avec une poutrelle longitudinale (8) venant en butée sous la forme d'un T, et équipée de fournitures permettant de fixer la poutrelle longitudinale (8), la ou chaque poutrelle (8) comportant une extrémité d'appui (9) et une extrémité de support (10), **caractérisé en ce que** la ou chaque poutrelle (8) comporte des fournitures permettant de fixer un élément d'arrêt (11), orienté essentiellement vers la solive d'enchevêtrement (5), présentant une surface d'arrêt destinée à l'élément enchevêtré configuré en panneau (7).
2. Accessoire pour enchevêtrement (21) selon la revendication 1, **caractérisé en ce que**, au niveau des deux extrémités, la solive d'enchevêtrement (5) est dotée de fournitures permettant de fixer la poutrelle longitudinale (8) venant en butée sous la forme d'un T, ayant, chaque fois, une extrémité d'appui (9) et une extrémité de support (10) avec des fournitures permettant de fixer un élément d'arrêt (11), orienté essentiellement vers la solive d'enchevêtrement (5), avec une surface d'arrêt destinée à un élément enchevêtré configuré en panneau (7).
3. Accessoire pour enchevêtrement (21) selon la revendication 1 ou 2, **caractérisé en ce que** les fournitures sont constituées de moyens de raccordement prévus et/ou préparés antérieurement par soudure et/ou de moyens de couplage pouvant être fixés.
4. Accessoire pour enchevêtrement (21) selon l'une quelconque des revendications 1 à 3, **caractérisé en ce que** les poutrelles longitudinales (8) sont constituées de profilés en U présentant leur côté ouvert du U tourné vers le côté opposé à la solive d'enchevêtrement.
5. Accessoire d'enchevêtrement (21) selon l'une quelcon-

que des revendications 1 à 4, **caractérisé en ce que** la solive d'enchevêtrement (5) est formée par un profilé configuré en L dont une branche (6) forme la surface d'appui et dont l'autre branche est dotée d'une tête de renforcement (18).

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6. Accessoire pour enchevêtrement (21) selon l'une quelconque des revendications 1 à 5, **caractérisé en ce que** l'une au moins des poutrelles longitudinales (8), au niveau de son extrémité d'appui (10), supporte un élément de blocage (12) à une certaine distance de l'élément d'arrêt (11).

7. Accessoire pour enchevêtrement (21) selon l'une quelconque des revendications 1 à 6, **caractérisé en ce qu'**une extrémité d'appui (9) est raccordée à une extrémité d'appui (9) d'un second accessoire pour enchevêtrement (21) de configuration symétrique type miroir, tandis que les poutrelles longitudinales (8) des pièces accessoires pour enchevêtrement (21) s'étendent en alignement l'un avec l'autre et fonctionnent comme un tout ou sont conçus comme un tout.

8. Construction d'enchevêtrement (1) destinée à un plancher (2) qui est construit à partir d'éléments configurés en panneau (3), lesquels reposent sur des éléments de support, tels que des parois de support, la construction (1) étant pourvue d'une solive d'enchevêtrement (5), dotée d'au moins une surface d'appui (6) destinée à au moins un élément enchevêtré configuré en panneau (7) et qui transmet des forces de support qui lui sont appliquées par l'un des éléments enchevêtrés configurés en panneau (7) à l'élément de support, dans laquelle la solive d'enchevêtrement (5) est dotée, au niveau d'au moins l'une de ses extrémités, d'une poutrelle longitudinale (8) venant en butée selon une configuration en forme de T, la ou les poutrelles (8) comportant une extrémité d'appui (9) reposant sur l'élément de support et une extrémité de support (10), **caractérisée en ce que** la ou chaque poutrelle (8) est prévue avec un élément d'arrêt (11) doté d'une surface d'arrêt, orienté essentiellement vers la solive d'enchevêtrement (5), tandis que l'un des éléments enchevêtrés configurés en panneau (7) repose sur la surface de support (6) par l'intermédiaire d'une surface de bordure d'un premier côté de panneau (14), et, à une certaine distance de cette surface de bordure, vient en butée contre la surface d'arrêt de l'élément d'arrêt (11) par l'intermédiaire d'un second côté de panneau (15) placé à l'opposé du premier côté de panneau (14).

9. Construction d'enchevêtrement (1) selon la revendication 8, **caractérisée en ce qu'**avec une construction d'enchevêtrement (1) présentant une largeur qui est plus petite que la somme des largeurs des éléments enchevêtrés configurés en panneau (7), la solive

d'enchevêtrement (5) présente une longueur qui correspond à la largeur qui lui correspond, et **en ce qu'**au moins l'un des panneaux enchevêtrés (7) adjacent à une poutrelle longitudinale (8) est réduit en largeur sur la longueur au moins le long de laquelle la poutrelle longitudinale (8) s'étend le long dudit panneau (7), l'agencement étant tel que la somme des largeurs des panneaux enchevêtrés (7) restant alors au niveau de la position de la construction d'enchevêtrement (1) est essentiellement égale à la longueur de la solive d'enchevêtrement (5), tandis qu'un espace entre la poutrelle longitudinale (8) et l'élément adjacent configuré en panneau non enchevêtré (7) a été rempli.

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10. Construction d'enchevêtrement (1) selon la revendication 8 ou 9, **caractérisée en ce que** l'extrémité d'appui (9) est raccordée de façon fixe à une seconde extrémité d'appui (9) qui fait partie d'une seconde poutrelle longitudinale (8) venant en butée sous forme de T contre une seconde solive d'enchevêtrement (5) présentant une seconde surface d'appui (6) et, placée à l'opposé de la seconde extrémité d'appui (9), une seconde extrémité d'appui (10) qui est dotée d'un second élément d'arrêt (11) avec une seconde surface d'arrêt, orienté essentiellement vers la seconde solive d'enchevêtrement (5), tandis qu'un second élément enchevêtré configuré en panneau (7) repose sur la seconde surface d'appui (6) par l'intermédiaire d'une surface de bordure d'un premier côté de panneau (14) et à une certaine distance de cette surface de bordure, vient en butée contre la seconde surface d'arrêt (15) du second élément d'arrêt (11) par l'intermédiaire d'un second côté de panneau placé à l'opposé du premier côté de panneau (14).

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11. Construction d'enchevêtrement (1) selon la revendication 10, **caractérisée en ce que** la première et la seconde poutrelles longitudinales (8) sont constituées d'une poutrelle continue en une seule partie.

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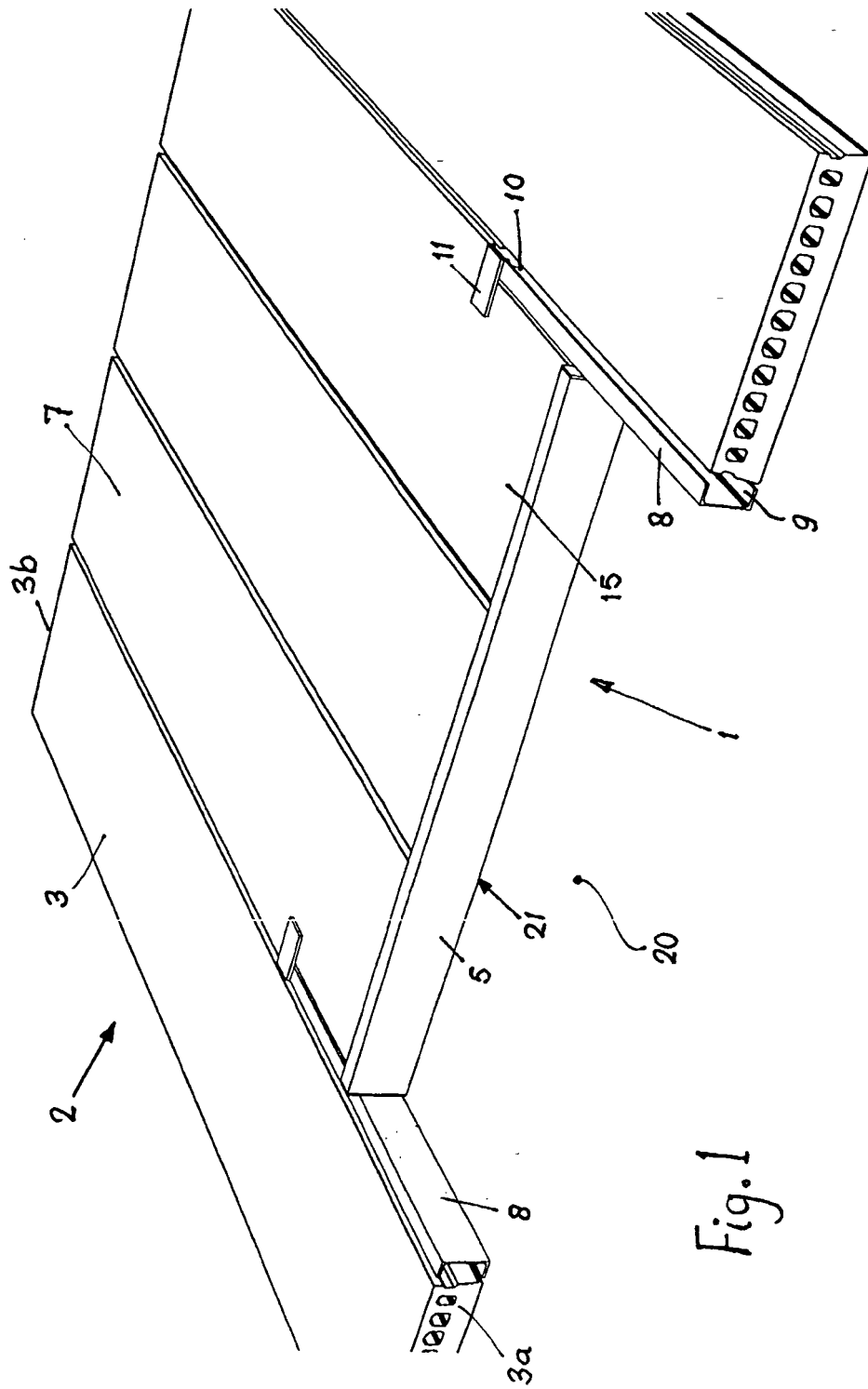
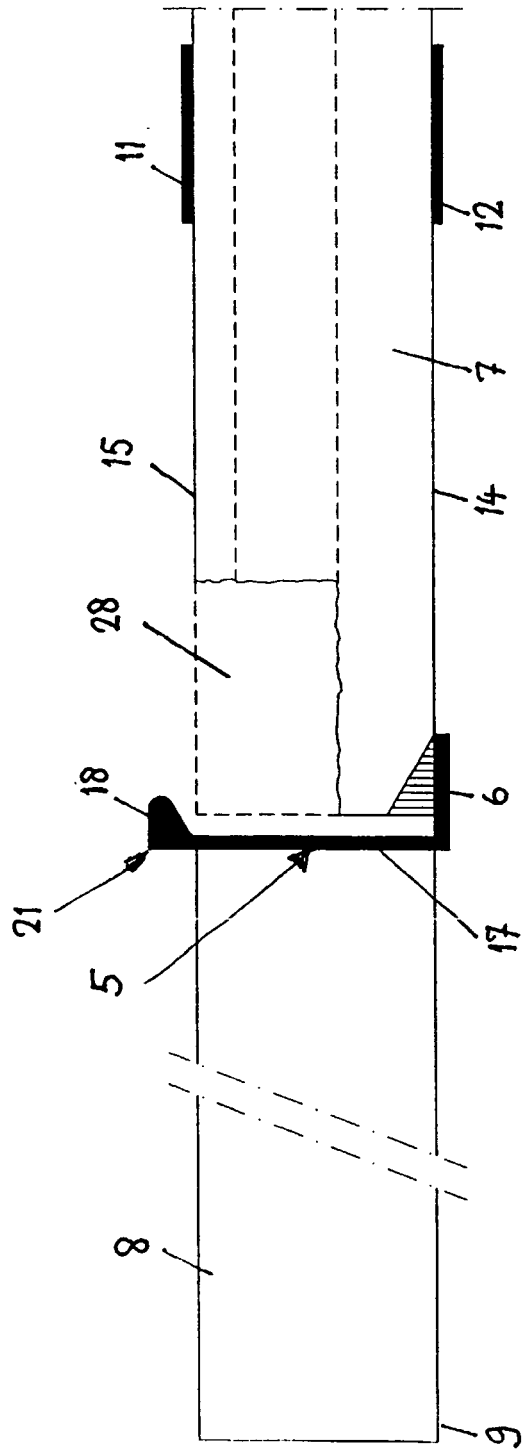


Fig.1



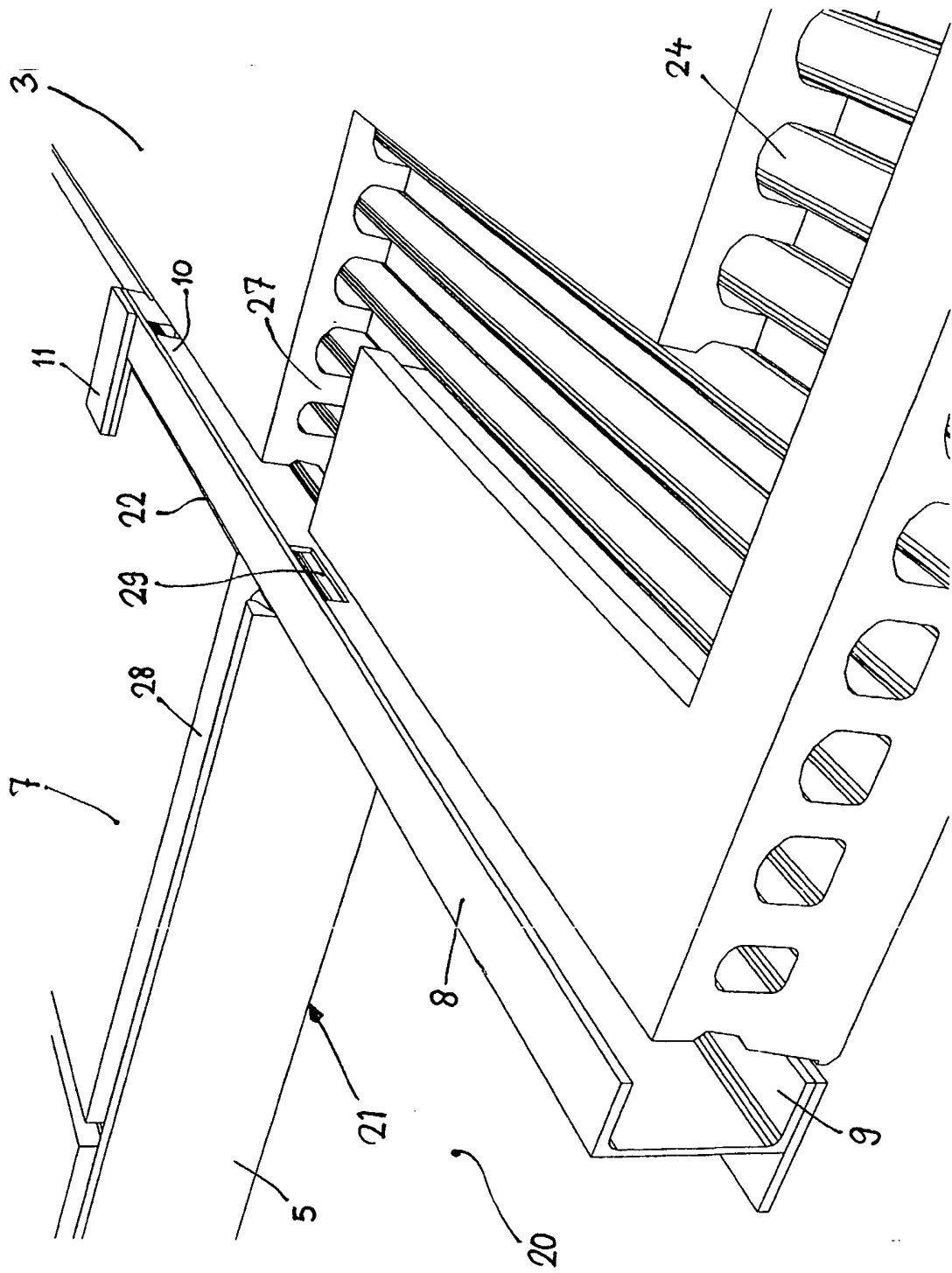


Fig. 3

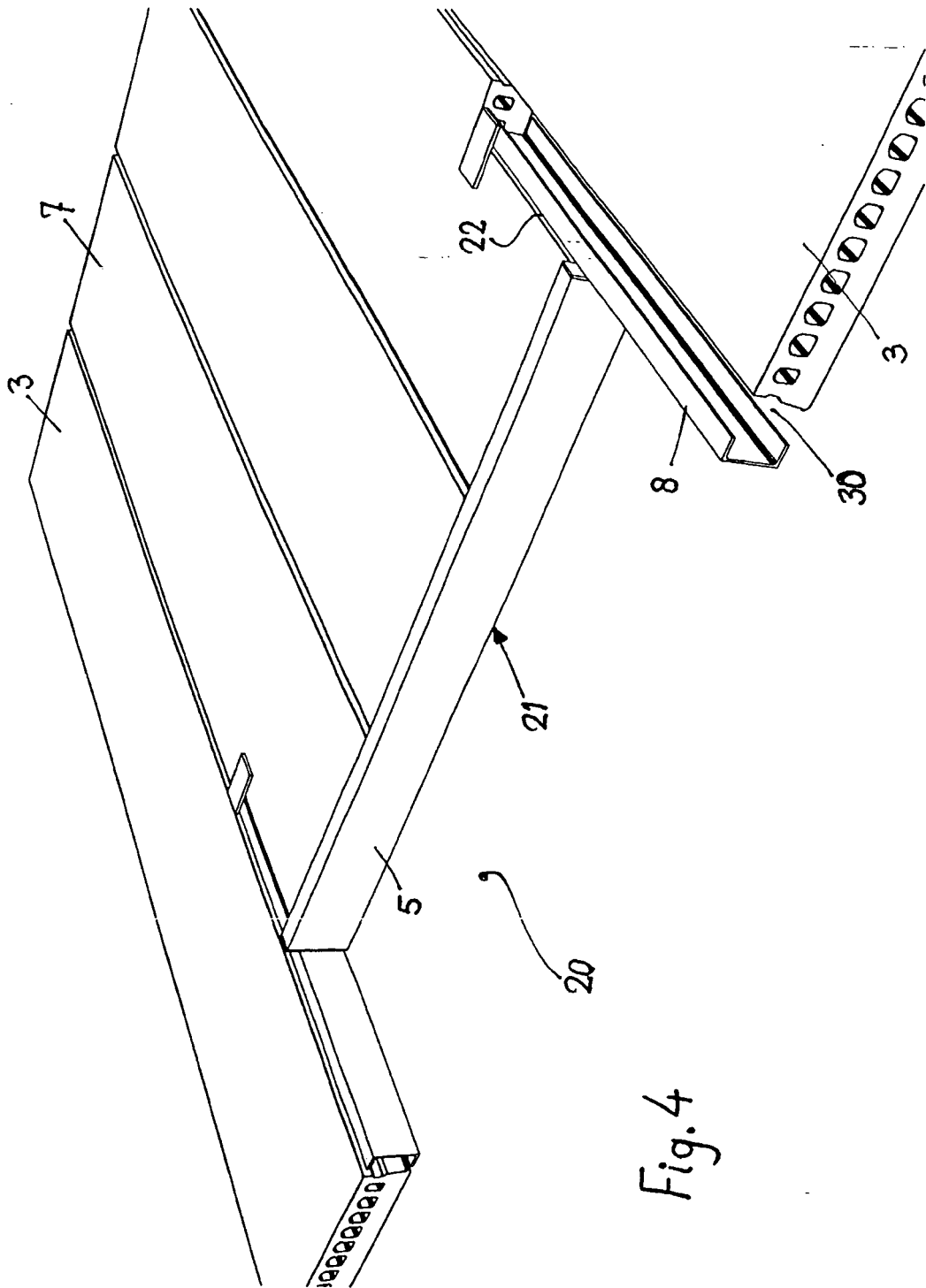


Fig. 4

**REFERENCES CITED IN THE DESCRIPTION**

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**Patent documents cited in the description**

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