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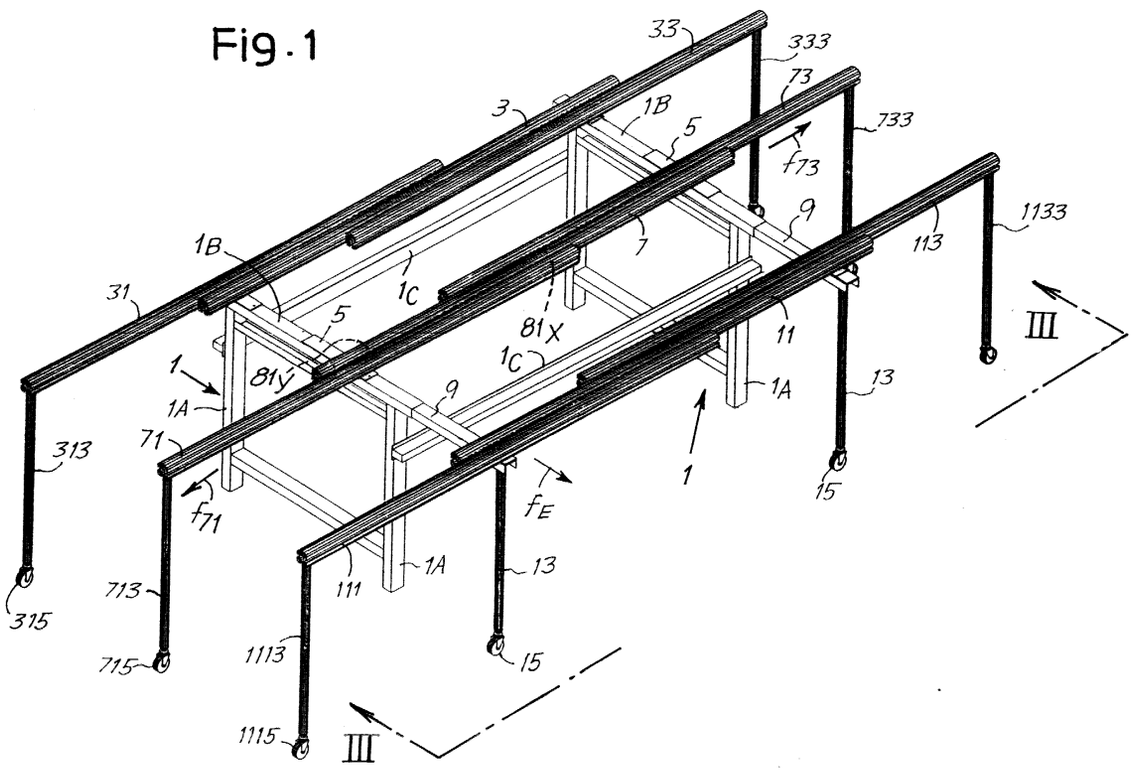
(54) A bench for working on metal door and window frames and other bulky items

(57) On the base frame (1) are pairs of longitudinal tracks (3, 7, 11) for extending, from opposite sides of the base frame, supporting beams (31, 33; 71, 73; 111, 113) with end legs (313, 315); this gives an increase in the surface area on each side of the same order of magnitude as the dimension of the base frame (1) in the direction of extension.

Fig.1



EP 1 138 447 A2

Description

[0001] A bench for working on metal door or window frames and the like, with components that extend on tracks to increase the usable surface area for working on on one side or both sides, to half the dimension of the fixed frame, is already in use. This bench offers limited capacity for increasing the useable surface area for supporting the items being handled.

[0002] The innovation makes it possible to offer a much greater increase in the usable surface area. This and other objects and advantages will become obvious in the course of the following text.

[0003] The present bench is of the type that comprises a base frame and supports that can be extended from said base frame to increase the surface area that can be used for working on. According to the innovation the bench comprises, on the base frame, pairs of longitudinal tracks for extending, from opposite sides of the base frame, supporting beams with end legs, such as to obtain - with said extendable beams - an increase in the surface area on each side of the base frame of the same order of magnitude as the dimension of the base frame in the direction of extension.

[0004] The bench may also comprise sliding tracks perpendicular to the previous tracks, for the lateral extension of a sliding assembly from one edge or from each edge of the base frame, in which case said sliding assembly or each of said sliding assemblies similarly has a pair of longitudinal tracks for extending supporting beams with end legs by corresponding amounts on opposite sides of said sliding assembly.

[0005] Both the extendable beams and the sliding assembly or assemblies have legs capable of sliding or rolling on the floor.

[0006] Said base frame - and, if present, said sliding assembly or assemblies - may possess fixed sections forming two opposite tracks, each of said sections being able to guide two beams along its opposite sides for extension in opposite directions. The fixed sections and the beams may have the same cross section.

[0007] Attached to each sliding beam is a sliding shoe, and attached to the corresponding track is a supporting shoe; said two shoes work together to facilitate sliding and to act as stops at the position of maximum extension of the associated beam.

[0008] A clearer understanding of the innovation will be gained from the description and the attached drawing, the latter showing a non-restrictive example of this innovation. In the drawing:

Fig. 1 is a perspective view of a bench constructed in accordance with the innovation;
Figs 2 and 3 are a plan view and a view on III-III as marked in Fig. 1;
Figs 4 and 5 show enlarged sections taken on IV-IV and V-V as marked in Fig. 2, limited to the sections forming the tracks and beams;
Fig. 6 is a perspective view of a sliding shoe; and
Fig. 7, which is analogous to Fig. 1, shows a variant.

[0009] In accordance with the illustrations of the accompanying drawing, and with initial reference to Figs 1 to 6, the number 1 is a general reference for a fixed base frame which comprises two end trusses 1A forming supporting crossmembers 1 B at the top, on which more later; 1C denotes longitudinal connecting members between the two trusses 1A. The whole frame 1 is fixed and capable of forming sliding tracks for the expansion of the supporting surface area relative to the horizontal area occupied by said frame 1. In particular, a track section 3 creating two opposite longitudinal sliding tracks is fixed to the frame 1. In an intermediate position along the length of the crossmembers 1B are two slides 5 capable of being adjusted in position along the crossmembers 1 B. The two slides 5 support a second track section 7 with two opposite sliding tracks 7A and 7B (see in particular Figs 4 and 5). The two crossmembers 1 B also create transverse sliding tracks for a sliding assembly that can be extended at right angles to the direction of the sliding tracks 3 and 7, which sliding assembly may in practice consist of two channel sections 9 and a third track section 11 that forms two longitudinal tracks similar to the tracks 7A and 7B already described. As a whole, therefore, the bench comprises two pairs of longitudinal tracks formed by section 3, section 7 and section 11; section 3 is fixed to the frame 1, section 7 is adjustable in position by means of the slides 5 along the crossmembers 1B of the frame 1, and section 11 is extendable at right angles to the direction of extension of the tracks 3, 7 and 11, said section 11 forming part of the sliding assembly 9, 11 which extends laterally in the direction of arrow fE shown in Figs 1 and 2. The channel sections 9 of the sliding assembly 9, 11 are advantageously equipped at their ends with uprights 13 with casters 15 to support them as they move across the floor and provide stability to the sliding assembly 9, 11. Each of the sections 3, 7 and 11 incorporates two tracks such as the tracks 7A, 7B of section 7, and is flanked by two supporting beams marked 31 and 33 (those of track section 3), 71 and 73 (those flanking track section 7) and 111 and 113 (those flanking track section 11). Each of these beams 31, 33; 71, 73 and 111, 113 is supported, at the extending end-by an upright 313, 333; 713, 733; 1113, 1133 with respective casters such as the casters 315, 715 and 1115 at the ends of said beams 31, 71 and 111. The beams 31, 33; 71, 73; 111, 113 can be composed of sections exactly like those of the pairs of longitudinal tracks 3, 7 and 11, of which the tracks 7 are more particularly shown in Figs 4 and 5. These sections are now described with reference to the sections 71, 73, to which the sections 31, 33 and 111, 113 are equivalent. The extendable beams 71 and 73 possess sliding tracks 71A and 73A which correspond to and are opposed to the sliding tracks 7A and 7B of the section 7. The beam 71 formed by the section illustrated in Figs 4 and 5, sim-

ilar to the section 7, can be slid longitudinally in the direction of arrow f71 and the beam 73 formed by a similar section like the section 7 can be slid longitudinally in the direction of arrow f73, in the opposite direction to the beam 71. The beams 31 and 33 on the one hand, and the beams 111 and 113 on the other, can likewise be extended to create extensions in the direction indicated by the axes of the beams 3, 7 and 11 to increase the length of the longitudinal supports represented by the sections 3, 7, 11 by as much as three times. The tracks represented by sections 7 and 11 can be kept close together on top of the crossmembers 1B of the frame 1, or can be displaced in the transverse direction, that is in the direction of arrow fE by differing amounts in order to increase in the direction of arrow fE the supporting area represented by the sections described above; in particular, by appropriately distributing the supports, the sections 71, 7 and 73 with the slides 5 can be moved half as far as the transversely sliding assembly 9, 11 which creates the supports by means of the sections 111,11 and 113.

[0010] Essentially, then, when the sliding assembly 9, 11 is moved by an amount almost equal to the length of the crossmembers 1 B of the frame 1, and when the beams 31, 33 are almost fully extended from the track 3, the beams 71 and 73 from the track 7 and the beams 111 and 113 from the track 11, the result is that the supporting area of the various sections 31, 3, 33; 71, 7, 73; 111, 11, 113 is expanded in total by an amount almost equal to six times the surface area represented by the base frame 1 and sections 3, 7, 11 when closed up immediately above or next to this frame 1.

[0011] The operations of extending and shortening lengthwise in the direction of arrows f71, f73, and in the direction of arrows fE, are very simple and easy to carry out especially as regards the sliding of the sections 31, 33; 71, 73; 111,113 with respect to the pairs of tracks 3, 7 and 11 because of the presence of pairs of shoes which are practically identical to each other and are clearly illustrated in perspective in Fig. 6 and clearly visible as fitted in Figs 4 and 5 to enable relative sliding between the sections 7 and 73 (Fig. 4) and between the sections 7 and 71 (Fig. 5).

[0012] Each shoe is indicated as a whole by the number 81 and comprises a separating wall 81A, two sliding seats 81B, 81E, two locking seats 81 C and 81 F and a retaining wall 81 G which can be tightened using tightening screws 83. When the screws 83 are tightened, the shoes such as the shoes 81 described above are clamped to the inward ends of the moveable beams and to the ends of the fixed beams forming the double sliding track such as 3, 7 and 11, from which ends the beams are pulled out. Thus, the distance between the shoes of the sections e.g. such as 7 and 71, which are fixed in positions 81X of beam 71 and 81Y of beam 7, is the residual length where the sections 7 and 71 are side by side. This forms the most efficient support possible for the beam 71 when extended, which in addition is also supported by the upright 713 and by the caster 715 which transfer the weight of the projecting part of the section 71 to the floor. The same applies to all the beams when extended, including the channel sections marked 9 which form part of the laterally extendable sliding assembly composed of the sections 9 and the double track 11.

[0013] It is possible for the user to extend the beams 31, 33; 71, 73; 111, 113 and the sections 9 of the transversely extendable sliding assembly only part of the way depending on what work happens to be required to be done on the bench in question. However, the shoes 81, positioned for example as indicated at 81X and 81Y in the case of beams 7 and 71, act as stops to define the maximum extension of the beam 71 from the track 7A of the section 7; and likewise for all the other shoes.

[0014] The sections 3, 7, 11 and the beams 31, 33; 71, 73; 111, 113 can be provided with protective surface trims as indicated at 91 in Figs 4 and 5.

[0015] Fig. 7 shows a variant which uses a second transversely extendable sliding assembly similar to and on the opposite side to that formed by the components 9, 11, 111, 113. The same references as appear in Fig. 1 are used for corresponding components in Fig. 7. The variant involves the use of two channel sections 309 (similar to the sections 9 and internal or external to the sections 9) and a track section 311 (similar to the track section 11) which replaces the track section 3 and is combined with supporting beams 331 and 333 (similar to the beams 111 and 113) which replace the beams 31 and 33 and are equipped with legs equivalent to the legs 313 and 333. In this version the second sliding assembly 309, 311 can be extended laterally, thereby virtually tripling the width compared with that of the base frame 1, 1A, 1B, 1C, making the maximum possible extension equal to almost nine times that of the base frame.

[0016] It will be understood that the drawing shows only an example given purely as a practical demonstration of the innovation, which innovation can be varied in its shapes and arrangements without thereby departing from the scope of the concept on which the innovation is based. The presence of any reference numerals in the appended claims is for the purpose of facilitating the reading of the claims with reference to the description, and does not limit the scope of protection represented by the claims.

Claims

1. A bench for working on large items, such as metal door or window frames or the like, that comprises a base frame and supports that can be extended from said base frame to increase the surface area that can be used for working on, **characterized in that** it comprises, on the base frame (1), pairs of longitudinal tracks (3; 7; 11) for extending, from opposite sides of the base frame, supporting beams (31, 33;

71, 73; 111, 113) with end legs (313, 315; 713, 715; 1113, 1115) in order, with the longitudinally extendable beams, to obtain an increase in the surface area which on each side is of the same order of magnitude as the dimension of the base frame in the direction of extension.

2. Bench according to Claim 1, also comprising sliding tracks perpendicular to the previous tracks, for the lateral extension of a sliding assembly from one side of the base frame, the bench being **characterized in that** said sliding assembly (9, 11) similarly has at least one pair of longitudinal tracks (11) for extending supporting beams (111; 113) with end legs (1113; 1115) by corresponding amounts on opposite sides of said sliding assembly.

3. Bench according to Claim 2, **characterized in that** it comprises two of said sliding assemblies (9, 11; 309, 311) capable of being extended laterally from opposite sides of the base frame.

4. Bench according to Claim 1 or 2 or 3, **characterized in that** said base frame (1) and, if present, said sliding assembly or assemblies (9, 11; 309, 311) possess fixed sections (3, 7, 11) forming two opposite tracks (7A, 7B), each of said sections being able to guide two beams (71; 73) along its opposite sides for extension in opposite directions.

5. Bench according to one of Claims 1 to 4, **characterized in that** the fixed sections (3; 7; 11) and the sliding beams (31, 33; 71, 73; 111, 113; 331, 333) are produced from materials of identical cross section.

6. Bench according to at least one of the previous claims, **characterized in that** attached to each sliding beam (71) is a sliding shoe (81X), and attached to the corresponding track (7) is a supporting shoe (81Y), said two shoes (81) working together to facilitate sliding and to act as stops at the position of maximum extension of the beam.

7. A bench for working on metal window and door frames and the like, with supports that can be extended in order to obtain a more extensive working area; the whole as described and illustrated.

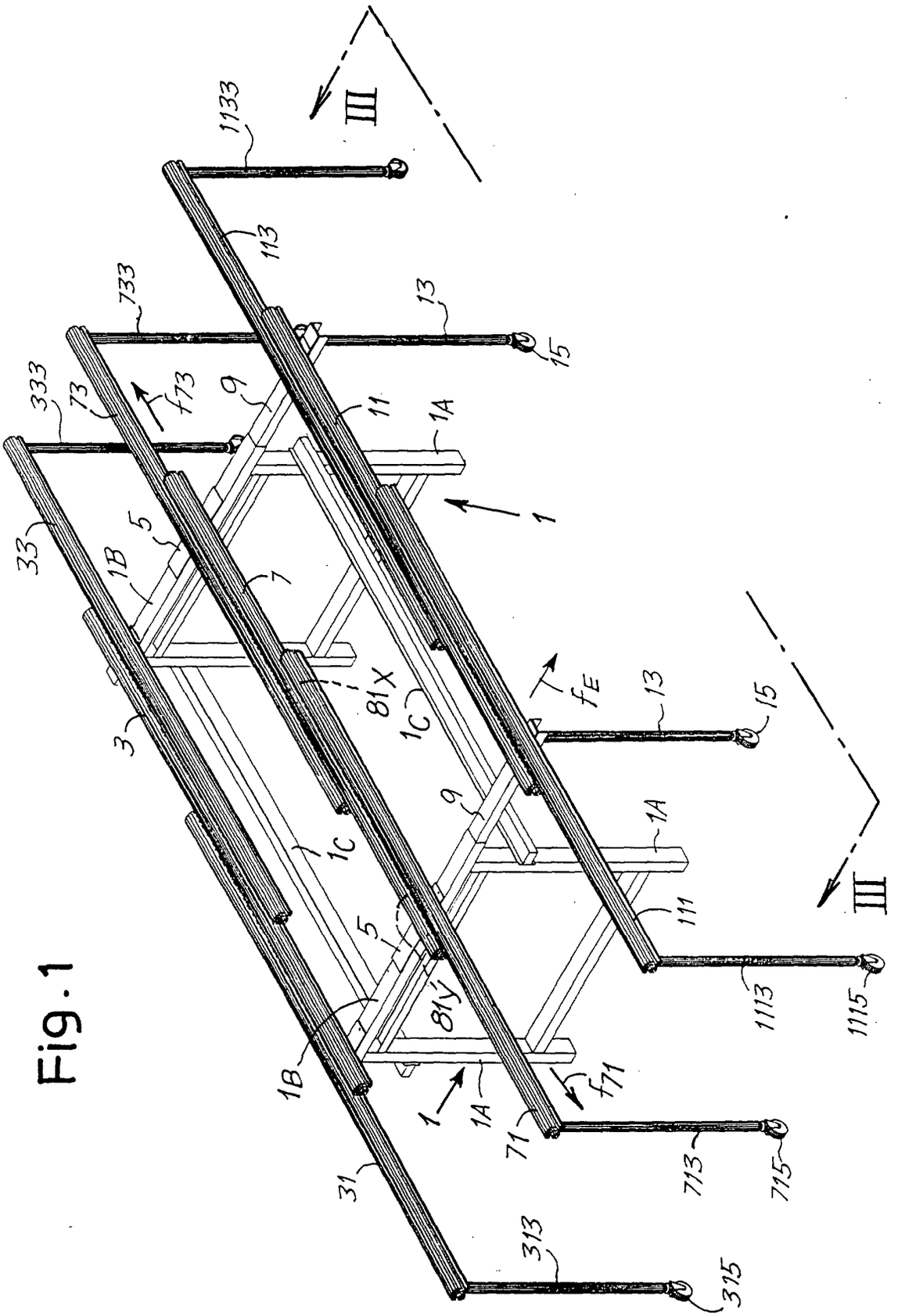

1133
III
113
733
13
15
333
73
f73
9
11
1A
33
5
1B
7
1
3
81x
1C
fE
13
15
9
1A
1C
111
III
5
81y
1113
1115
18
f71
1
1A
71
713
715
31
313
315

Fig.1

Fig.2

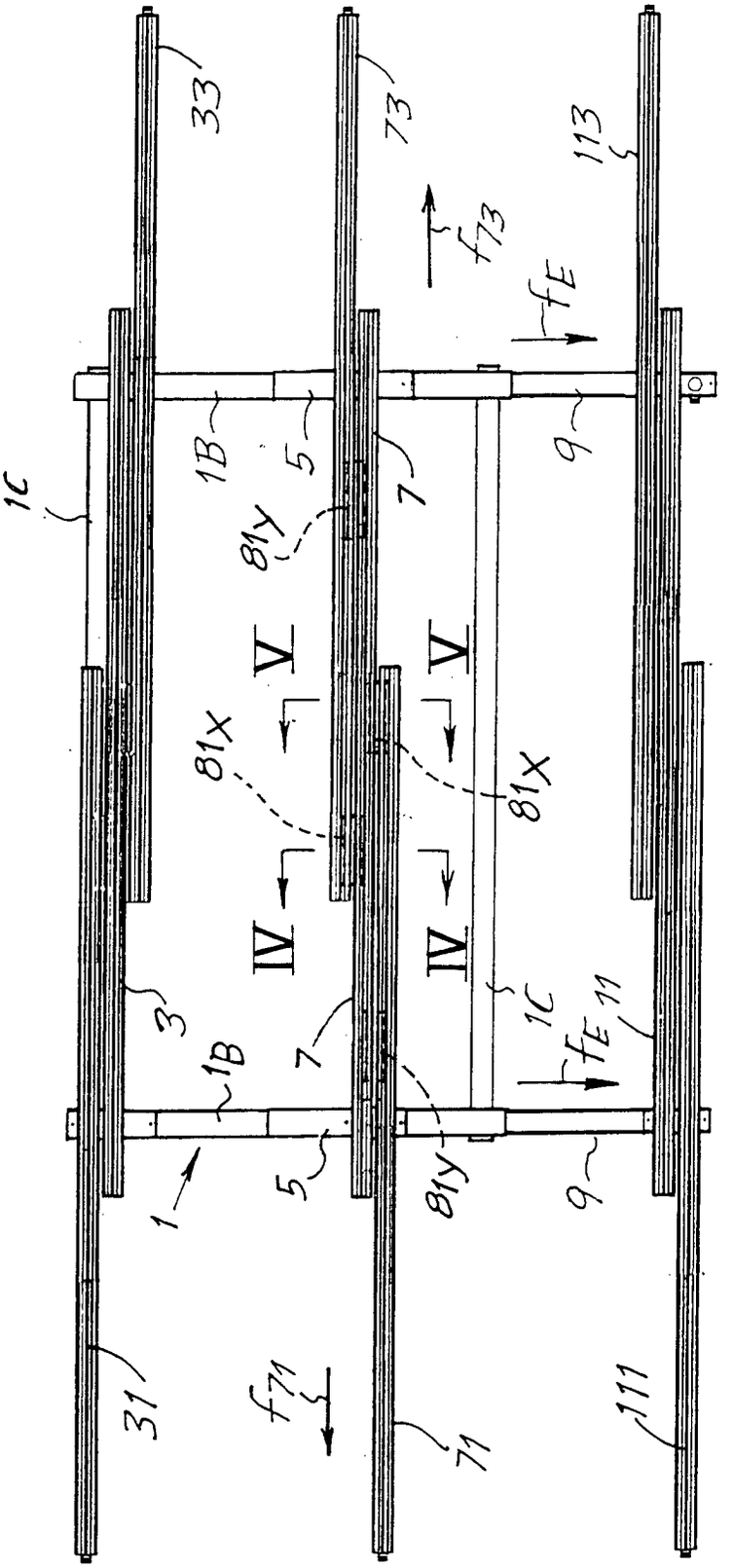

33
73
113
f73
fE
1B
5
7
9
1C
81y
V
V
81x
81x
IV
IV
3
1B
7
1C
fE
11
1
5
81y
9
31
f71
71
111

Fig.3

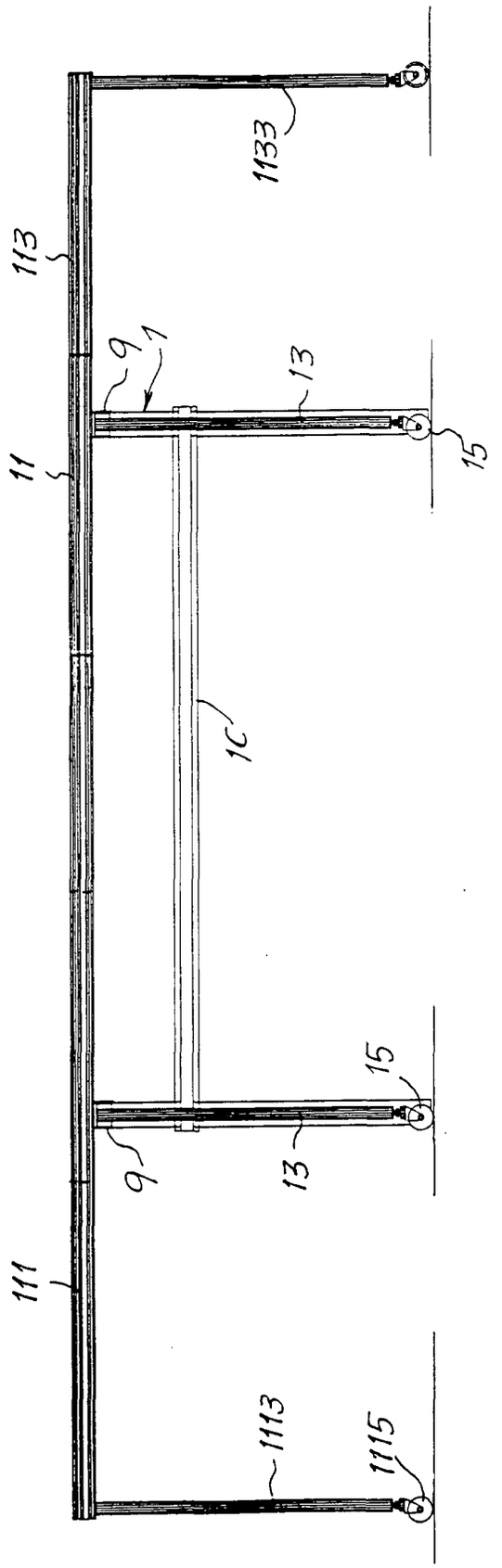
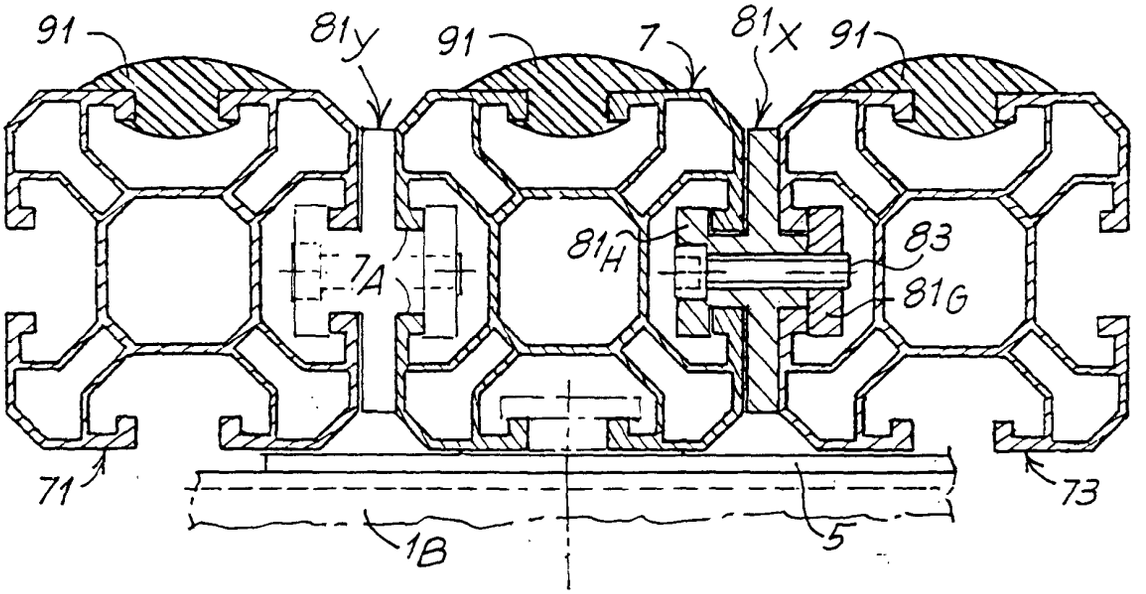


Fig.4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81y
91
7
81x
91
7A
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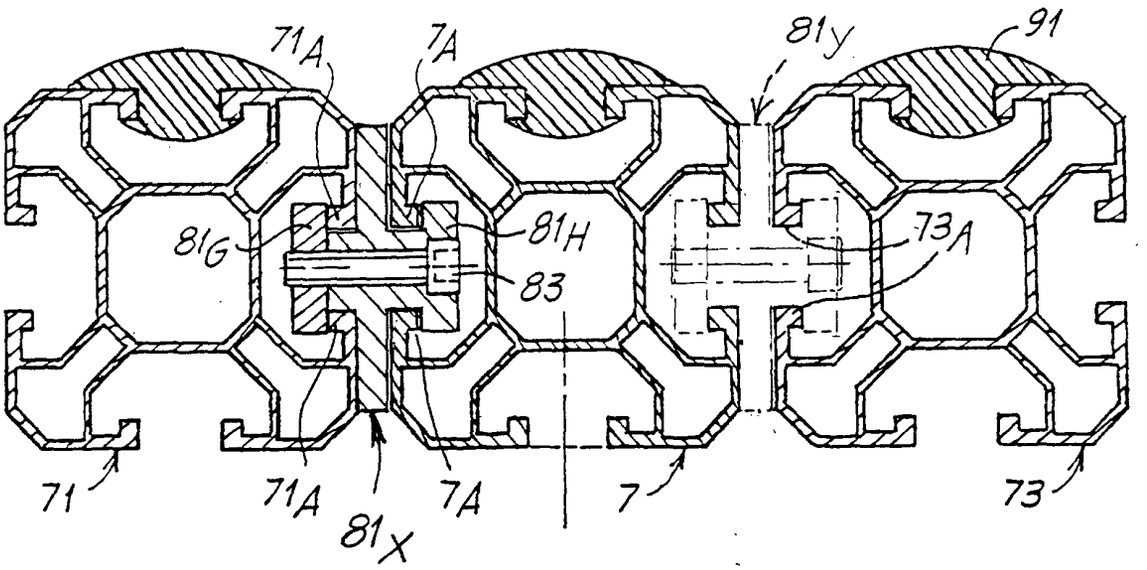
83
81G
71
73
1B
5

Fig.5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91
81G
81H
83
73A
71
71A
7A
81x
7
73

Fig.6

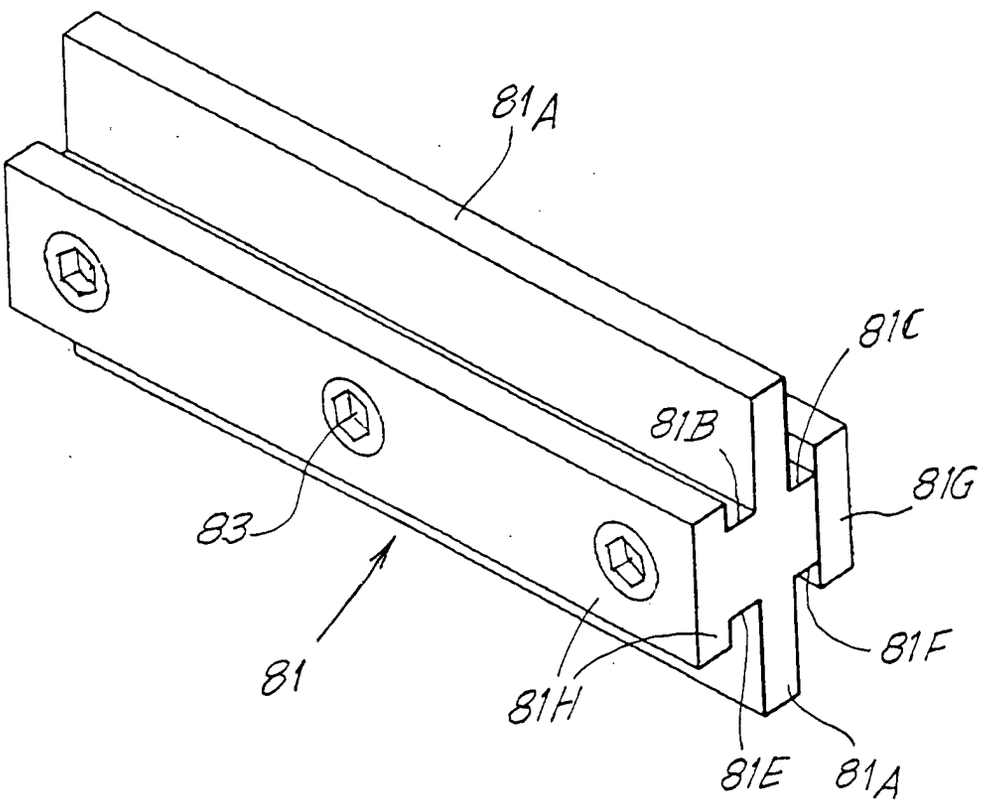

Fig. 7