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(54) **System of adjusting height and length of a bed frame.**

(57) Guide means (1,3-9,11-13,21) applicable with threaded means to the legs (2,24,35) of the bed head and foot and connecting said legs (2,24,35) to the longitudinal bars (10,25) of the bed frame at points selected by the user according to his personal requirements.

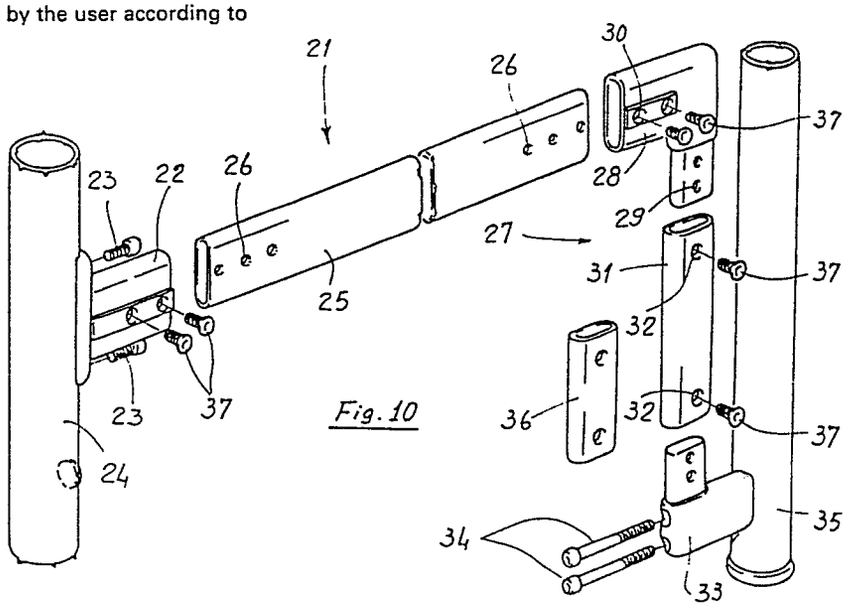


Fig. 10

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"SYSTEM OF ADJUSTING HEIGHT AND LENGTH OF A BED FRAME"

The present invention relates to a system allowing to obtain the adjustment of height and length of the longitudinal bars connecting the uprights or legs of the bed head and foot.

It is well known the metal bed frames have assembling systems for the connection of the longitudinal bars to the head and foot.

However these connections have a dimension which is fixed by the manufacturer without taking into account particular requirements of space and size of the bed user.

The dimensional features of the bed often are not harmonized with the size of the mattress which sometimes the user has already at his disposal and the height from the floor does not always meet the user's physical needs or preferences.

The present invention solves both problems at the same time. The system of the invention provides for guide means which can be applied with threaded means to the uprights or legs of the bed head and foot, so as to allow connection of the longitudinal bars according to precise personal dimensional needs, by means of differentiated holes.

According to a first simplified embodiment of the present invention, the longitudinal bars are bayonet inserted in the guides and fixed thereto with threaded means, allowing a limited dimensional bed adjustment.

According to a second more complete embodiment of the present invention, a set of elements which are to be telescopically inserted and fixed with threaded means, makes it possible an optimal regulation of length and height of said longitudinal bars.

In practice this adjustable guide system may take various forms, all falling however in the scope of the present invention, and will be described hereinafter in detail as an illustrative example not limiting the scope of the invention, with reference to the figures of the annexed sheets of accompanying drawings, in which:

Fig. 1 is a longitudinal sectional view of the guide means being the first embodiment of the system of the invention;

Fig. 2 is a front view of the inner side of the guide of Fig. 1;

Fig. 3 is a sectioned top view of the guide;

Fig. 4 is a partial longitudinal sectional view of the guide means applied to a leg and telescopically connected to a longitudinal bar of the bed;

Fig. 5 is a plan view of said guide means applied to a leg and telescopically connected to a longitudinal bar of the bed;

Fig. 6 is an elevational view of a single cast guide system also applied to a leg and telescopically connected to a longitudinal bar of the bed;

Fig. 7 is a plan view of a variant of the guide system, in this case being directly made from the flat support being part of the bed leg;

Fig. 8 is a front view of the guide means made from the flat support being part of the bed leg;

Fig. 9 is a perspective view of the aesthetical masking element adapted to be inserted on the visible part of the bayonet connection; and

Fig. 10 is an exploded perspective view of the entire set of components of the second embodiment of the invention, allowing to adjust the longitudinal bars of the

bed.

With reference to Figs. 1, 2 and 3, the first embodiment of the present invention comprises a bracket 1 to be applied to the leg 2 of the bed head or foot. Said bracket is fixed with threaded means 3 through suitable seats 4 made as a recess at both ends.

The threaded means 3 are screwed on the round profile of the legs.

Between the two fastening points above cited, there are three seats 5 with the sockets 6 for the heads 7 of the threaded means 8 connecting with the leg.

Referring now to Figs. 4 and 5, bayonet 9 is fixed to bracket 1 using a threaded means 8 passing through one of the central seats according to the height to which the bed frame has to be adjusted. After having fixed the bayonet 9 through the bracket 1, the longitudinal bar 10 is telescopically inserted, then fixed by another threaded means 11 inserting it in corresponding holes 12 for the desired length.

With reference to Fig. 6, in order to obtain the same result, as a variant to the preceding embodiment, it is possible to make the guide as a single cast piece 13. The telescopic coupling is then obtained by inserting the longitudinal bar 10 inside the bayonet instead of outside it, then fixing it always by using corresponding holes 12 at the desired length of the bed.

In case of a different attachment illustrated in Figs. 7 and 8, this is made directly with a shaped profile 13 of the plate connected to the leg, in which the longitudinal bar 10 of the bed frame may be connected so as to regulate the bed length.

Furthermore, in order to cover the bayonet visible part for aesthetic reasons, a masking element 14 having the shape of an inverted U is placed on the connection system, said element 14 being provided with preformed perforations 15 (Fig. 9) in order to sever only the part of the element which is required to conceal the bayonet connection. It is also to be noted that said guide means may be used also in case the

longitudinal bars are curved.

With reference now to Fig. 10 illustrating the second embodiment of the invention, the system 21 has a bracket 22 which can be applied to the leg 24 of the bed head or foot by means of two threaded elements 23.

Into said bracket 22 a tubular bar 25 is telescopically inserted, at the ends of which there are sets of threaded holes 26 adapted for fixing it to the bracket 22 and to the vertical member 27, obviously with several positioning possibilities. The vertical member 27 has an angled male and female upper element 28, with corresponding fixing threaded holes 29 and through holes 30, a tubular stud 31 with corresponding through holes 32 at it ends and an angled bracket 33 with a male attachment, fixed with threaded fasteners 34 to the lower part of the leg 35 of the bed or foot. As it is shown in Fig. 10, it is also possible to further vary the height by using vertical tubular extensions 36 of various lengths. It is also clear that suitable threaded means 37 are used for fixing all the elements of the connection system at the desired position.

From the foregoing description it can be understood that the system according to the present invention solves the problem of adjusting height and length of the longitudinal bars connecting bed head and foot by keeping the indispensable sturdiness and assembling easiness.

Finally it is to be pointed out that the foregoing detailed description of the preferred embodiments does not limit the scope of the invention, but on the contrary it has to be understood that modifications, additions or substitutions of elements may be resorted to it without departing however from its spirit and scope and always falling in its scope as it results better defined in the appended claims.

CLAIMS

1) System of adjusting height and length of a bed frame, characterized by the fact of comprising guide means which may be applied with threaded means to the legs of bed head and foot, so as to allow to connect the longitudinal bars with points of the legs which are selected by the user, by means of differentiated holes.

2) System according to Claim 1, characterized by the fact that the guide means comprise two bracket and bayonet elements which are coupled and fixed to the legs, so as to make it possible to adjust the bed frame dimensions according to the user's personal needs.

3) System according to Claim 2, characterized by the fact that the height regulation is obtained by fixing the bayonet element through one of the holes made in the bracket.

4) System according to Claim 2, characterized by the fact that the length regulation is obtained by fixing the longitudinal bars of the bed through one of the holes made in the bayonet.

5) System according to Claim 2, characterized by the fact that the longitudinal bars are telescopically coupled outside or inside the bayonet element.

6) System according to Claim 2, characterized by the fact that the bracket and the bayonet are made in a single cast piece.

7) System according to Claim 2, characterized by the fact that the coupling seat for the elements is made by direct shaping of the plate connected to the bed legs.

8) System according to one or more of the preceding claims, characterized by the fact of comprising a masking element which can be inserted on the guide means for covering the visible part of the bayonet element.

9) System according to Claim 8, characterized by the fact that the masking

element is provided with performed perforations in order to sever only the part required for covering the bayonet element.

10) System according to Claim 1, characterized by the fact that the guide means comprise a plurality of components, adapted to form the longitudinal bars between bed head and foot, with adjustable dimensions, said components comprising a horizontal bar, brackets for leg attachment, an angled element and a vertical stud.

11) System according to Claim 10, characterized by the fact that the length regulation is obtained through the telescopic coupling of horizontal bar, bracket and vertical upright by using the holes with different spacing.

12) System according to Claim 10, characterized by the fact that the height regulation is obtained through an adjustable vertical upright placed between the horizontal bar and the bracket for attachment to the bed head or foot.

13) System according to Claim 10, characterized by the fact the eight regulation is obtained by fixing the vertical stud of variable length, through the holes with different spacing, coupled to the angled element and the angular end bracket.

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Fig. 1

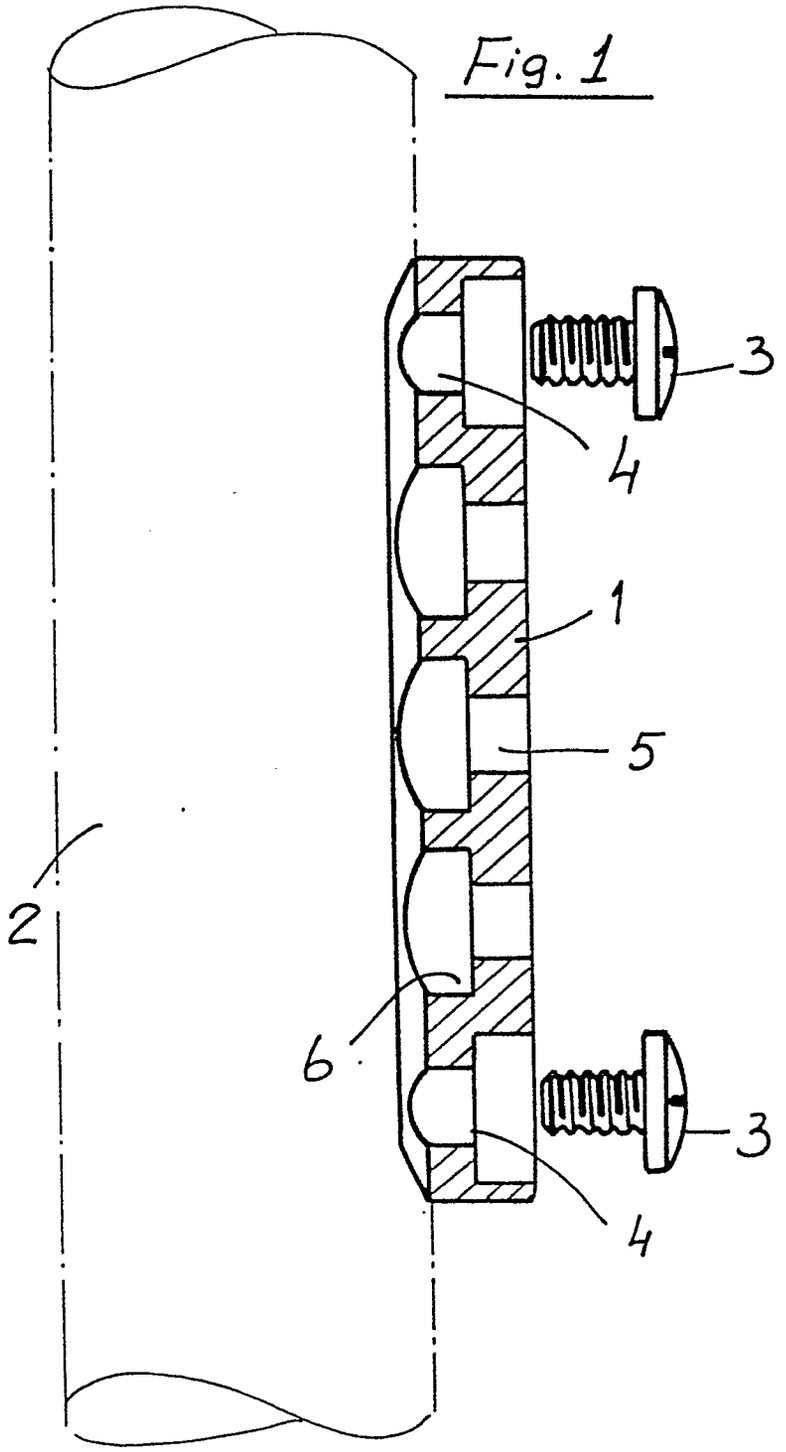
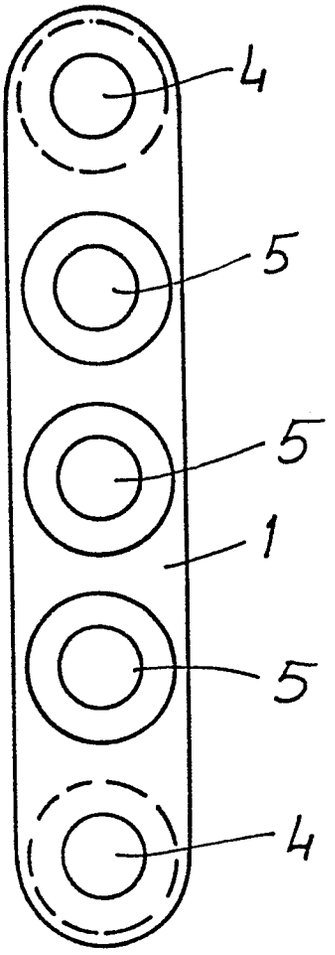


Fig. 2



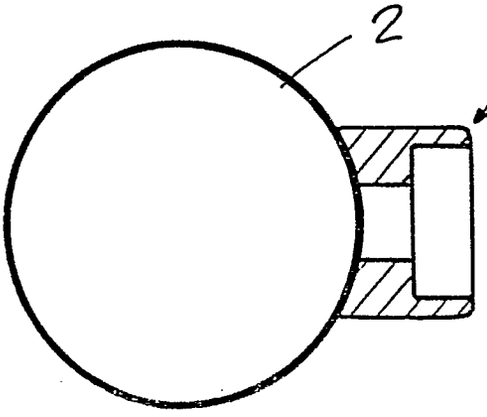


Fig. 3

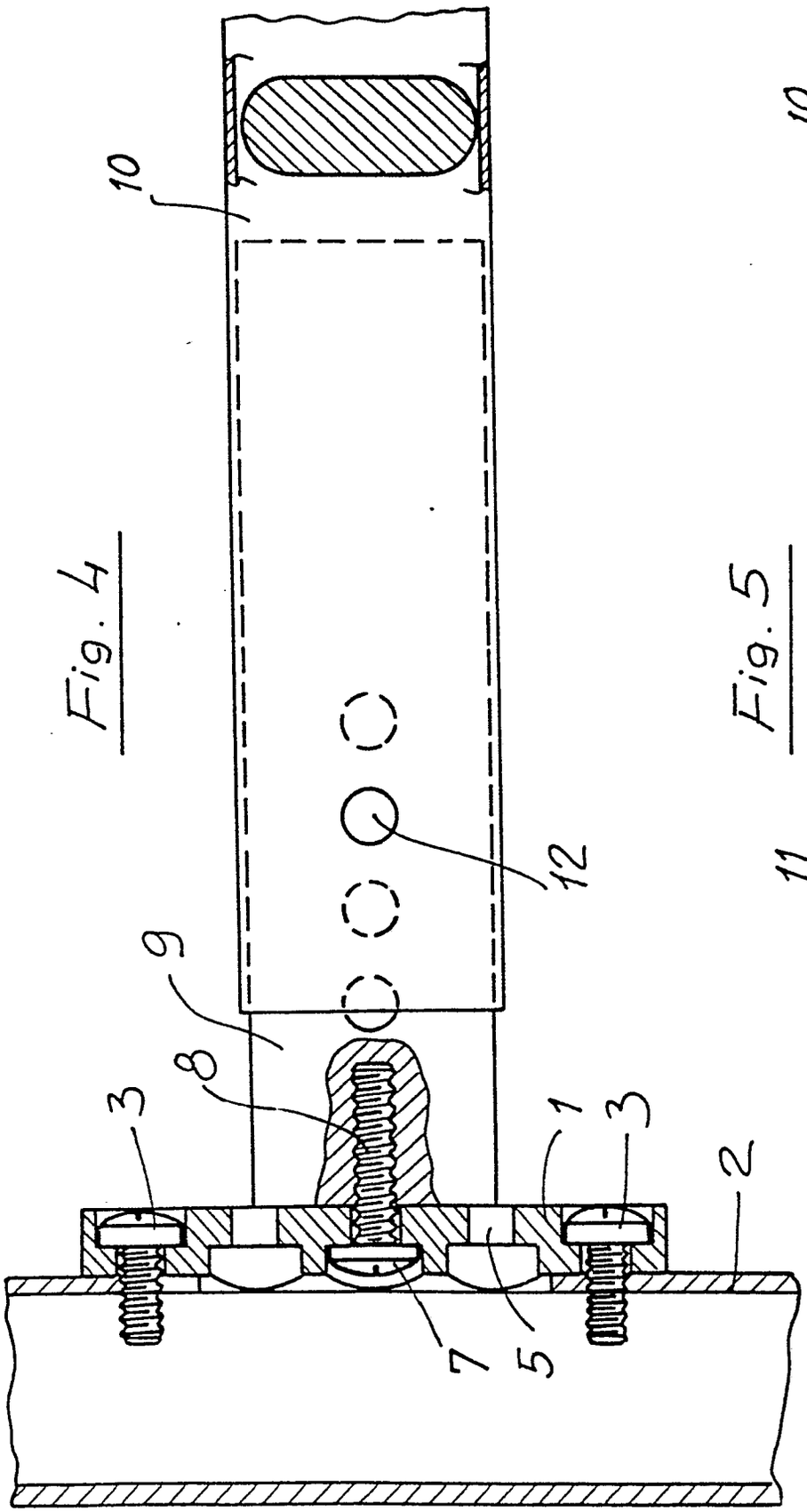


Fig. 4

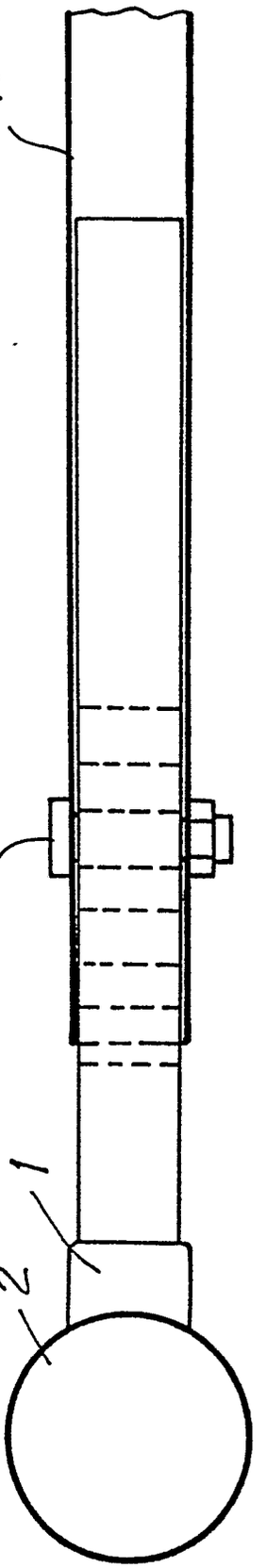


Fig. 5

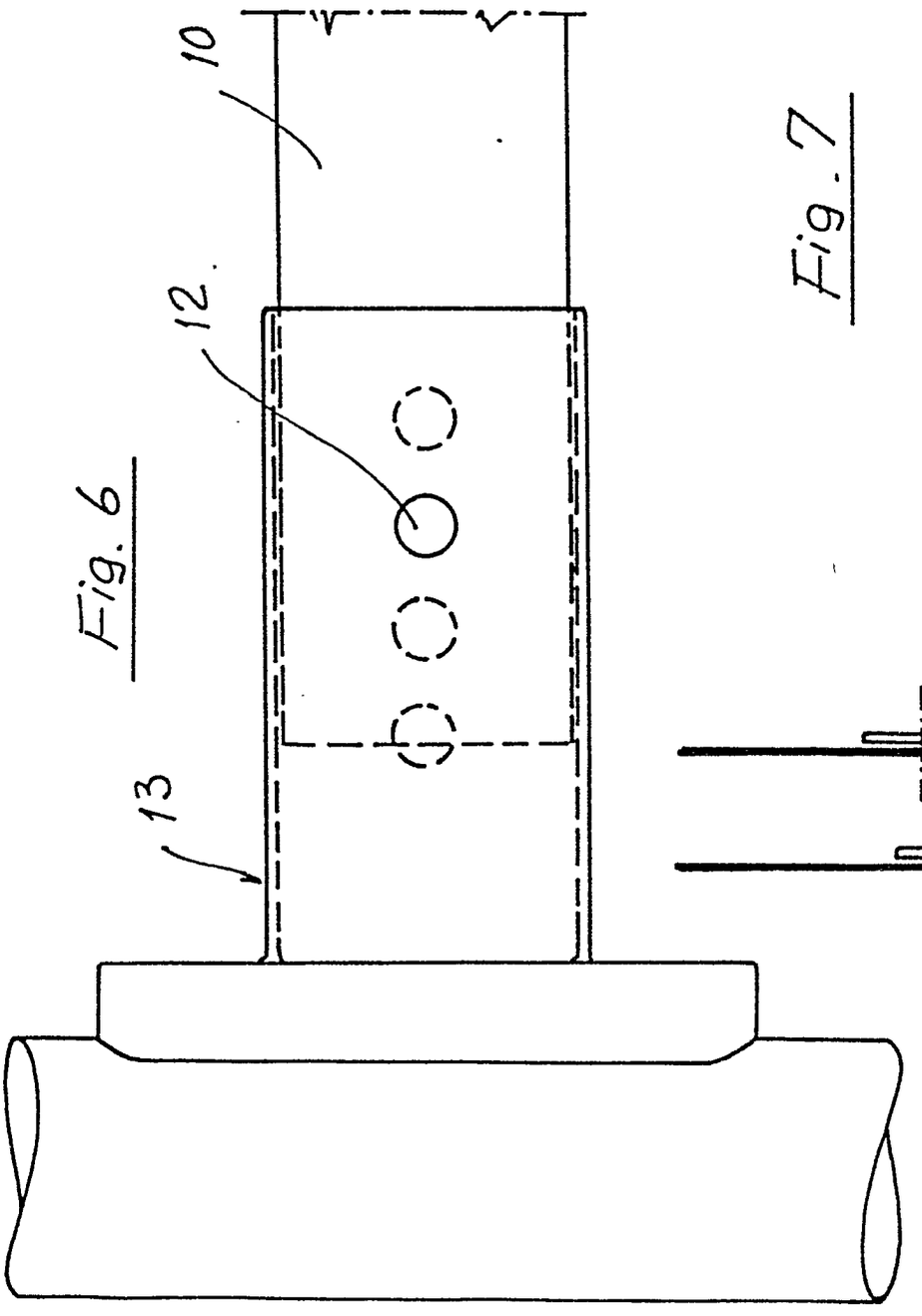


Fig. 6

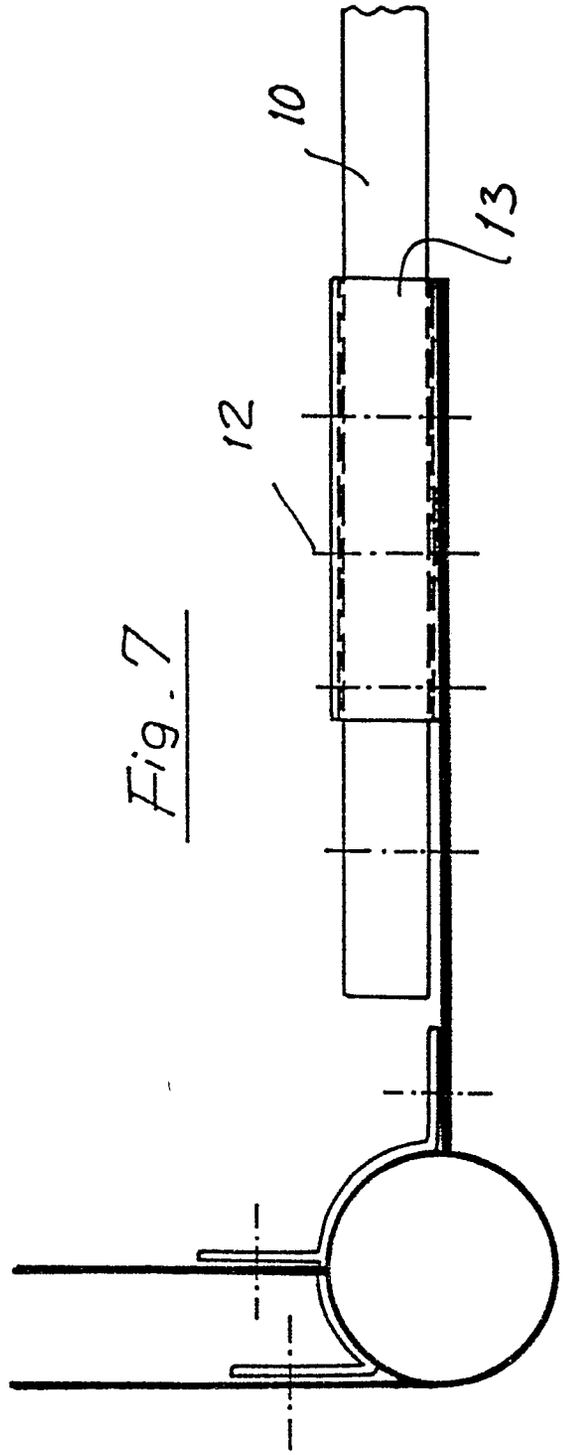


Fig. 7

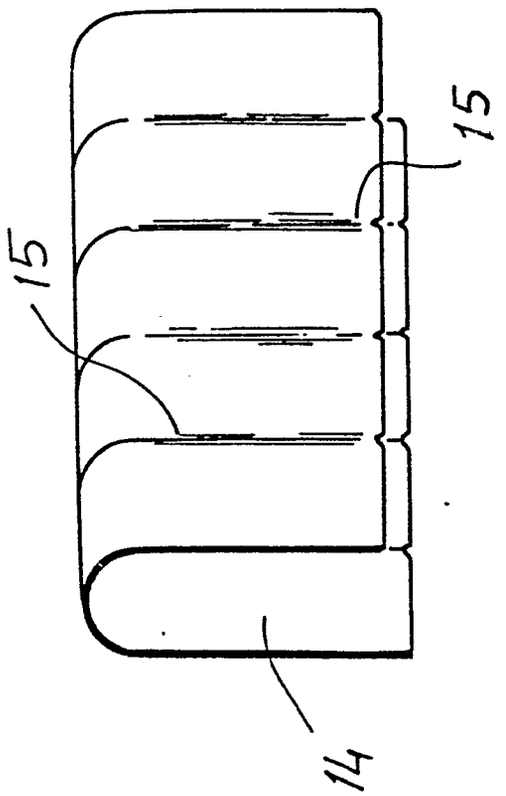


Fig. 9

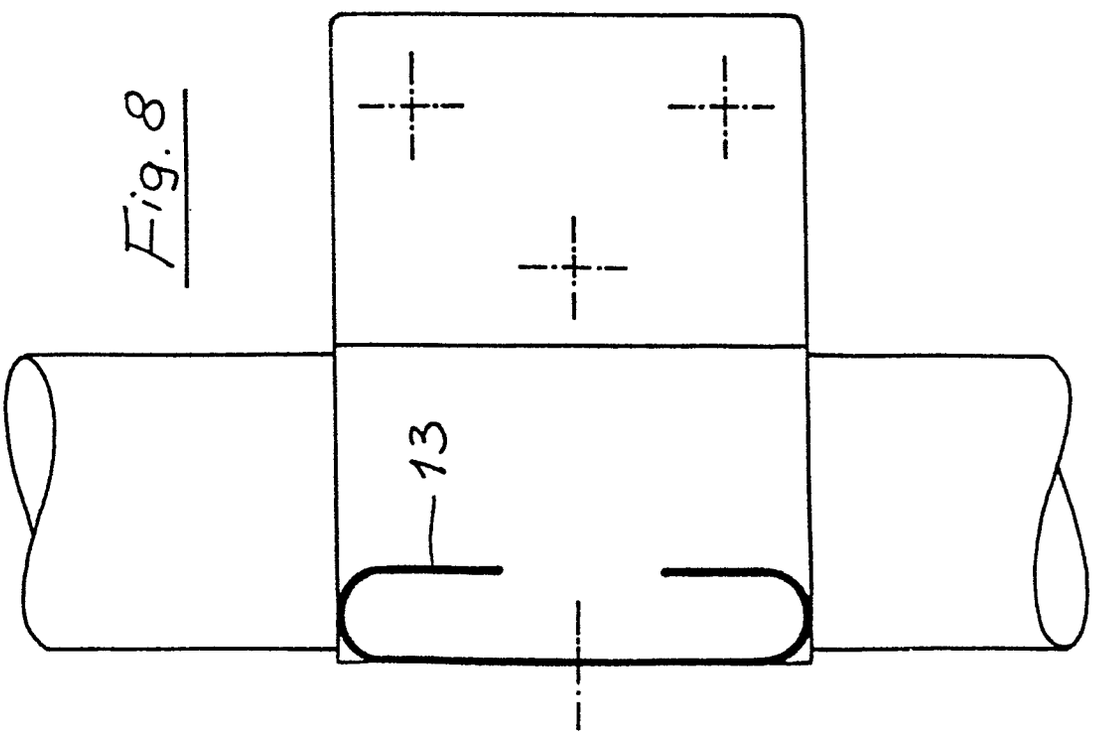


Fig. 8

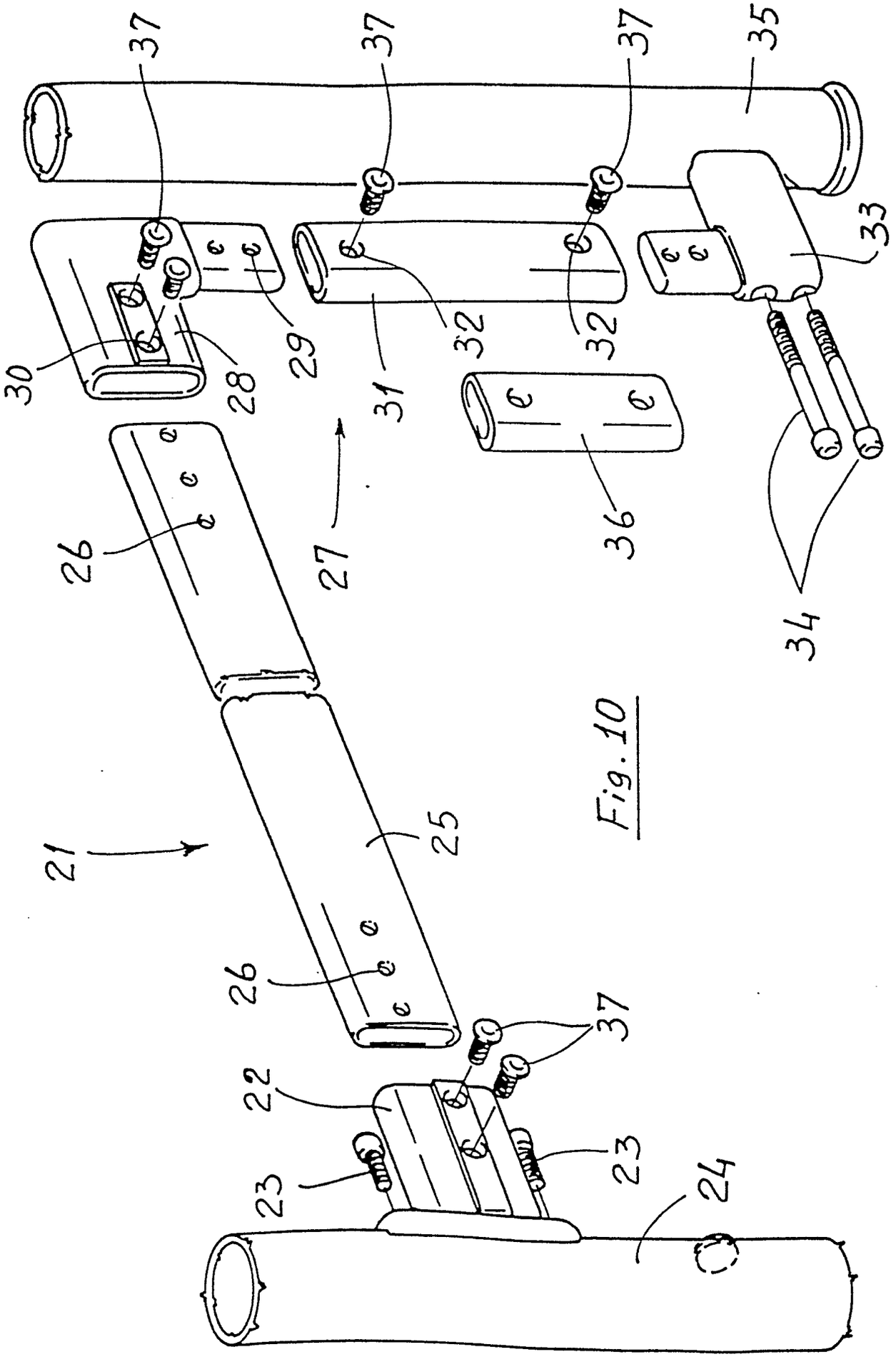


Fig. 10

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EUROPEAN SEARCH REPORT

0116184
Application number

EP 83 20 1828

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
A	US-A-3 761 970 (FREDMAN) * Column 3, line 26 - column 5, line 37; figures 1-9 *	1-3,5, 11	A 47 C 19/04
A	DE-C- 820 479 (SCHILPP) * Page 2, lines 36-96; figures 1-5 *	1,5	
A	CH-A- 447 509 (RÖÖSLI) * Whole document *	1,5	
A	US-A-2 611 907 (CLERC) * Whole document *	1,5	
A	US-A-1 951 196 (MEADOWS) * Page 1, line 60 - page 2, line 25; figures 1-5 *	1	TECHNICAL FIELDS SEARCHED (Int. Cl. ³) A 47 C
A	US-A-3 758 895 (GUNTER) * Column 1, line 41 - column 2, line 44; figures 1-5 *	1	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	18-04-1984	SARRE K.J.K.TH.

CATEGORY OF CITED DOCUMENTS

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