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(54) An apparatus for supporting and coupling an extension leaf of a table

(57) Regards a coupling and supporting device of additional planes of an extensible table, where the additional planes are contained below the main plane, and they are extracted when they are to be used. Such device is characterised in that it comprises a mechanism substantially consisting of a pair of parallel rods, sliding into guides, applied below the main plane of the table. Such rods - when needed - are made to protrude from a side of the same table, usually from the side exhibiting a smaller length, so as to form the support of an additional plane. The main characteristic of the device according to the finding is that each of the two rods of each pair is provided, at its end, with a spring leverage which provides to coupling the additional plane and keeping it locked when it is aligned with the same main plane.

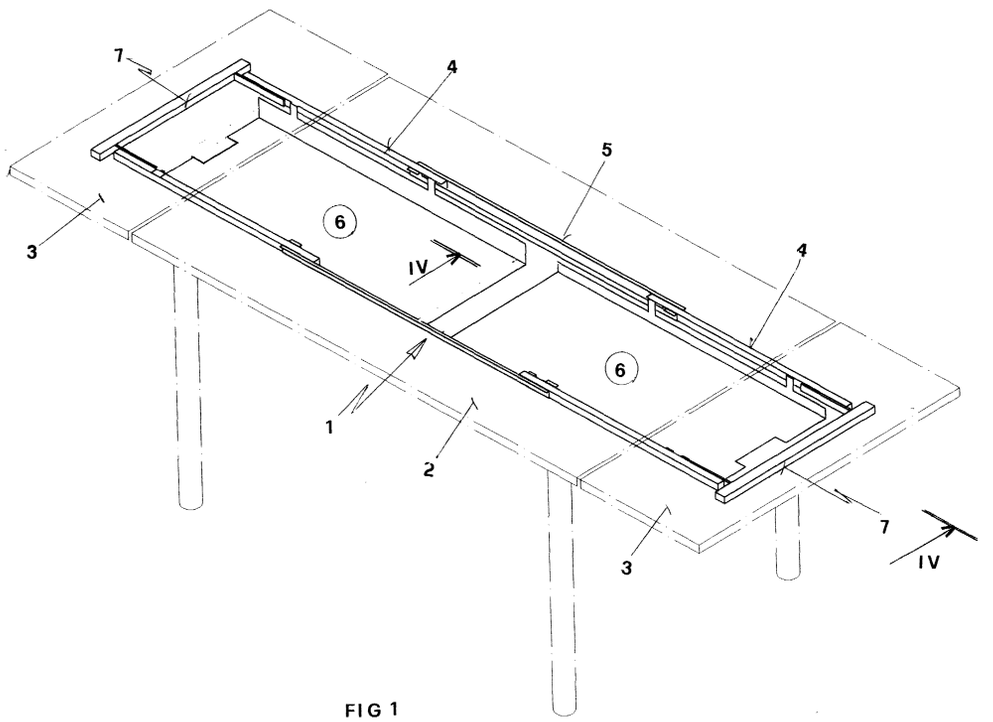

FIG 1

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Description

[0001] The finding relates to a coupling and supporting device of additional planes of an extensible table, as described in the general part of claim 1.

[0002] The so-called extensible tables are increasingly spreading in modern furnishings; when necessary, they can be coupled to one or more additional planes.

[0003] Usually, the additional planes are contained below the main plane, and they are extracted when they are to be used.

[0004] In the prior art there are several mechanisms realised to move and support the additional planes, consisting of sliding tracks, supporting brackets, stopping hooks, and other components with different configuration.

[0005] However, these devices exhibit a considerable volume, and thus the table is generally provided with a side covering the above devices.

[0006] Purpose of the present finding is that of realising a coupling and supporting device of additional planes of an extensible table, which should be easy to realise and use by the user but, above all, having a small thickness in the table height, thus eliminating the above side.

[0007] This is realised with a mechanism substantially consisting of a pair of parallel rods, sliding into guides, applied below the main plane of the table, which - when needed - are made to protrude from a side of the same table, usually from the side exhibiting a smaller length, so as to form the support of an additional plane.

[0008] Each of the two rods of each pair is provided, at its end, with a spring leverage which provides to coupling the additional plane and keeping it locked when it is aligned with the same main plane.

[0009] The pair of sliding rods supports a cup serving as container for the additional plane, when it is not used.

[0010] The features of the finding will appear more clearly from the description of a possible embodiment, made only by way of an illustrative and non-limiting example, with reference to the attached drawings. In such drawings:

- Fig. 1 (Table I) shows the perspective view of a table provided with the device of the finding, in opening condition;
- Fig. 2 (Table II) shows the perspective view of the table of Fig. 1, with the device in closing condition;
- Fig. 3 (Table III) shows a front sectioned view, according to line III-III of Fig. 2, of the table with the device in closing condition;
- Fig. 4 shows a front sectioned view, according to line IV-IV of Fig. 1, with the device in opening condition;
- Fig. 5 (Table IV) shows a detailed front view of the leverage in uncoupling condition;
- Fig. 6 shows a detailed front view of the leverage in coupling condition;
- Fig. 7 shows a plan sectioned view, according to line VII-VII of Fig. 6;
- Fig. 8 (Table V) shows a construction perspective view of the device of the finding;
- Fig. 9 (Table VI) shows a construction perspective view of the leverage;
- Fig. 10 (Table VII) shows a construction perspective view of the device of the finding, provided with the cups and with an additional plane.

[0011] As it can be seen in figures 1 and 2, device 1 of the finding, applied below the supporting plane 2 of the table and intended to support the two additional side planes 3, consists of two pairs of rods 4, sliding into guides 5 applied below the above plane 2.

[0012] A cup 6 is applied on each pair of rods, so as to contain the additional plane 3 when the table is "closed" (reference shall be made to fig. 2).

[0013] The device is characterised by the system for coupling and locking the additional plane 3, when it is aligned with the supporting plane 2, which comprises a leverage 7, actuated by the user.

[0014] As it can be seen in figure 3 and following ones, leverage 7 consists of a small base 8, idly pivoted on pin 9 integral with rod 4 and provided with a tooth 10 which, in working position, couples with strap 11, applied on the additional plane 3, thus realising the desired locking.

[0015] The rotation of the small base 8 on pin 9 to allow the coupling/releasing action, occurs through the lever arm 12, pivoted on pin 13, integral with the small base 8 and engaged with the lozenge slit 14 on the guiding pin 15, anchored to rod 4.

[0016] The crank gear thus realised is made elastic through the shaped spring 16, constrained at the two ends, respectively to the two pins 13 and 15, which, by acting in contrast with the rotation of the lever arm 12, locks the leverage in the two end positions, as it can be seen in figures 5 and 6.

[0017] Leverages 7, applied into the two rods 4, are reciprocally connected through crosspiece 17, which makes the two lever arms 12 reciprocally integral and forms the gripping handle for the operator.

[0018] Operatively, when the table is "closed", as it can be seen in figures 2 and 3, where the two additional planes 3' and 3" are contained into the respective cups 6 and arranged substantially overlapping, the operator provides to manually extract the entire mobile carriage so as to withdraw the above additional planes and ar-

range them above the pair of rods 4, which protrude from the main plane 2.

[0019] Then, the operator provides to manually lower crosspiece 17, so as to allow the support of the additional planes 3 on the protruding pairs of rods 4 and afterwards, he provides to lifting the above crosspiece again so that, with the rotation of the small base 8, tooth 10 couples on strap 11 of the additional plane.

[0020] Of course, other embodiments are possible besides that illustrated, according to the table size or for the use of specific accessories and construction elements, without departing from the scope of the claims defined below.

Claims

1. COUPLING AND SUPPORTING DEVICE OF ADDITIONAL PLANES OF AN EXTENSIBLE TABLE, where the additional planes, consisting of detached elements disjoined from the same table and contained below the main plane, are extracted upon use, said device
   characterised in that
   it comprises a mechanism consisting of a pair of parallel rods, sliding into guides, applied below the main plane of the table, which - when needed - are made to protrude from a side of the same table, usually from the side exhibiting a smaller length, so as to form the support of an additional plane, each of the two rods of each pair being provided, at its end, with a spring leverage which provides to coupling the additional plane and keeping it locked when it is aligned with the same main plane.

2. COUPLING AND SUPPORTING DEVICE OF ADDITIONAL PLANES OF AN EXTENSIBLE TABLE, according to claim 1, **characterised in that** the pair of sliding rods supports a cup serving as container for the additional plane, when it is not used.

3. COUPLING AND SUPPORTING DEVICE OF ADDITIONAL PLANES OF AN EXTENSIBLE TABLE, according to claims 1 and/or 2, said device (1) being applied below the supporting plane (2) of the table and being intended to support at least one additional side plane (3), and **characterised in that** it comprises at least one pair of rods (4) sliding into guides (5) applied below the above supporting plane, between said rods there being present a leverage (7), actuated by the user, which provides to coupling and locking the additional plane (3) when it is aligned with the supporting plane (2).

4. COUPLING AND SUPPORTING DEVICE OF ADDITIONAL PLANES OF AN EXTENSIBLE TABLE, according to claim 3, **characterised in that** the leverage (7) consists of a small base (8), idly pivoted on the pin (9) integral with the rod (4) and provided with a tooth (10) which, in working position, couples with the strap (11), applied on the additional plane (3), thus realising the desired locking.

5. COUPLING AND SUPPORTING DEVICE OF ADDITIONAL PLANES OF AN EXTENSIBLE TABLE, according to claim 4, **characterised in that** the rotation of the small base (8) on the pin (9) to allow the coupling/releasing action, occurs through the lever arm (12), pivoted on the pin (13), integral with the small base (8) and engaged, through with the lozenge slit (14), on the guiding pin (15), anchored to the rod (4).

6. COUPLING AND SUPPORTING DEVICE OF ADDITIONAL PLANES OF AN EXTENSIBLE TABLE, according to claims 4 and 5, **characterised in that** the strap (8) - lever arm (12) crank gear is made elastic through the shaped spring (16), constrained at the two ends, respectively to the two pins (13, 15), which, by acting in contrast with the rotation of the lever arm (12), locks the leverage in the two end positions, respectively of coupling and releasing.

7. COUPLING AND SUPPORTING DEVICE OF ADDITIONAL PLANES OF AN EXTENSIBLE TABLE, according to one or more of the previous claims, **characterised in that** the leverages (7) applied into the two rods (4), are reciprocally connected through the crosspiece (17), which makes the two lever arms (12) reciprocally integral and forms the gripping handle for the operator.

8. COUPLING AND SUPPORTING DEVICE OF ADDITIONAL PLANES OF AN EXTENSIBLE TABLE, according to one or more of the previous claims, **characterised in that** each pair of rods (4) supports a cup (6) which contains the additional plane (3) when it is not used.

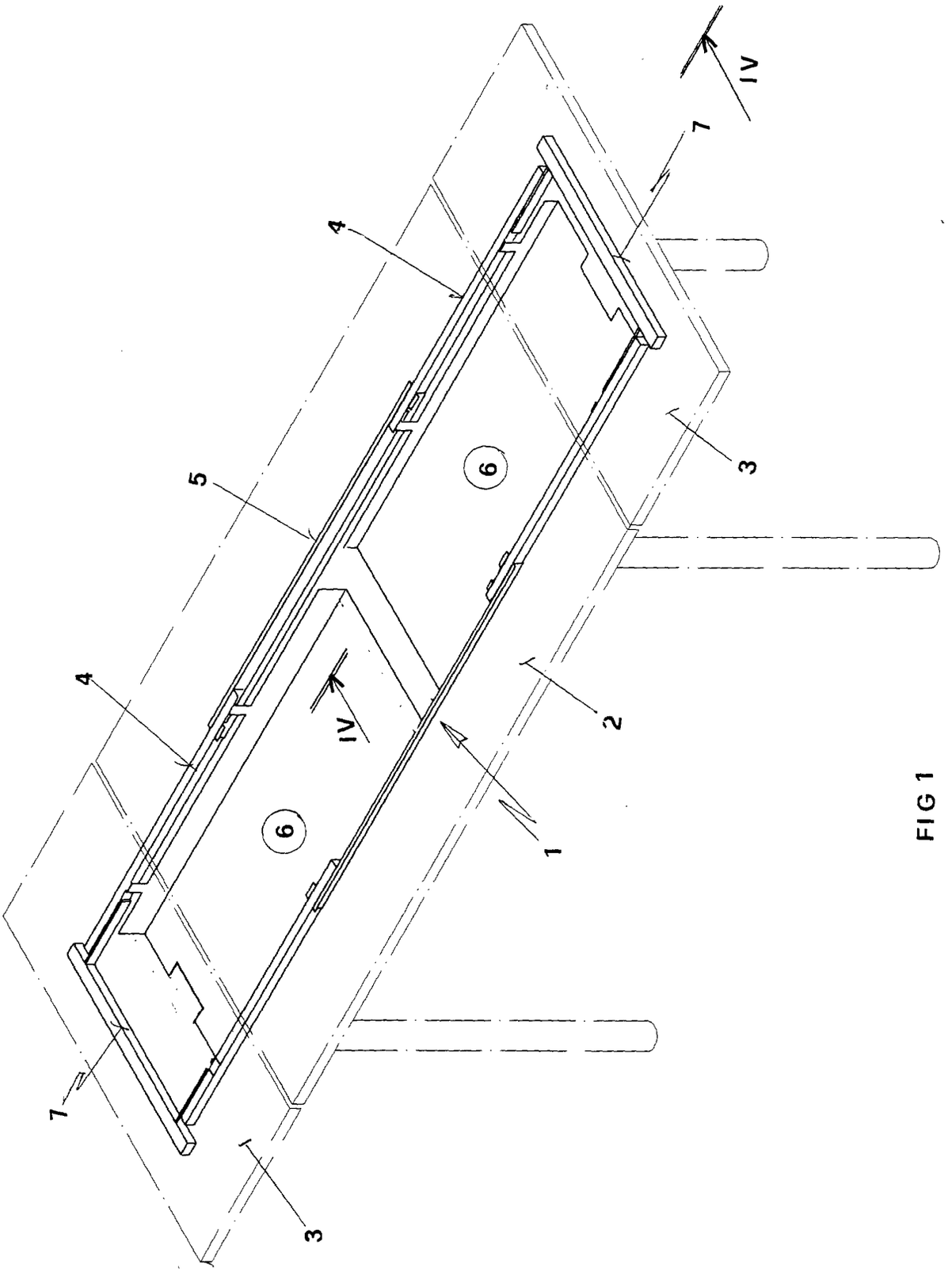

FIG 1

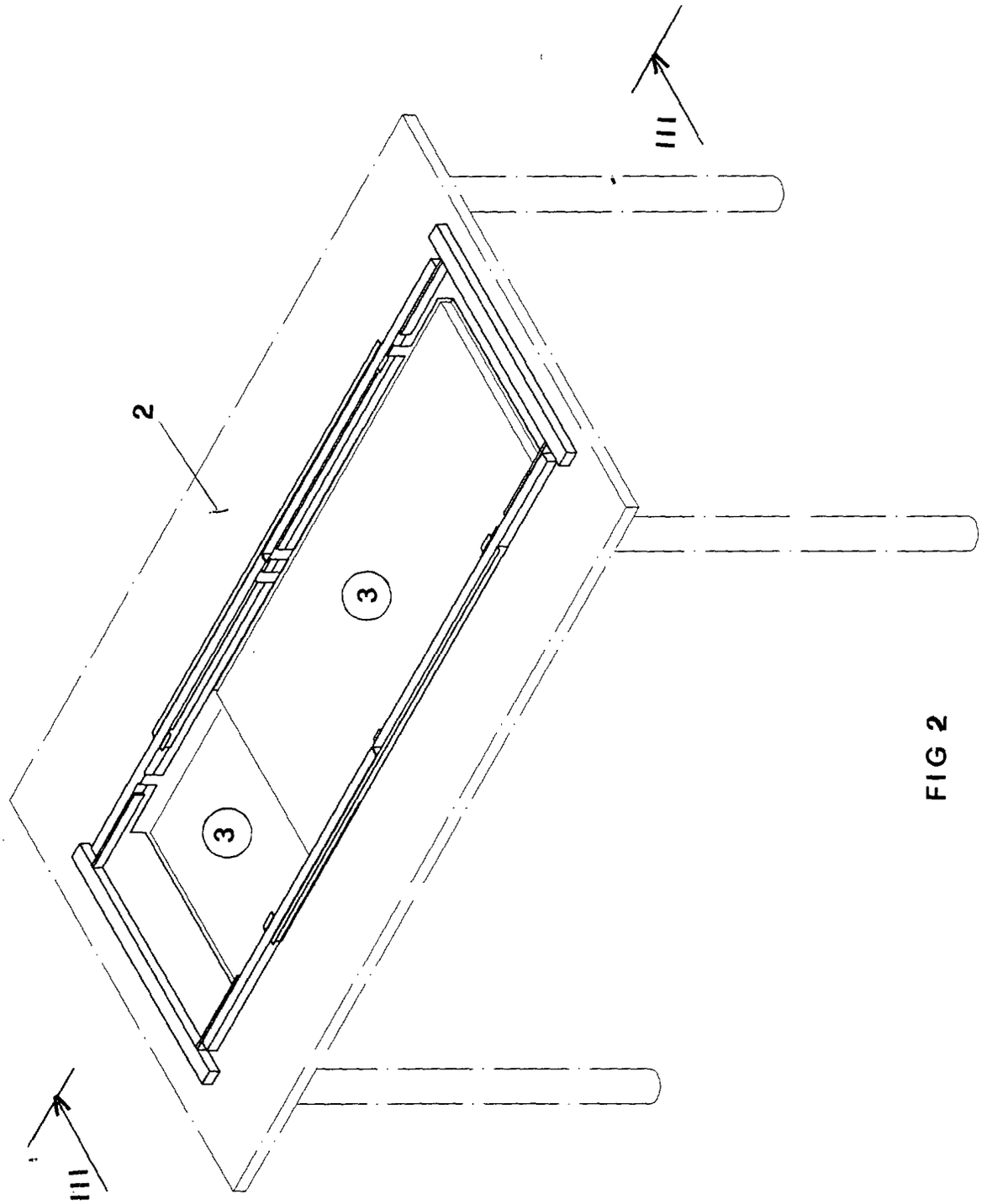

FIG 2

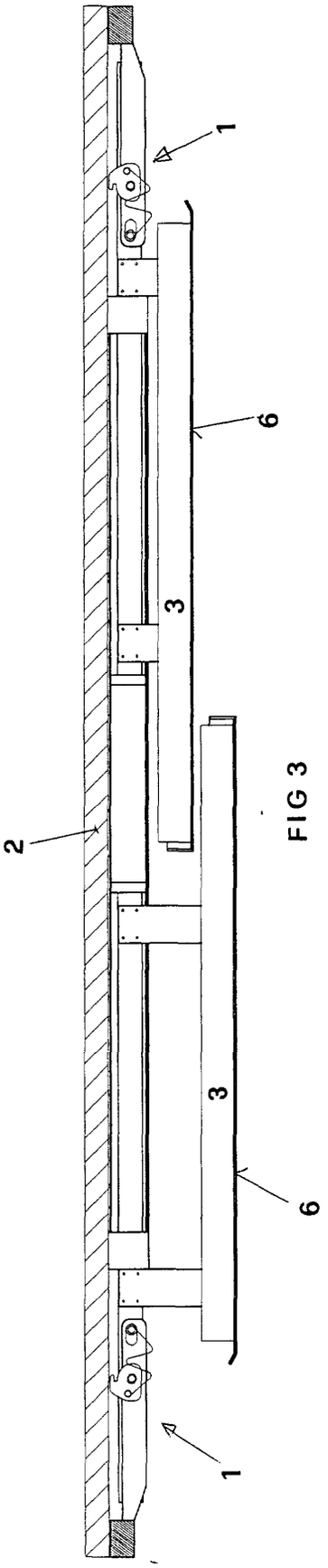

FIG 3

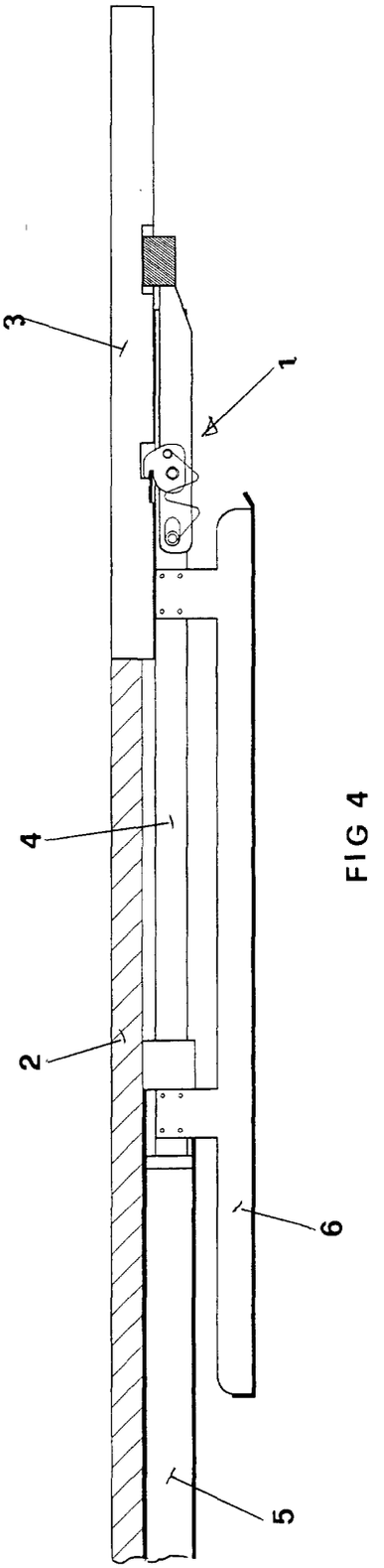

FIG 4

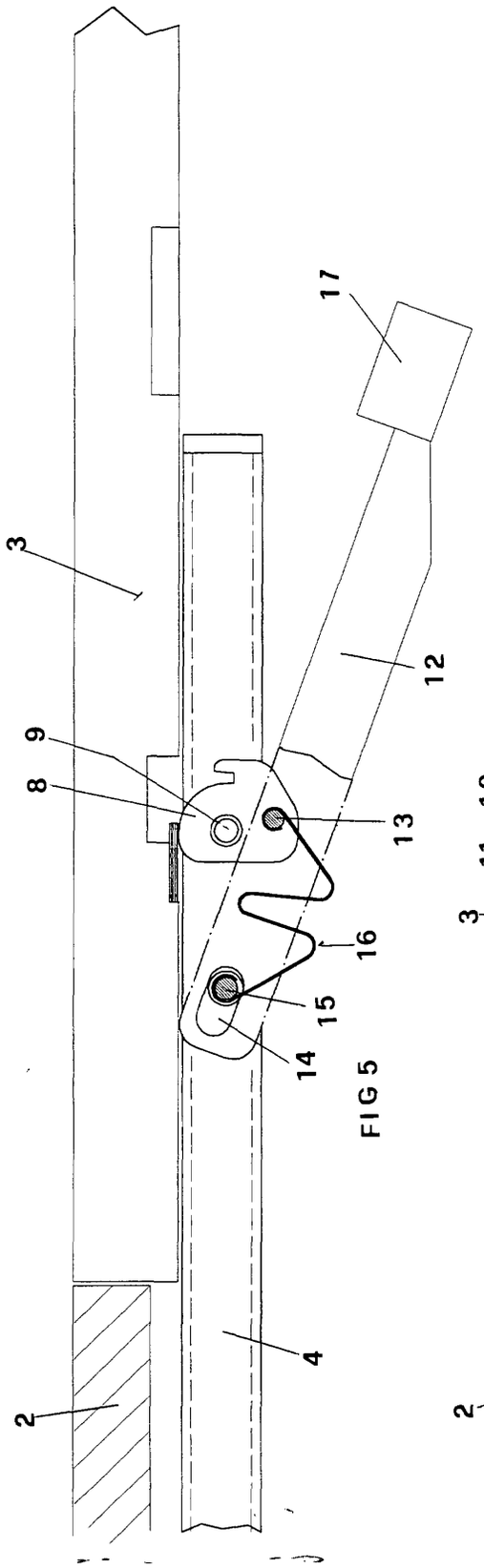

FIG 5

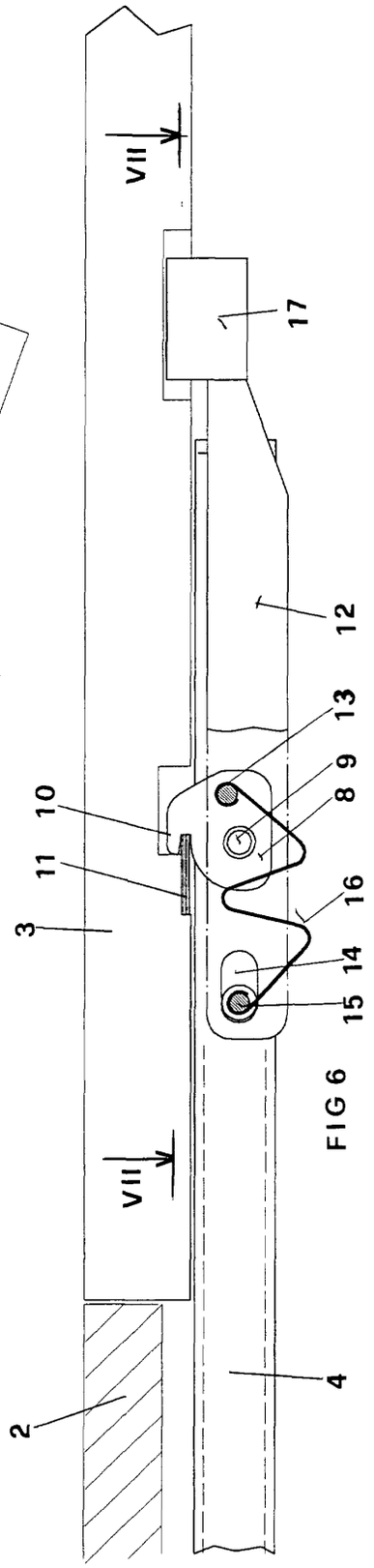

FIG 6

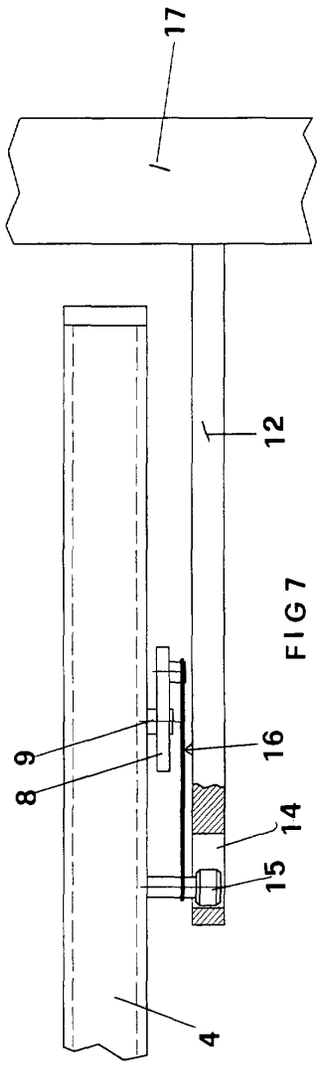

FIG 7

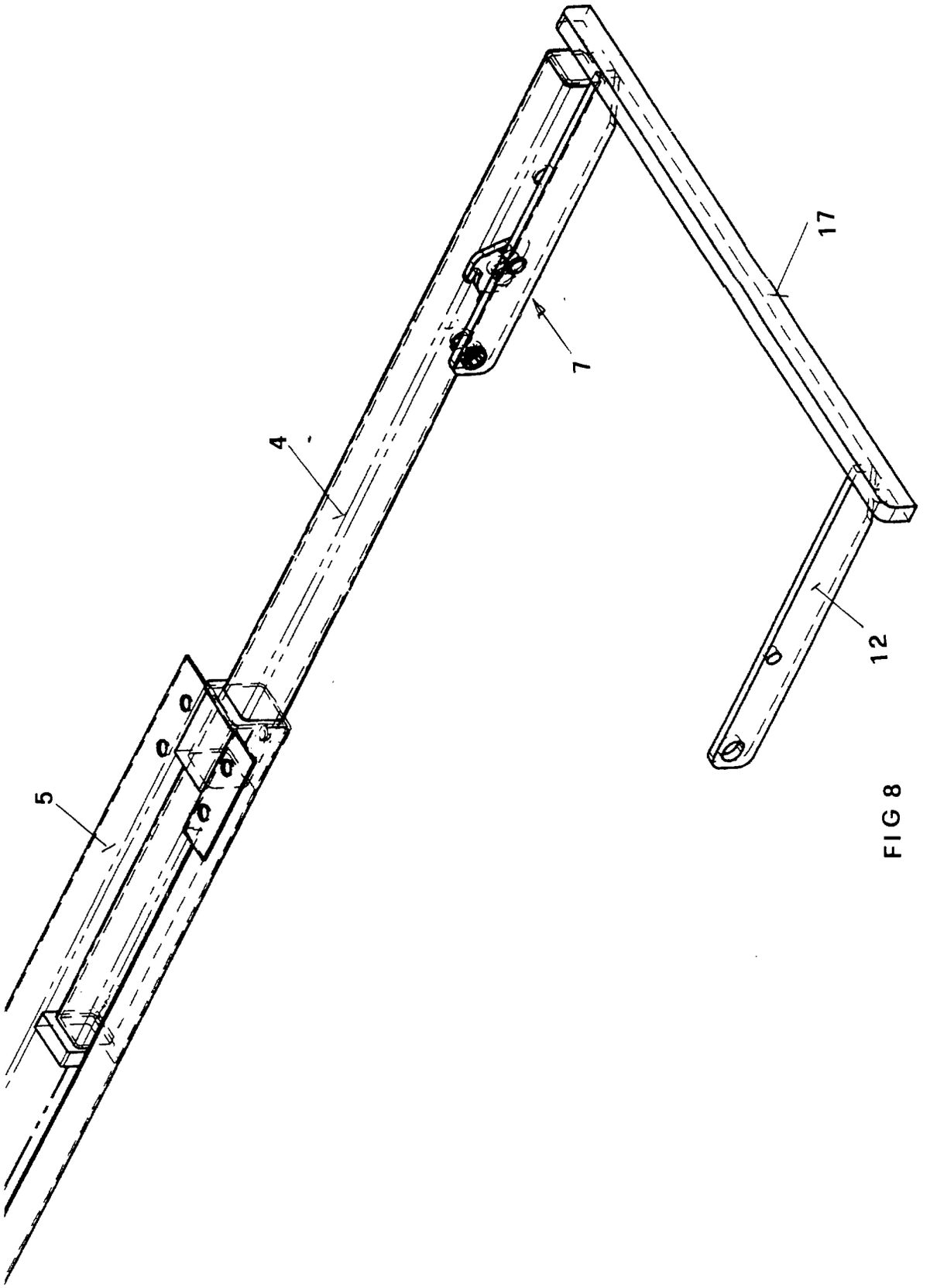

FIG 8

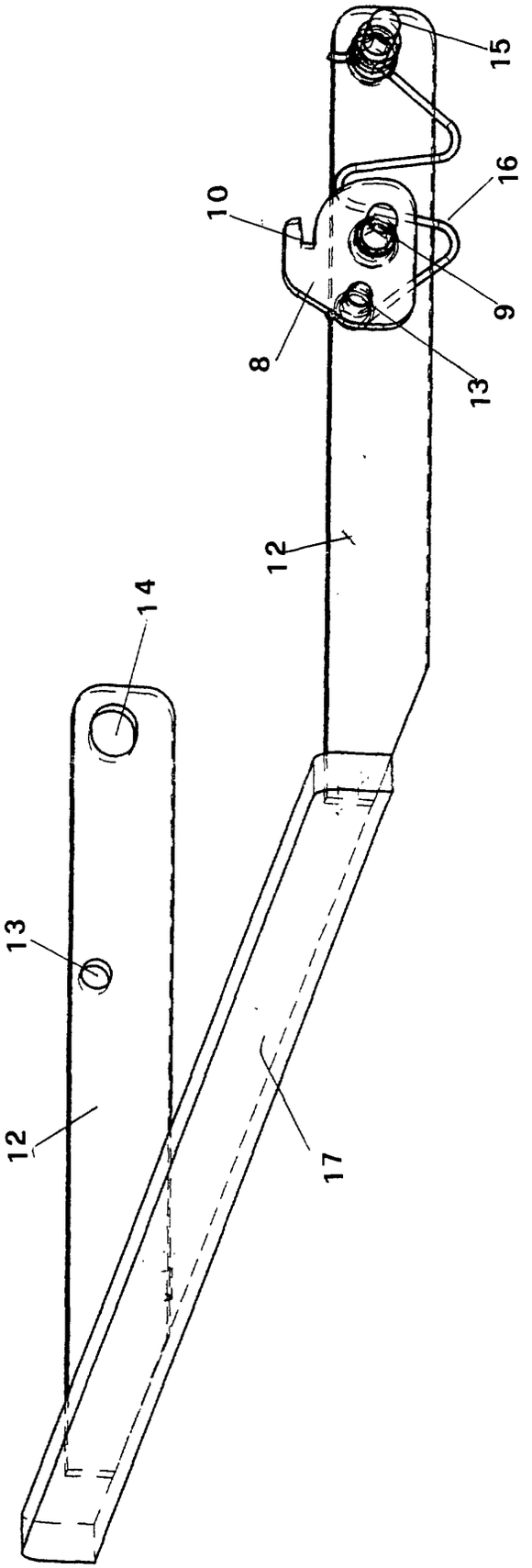

FIG 9

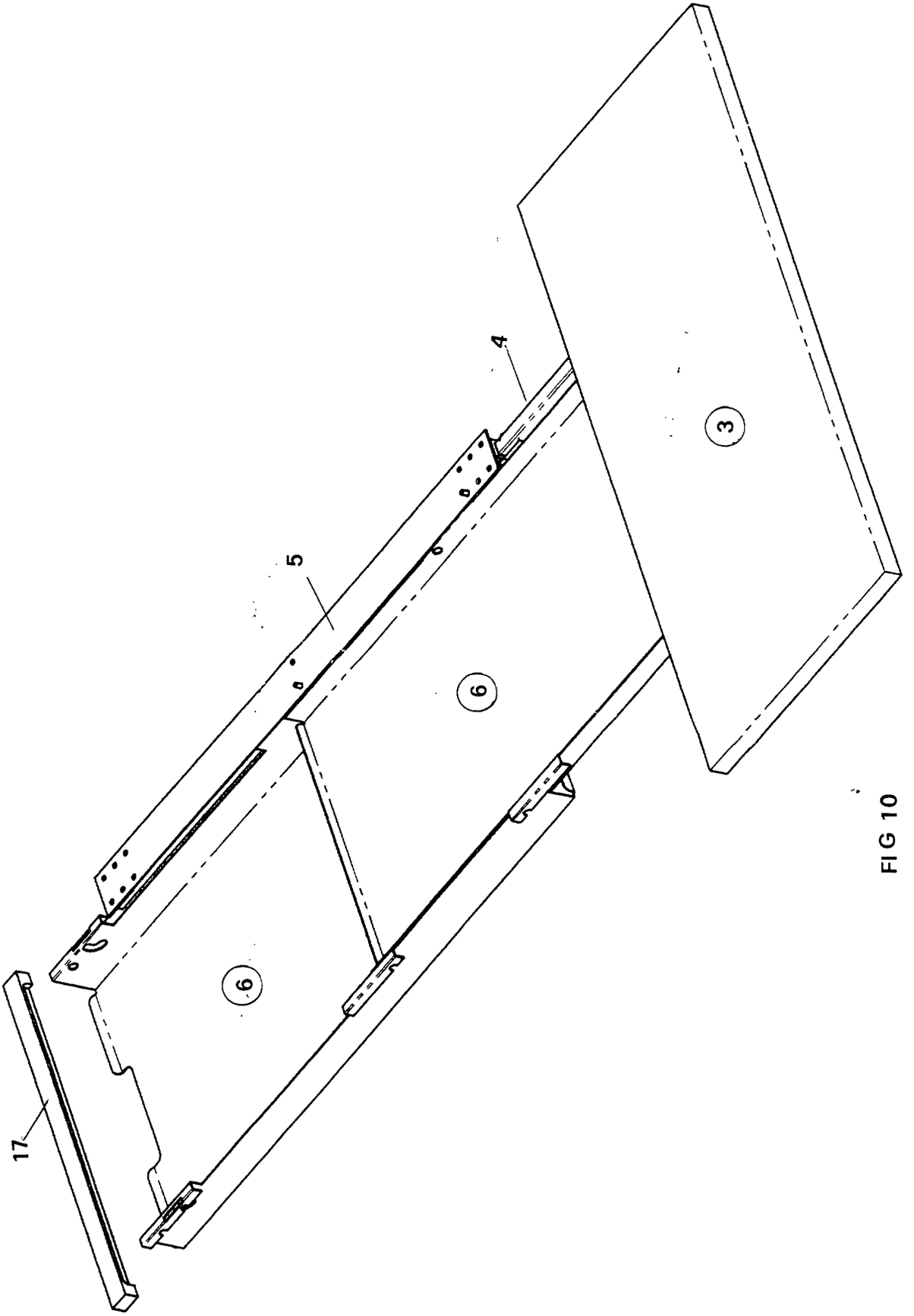

FIG 10

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EUROPEAN SEARCH REPORT

Application Number
EP 01 11 7341

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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X	US 2 111 616 A (CREECH JR CHARLES L) 22 March 1938 (1938-03-22) * page 2, line 64 - line 114; figure 1 *	1,3	
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	6 September 2001	Papadimitriou, S

CATEGORY OF CITED DOCUMENTS

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82