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(54) Hinge for casements in general and for outdoor casements in particular

(57) A hinge for casements in general and for outdoor casements in particular, comprising a first element (2) and a second element (3) which can rotate with respect to each other and can be coupled to the fixed structure (10) and to the casement (11) respectively. The hinge (1) for casements comprises at least one hollow screw (20) provided with an external thread (21) for coupling to the fixed structure (10) or the casement (11) and with an internal thread (23) for coupling to the threaded shank (24) of one of the elements (2,3). The external thread (21) is different from the internal thread (23) in order to produce, upon the rotation of the external thread (21), a translatory motion of the threaded shank (24).

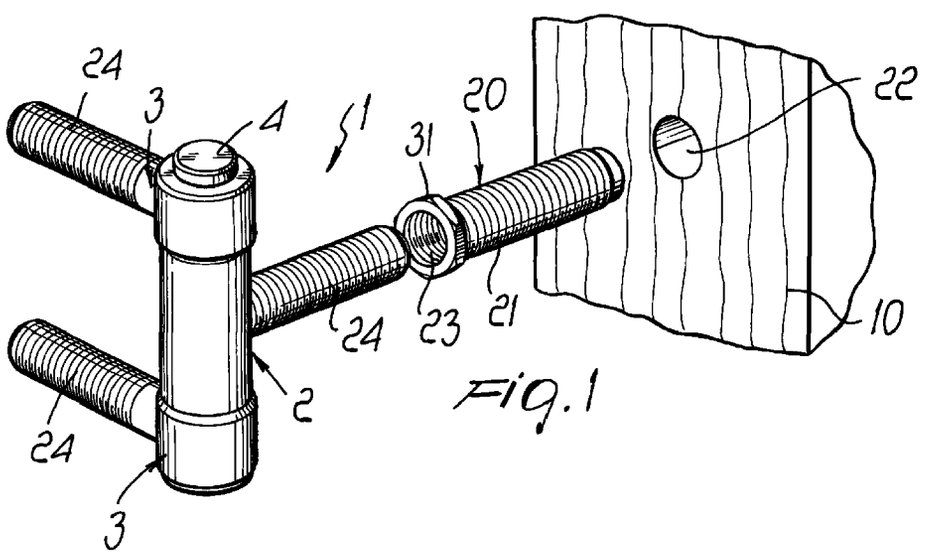

Fig. 1

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Description

[0001] The present invention relates to a hinge for casements in general and for outdoor casements in particular.

[0002] It is known that when installing casements, particularly outdoor casements such as shutters and the like, considerable difficulties are encountered in correctly positioning the rotation pivot of the hinge.

[0003] In particular, the hinges or pivots to which it is necessary to connect the other hinge element, which is fixed to the casements, are fixed to the jamb or pillaring; during this operation, it is often very difficult to align the pivots, since there is no adequate possibility of adjustment because the position of the hinge element that is fixed to the casement can be changed only in some cases, but this is feasible anyway with extremely complicated operations which essentially require the disassembly of the hinge element.

[0004] The aim of the invention is to solve the above problem, providing a hinge for casements in general and for outdoor casements in particular which allows to achieve optimum position adjustment, since it is possible to act both on the hinge that is fixed to the fixed structure and on the hinge element that is connected to the casement and it is furthermore possible to perform adjustment without having to disassemble the hinge.

[0005] Within the scope of the above aim, a particular object of the invention is to provide a hinge in which the position can be adjusted with very simple and easy maneuvers which allow to achieve precise mounting with great time savings.

[0006] Another object of the present invention is to provide a hinge which, by virtue of its particular constructive characteristics, is capable of giving the greatest assurances of reliability and safety in use.

[0007] Another object of the present invention is to provide a hinge for casements in general and for outdoor casements in particular which can be easily obtained starting from commonly commercially available elements and materials.

[0008] This aim, these objects and others which will become apparent are achieved by a hinge for casements in general and for outdoor casements in particular, according to the invention, comprising a first element and a second element which can rotate with respect to each other and can be coupled to the fixed structure and to the casement respectively, characterized in that it comprises at least one hollow screw provided with an external thread for coupling to said fixed structure or said casement and with an internal thread for coupling to the threaded shank of one of said hinge elements, said external thread being different from said internal thread in order to produce, upon the rotation of said external thread, a translatory motion of said threaded shank.

[0009] Further characteristics and advantages will become apparent from the description of a preferred but not exclusive embodiment of a hinge for casements in general and for outdoor casements in particular, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is an exploded perspective view of a hinge according to the invention;
figure 2 is a partially cutout view of a hinge element and of the hollow screw;
figure 3 is a top plan view of the hinge in the installed condition;
figure 4 is a view of the installed hinge, illustrating a possible adjustment of the position of the hinge pivot;
figure 5 is an elevation view of the hinge;
figure 6 is an elevation view of the hinge, with the hollow screw connected both to the threaded shank of the first element and to the threaded shank of the second element that constitutes the hinge.

[0010] With reference to the above figures, the hinge for casements in general and for outdoor casements in particular, according to the invention, generally designated by the reference numeral 1, comprises a first element 2 and a second element 3 which can rotate with respect to each other by virtue of the coupling of a hinge pivot 4. The illustrated example provides for an embodiment which uses two second elements 3 arranged at the ends of the sleeve of the first element 2; it is of course possible to use any constructive solution.

[0011] The first element 2 can be associated with the fixed structure, which can be constituted by a jamb 10, by a pillaring or by any other element, whilst the second element 3 can be connected to the edge of the casement 11.

[0012] The particularity of the invention is constituted by the fact that it comprises a hollow screw, generally designated by the reference numeral 20, which has an external thread 21 for the insertion of the hollow screw in the threaded hole or seat 22 provided either in the fixed structure or in the casement or optionally in both bodies.

[0013] The hollow screw 20 internally forms an internal thread 23 which couples to the threaded pivot 24 of the corresponding element 2 or 3.

[0014] In order to install the hollow screw 20, at the inner end there is a hexagonal hollow end or hex socket end, designated by the reference numeral 30, which allows engagement with the tool for inserting the hollow screw in the seat 22.

[0015] At the other end, the hollow screw has a shallow nut 31 whose function will become apparent hereinafter.

[0016] An important particularity is constituted by the fact that the internal thread 23 is different from the external thread 21; the difference can consist of a different pitch, but preferably the two threads wind in opposite directions, so that the rotation applied to the hollow

screw 20 inserted in the seat 22 produces an axial translatory motion of the threaded shank 24, which cannot rotate by virtue of its coupling to the other element.

[0017] In the case of threads having the same orientation but a different pitch, the rotation of the hollow screw produces a limited translatory motion of the threaded pivot, whilst in the case of opposite-handed threads a modest rotation of the hollow screw is matched by a significant translatory motion of the threaded shank, with a consequent greater possibility of adjustment.

[0018] As shown in figure 6, the hollow screw can be provided at only one of the elements, but it is advantageously possible to provide the hollow screw both on the first hinge element and on the second hinge element, thus significantly increasing the adjustment range.

[0019] During installation, first of all the hollow screw is inserted in the corresponding seat, then the threaded shank of the corresponding element is screwed inside it, thus achieving the insertion of the two elements, which are then mutually joined by the hinge pivot 4.

[0020] In order to perform positioning, it is sufficient to act on the shallow nut 31 which, as explained above, allows to adjust the position by virtue of a limited axial translatory motion.

[0021] It is important to point out that the hinges according to the present invention, show a remarkable stability, in that they are made with three "shanks", i.e. two second elements 3 and a first element 2 which is enclosed between the elements 3, thus preventing vertical oscillations which may occur with the conventional hinges usually having four "shanks", and which are fixed in a comb-like fashion.

[0022] From the above description it is thus evident that the invention achieves the intended aim and objects, and in particular the fact is stressed that extremely simple means provide a hinge which allows easy adjustment of the position of the hinge pivot while the casement is installed and without having to perform complicated operations.

[0023] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the inventive concept.

[0024] All the details may furthermore be replaced with other technically equivalent elements.

[0025] In practice, the materials used, as well as the contingent shapes and dimensions, may be any according to the requirements.

[0026] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A hinge for casements in general and for outdoor casements in particular, comprising a first element (2) and a second element (3) which can rotate with respect to each other and can be coupled to the fixed structure (10) and to the casement (11) respectively, characterized in that it comprises at least one hollow screw (20) provided with an external thread (21) for coupling to said fixed structure (10) or said casement (11) and with an internal thread (23) for coupling to the threaded shank (24) of one of said elements (2,3), said external thread (21) being different from said internal thread (23) in order to produce, upon the rotation of said external thread (21), a translatory motion of said threaded shank (24).

2. A hinge according to claim 1, characterized in that said external thread (21) and said internal thread (23) are mutually opposite-handed.

3. A hinge according to one or more of the preceding claims, characterized in that said external thread (21) and said internal thread (23) have mutually different pitches.

4. A hinge according to one or more of the preceding claims, characterized in that said hollow screw (20) has, at one of its ends, a hexagonal seat (30) for engagement with a tool for installing said hollow screw (20), said hollow screw having an external shallow nut (31) at its other end.

5. A hinge according to one or more of the preceding claims, characterized in that said first element (2) and said second element (3) are connected respectively to the fixed structure (10) and to the casement (11) by way of the interposition of said hollow screw (20).

6. A hinge according to one or more of the preceding claims, characterized in that it comprises two of said second elements (3) located, on the hinge pivot (4), at opposite parts with respect to said first element (2).

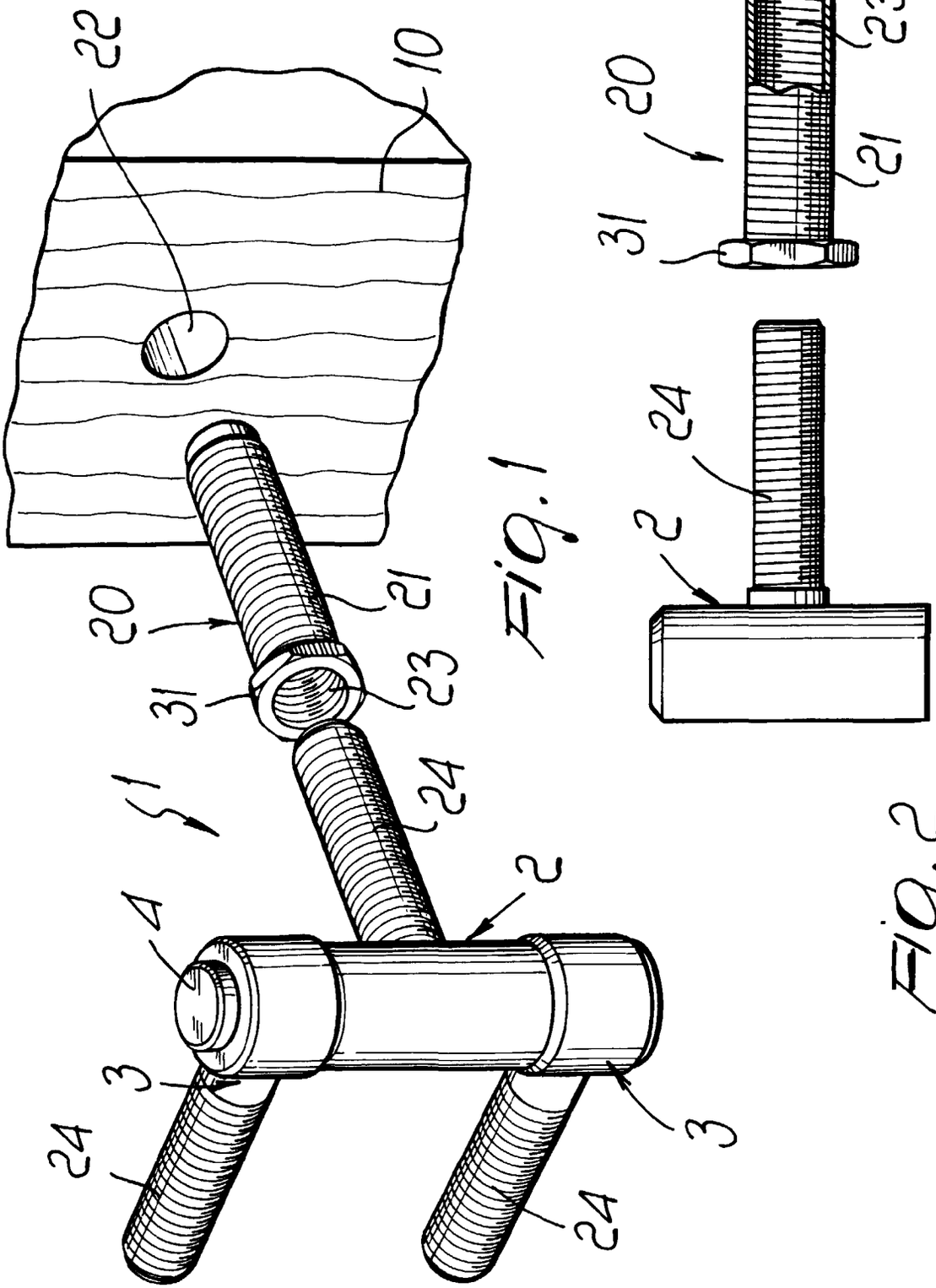

Fig. 1

Fig. 2

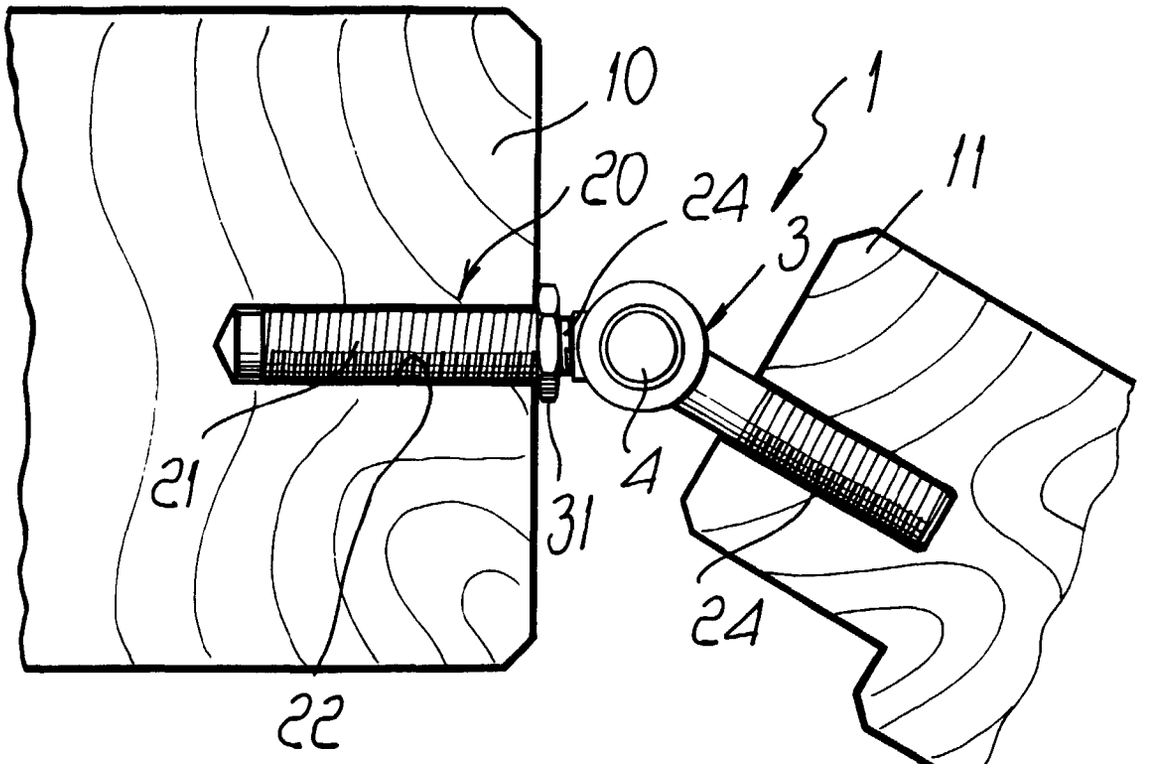

Fig. 3

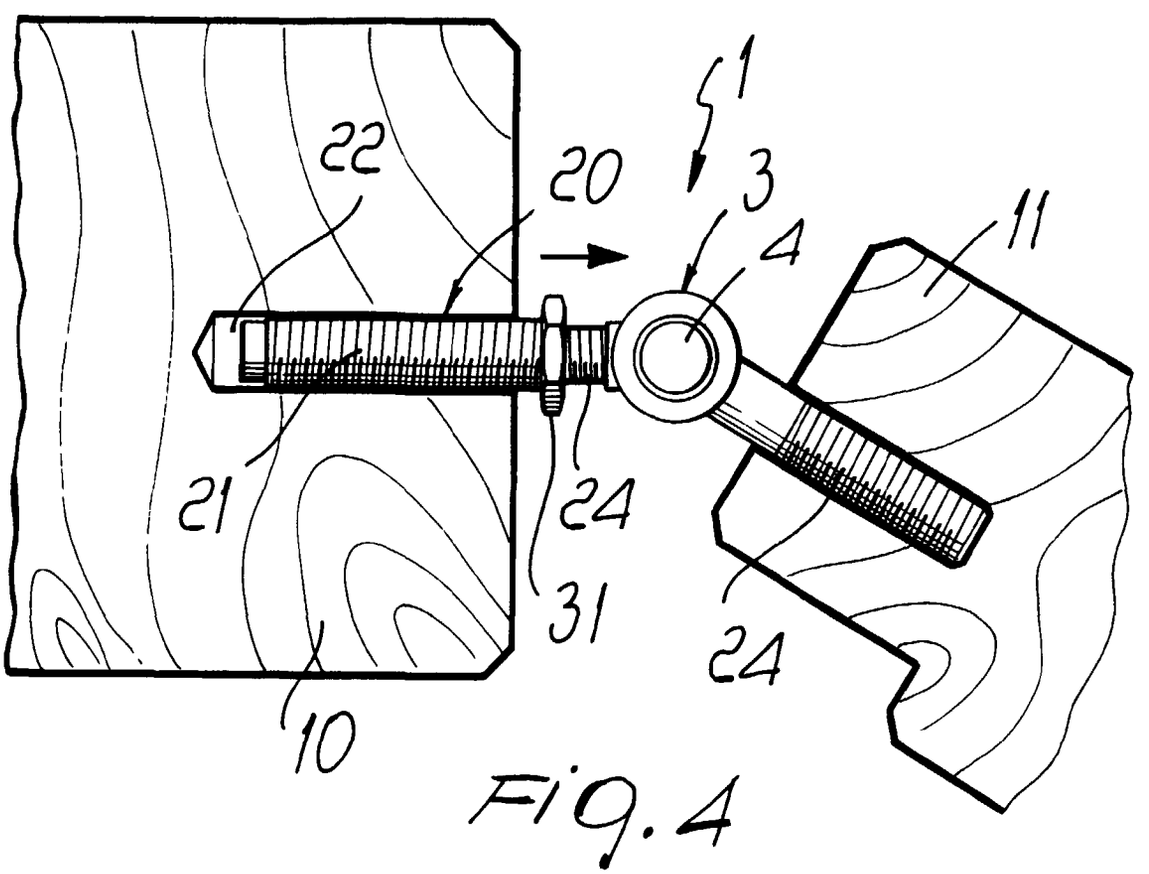

Fig. 4

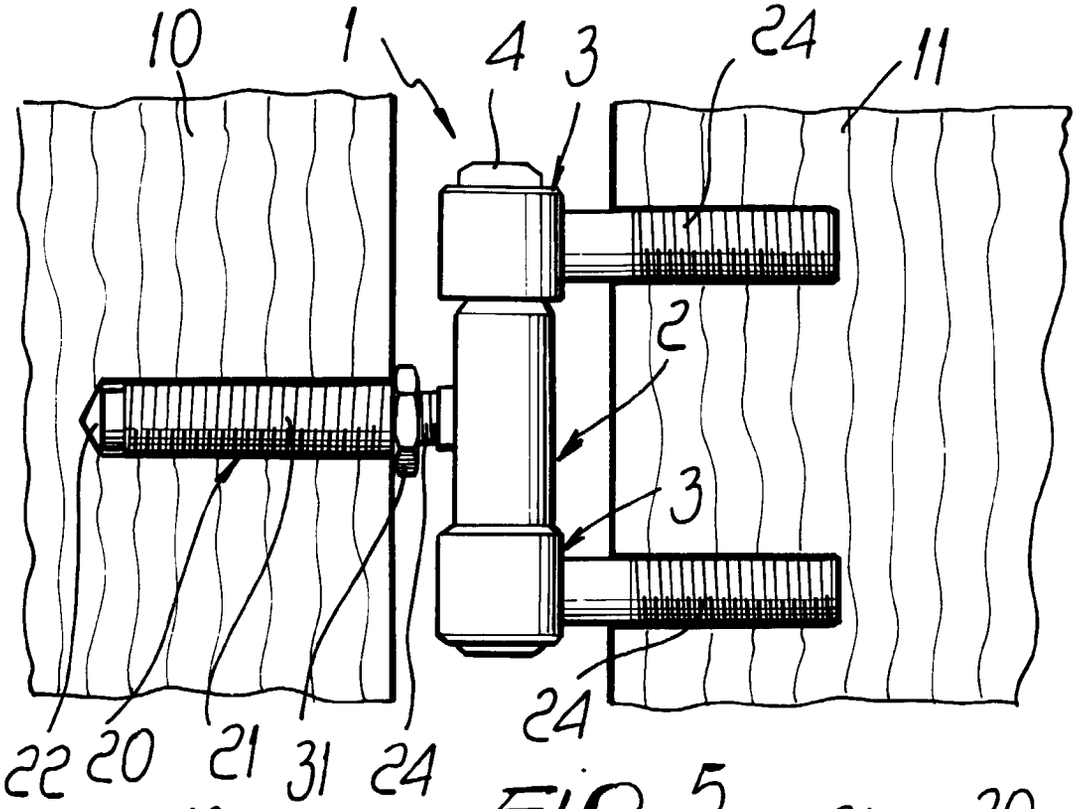
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FIG. 5

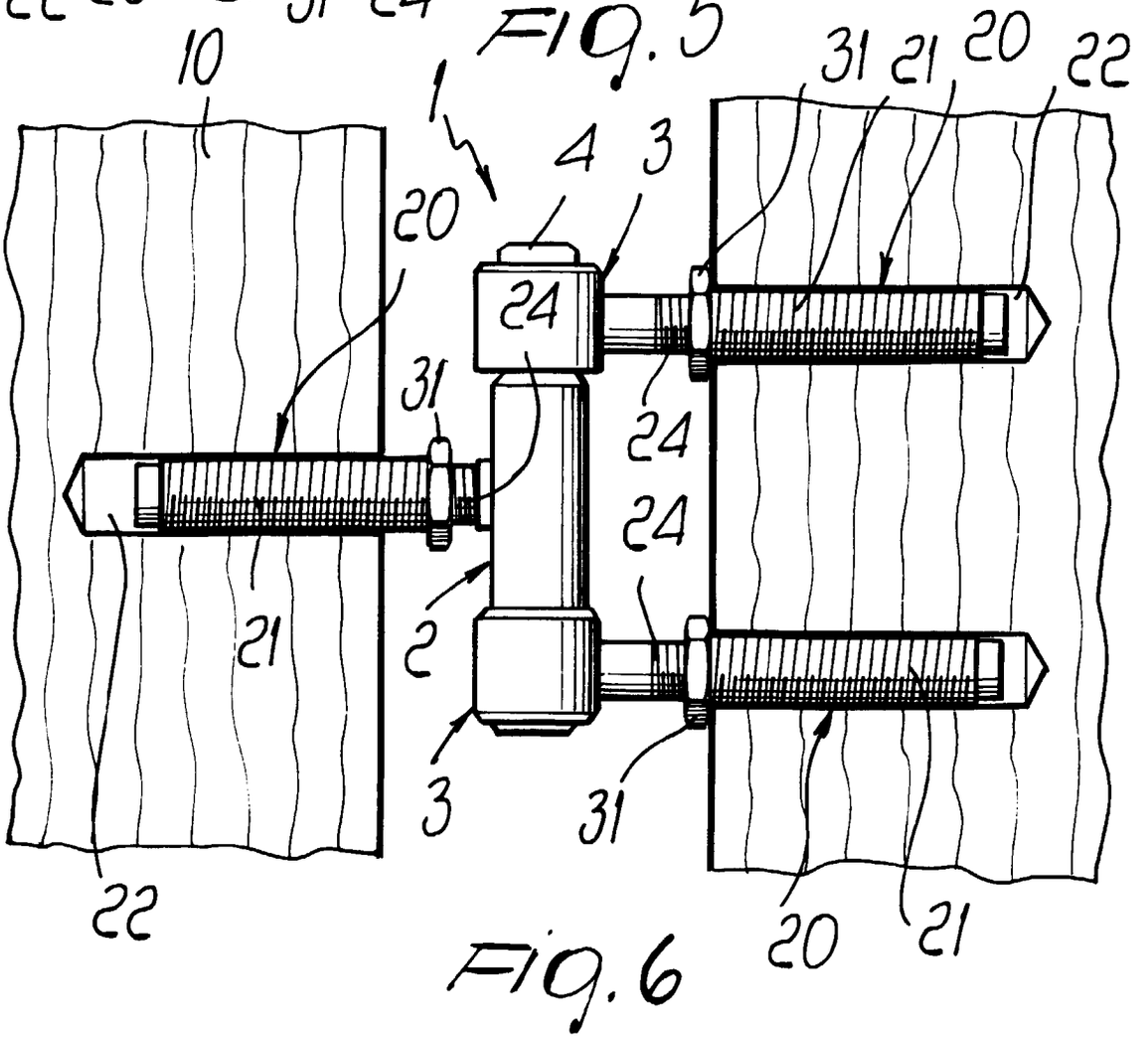
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FIG. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 98 10 7329

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.6)
X	DE 37 41 445 C (ANUBA-BESCHLÄGE) 20 April 1989 * column 1, line 53 - line 60 * * column 2, line 47 - line 62; figures *	1,2,5,6	E05D7/04
X	EP 0 065 215 A (HAUPTMANN) 24 November 1982 * page 4, paragraph 1 *	1,2,5	
X	DE 23 09 488 A (RICHTER) 29 August 1974 * page 2, last paragraph - page 3, paragraph 2; figures *	1,2,5	
A	DE 30 42 207 A (PFÄFFLI) 20 August 1981 * page 8, line 32 - page 9, line 3; figure 4 *	4	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

E05D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	3 September 1998	Van Kessel, J

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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