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(54) A device for quickly anchoring scaffolds, stages and provisional frames, particularly having a tubular structure or the like, to buildings

(57) A device for quickly anchoring scaffolds, stages and provisional frames to buildings including in combination an anchor screw or chemical dowel (1) which can be embedded into the building frame, a clamping means (4) which can be secured to the scaffold, and a rigid member (2, 3) having an adjustable length and being able to be subjected to a tensile stress between said anchor screw (1) and said clamping means (4) which is secured to scaffold (P) by quick-coupling/release means (6) so as to perform the function of a tension rod between the building and scaffold (P) which is thus anchored to the front (F) of the building.

Said rigid member with adjustable length has two rigid portions (2, 3) capable of co-operating with each other to perform the function of a tension rod between anchor screw (1) embedded into front (F) of the building and clamping means (4) secured to scaffold (P).

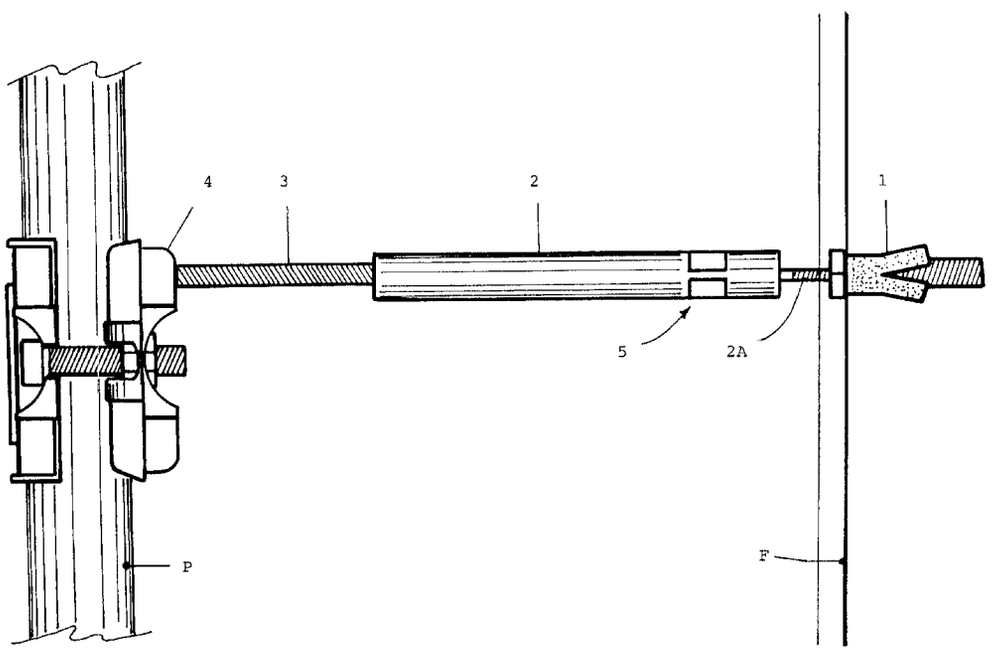

FIG. 2

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Description

[0001] The present invention relates to a scaffold anchor system for the maintenance, restoration, restructuring of buildings.

It is well known that the difficulties arising from the anchorage of the provisional stages to buildings to be subjected to maintenance and/or restructuring make such works particularly heavy as far as both time and money is concerned.

The current methods for anchoring scaffolds to the building frame usually consist in embedding irons into the wall, anchoring the scaffold to any overhangs of the building frame, using big screws to be screwed into the frame jambs, etc.

[0002] The present invention aims at providing a device allowing a quick anchoring of scaffolds and/or stages to a building by common anchor screw and/or chemical dowels that can remain in their positions after the installation for a later use.

The device according to the invention is provided with a member whose length can be adjusted according to the distance between the front of the building and the scaffold to be anchored, such an adjustable member being able to be subjected to tensile stress between a suitable anchor means connected to the scaffold and a dowel embedded into the wall.

[0003] According to a particular feature of the present invention the above-mentioned adjustable member is provided with quick-coupling-and-release means that simplifies and speeds up both scaffold assembling and disassembling operations.

In order to efficiently anchor a scaffold to a building it is sufficient to install a series of devices according to the invention in different points of the scaffold at different heights so that a plurality of anchorings distributed all over the front of the building is provided.

[0004] A better understanding of the invention will ensue from the following detailed description with reference to the annexed drawings that show only by way of a not limiting example a preferred embodiment of the invention.

In the drawings:

Fig. 1 is a top plan view of the device according to the invention installed between a scaffold and the front of a building;

Fig. 2 is an elevation side view of the device of Fig. 1;

Figs. 3 and 4 are exploded plan and elevation views of the described device; and

Fig. 5 is an elevation side view of the device in non-operating conditions.

[0005] With reference to the figures, the device according to the invention includes essentially an anchor screw or a chemical dowel 1 to be secured to the wall or front F of the building, a clamping means 4 secured to scaffold P, and two rigid members 2, 3 capable of cooperating with each other to perform the function of a tension rod between anchor screw 1 embedded into the building and clamping means 4 secured to the scaffold.

Particularly, anchor screw 1 is provided with an inside longitudinal (female) thread 1A from its outer end to the inside of the building. Such a female thread 1A is able to engage a corresponding longitudinal male thread 2A arranged at one end of rigid member 2 which is provided with another but opposite handed thread 2B parallel to thread 2A.

Rigid member 3 is provided with a thread which is capable of engaging thread 2B of rigid member 2, its free end having two projecting side flanges 6 able to engage clamping means 4 secured to the scaffold.

In other words, the top plan view of rigid member 3 is that of a "T"-shaped bolt with threaded shank and very short, squared flanges 6.

Clamping means 4 is essentially provided with a clamp formed of two half collars connected by two bolts which are similar to those currently used for securing to one another the tubular members forming the scaffolds.

[0006] This device can be very easily and quickly assembled. In fact, rigid member 3 is first coupled to one of the half collars forming clamping member 4 and then both half collars are clamped to the scaffold which is being raised. At this point, rigid member 2 is partially screwed to rigid member 3, as shown in fig. 5, whereupon free threaded end 2A is screwed to anchor bolt 1 which has been previously embedded into the building.

The tension rod formed by the coupling of the components 1, 2, 3 and 4 can be adjusted according to the distance between the tubular scaffold members and wall F by rotating rigid member 2 so that a safe and stable anchoring of the scaffold to the wall can be accomplished.

In order to facilitate the rotation of rigid member 2, its peripheral portion 5 is provided with at least two diametrically opposed flat surfaces that are parallel to the longitudinal axis of rigid member 2 itself so that an adjustable spanner can be engaged and used. It is obvious that, as an alternative, the outer surface of rigid member 2 may be provided with a polygonal section (having an even number of sides) to which an adjustable spanner or the like can be engaged.

[0007] A first advantage over the known art is that the assembling and the disassembling of the scaffold is made easier and faster owing to the simplicity by which the single anchor elements are coupled and quickly released by screwing and unscrewing threads and the fact that the T-shaped head of rigid member 3 can be released from the half collar of clamping means 4 only by axially rotating the same by 90°.

A second advantage of the invention is that the anchoring device can be locked in its position by a suitable nut

screwed to the shank of rigid member 3 which is tightened against the end of rigid member 2 after the adjustment.

A third advantage of the invention is given by the fact that the future assembling of a scaffold requires less time and work because the anchor screws remain in their seats embedded into the front wall and then are available for future use. In this connection, it should be appreciated that the next scaffolds to be raised can be completely or partially erected without impairing their stability and safety.

Still another advantage of the invention is given by the fact that as the next assembling does not require any hole for the anchor screws (which have been already embedded into the wall), the front of the building does not need any finishing after disassembling the scaffolds.

[0008] The present invention has been described and illustrated according to a preferred embodiment thereof, however, it should be understood that those skilled in the art can make modifications and/or equivalent replacements without departing from the scope of the present invention.

Claims

1. A device for quickly anchoring scaffolds, stages and provisional frames to buildings, wherein it includes in combination an anchor screw or chemical dowel (1) which can be embedded into the building frame, a clamping means (4) which can be secured to the scaffold, and a rigid member (2, 3) having an adjustable length and being able to be subjected to a tensile stress between said anchor screw (1) and said clamping means (4) which is secured to scaffold (P) by quick-coupling/release means (6) so as to perform the function of a tension rod between the building and scaffold (P) which is thus anchored to the front (F) of the building.

2. The device for quickly anchoring scaffolds to buildings of claim 1, characterized in that said rigid member with adjustable length has two rigid portions (2, 3) capable of co-operating with each other to perform the function of a tension rod between anchor screw (1) embedded into front (F) of the building and clamping means (4) secured to scaffold (P).

3. The device for quickly anchoring scaffolds to buildings of the preceding claims, characterized in that anchor means (1) is provided with an inside longitudinal female thread (1A) from its outer end to the inside of the building, said thread (1A) being able to engage a corresponding longitudinal male thread (2A) arranged at one end of rigid member (2).

4. The device for quickly anchoring scaffolds to buildings of the preceding claims, characterized in that rigid member (2) is provided with another but opposite handed thread (2B) parallel to thread (2A).

5. The device for quickly anchoring scaffolds to buildings of the preceding claims, characterized in that said rigid member (3) is provided with a thread which is capable of engaging thread (2B) of rigid member (2), said quick-coupling/release means being formed of two projecting side flanges (6) arranged at its free end and able to quickly engage to or disengage from clamping means (4) secured to the scaffold.

6. The device for quickly anchoring scaffolds to buildings of the preceding claims, characterized in that the top plan view of rigid member (3) is that of a "T"-shaped bolt with threaded shank and very short, squared flanges (6).

7. The device for quickly anchoring scaffolds to buildings of the preceding claims, characterized in that clamping means (4) is essentially provided with a clamp formed of two half collars connected by two bolts which are similar to those currently used for securing to one another the tubular members forming the scaffolds.

8. The device for quickly anchoring scaffolds to buildings of the preceding claims, characterized in that tension rod (1, 2, 3 and 4) can be adjusted according to the distance between the tubular scaffold members and the building wall by rotating rigid member (2) so that a safe and stable anchoring of the scaffold to the wall can be accomplished.

9. The device for quickly anchoring scaffolds to buildings of the preceding claims, characterized in that in order to facilitate the rotation of rigid member (2), its peripheral portion (5) is provided with at least two diametrically opposed flat surfaces which are parallel to the longitudinal axis of rigid member (2) itself so that an adjustable spanner can be engaged and used.

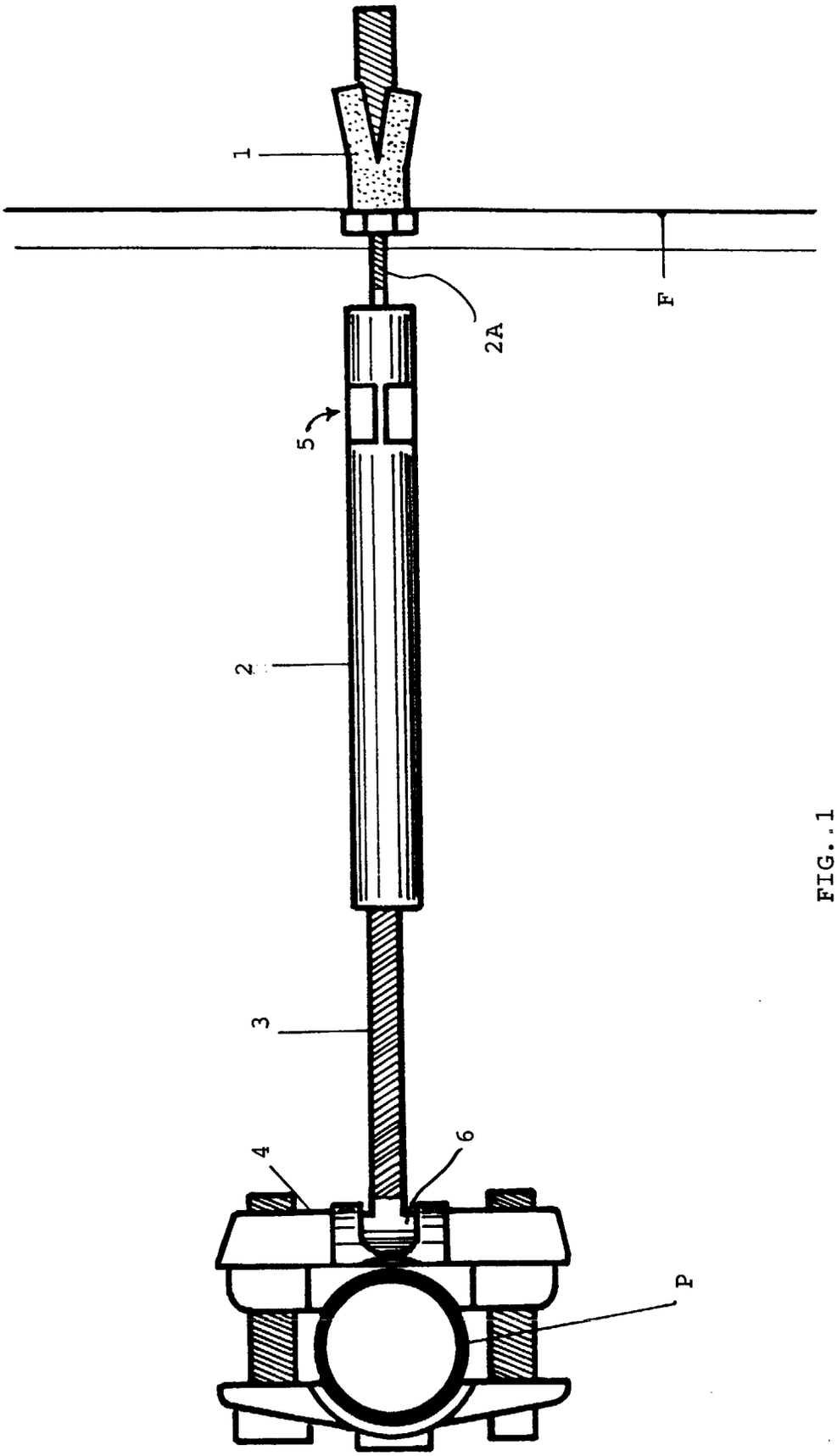

FIG..1

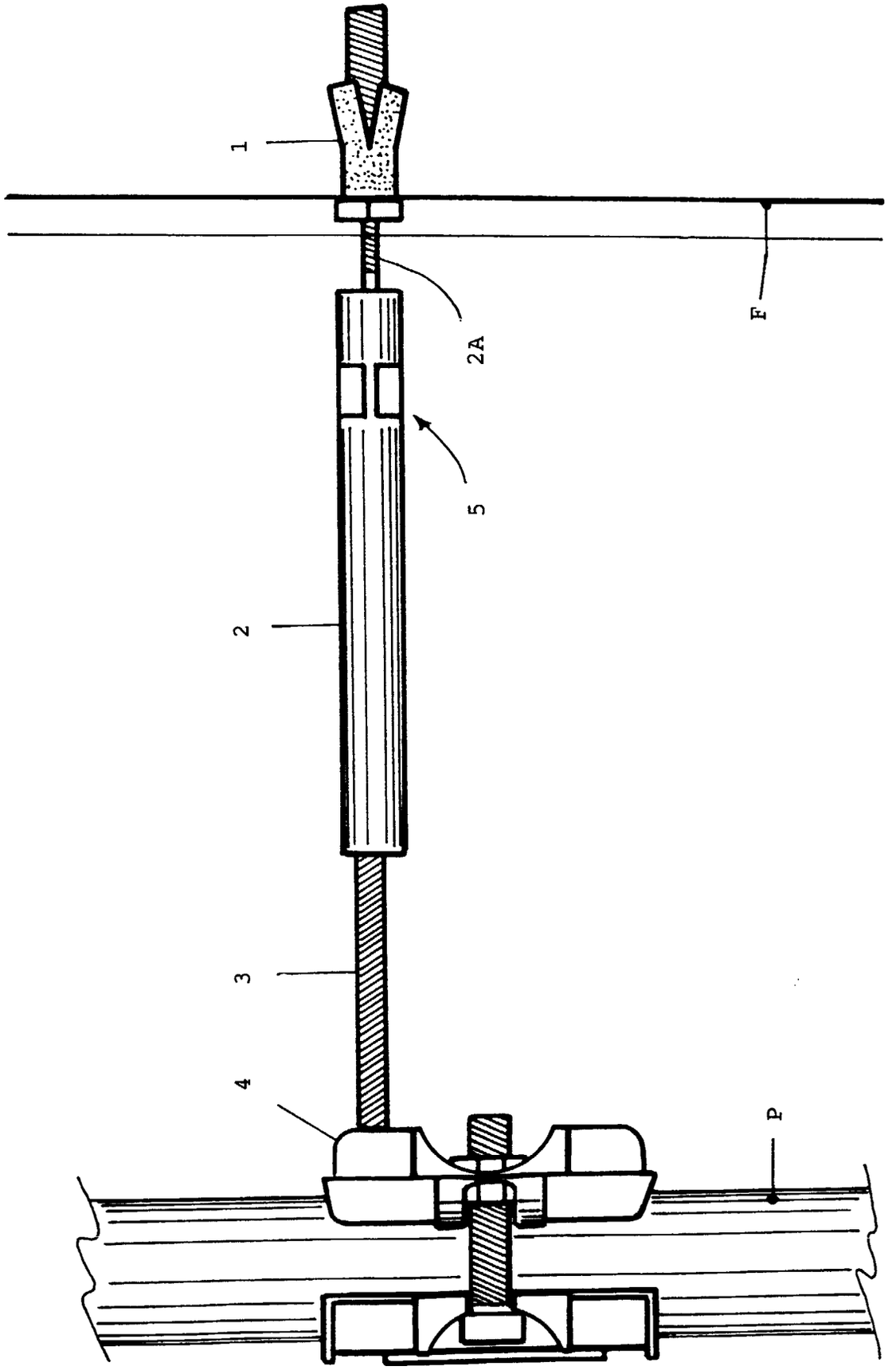

FIG. 2

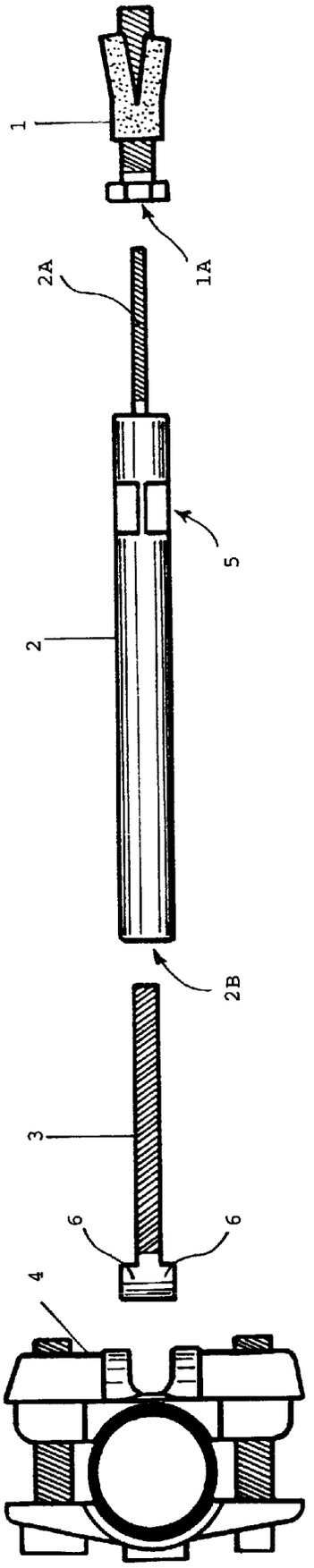

FIG. 3

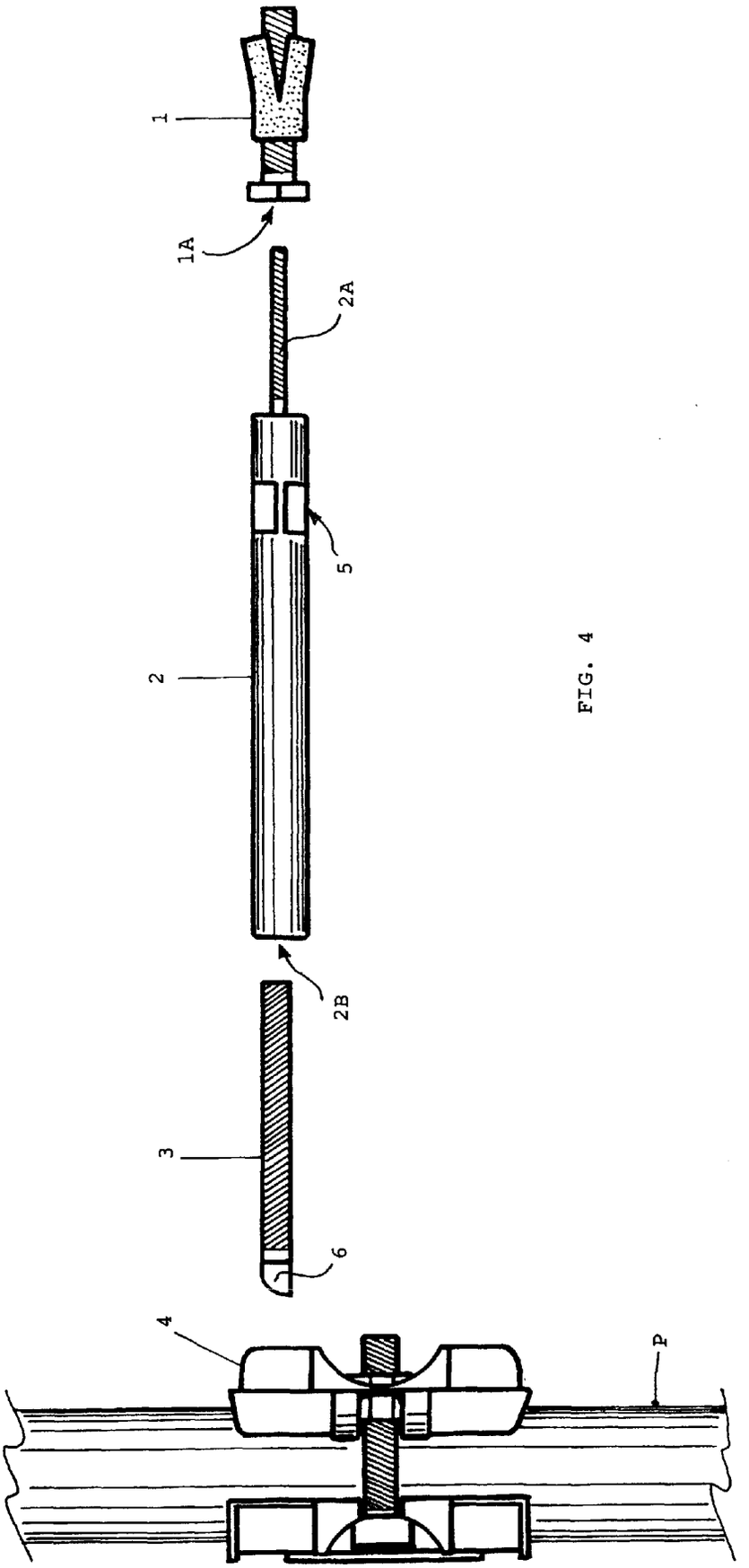

FIG. 4

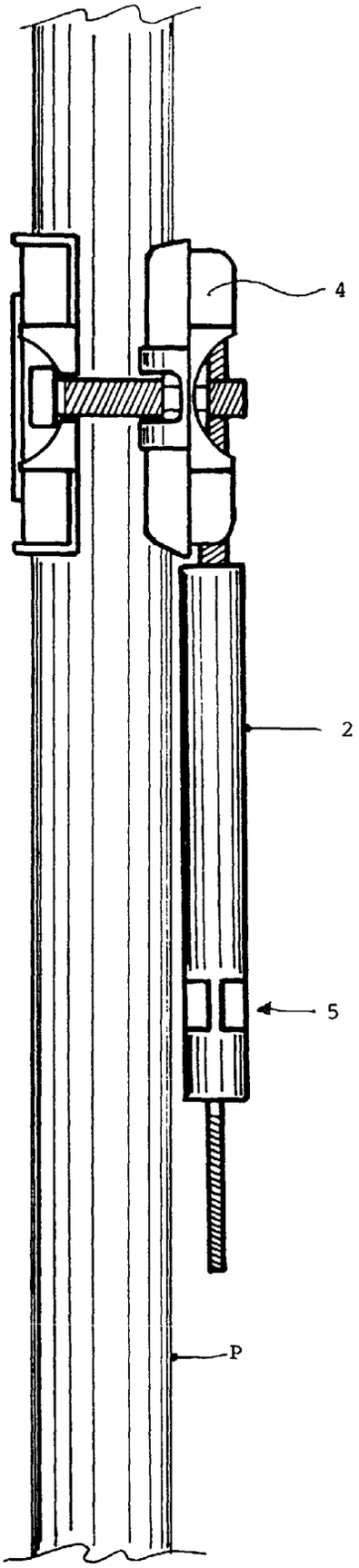

FIG. 5

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EUROPEAN SEARCH REPORT

Application Number
EP 98 83 0587

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	DE 94 17 562 U (HAESER) 16 February 1995	1,2,4,7, 8	E04G5/04
A	* page 5, paragraph 7 - page 8; figures *	5,9	
A	DE 28 50 279 A (HÄNZEL) 29 May 1980	1,2,4, 7-9	
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A	US 3 998 294 A (MOELLER) 21 December 1976 * the whole document *	1,2,4,8	
A	EP 0 071 376 A (J.W.RAYLOR & CO.) 9 February 1983		
A	DE 93 12 778 U (9312778) 3 March 1994		TECHNICAL FIELDS SEARCHED (Int.Cl.6) E04G

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	7 January 1999	Vijverman, W

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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