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(12) # EUROPEAN PATENT APPLICATION

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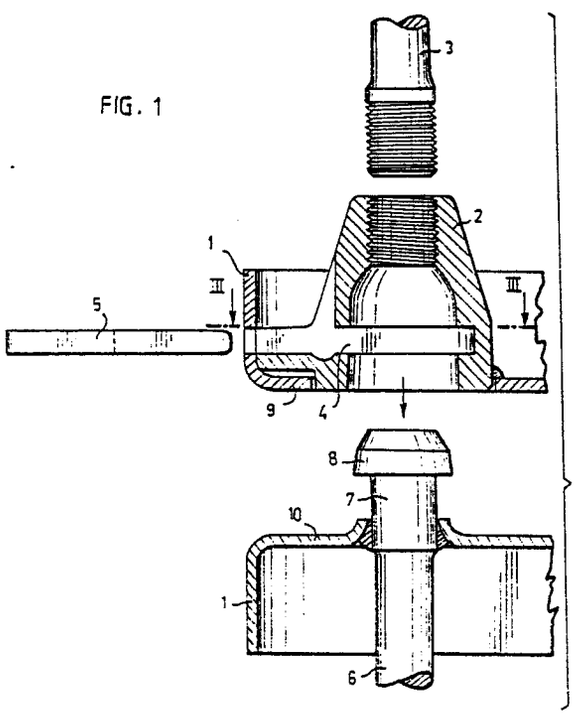
(54) **A method for the manufacture of a joint means for building units.**

(57) The present invention relates to a method for the manufacture of a joint means for building units. The joint is formed by a lock housing (2) positioned in one of the building units and a peg (7) projecting from the other building unit. The peg is a concrete steel (6) of the building unit and the free end of the peg is provided with a flange (8) which can be inserted in the lock housing (2). The peg (7) is locked in the lock housing by means of a locking means. In prior pegs, the flange (8) is formed by a ring welded to the end of a concrete steel, which is difficult to carry out as well as unreliable. This drawback can be avoided when the flange (8) is formed by jolting the end of the concrete steel (6).

FIG. 1



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A method for the manufacture of a joint means for building units

The present invention relates to a method for the manufacture of a joint means to be used in a joint between two concrete building units, said joint comprising a lock housing positioned in one of the building units, and a peg projecting from the joint face of the other building unit and arranged to be fitted in the lock housing, whereby the peg is a concrete steel of the building unit and the free end thereof is provided with a flange, and the peg is arranged to be locked in the lock housing by means of a locking means extending transversally to the peg.

An application of this kind of joint in concrete piles is disclosed in Finnish Patent Specifications 57 293 and 58 669. In these joints, the anchor or concrete steels project in some cases from the joint face of a pile so as to form a peg which is inserted in the lock housing of another pile. In order that the peg could be locked in the locking house by means of a locking means surrounding the peg, a steady ring or a steel part manufactured separately by turning and comprising a ring is attached to the free end of the peg so that the peg is provided with a flange-like end. The ring or steel part is fastened to the peg by welding.

Since the flange is exposed to extremely great forces, the weld joint has to be very durable.

The object of the present invention is to provide a method for the manufacture of a joint means, which enables jointing to be carried out in a more simple and less expensive way and at the same time the joint is more durable than previously. The method according to the invention is characterized in that the flange provided at the free end of the peg is formed by jolting the end of a concrete steel.

When the flange at the end of the peg is formed by jolting the concrete steel, no separate ring or steel part has to be manufactured and welded to the concrete steel, which simplifies the jointing, because it has been discovered in the invention that concrete steel is extremely suitable for jolting. There is not, either, any risk that a flange made according to the invention comes off.

The invention will be described in the following in more detail with reference to the attached drawings, wherein

Figure 1 shows the joint means of building units as a section perpendicular to the faces to be jointed,

Figure 2 is a horizontal sectional view of a lock housing along the line III...III shown in Figure 1, and

Figure 3 illustrates the invention when applied to concrete piles.

The joint faces of the building units to be jointed as shown in Figure 1 are provided with steel plates 9 and 10 which in the case of concrete piles are formed by a box 1 having the shape of a shallow bowl. Cup-shaped lock housings 2 are provided on the inside of the steel plates, and a concrete steel 3, preferably forming part of the reinforcement of the building unit, is attached to the lock housings, in the case of a pile this may be even the main steel extending up to the other end. The side wall of the lock housings 2 is provided with an opening 4 through which a two-branch locking means 5 can be knocked into the lock housing from outside the pile.

One of the building units to be jointed com prises concrete steels 6 projecting outside the box 1, whereby the number of these concrete steels equals to that of the lock housings of the other building unit to be jointed. That portion of the concrete steel which projects outside the box forms a peg 7 the free end of which is provided with a flange 8 the diameter of which exceeds that of the peg.

The joint of the building units may be formed by one or more pairs of a joint means comprising a lock housing and a joint means comprising a peg.

When joining concrete piles, for instance, it is to be preferred to use four pairs so positioned that both pile ends to be jointed comprise two joint means comprising a lock housing and two joint means comprising a peg.

According to the invention a flange 8 is formed at the free end of the peg 7 by jolting the end of the concrete steel 6. The jolting is preferably carried out as hot-jolting which is best suited for concrete steel.

When the building units are jointed to each other, the joint means on the joint faces are positioned against each other as shown in Figure 1 in such a way that the pegs 7 are passed into the lock housings. The pegs 7 are so long that the flange 8 is displaced past the opening 4 of the lock housing. For interlocking the piles, a locking means 5 is knocked into the opening 4 of the lock housing from the side, so that it is positioned between the flange 8 and the bottom of the lock housing. The branches of the two-branch locking means 5 are caused to turn towards each other by the action of guiding means provided in the lock housing or the shape of the wall as shown in Figure 3 so that the locking means is fastened in place.

By means of the method according to the inven tion it is possible to make a simple and durable joint which can be used for interconnecting all kinds of building units, such as piles and building elements.

Claims

1. A method for the manufacture of a joint means to be used in a joint between two concrete building units, said joint comprising a lock housing (2) positioned in one of the building units and a peg (7) projecting from the joint face of the other building unit and arranged to be fitted in the lock housing, whereby the peg is a concrete steel (6) of the building unit and the free end thereof is provided with a flange (8), and the peg (7) is arranged to be locked in the lock housing (2) by means of a locking means (5) extending transversally to the peg, **characterized** in that the flange (8) is formed at the free end of the peg (7) by jolting the end of the concrete steel (6).

2. A method according to claim 1, **characterized** in that the flange (8) is formed by hot-jolting.

3. A method according to claim 1, **characterized** in that the flange (8) is jolted at the end of a concrete steel (6) forming part of the structural reinforcement of the building unit.

FIG. 1

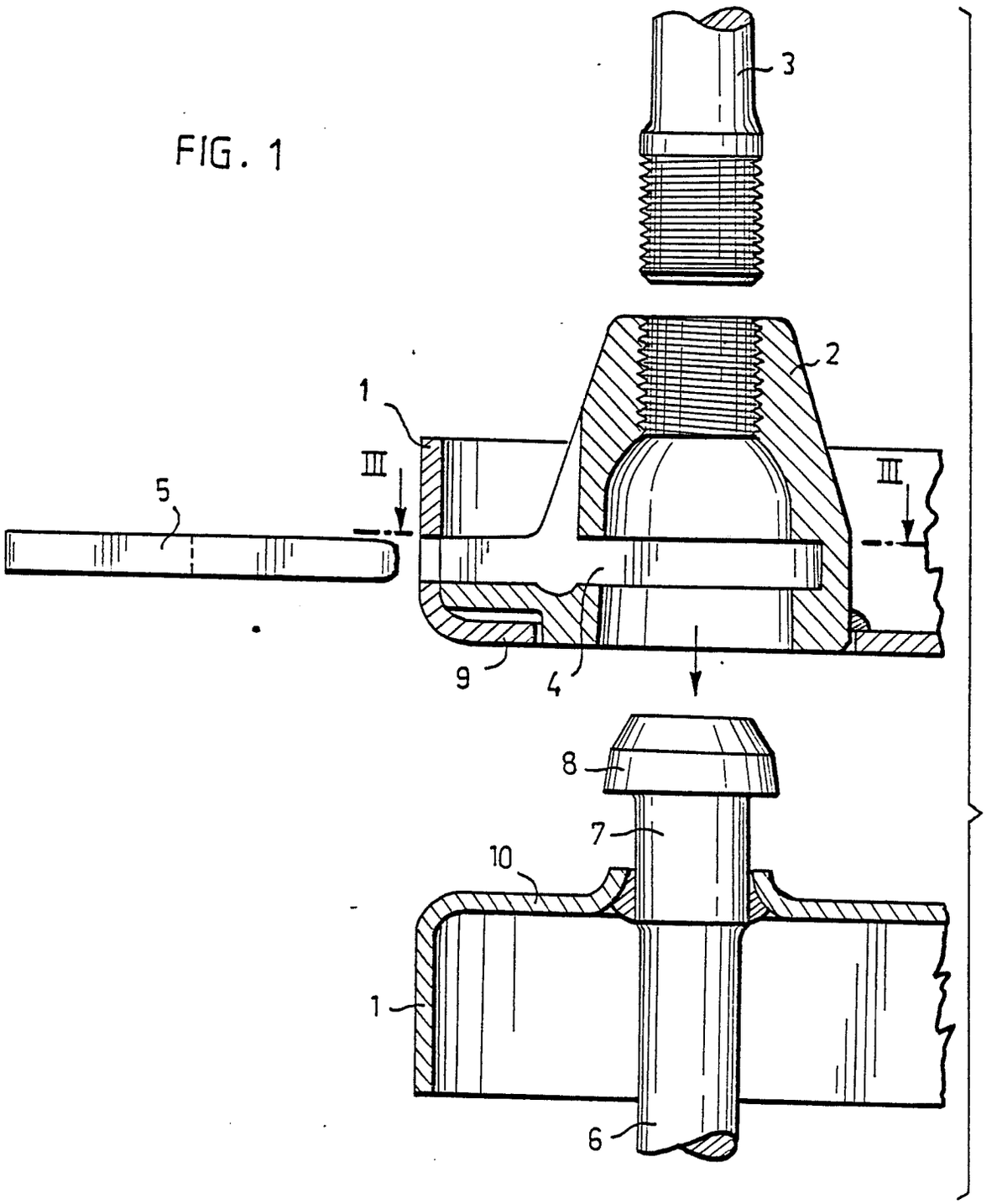


FIG. 3

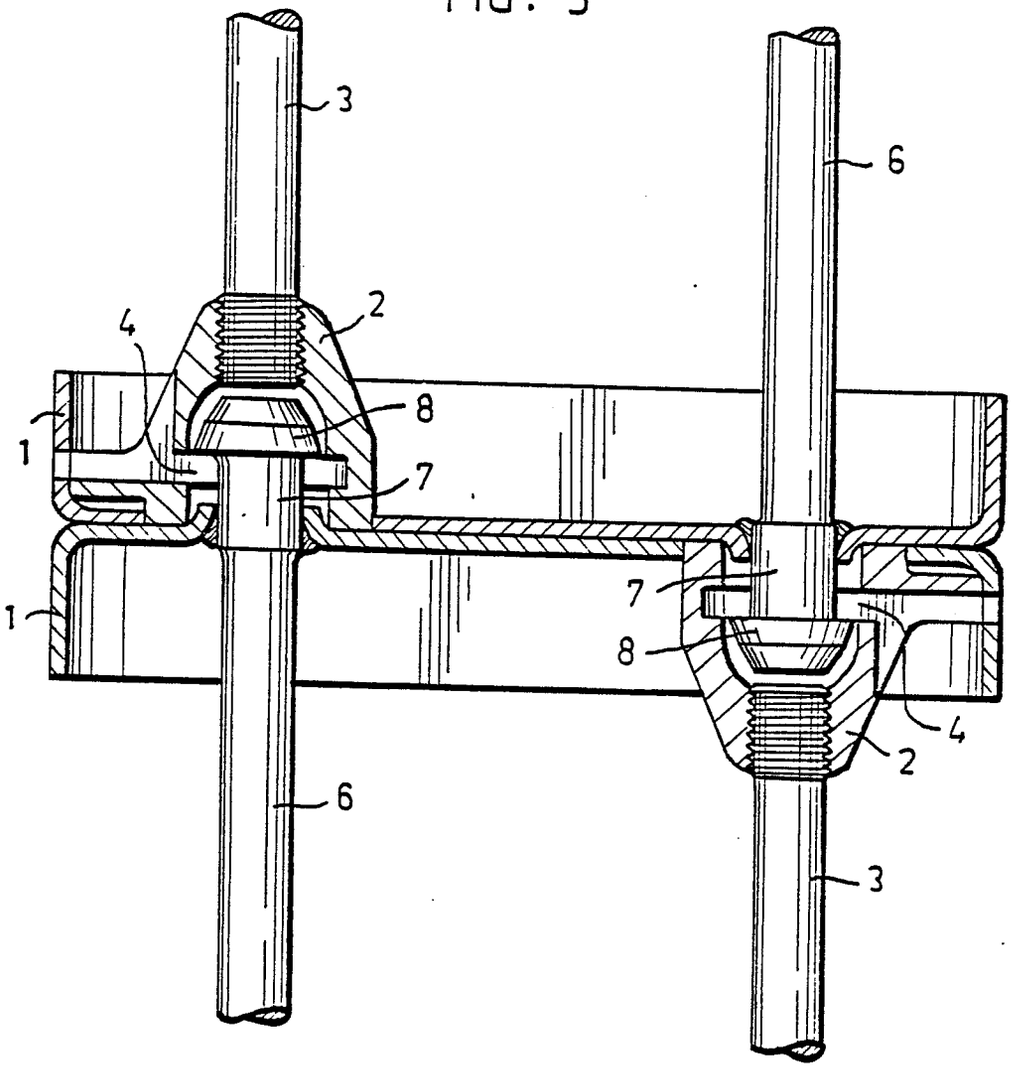
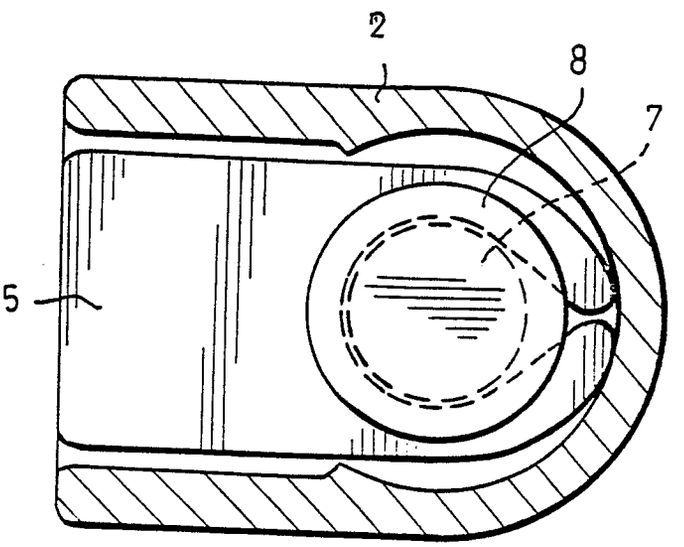


FIG. 2



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EUROPEAN SEARCH REPORT

Application Number

EP 87 11 5548

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.4)
D,Y	FI-B- 58 669 (OY LOHJA AB) * Figures 1-3 *	1-3	E 04 B 1/21
Y	GB-A- 772 103 (KÖHLER) * Whole document *	1-3	
A	US-A-4 590 724 (M. KURAUCHI et al.) * Column 3, lines 45-49 *	1-3	
D,A	FI-B- 57 293 (OY LOHJA AB)		

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

E 04 B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	15-01-1988	PORWOLL H.P.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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