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# (12) EUROPEAN PATENT APPLICATION

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## (54) Lock for glass doors

(57) Double fastener lock symmetrical with respect to the horizontal axis of the door, and provided with a fixed intermediate U-plate (2) which acts as a stop for the lock's insertion in glass pane (3); bases (4) with housing (5); bridges (1) provided with corresponding extendable cylinders (1) and mortisings (1.2); side enclosures (6) of bases (4) provided with an orifice (6.1) for each cylinder (1.1) to pass; each cylinder (1) provided with a widened end (1.3) with a lateral recess having a lug (7) inserted in it; and an elastic plate (9) with projections (9.1) inserted in a recess of base (4).

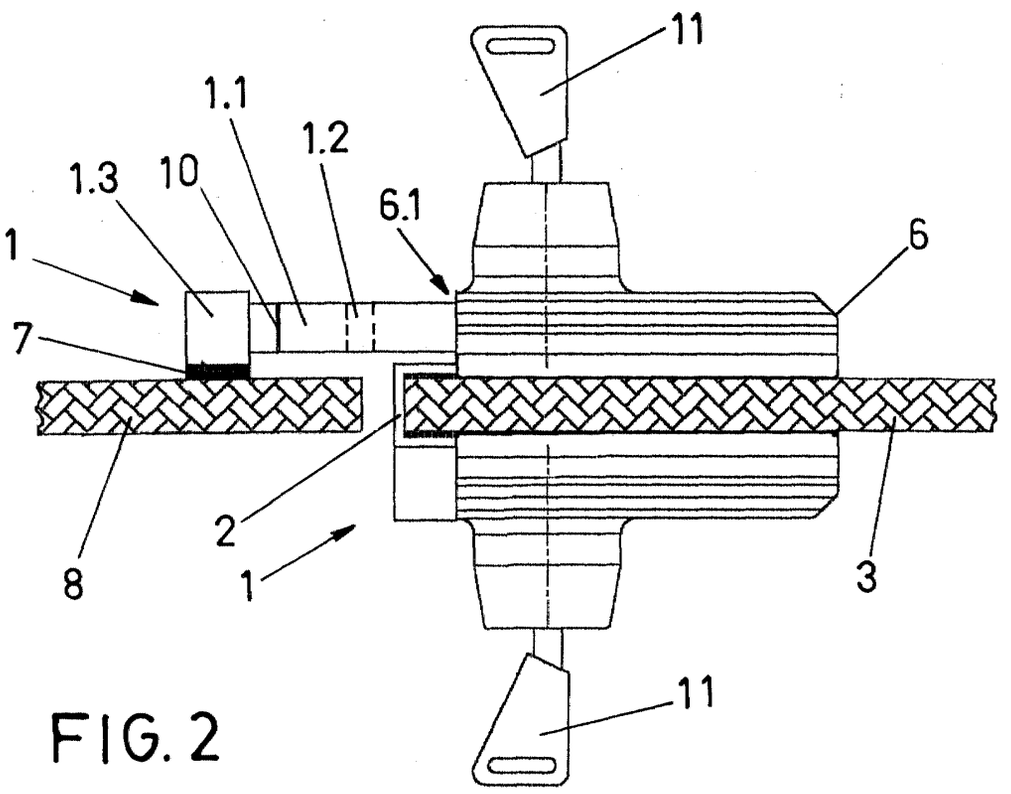



FIG. 2

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## Description

### OBJECT OF THE INVENTION

**[0001]** The invention here disclosed consists of a lock for glass doors, from among those straddling both sides of the door and provided with extendable fasteners.

**[0002]** The invention is characterised by a special construction of the locks, in two forms of embodiment, single or double and placed symmetrically or not, provided with one or two bridges laterally extendable beyond the intermediate fixed U-plate which functions as a stop for the insertion of the lock in the glass.

### BACKGROUND OF THE INVENTION

**[0003]** Locks for glass doors are widely known and used, so that it is not considered necessary to mention more than the difficulty in operating the two parts which generally comprise them, when they are placed opposite each other when locking the door.

**[0004]** It is also known that these conventional locks require mortisings made prior to tempering the glass, and occasionally are also provided with orifices which force the user, in the event of replacing the lock, to keep using the same brand of lock as it is physically impossible to adapt other locks of different origin by reworking the glass once tempered.

**[0005]** The applicant is not aware of any locks, whether single or double, in a single piece as regards its operation and with the advantages and simplicity of the one described below.

### DESCRIPTION OF THE INVENTION

**[0006]** The invention object of this memory relates to locks for glass doors, from among locks which straddle both sides of the door on its closing edge and provided with extendible fastening means, continued on the fixed coplanar wall next to the door, also made of glass, which completes the enclosure of the construction.

**[0007]** The invention is characterised by a special construction of the locks, either with a single or double fastener, arranged symmetrically with the horizontal axis of the door and provided in the former case with a lock as a laterally extendable bridge, beyond the intermediate fixed U-plate, which acts as a stop when inserting the lock in the glass, while in the latter case there are two fasteners in a bridge placed symmetrically.

**[0008]** The horizontal central U-plate is inserted in one or both end lateral recesses of the base(s) of the housing(s) of the lock(s), with the free end of the U simply welded to a rectangular plate in the case of the single lock.

**[0009]** The bridge or bridges have their cylinders or fasteners provided with recesses along their main lines, on end positions matching the maximum extension or retraction of the bridge from the base, suitably provided with an orifice opposite each cylinder.

**[0010]** Additionally, the bridge is provided with a circular sector mortise where the core and arms meet to allow the end of the cylinder to pass, thickened as a large cylindrical part which receives one of the ends of the also cylindrical bridge core.

**[0011]** On the inside the cylindrical widening is provided with mortises in order to insert a rectangular prism shaped lug made from an elastic material, meant to come in contact with the glass of the fixed enclosure of the construction.

**[0012]** A further elastic wide plate covers the inside of the housing base, inserted in a mortising provided in it and also covering the inserted end of the U-plate arm, so that from the base mortising extends only a number of small prismatic projections aligned longitudinally, which come in contact with one of the glass door surfaces and whose outer surfaces are placed co-planar to the outer face of the rectangular prismatic piece which fulfils the same purpose in the fixed side of the enclosure.

**[0013]** Finally, a notch on one of the fasteners defines its location for a double lock, in order to help to insert the key in the same operation position.

### DESCRIPTION OF THE DRAWINGS

**[0014]** As a complement of the description and in order to aid a better understanding of the characteristics of the invention, the present memory is accompanied by a set of drawings where, for purposes of illustration only and in a non-limiting manner the following is shown:

**[0015]** Figure 1 shows a partially sectioned view of the glass door and fixed element, the former with the double lock of the preferred embodiment inserted and with the bridges in the position of maximum retraction, placed against the housing support.

**[0016]** Figure 2 shows the co-planar arrangement of the glass door and fixed glass wall, with one of the fastening bridges extended, blocking the locks.

**[0017]** Figure 3 shows the double lock door closed.

**[0018]** Figure 4 shows the U-plate of the bridge in two elevation views, front and side, as well as a staggered cross sectional view of the same.

**[0019]** Figure 5 shows the single lock after the bridge U-plate is inserted in the door, before extending the bridge over the fixed element.

**[0020]** Figure 6 shows the single lock door closed.

**[0021]** Figure 7 shows the door edge stop in front and side elevation views, as well as a staggered cross sectional view of the same.

### PREFERRED EMBODIMENT OF THE INVENTION

**[0022]** In view of the above, the present invention relates to locks for glass doors, essentially characterised in that the lock may be mobile or alternatively fixed, in both cases located on a door which does not require the

conventional recessing operation antagonistic of the lock and prior to tempering the glass, as the lock is attached under pressure and free to be removed after each use, or secured by silicone, with the lock made double and symmetrical with respect to the horizontal axis of the door, provided with corresponding fasteners on bridges (1), laterally extendable beyond the intermediate fixed U-plate (2) which acts as a stop for the insertion of the lock in the glass pane (3) of the door.

**[0023]** Additionally, U-plate (2), provided with mortisings (2.1) allowing widened end (1.3) of cylinder (1) to pass until its stop, is inserted in corresponding end lateral mortisings of bases (4) of housings (5) and is screwed (4) onto these, while bridges (1) have cylinders (1.1) with recesses (1.2) which stop bridge (1) in its maximum extension or retraction with respect to side enclosure (6) of base (4), provided with an orifice (6.1) for each cylinder.

**[0024]** The widened end (1.2) of cylinder (1.1) is provided with a lateral recess in which is inserted a lug (7) made from an elastic material, which contacts the fixed enclosure element (8), while a further elastic plate (9) with a number of small projections (9.1) is inserted in a recess of base (4), contacting glass pane (3) of the door co-planar to lug (7).

**[0025]** Notch (10) defines the position for the double lock and at the same time the position for inserting key (11).

**[0026]** As an alternative, for a single bridge lock the U-plate is replaced by another U-plate (12) with only one arm, which is a wide plate (12.1) for internal support.

**[0027]** The essence of this invention is unaltered by variations in the materials, shape, size and arrangement of the components, described in a non-limiting manner, this description enabling an expert in the field to reproduce it.

## Claims

1. Locks for glass doors, **characterised in that** the lock is double and placed symmetrically to the horizontal axis of the door, and provided with:

   - an intermediate U-plate (2), provided with mortises (2.1), which acts as an insertion stop for the lock in glass pane (3) of the door;
   - at least one base (4), with at least one housing (5), provided with at least one end mortising;
   - a bridge or bridges (1) provided with corresponding cylinders (1) which are laterally extendable and provided with recesses (1.2);
   - side enclosure(s) (6) of base(s) (4) provided with an orifice (6.1) allowing each cylinder (1.1) to pass;
   - each cylinder (1.1) has a widened ends (1.3) with a side recess having a lug (7) inserted in it;
   - an elastic plate (9) provided with a number of small projections (9.1), inserted in a recess of base (4).

2. Locks for glass doors, as claimed in above claim, **characterised in that** mortisings (2.1) of the U-plate (2) allow the widened end (1.3) of cylinder (1) and lug (7) to pass as far as the stop.

3. Locks for glass doors, as claimed in above claims, **characterised in that** the U-plate (2) is inserted in lateral end mortise(s) of base(s) (4) and is screwed (4.1) onto these.

4. Locks for glass doors, as claimed in above claims, **characterised in that** recesses (1.2) allow to retain cylinders (1.1) of bridge (1) in the maximum extension position or the maximum retraction position of bridge (1) with respect to base (4).

5. Locks for glass doors, as claimed in above claims, **characterised in that** lug (7), made from an elastic material, is in contact with fixed element (8) of the enclosure.

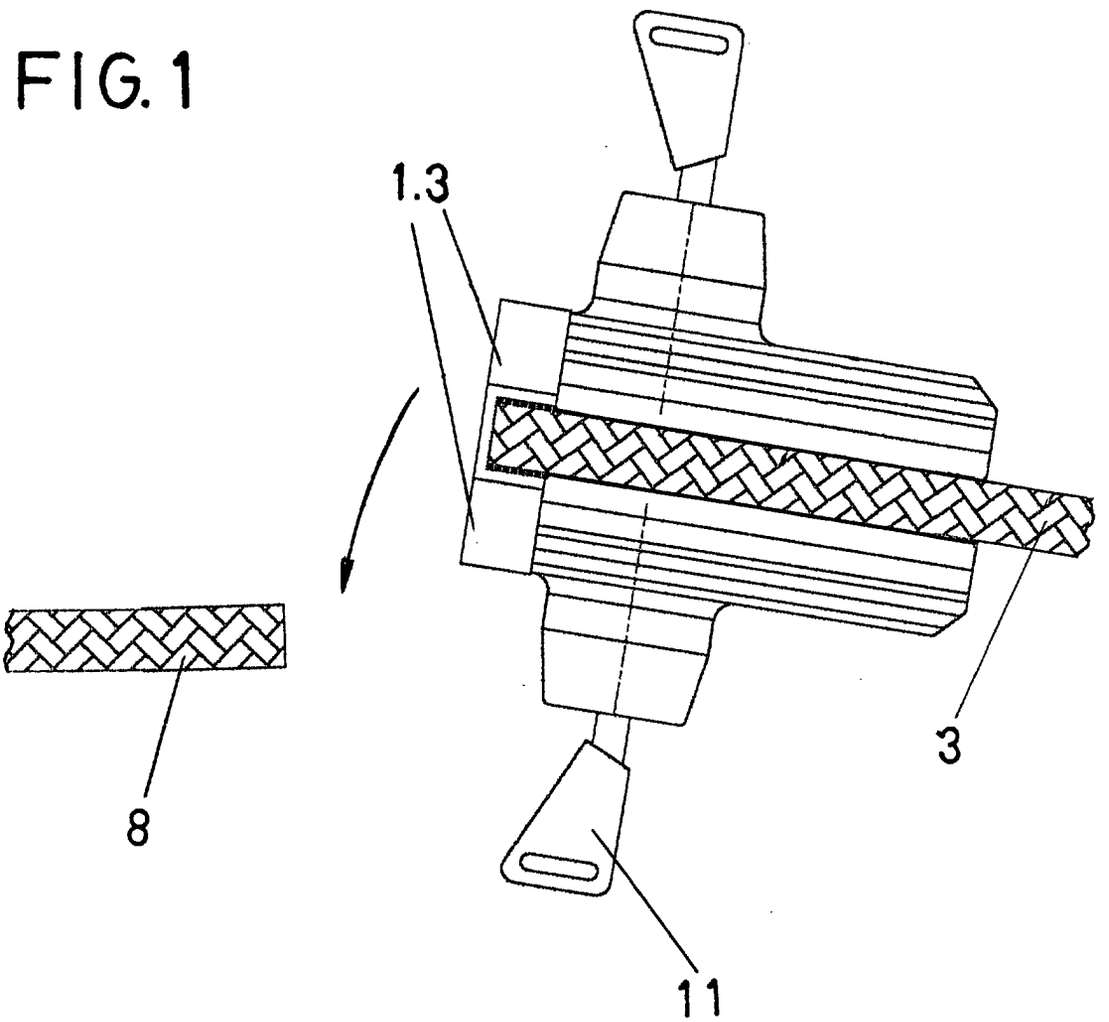
6. Locks for glass doors, as claimed in above claims, **characterised in that** elastic plate (9) is in contact with glass pane (3) of the door, co-planar to lug (7).

7. Locks for glass doors, as claimed in above claims, **characterised in that** a notch (10) defines the position for placing the double lock, and also the position in which to insert key (11).

8. Locks for glass doors, as claimed in above claims, **characterised in that** alternatively, for a single bridge lock U-plate (2) is replaced by another U-plate (12) with one arm, as a wide plate (12.1) of internal support.

9. Locks for glass doors, as claimed in above claims, **characterised in that** alternatively, the lock may be installed mobile or fixed, and in both cases it is installed on a door without antagonistic mortisings nor orifices, whether inserted under pressure for removal after each use or inserted under pressure and secured with silicone, symmetrically.

FIG. 1



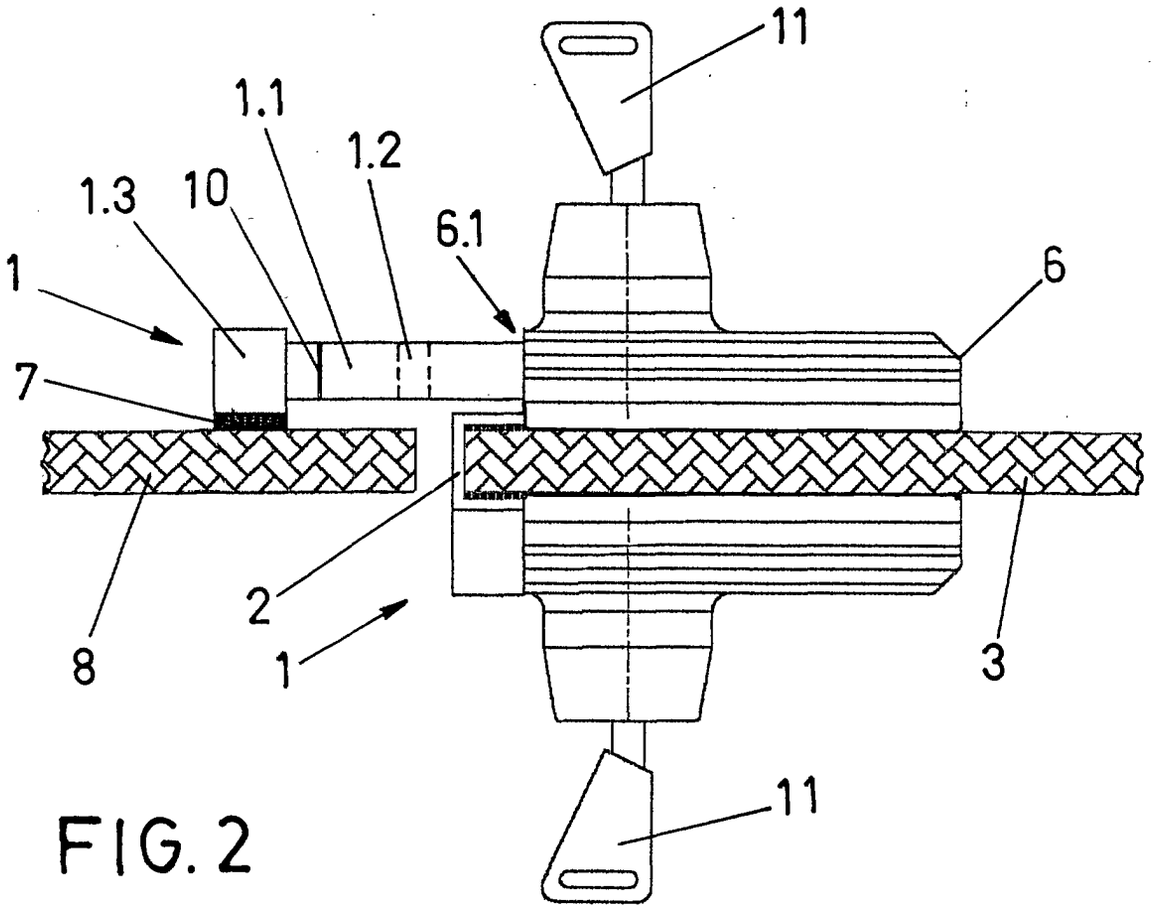



FIG. 2

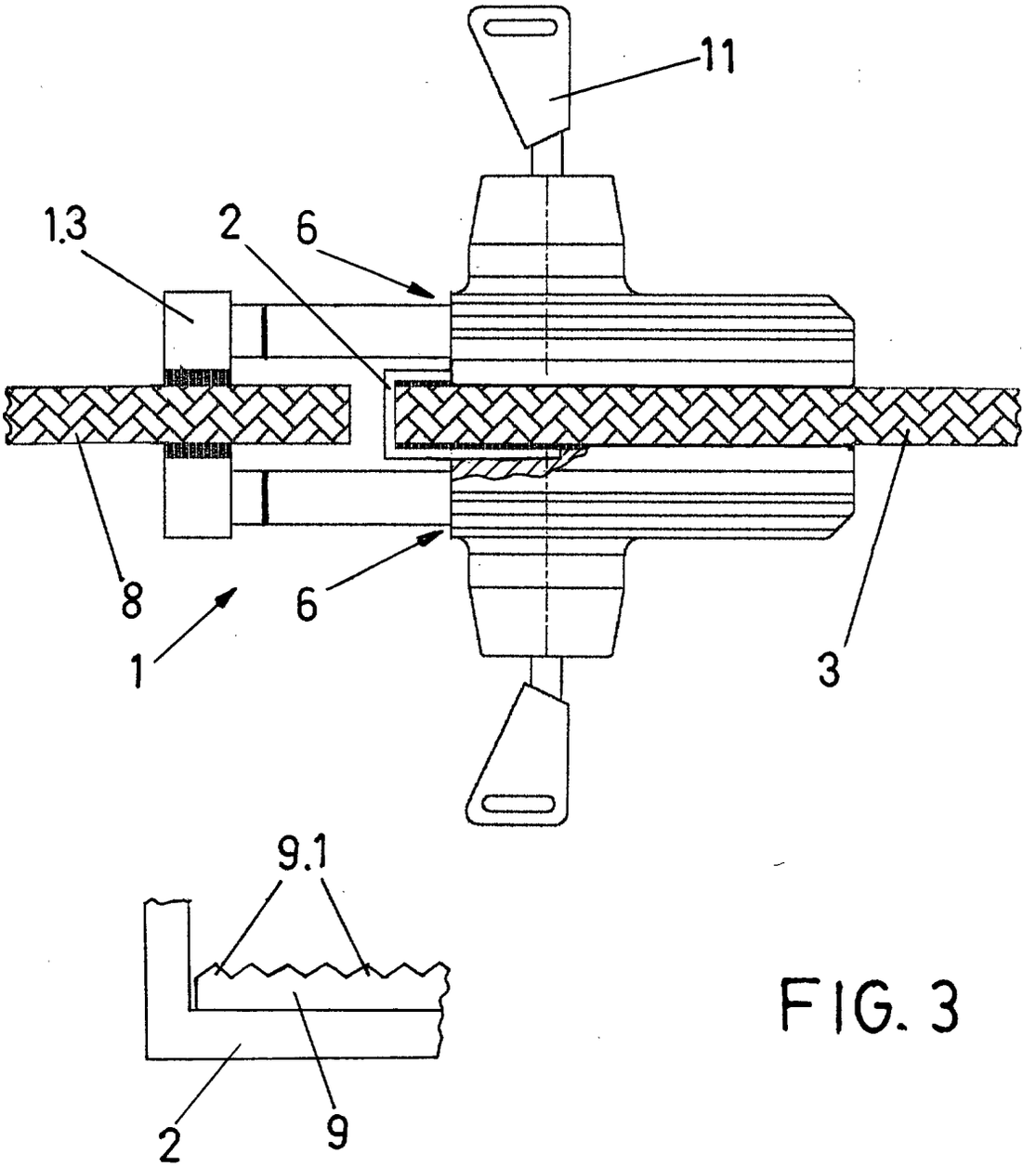



FIG. 3

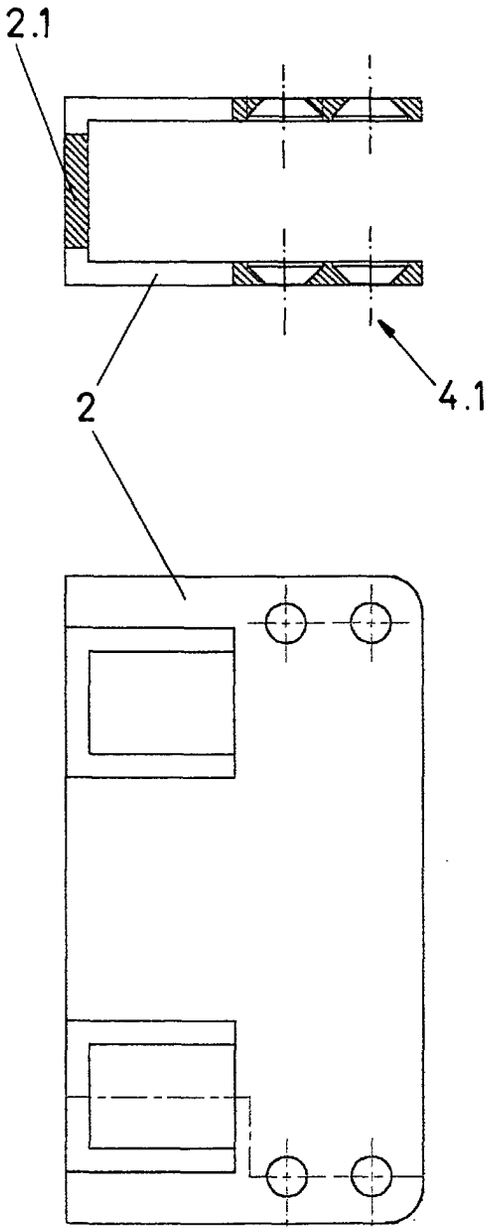



FIG. 4

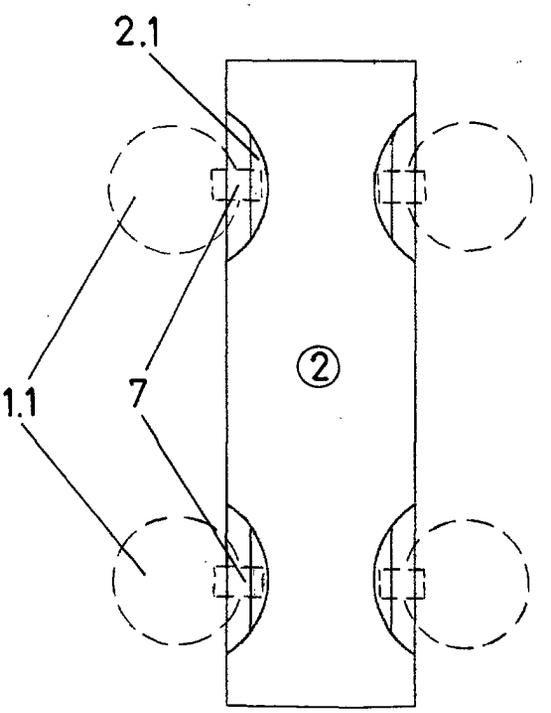


FIG. 5

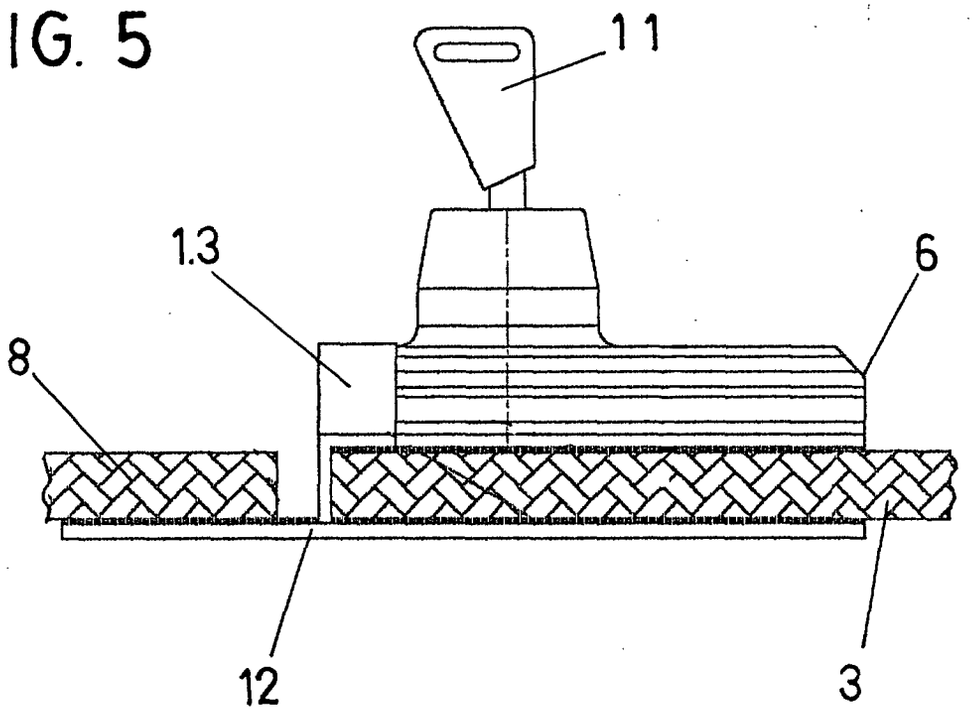
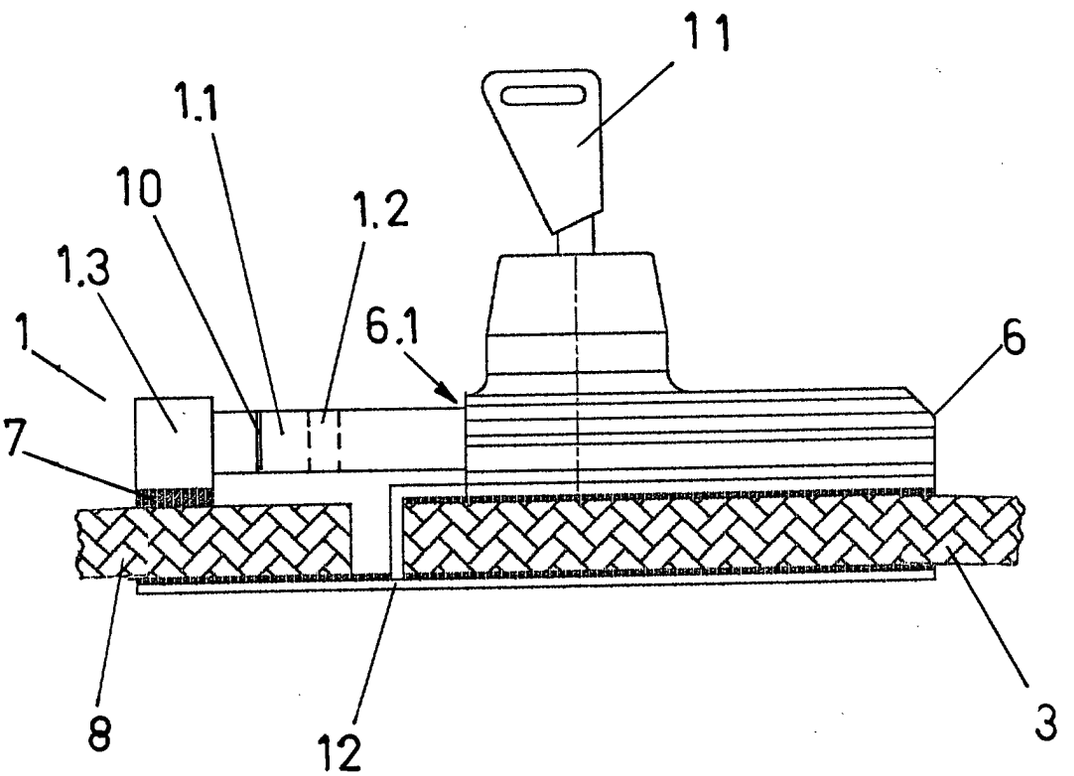


FIG.6



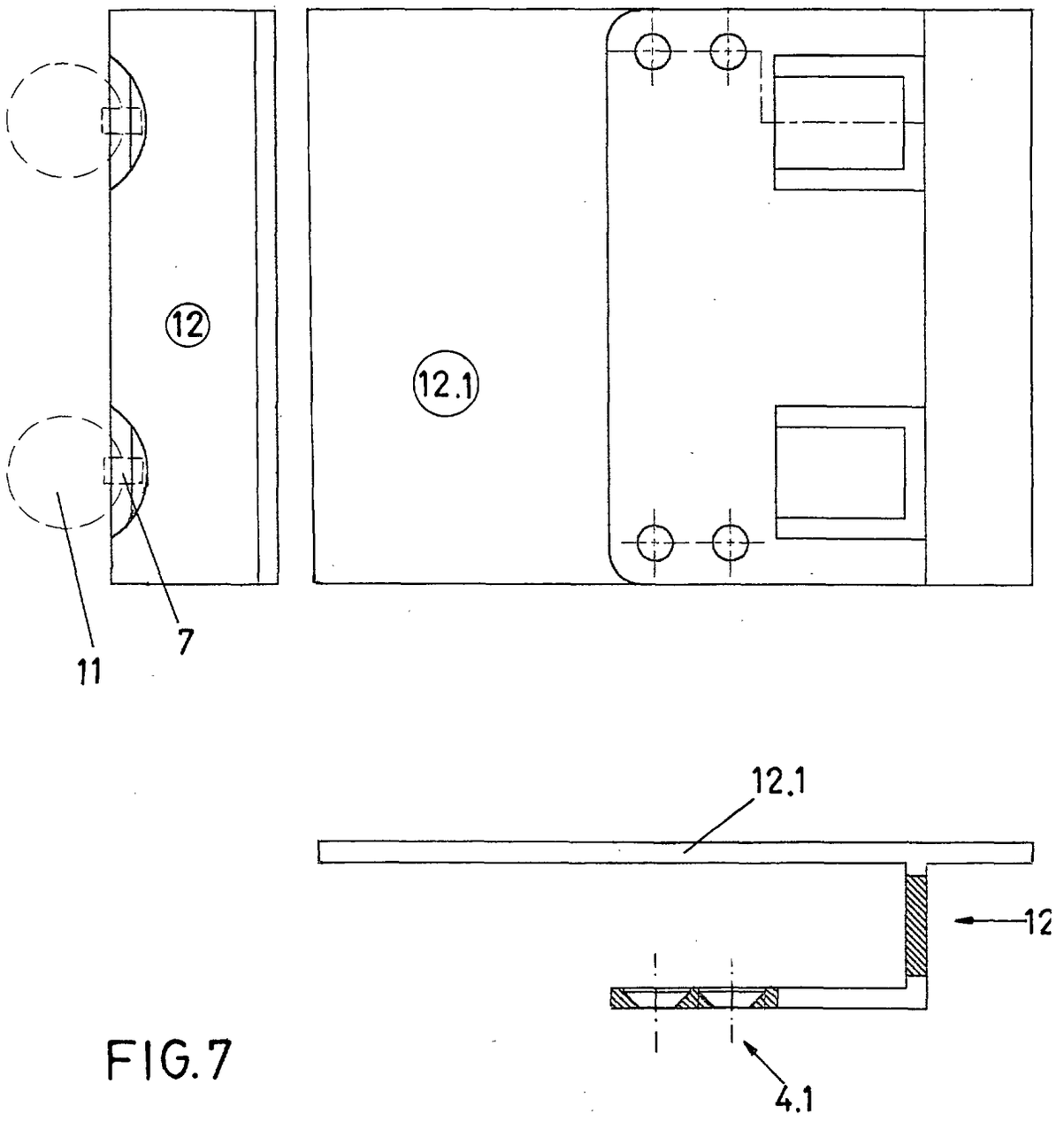



FIG.7

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# EUROPEAN SEARCH REPORT

Application Number
EP 00 50 0128

## 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.7) |
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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 | 15 November 2000 | Friedrich, A |

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## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 00 50 0128

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