(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 403 532 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
31.03.2004 Bulletin 2004/14

(51) Int Cl.[7]: **F16B 12/20**

(21) Application number: **03021707.9**

(22) Date of filing: **25.09.2003**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR
Designated Extension States:
AL LT LV MK

(30) Priority: **30.09.2002 IT TO20020176**

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(54) A system for mounting an article on a wall

(57) The system comprises at least one support element (1; 1a, 1b) which can be fixed to the wall (W) and at least one corresponding engagement member (2) which can be fixed to or is integral with the article and can be coupled with the support element (1; 1a, 1b) previously fixed to the wall (W).

The support element (1; 1a, 1b) has a retaining surface (4e) which, in the condition of use, is inclined substantially downwards towards the wall (W).

The engagement member (2) has a corresponding bearing and sliding surface (10a) which can be placed bearing against the retaining surface (4e) of the support element (1; 1a, 1b) whilst the engagement member (2) is spaced from the wall (W) and which can then slide downwards and towards the wall (W) on the retaining surface (4e), bringing about a progressive movement of the engagement member (2) towards the wall (W) during the coupling of the member (2) with the support element (1).

FIG. 1

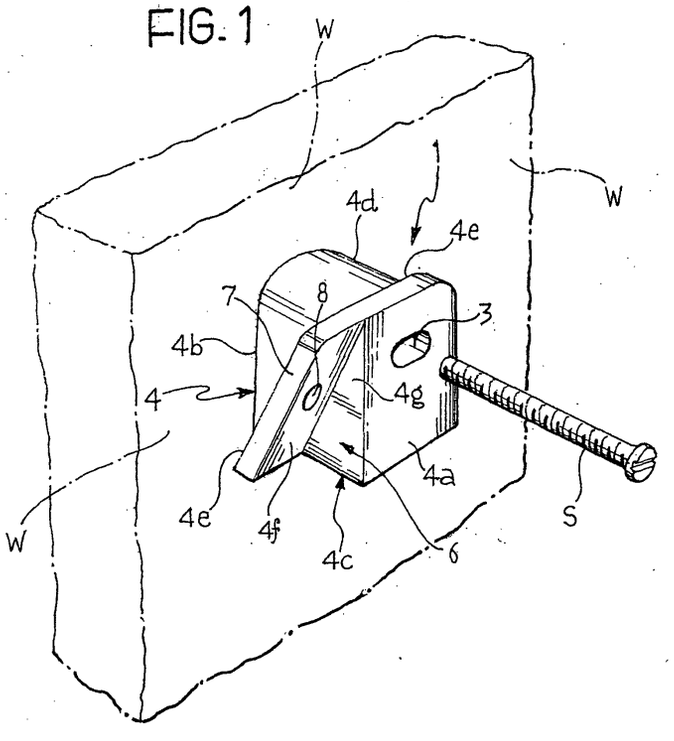

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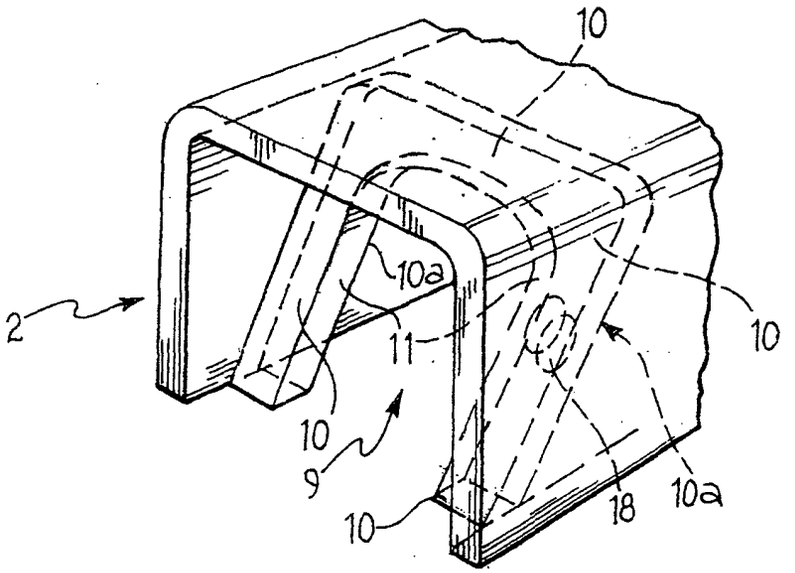
FIG. 2



Description

[0001] The subject of the present invention is a system for mounting or hanging an article on a substantially vertical wall.

[0002] More specifically, the subject of the invention is a mounting system comprising at least one support element which can be fixed to the wall and at least one corresponding engagement member which can be fixed to or is integral with the article and which can be coupled with the support element previously fixed to the wall.

[0003] Mounting systems of this type are used widely, for example, for mounting bathroom accessories such as towel rails, cabinets, etc. on walls.

[0004] With the mounting systems that have been produced up to now, the coupling of the engagement member with the associated fixed support element involves scraping the engagement member against the wall. This scraping may cause undesired "scratching" of the wall and damage to its surface.

[0005] An object of the present invention is to propose a mounting system which overcomes this problem.

[0006] This and other objects are achieved according to the invention by a mounting system of the type specified above, characterized in that:
the support element has a retaining surface which, in the condition of use, is inclined substantially downwards towards the wall, and in that
the engagement member of the article has a corresponding bearing and sliding surface which can be placed against the retaining surface of the support element whilst the engagement member is spaced from the wall and which can then slide downwards and towards the wall on the retaining surface, bringing about a progressive movement of the engagement member towards the wall during the coupling of the member with the support element.

[0007] Further characteristics and advantages of the system according to the present invention will become clear from the following detailed description which is given purely by way of non-limiting example with reference to the appended drawings, in which:

Figure 1 is a front/side perspective view of a support element for a mounting system according to the present invention,

Figure 2 is a partial front/side perspective view of an engagement member which can be coupled with the support element of Figure 1 in a mounting system according to the invention,

Figure 3 is a side/rear perspective view of the support element of Figure 1,

Figure 4 is a partial side elevational view which shows a support element of the mounting system according to the invention fixed to a wall and a corresponding engagement member of an article at a stage immediately prior to their mutual coupling,

Figure 5 is a side elevational view similar to that of Figure 4 with the engagement member shown coupled with the support element,

Figure 6 shows a locking member for a mounting system according to the invention,

Figure 7 is a front/side perspective view which shows the locking member of Figure 6 coupled with the support element of Figures 1 and 3,

Figure 8 is a partially-sectioned side view similar to that of Figure 5 and shows the locking member of Figures 6 and 7 in its arrangement of use, and

Figure 9 is a perspective view which shows an article such as a towel rail which can be mounted on a wall by means of a mounting system according to the invention.

[0008] With reference to Figures 1 and 2, in a minimal configuration, a system according to the present invention for mounting an article on a substantially vertical wall W comprises a support element, generally indicated 1, and an associated engagement member, indicated 2.

[0009] The support element 1 can be fixed to the wall W in known manner, for example, by means of a screw, indicated S in Figure 1, which is engaged in a longitudinal through-hole 3 of the support element 1, preferably with a slot-like cross-section.

[0010] The engagement member 2 may be formed integrally with, that is, as part of an article or may be separate from the article and fixable thereto in known manner.

[0011] The support element 1 comprises a body 4, for example, made of moulded plastics material.

[0012] In the embodiment shown, the body 4 has a flat front surface 4a and a rear surface 4b which is also flat (see also Figures 3 and 4).

[0013] The body 4 also has a flat lower surface or face 4c. As can be seen in Figure 3, a groove 5 with a substantially inverted V-shaped cross-section is advantageously formed in the rear portion of the lower face 4c, with its vertex vertically aligned with the axis of the through-hole 3. The groove 5 enables the user to put a mark on the wall W, for example by means of a pencil P (Figure 3), to identify the vertical line on which any drilling (by means of a drill or the like) is to be performed for the pre-positioning of a screw anchor used for the fixing of the support element 1 to the wall.

[0014] In the embodiment shown, the body 4 of the support element 1 has an upper surface 4d with a convex arcuate profile.

[0015] A retaining surface of the body 4, which lies in

a plane that is inclined to the axis of the hole 3, is indicated 4e.

[0016] As can be appreciated in particular from Figures 1, 4 and 5, when the support element 1 is fixed to the wall W, the retaining surface 4e is inclined downwards towards the wall W.

[0017] A lateral recess 6 is advantageously but not necessarily formed in the front portion of the support element 1 between two surfaces 4f and 4g, of which the former is substantially parallel to the surface 4e and the latter is substantially perpendicular to the front surface 4a.

[0018] A wall portion 7 is thus defined between the inclined surfaces 4e and 4f of the body 4 of the support element 1; a. through-hole 8 (Figures 1, 3-5, and 8) is advantageously formed in the wall portion 7 with its axis substantially perpendicular thereto.

[0019] With reference in particular to Figure 2, the engagement member 2 defines a cavity or receptacle 9 which is intended to face the wall W and can house the support element 1. In the receptacle 9, the engagement member 2 has an inclined wall 10 in which a notch 11 is formed for accepting the body 4 of the support element 1.

[0020] The lower surface or face of the inclined wall 10 of the engagement member 2 is indicated 10a.

[0021] The engagement member 2 can be coupled with a support element 1 already fixed to the wall W in the manner which will now be described with reference to Figure 4 et seq.

[0022] The engagement member 2 is moved towards the support element 1, from above as seen in Figure 4, until the inclined surface 10a of the member is brought up to or beyond the inclined retaining surface 4e of the support element. The surface 10a is then placed bearing against the retaining surface 4e of the support element whilst the engagement member 2 is spaced from the wall W.

[0023] As a result of the engagement of the surfaces 10a and 4e, the engagement member 2 can then slide downwards in guided manner towards the wall W, approaching the wall progressively until the condition shown in Figure 5 is reached, in which the coupling between the engagement member 2 and the support element 1 is complete.

[0024] In the embodiment shown by way of example, upon completion of the coupling, the rear end of the engagement member 2 is in abutment with the surface of the wall W. However, persons skilled in the art will appreciate that this condition is not mandatory.

[0025] It will nevertheless be understood that, by virtue of the progressive movement of the engagement member towards the wall W in the course of the coupling with the support element 1, any scraping of the engagement member on the wall W is prevented. The disadvantages of the devices of the prior art mentioned in the introductory part of this description are thus overcome.

[0026] The mounting system described above can be used, for example, to secure the ends of a towel rail to a wall. In this case, a respective engagement member is associated with each end of the rail for coupling with (at least) one corresponding support element previously fixed to the wall. In an application of this type, the support elements associated with the two ends of the article to be mounted or hung on the wall may be identical or may have a reflectively symmetrical configuration.

[0027] If the support elements are fixed by means of screws or screw anchors, the hole for the insertion of the screw may advantageously be in the form of a horizontal slot in one support element and in the form of a vertical slot in the other to permit compensation for any inaccuracies in the positions in which the corresponding holes are formed in the wall.

[0028] With the mounting system described above with reference to Figures 1 to 5, the article mounted or hung on the wall W can be removed by a movement of the article such as to cause its engagement member/s to repeat the movement for coupling with the associated support element/s in reverse.

[0029] In some applications, however, it may be desirable to stabilize or lock the engagement member/s in the position of coupling with the associated support element/s to hinder removal of the article fixed to the wall. Such a need arises, for example, in order to make the removal or theft of accessories from hotel bathrooms and the like more difficult.

[0030] According to an embodiment of the invention which will now be described, this need can be satisfied with the use of a locking member such as that generally indicated 15 in Figures 6 to 8.

[0031] The locking member 15 shown in these drawings comprises a body 16 having a substantially wedge-like shape complementary with that of the front/lateral recess 6 of the support element 1 described above.

[0032] A pin 17 extends from the rear inclined face 16a of this body, substantially perpendicularly thereto.

[0033] The pin 17 of the locking member 15 can engage in the hole 8 in the wall 7 of the support element as well as in a corresponding hole 18 formed in the inclined wall 10 of the engagement member 2 (see Figures 2, 5 and 8).

[0034] Figure 8 shows the locking member 15 disposed in the condition of use in which it opposes the release of the engagement member 2 from the support element 1 by means of its pin 17.

[0035] The portion of the pin 17 which projects beyond the wall 10 of the engagement member 2 advantageously has one or more external projections 17a suitable for being forced through the holes 8 and 18 and acting as retaining elements that can hinder the disengagement of the locking member 15.

[0036] In the condition of use, the locking member 15 is concealed from view and hinders fraudulent removal attempts. However, if necessary, the locking member 15 can in fact be removed, for example, by wedging the end of a screwdriver or the like between its inclined sur-

face and the surface or face 4f of the support element 1. To facilitate the wedging of the tool used to bring about the disengagement of the locking member 15, a chamfer such as that indicated 19 in Figures 6 to 8 may advantageously be formed in the lower portion of the inclined face of the body 16 of the locking member.

[0037] Figure 9 of the appended drawings shows, by way of example, an article 20 such as, for example, a towel rail, which is to be mounted on a wall (not shown) at only one 20a of its ends. In the example shown, this end of the article 20 has a recess or receptacle 9 in which there is an inclined wall 10 having a pair of notches 11a and 11b, and (optionally) adjacent through-holes 18a and 18b, for coupling with a corresponding pair of support elements 1a and 1b of the type described above, which have previously been fixed to the wall side by side.

[0038] In the embodiment shown in Figure 9, the article 20 thus has a single engagement member 2 constituted substantially by its end 20a, for coupling with two support elements 1a, 1b of the type described above (optionally with the use of associated locking members 15 of the type shown in Figure 6) .

[0039] The wall mounting system according to the invention is not, however, limited to use for fixing bathroom accessories, but may advantageously be used whenever a generic article is to be fixed securely to or hung on a substantially vertical wall.

[0040] Naturally, the principle of the invention remaining the same, the forms of embodiment and details of construction may be varied widely with respect to those described and illustrated purely by way of non-limiting example, without thereby departing from the scope of the invention as defined in the appended claims.

Claims

1. A system for mounting an article on a substantially vertical wall (W), comprising at least one support element (1; 1a, 1b) which can be fixed to the wall (W) and at least one corresponding engagement member (2) which can be fixed to or is integral with the article and which can be coupled with the support element (1; 1a, 1b) previously fixed to the wall (w), the system being **characterized in that**:
   the support element (1; 1a, 1b) has a retaining surface (4e) which, in the condition of use, is inclined substantially downwards towards the wall (W), and **in that**
   the engagement member (2) has a corresponding bearing and sliding surface (10a) which can be placed bearing against the retaining surface (4e) of the support element (1; 1a, 1b) whilst the engagement member (2) is spaced from the wall (W) and which can then slide downwards and towards the wall (W) on the retaining surface (4e), bringing about a progressive movement of the engagement member (2) towards the wall (W) during the coupling of the member (2) with the support element (1).

2. A mounting system according to Claim 1, in which the support element (1; 1a, 1b) has a through-hole (3) for the insertion of a fixing member (S) for fixing to the wall (W) .

3. A mounting system according to Claim 1 in which, in order to fix the support element (1; 1a, 1b) to the wall (W) by means of a screw anchor or the like provided in a hole formed in the wall (W), the support element (1; 1a, 1b) has a nick or notch (5) for enabling a mark to be put on the wall (W) to identify the vertical line on which the hole is to be formed.

4. A mounting system according to any one of the preceding claims, further comprising a locking member (15) that can be coupled with the support element (1; 1a, 1b) and with the engagement member (2) of the article to prevent their disconnection.

5. A mounting system according to Claim 4 in which the locking member (15) comprises a body (16) which can be disposed in a seat (6) of the support element (1; 1a, 1b) and from which a retaining pin (17) extends for engagement through respective openings or holes (8, 18) which are provided in the inclined surfaces (4e, 10a) of the support element (1; 1a, 1b) and of the engagement member (2) in positions such as to be aligned with one another when the engagement member (2) is coupled with the support element (1; 1a, 1b).

6. A mounting system according to Claim 5 in which the pin (17) of the locking member (15) has at least one lateral retaining projection or raised portion (17a) which can be forced through the openings or holes (8, 18) and can hinder the disengagement of the locking member (15) from the openings or holes (8, 18).

FIG. 1

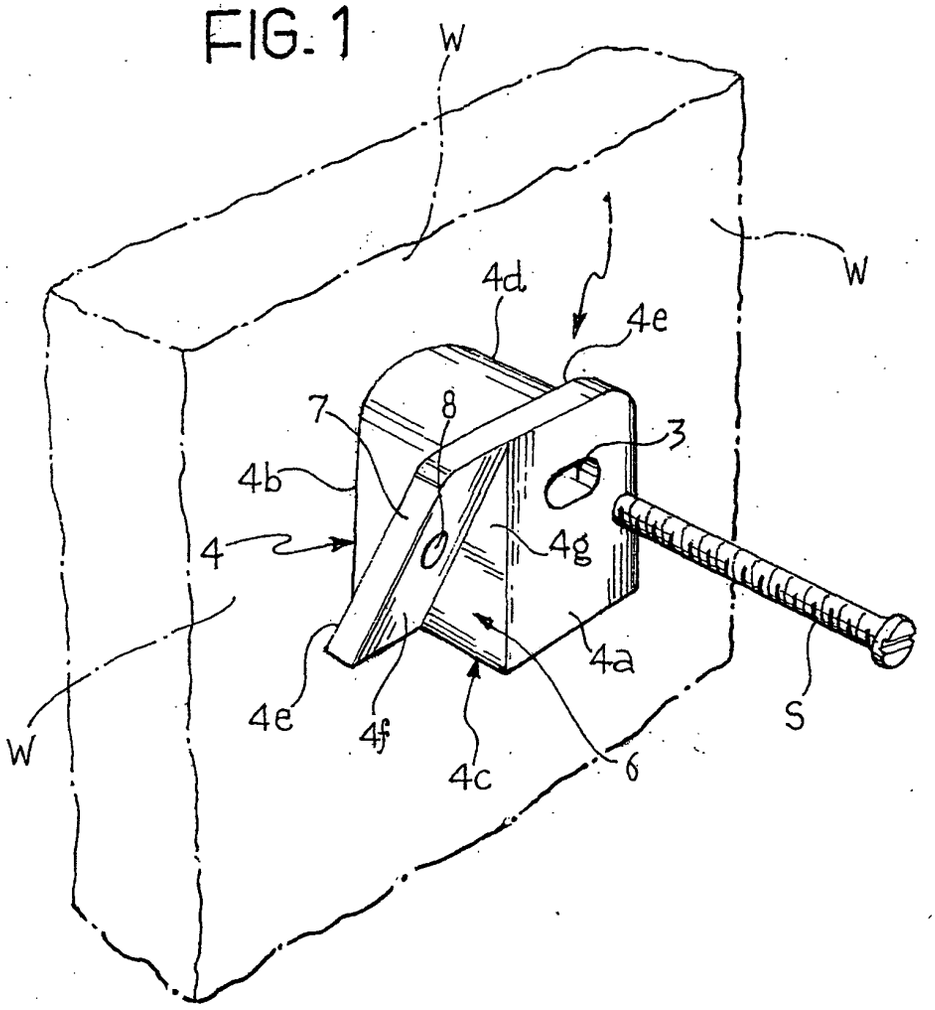


FIG. 2

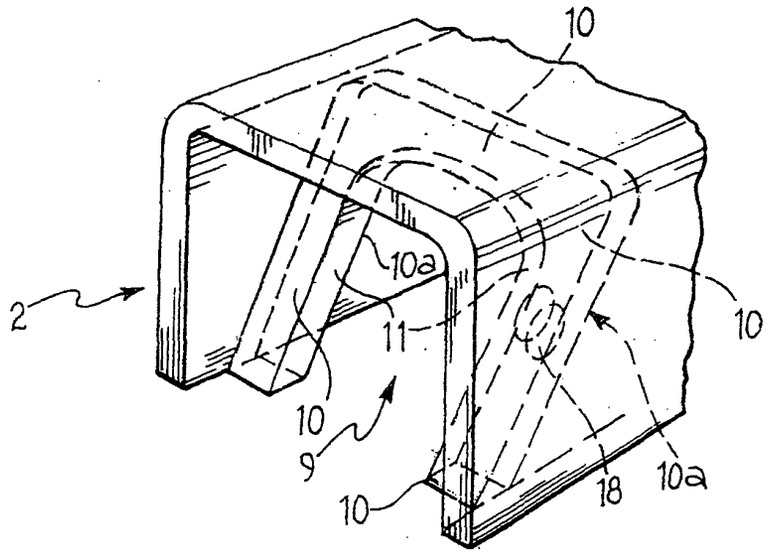


FIG. 3

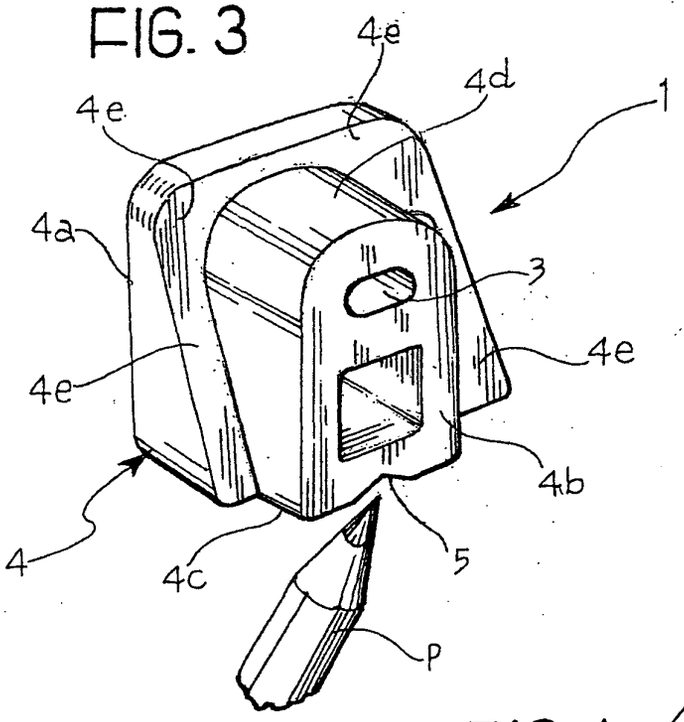

4e
4d
1
4e
4a
3
4e
4e
4b
4
4c
5
P

FIG. 4

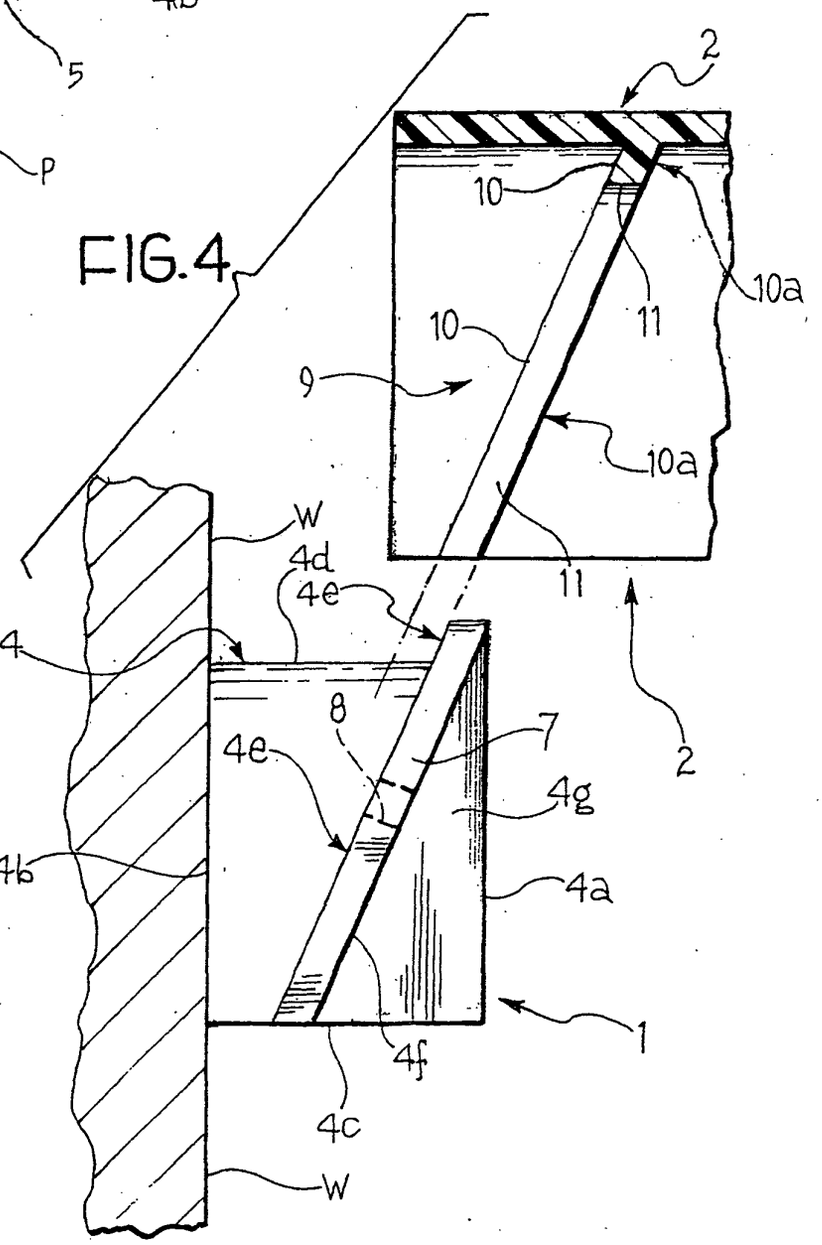

2
10
10a
11
10
9
10a
W
4d
4e
11
4
2
8
7
4e
4g
4b
4a
1
4f
4c
W

FIG. 8

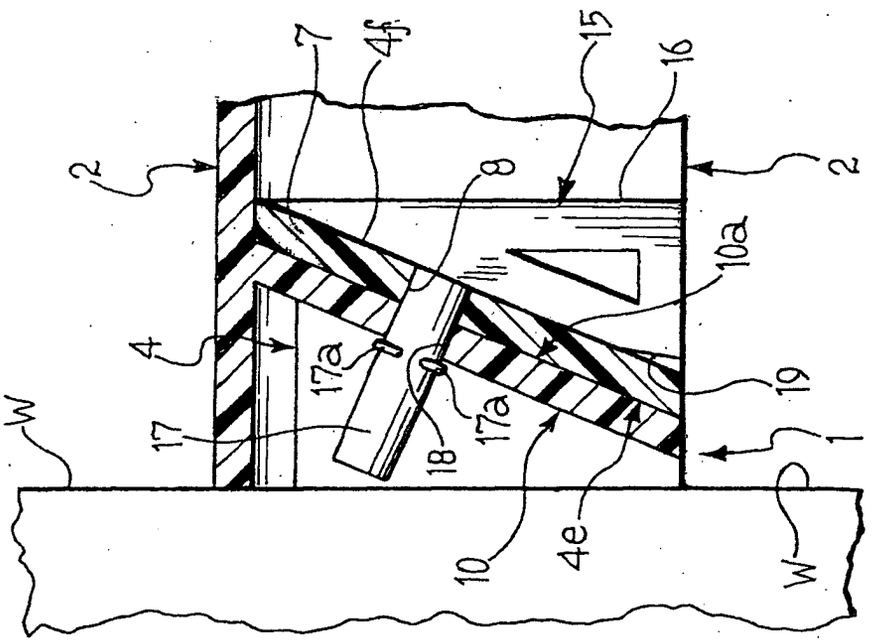
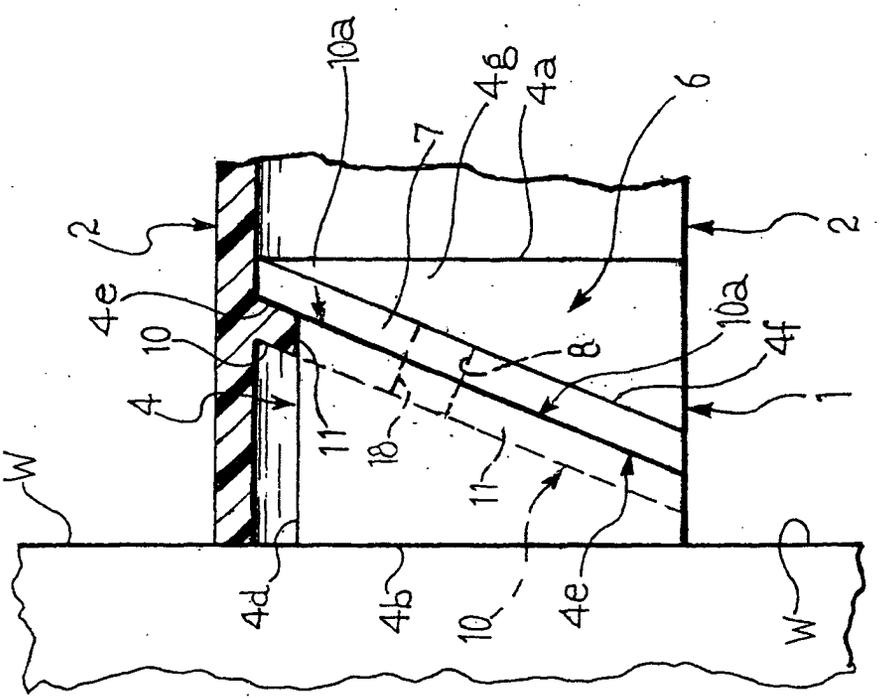

7
4f
15
16
2
2
8
10a
4
17a
19
17
18
17a
1
W
10
4e
W

FIG. 5


10a
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4e
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4f
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4d
4b
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4e
W

FIG. 7

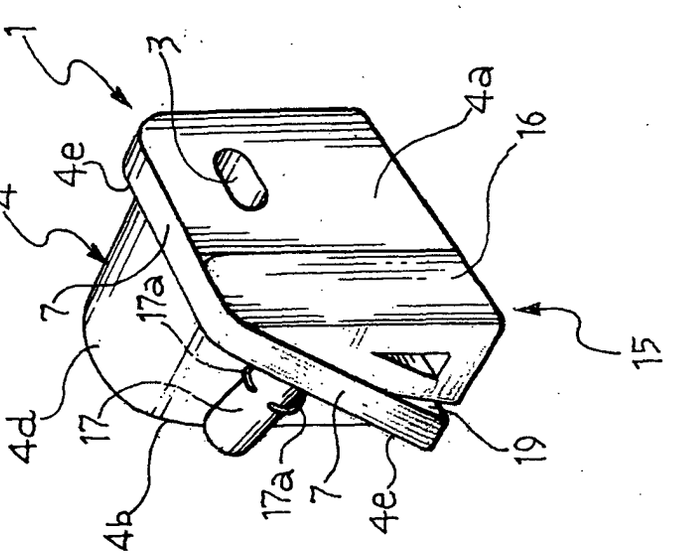


FIG. 6

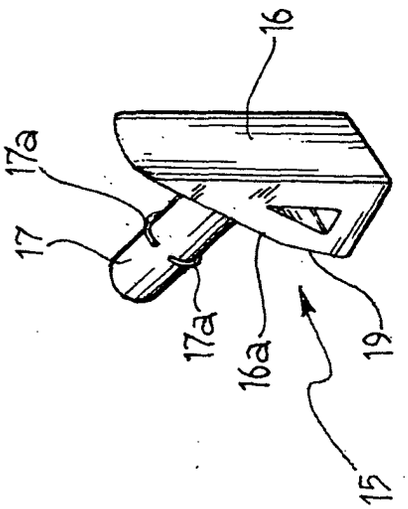
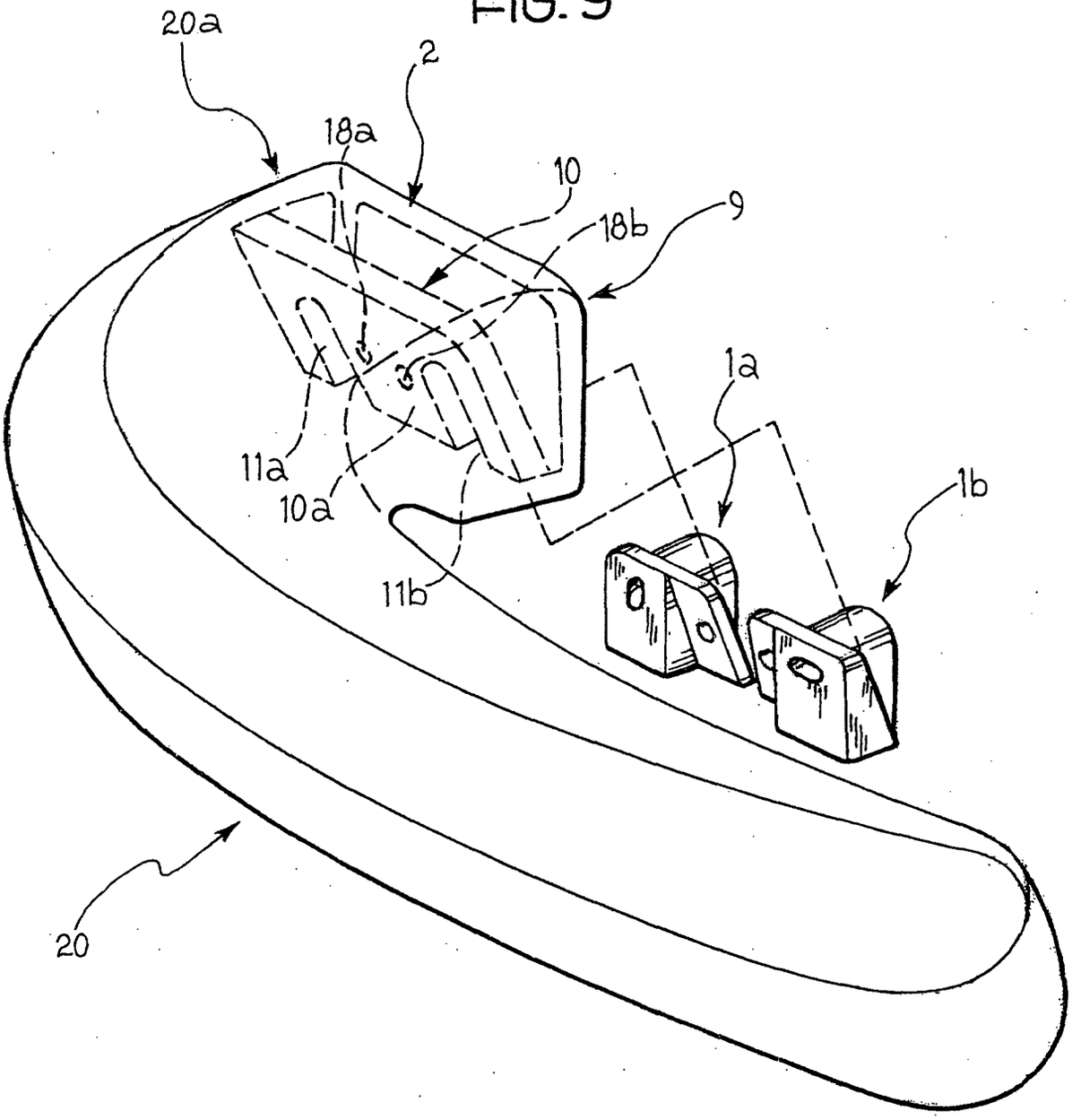


FIG. 9



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EUROPEAN SEARCH REPORT

Application Number
EP 03 02 1707

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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	BE 900 495 A (VELDA N V) 2 January 1985 (1985-01-02) * abstract * ---	1,2	
X	GB 2 229 487 A (CHANG WEN SHYONG) 26 September 1990 (1990-09-26) * page 4, line 28 - page 5, line 12; figure 4 * ---	1,2	
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A	DE 35 11 394 A (SCHLAPP FRIEDRICH) 9 October 1986 (1986-10-09) * the whole document * -----	1-6	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			F16B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	15 January 2004	Cardan, C

CATEGORY OF CITED DOCUMENTS

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15-01-2004

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