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(54) An improvement in a universal espagnolette handle.

(57) In an improved espagnolette handle, the fixing sockets (11) afforded by the escutcheon flange or casing (1) are through holes allowing the insertion of screws (10) from the front of the handle, hence from the side opposite to that occupied by the back cover plate (8), and can be concealed by applying a removable snap-fitted decor element (12) designed to mask at least part of the front face (1a) of the casing ; similarly, the cover plate (8) incorporates positive fasteners (16) enabling its attachment to the rear face (1b).

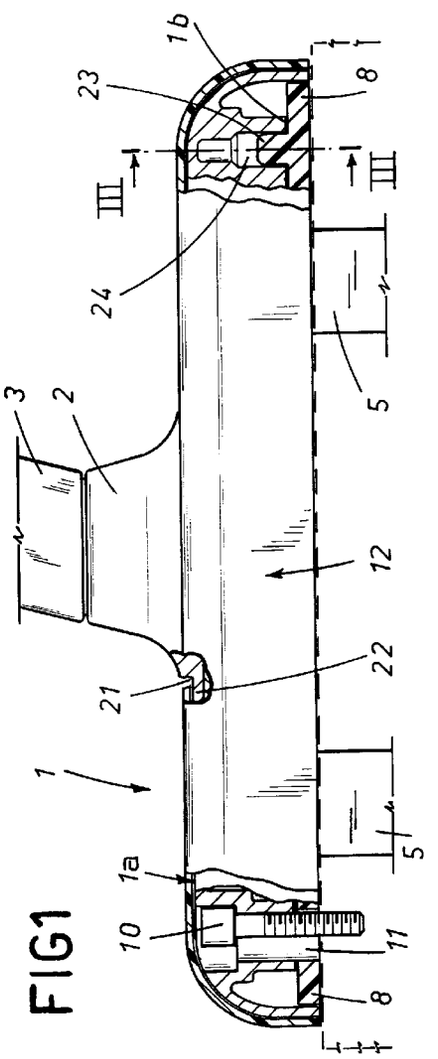

FIG1

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The present invention relates to an improvement in a universal espagnolette handle for door and window fixtures, of the type comprising an escutcheon flange or casing (usually of quadrangular shape), from which a hand grip projects on the one side and a mechanism for the operation of the sash fastener on the other.

Conventionally, espagnolette handles of the type in question are designed in such a way as to adapt to right-hand opening and to left-hand opening sashes with equal facility; such a handle is disclosed in application n° 3391 A/90 for Italian patent, filed by the same applicant: in this handle the rear face of the casing or escutcheon flange affords securing holes arranged (preferably in pairs) on either side of a transverse axis and with dissimilar distances between centres, which can be placed asymmetrically in relation to the longitudinal median axis of the casing in positions determined both by the value of the distance between centres and by the diameter of the single holes; the casing also affords a pair of parallel guide slots by which the two racks of an espagnolette rod operating mechanism are simply and slidably accommodated on opposite sides of a single centre pinion, the face of each rack remote from the tooth face affording a flat seating in which the supporting lug of a respective flat connecting pin is stably insertable. The handle is secured to the sash member with screws inserted from the rear and engaging in the pairs of holes. In this design, moreover, the racks are seated without restraint in their respective housings and thus free to separate from the casing, as also are the connecting pins, until held in place by a back cover plate which is fitted automatically by securing the handle to the relative sash member.

It now occurs to the applicant, being aware of the widespread use of these handles in different types of fixtures and of the great diversity of mounting requirements encountered, that an espagnolette handle of the same essential design and comprising the same components (casing, handgrip, and internal mechanism) might be improved with the end in view, on the one hand, of enhancing its adaptability even in respect of fixtures normally disallowing or in any event hindering the attachment or positioning of such a handle (while maintaining the established technical operating features intact, needless to say) and thereby responding more fully to current market demand, and on the other, of facilitating the change from one type of use to another, i.e. repositioning of the connecting pins to give left or right hand opening.

The improvement in question is realized, according to the present invention, by the incorporation of features as characterized in the appended claims.

The invention will now be described in detail, by way of example, with the aid of the accompanying drawings, in which:

- fig 1 is the side elevation of an espagnolette handle incorporating the improvement disclosed, parts of which are shown in section;
- fig 2 shows the handle of fig 1 in plan, with certain parts omitted and others shown in section;
- fig 3 is the section through III-III in fig 1;
- fig 4 illustrates an alternative embodiment of the improved handle, viewed in perspective from the front;
- fig 5 illustrates a further alternative embodiment of the improved handle, viewed in perspective from the front;
- fig 6 is the section through VI-VI in fig 1.

With reference to the drawings, the improvement to which the invention relates is incorporated into an espagnolette handle for door and window fixtures, comprising (see fig 1 and fig 2 in particular) an escutcheon flange or casing 1, and, projecting on one side from a boss 2 integral with the casing, a hand grip 3, also a spindle 4 positioned internally of the casing 1 and rotatable by means of the grip between a first position and a second position, and two pins 5 emerging from the side of the casing 1 opposite to the grip, of which the projecting ends engage with an espagnolette fastener (conventional and therefore not illustrated).

Again observing figs 1 and 2, the interior of the casing 1 accommodates a pair of racks 6, disposed mutually parallel, of which the teeth are engaged in meshing contact by those of a pinion 7 rigidly associated with the spindle 4; the two racks afford elements (conventional in embodiment and forming no part of the invention, therefore not illustrated) by means of which to attach and support the pins 5, in such a way that these can be traversed between a first position and a second position corresponding to the aforementioned first and second positions of the hand grip 3, in which the sash is fastened and released, respectively.

8 denotes a cover plate associated with and capable of stable attachment to the rear of the casing 1, and affording a set of holes 9 at each end through which to insert screw means 10; these same screw means 10 are insertable also through sockets 11 afforded by the casing 1 in positions corresponding to those of the holes 9, and serve to secure the handle to the sash.

In the solution disclosed, the sockets 11 pass completely through the casing 1, thereby allowing insertion of the screw means 10 from the front of the handle, i.e. the side opposite to that occupied by the cover plate 8, and are fashioned each with a respective widened portion 11a (clearly discernible in fig 3) open to the front face 1a of the casing, in which to seat the head of the screw means 10.

Also associated with this same area of the handle are externally located, removable means 12 applied by means of a positive fit to a part of the front face 1a of the casing, of which the function is to con-

ceal the sockets 11.

Similarly, the cover plate 8 is secured by way of positive fastening means 16 to the rear face 1b of the casing 1.

In a first embodiment, illustrated in figs 1, 2, 3 and 6, the removable concealing means 12 consist in a hollow decor element 20 or cladding fashioned in a single piece and affording a central opening 21; a cladding 20 thus fashioned can be passed over the hand grip 3 and locked to the front face 1a of the casing 1 at the base of the boss 2, which affords a peripheral stepped profile 22 suitably matched to the shape of the opening 21, thereby covering the entire area of the casing 1 exposed to view.

As illustrated in a second embodiment (see fig 4), the concealing means 12 might consist in flexible caps 13 (fashioned preferably in plastic material) applied one to each end of the casing 1 and secured by means of a pin 14 projecting from the reverse face 14a of the cap 13 itself, which is insertable to a stable fit in a matching hole 15 afforded by the casing 1 in a position between a corresponding pair of the sockets 11 described previously. In the example illustrated, the cap 13 is of quadrangular shape in such a way as to conceal the area occupied by the pair of sockets 11 and the relative widened portions 11a at each end of the casing 1.

In a further embodiment, illustrated in fig 5, the concealing means 12 take the form of a hollow decor element 17 essentially similar to the cladding 20 described above, i.e. fashioned in a single piece and affording a central opening 18; the element 17 thus can be passed over the grip 3 and locked onto the front face 1a of the casing 1, which in this instance affords an undercut face 41 proportioned to encompass the widened portions 11a and extending from the boss 2 toward each end in such a way as to establish stepped profiles 19 and 40 between which the decor element 17 is insertable positively, and in such a way as to conceal the front face 1a and a selected part of the longer parallel side faces of the casing 1 with a certain measure of stability.

The positive fastening means 16 proposed for the cover plate 8 consist in a pair of studs 23 (see also fig 3) located respectively at the two ends of the plate 8 and stably insertable in corresponding sockets 24 afforded by the casing 1, positioned in such a way that the plate 8 is contained entirely within the dimensional compass of the casing 1.

A further aspect of the improvement is illustrated in fig 6, which shows the spindle 4 secured to the grip 2 by means of a screw 50 of which the head 51 occupies a central position between the racks 6; in this instance each rack 6 affords a projection 6s, extending longitudinally along the rack itself and directed transversely toward the screw 50, which is proportioned in such a way as to interpose a given distance between the head 51 and the spindle 4 and thus furnish means by which to restrain the racks stably in the casing.

In practical terms, the fitment of an espagnolette handle as described above requires first that the internal mechanism be assembled in the conventional manner, with the difference, obviously enough, that the preassembled racks 6 will be restrained behind the head 51 of the centre screw 50; thereupon, the escutcheon flange or casing 1 is fixed to the sash with the screw means 10, which can be inserted from either direction through the holes 9 in the cover plate 8 and the corresponding sockets 11, having first fitted the plate 8 to the casing 1, needless to say. With the screw means 10 suitably tightened (use can be made of ordinary wood or metal screws, and even of nuts and bolts where particular fixing requirements may dictate; these are not shown in the drawings), the cladding 20 is passed over the hand grip 3, offered to the front face 1a of the casing 1 and locked in place against the profile 22 afforded by the base of the boss 2; the assembly of the handle with the close-fitting decor element 17 will be completed in similar fashion. In the case of the handle with the smaller decor caps 13, these are fitted exclusively to the parts of the casing 1 affording the sockets 11, by inserting the pin 14 in the relative hole 15.

By virtue of the improvement disclosed, installers are provided with an espagnolette handle which is both manufactured to a well known mechanical design of proven functional reliability, and can also be fitted with ease even to those fixtures liable to pose difficulties in securing and/or proportioning the espagnolette mechanism (e.g. secondary glazing, shutters etc.); instead, thanks to the particular decor elements utilized, the external appearance of the handle can remain substantially unaffected.

Claims

1) An improvement in a universal espagnolette handle for door and window fixtures, comprising:
an escutcheon flange or casing (1); a handgrip (3) projecting on the one side from a boss (2) embodied integrally with the casing, by which a spindle (4) accommodated internally of the casing is rotated between a first position and a second position; two pins (5) projecting from the side opposite to the grip (3), of which the free ends connect with a fastener incorporated into the fixture; a pair of racks (6) disposed mutually parallel internally of the casing (1), engaged in meshing contact by a pinion (7) rotatable as one with the spindle (4) and affording elements by which the pins (5) are supported and traversed between a first position and a second position coinciding with the first and second positions of the grip (2) and corresponding to the fastened and unfastened configurations of the fixture; and a cover plate (8) applied to the rear face (1b) of the casing and affording a set of

holes (9) at each end through which to insert screw means (10), insertable also through sockets (11) afforded in corresponding positions by the flange or casing (1) and serving to secure the handle to the fixture,
characterized

- in that the sockets (11) afforded by the flange or casing (1) consist in through holes allowing insertion of the screw means (10) from the front of the handle, hence from the side opposite to that occupied by the cover plate (8), and are concealed externally by removable means (12) associated in a positive mechanical fit with at least a part of the front face (1a) of the casing (1); and
- in that the cover plate (8) is secured by way of positive fastening means (16) to the rear face (1b) of the casing (1).

2) An improvement as in claim 1, wherein the sockets (11) are fashioned each with a respective widened portion (11a) open to the front face (1a) of the casing and accommodating the head of the screw means (10), and concealing means (12) consist in caps (13) secured one to each end of the casing (1) by means of a pin (14) projecting from the reverse face (14a) of the cap (13) and insertable in a corresponding hole (15) afforded by the casing (1).

3) An improvement as in claim 1, wherein the sockets (11) are fashioned each with a respective widened portion (11a) open to the front face (1a) of the casing and accommodating the head of the screw means (10), the casing (1) exhibits an undercut face (41) proportioned to encompass the widened portions (11a) and extending from the boss (2) toward each end in such a way as to establish a plurality of stepped profiles (19, 40), and the concealing means (12) consist in a hollow decor element (17) substantially of U section, fashioned in a single piece and affording a central opening (18), which can be passed over the grip (3) and secured against the front face (1a) of the casing in a matching fit with the undercut face (41) by insertion between the stepped profiles (19, 40), stably concealing the front face (1a) and part of the longer parallel side faces of the casing (1).

4) An improvement as in claim 1, wherein the sockets (11) are fashioned each with a respective widened portion (11a) open to the front face (1a) of the casing and accommodating the head of the screw means (10), the casing affords a stepped profile (22) peripherally encompassing the boss (2), and the concealing means (12) consist in a hollow decor element or cladding (20), fashioned in a single piece and affording a central opening (21), which can be passed over the hand grip (3) and locked to the front face (1a) of the casing (1) by positive engagement of the opening (21) with the stepped profile (22), thereby concealing the entire area of the casing (1) exposed to view.

5) An improvement as in claim 1, wherein the cover plate (8) is secured by positive fastening means (16) consisting in at least one pair of studs (23) positioned one substantially at each end of the plate (8) and stably insertable in a corresponding socket (24) afforded by the rear face (1b) of the casing (1).

6) An improvement as in claim 1, wherein the external contours of the cover plate (8) are contained within the dimensional compass of the casing (1).

7) An improvement as in claim 1, wherein the spindle (4) is secured to the grip (2) by means of a screw (50) of which the head (51) is disposed centrally between a pair of racks (6) affording respective longitudinally extending projections (6s) directed transversely toward the screw (50) in such a way as to interpose between the head (51) and the spindle (4) and thus furnish means by which the racks are restrained stably in the casing.

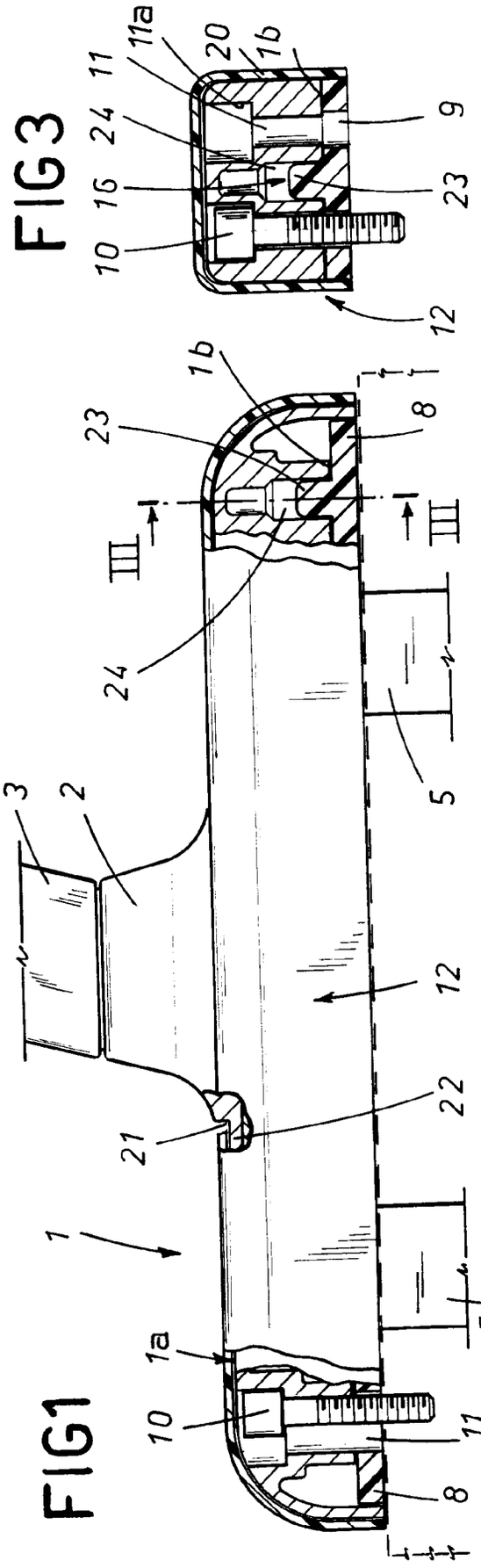
FIG1
1
1a
1b
2
3
5
8
10
11
12
21
22
23
24
III
III

FIG3
9
10
11
11a
12
16
20
23
24

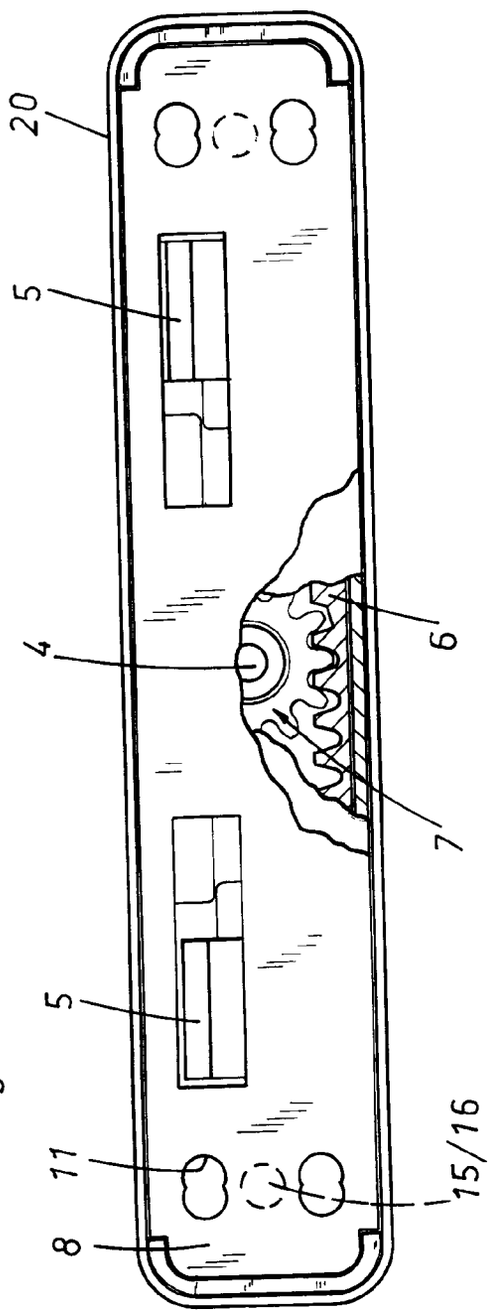
FIG2
4
5
6
7
8
11
15/16
20

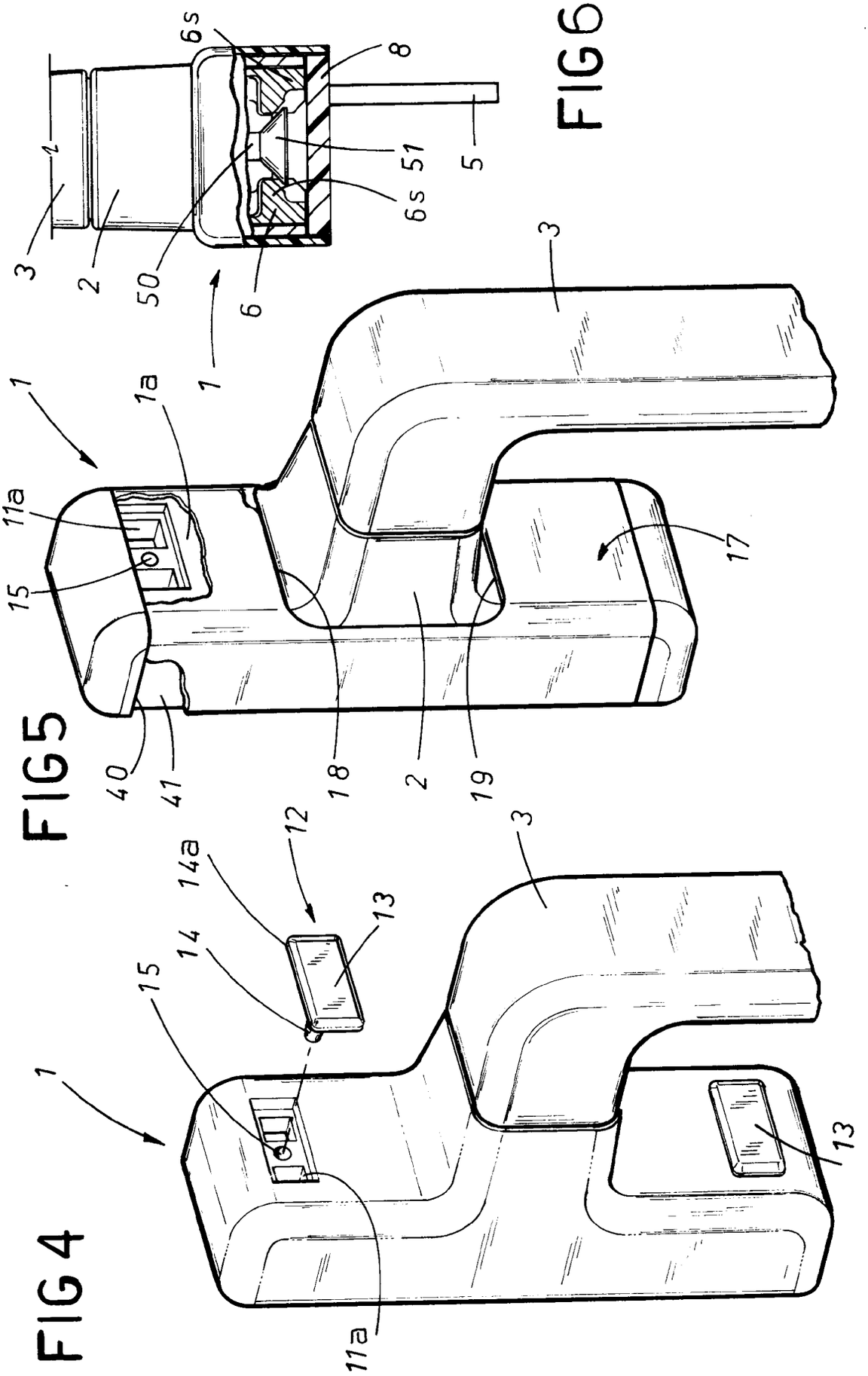
FIG4
1
11a
15
14
14a
12
13
3
FIG5
1
1a
11a
15
40
41
18
2
19
17
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FIG6
1
3
2
50
6
6s
51
5
8

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EUROPEAN SEARCH REPORT

Application Number EP 93830100.9

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.5)
X	DE - A - 3 445 170 (ERRETI S.r.l.) * Fig. 1-7; claims 1-9 * --	1-7	E 05 B 1/00
A	US - A - 4 616 864 (DOUGLAS) * Fig. 1-2; claims 1-12 * --	1-6	
A	CH - A - 484 351 (HANS SCHÄRER) * Fig. 1-3 * --	1	
X	FR - A - 2 653 155 (MERLIN GERIN S.A.) * Fig. 1-2 * --	1-4	
A	GB - A - 2 233 035 (W.J. GOODWIN & SON LTD.) * Fig. 1-17 * --	1-4	
A	DD - A - 221 232 (INST. FÜR BAUELEMENTE UND FASERBAUSTOFFE) * Fig. 1-2 * --	1	TECHNICAL FIELDS SEARCHED (Int. Cl.5) E 05 B E 05 C
A	DE - A - 3 038 508 (GEZE GMBH) * Fig. 1-3 * ----	1,7	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
VIENNA	25-05-1993	CZASTKA

CATEGORY OF CITED DOCUMENTS

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