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(54) **Plate for irons**

(57) Plate (1) for irons comprising a lower ironing surface (2) and developing mainly from a rear portion (4) to a front portion (3). The plate (1) internally has a first and second chamber (5,6) for dispensing steam, and at least a heating element (20) which traverses at least in part both steam dispensing chambers (5,6). A first plurality of steam dispensing holes (7) connects the first chamber (5) to a second dispensing portion (8) of the lower surface (2), whilst at least a second steam dispensing hole (9) connects the second chamber (6) to another dispensing area (10) of the plate (1). Each chamber (5,6) has a steam inlet section (11,12) located in proximity to the rear portion (3) of the plate (1). The first and the second chamber (5,6) develop side by side starting from the respective steam inlet sections (11,12) at least until arriving in correspondence with the dispensing portion (8) of the lower surface (2).

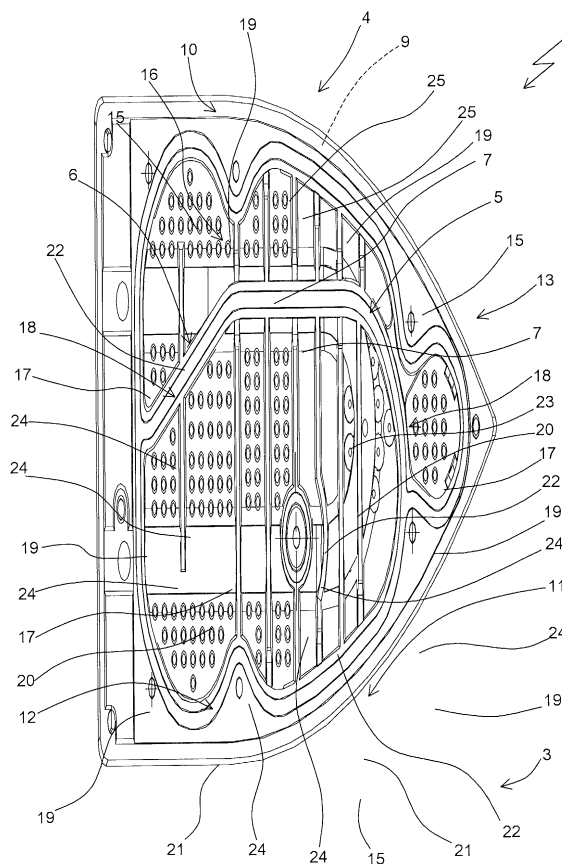


FIG. 1

Description

[0001] The present invention relates to a plate for irons comprising the characteristics expressed in the preamble to claim 1.

[0002] The plate for irons of the present invention can be mounted both on irons for home use, and on irons for professional use.

[0003] In particular the present invention relates to plates for irons wherein two independent pluralities of steam dispensing holes are provided.

[0004] In general, such plates comprise a first plurality of holes distributed on the lower surface and destined to dispense steam in nearly continuous fashion during the ironing operation, and a second plurality of holes positioned in proximity to the tip of the iron, whose purpose is to dispense a jet of steam when required by the user.

[0005] The second plurality of holes in some cases can also be reduced to a single hole, and, depending on requirements, it can be positioned either on the lower or on the front surface of the plate, in such a way as to dispense steam ahead of the iron itself.

[0006] Oftentimes, in professional irons, the first plurality of holes is also positioned proximate to the tip of the iron, in such a way that the lower half of the plate can be destined solely to drying the fabric that is being ironed.

[0007] Each plurality of holes is then connected to a related steam chamber obtained inside the plate itself, and connected to the boiler that produces the steam.

[0008] Depending on the cases, the shape and position of each chamber vary to adapt the plate to different types of iron.

[0009] In general, however, in prior art plates each chamber develops substantially above the related steam dispensing holes.

[0010] Moreover, said plates are provided with a heating element inserted inside the first chamber to maintain the steam in the gaseous state and prevent it from condensing.

[0011] Prior art plates, however, have the drawback that the steam is often not dispensed in equivalent manners through the first and the second holes. In particular, there are differences in the steam output temperature.

[0012] In this regard it must be considered that, at the time the user commands steam to be dispensed through the holes present in the tip, it may occur that the steam that is dispensed is at a lower temperature than the set temperature, with the risk of an accidental dispensing of water droplets (which may soil the fabric).

[0013] On the other hand, to overcome the problem the temperature of the steam (of both chambers) can be raised, but one thereby incurs the risk that the steam dispensed by the first holes 7 is at such a temperature as to ruin the fabrics.

[0014] In this situation the technical task of the present invention is to provide a plate for irons, that overcomes the aforementioned drawbacks.

[0015] In particular, a technical task of the present invention is to provide a plate for irons that minimises the temperature difference between the steam dispensed by the first plurality of holes and the steam dispensed by the second plurality.

[0016] Another technical task of the present invention is to provide a plate for irons the minimises the accidental dispensing of water droplets both through the first plurality of holes, and through the second plurality of holes.

[0017] The specified technical task and the indicated aims are substantially achieved by a plate for irons, as described in the accompanying claims.

[0018] Further features and advantages of the invention shall become more readily apparent from the detailed description that follows of a preferred, but not exclusive, embodiment of a plate for irons, illustrated in the accompanying drawings, in which:

- Figure 1 shows a plan view of the base element of a plate for irons according to the present invention;
- Figure 2 shows a lateral elevation view of the base element of Figure 1;
- Figure 3 shows a front elevation view of the base element of Figure 1;
- Figure 4 shows a bottom view of the base element of Figure 1;
- Figure 5 shows a three-quarter rear axonometric view of a covering element able to be associated to the base element of Figure 1;
- Figure 6 shows a lateral elevation view of the covering element of Figure 5;
- Figure 7 shows a rear elevation view of the covering element of Figure 5; e
- Figure 8 shows a plan view of the covering element of Figure 5.

[0019] With reference to the aforementioned figures, the reference number 1 globally designates a plate for irons, according to the present invention.

[0020] The plate 1, which has a planar lower surface 2 for ironing, develops along a main direction of development which extends from a rear portion 3 to a front portion 4.

[0021] Inside the plate 1 are obtained a first and a second chamber 5, 6 for dispensing the steam respectively connected to a first plurality of holes 7 for dispensing the steam, which end in correspondence with a dispensing portion 8 of the lower surface 2, and to at least a second steam dispensing hole 9 which ends in correspondence with another dispensing area 10 of the plate 1. In the illustrated embodiment the dispensing area 10 is positioned anteriorly, with reference to the main direction of development, relative to the dispensing portion 8 of the lower surface 2.

[0022] In the illustrated embodiment, the plate 1 comprises four second holes 9, and in general may comprise any plurality thereof.

[0023] Moreover, the accompanying figures show an embodiment in which the second holes 9 end frontally to the plate 1 to dispense steam ahead of the plate 1 itself.

[0024] In any case, the second holes 9 can also end on the lower surface 2 of the plate 1.

[0025] Advantageously then, the first dispensing holes 7 are grouped in proximity to the longitudinal axis of the plate 1 and are closer to the front portion 4 than to the rear portion of the plate 1 itself.

[0026] Each chamber 5, 6 also has a related steam inlet section 11, 12 located in proximity to its own rear portion 3.

[0027] The two chambers 5, 6 then develop side by side within the plate 1 starting from the respective steam inlet sections 11, 12 to arrive in correspondence with the dispensing portion 8 of the lower surface 2, where the first chamber 5.

[0028] Advantageously, the cross section of the steam passage of the second chamber 6 is smaller than that of the first chamber 5, in accordance, in the case illustrated herein, with the fact that the flow rate of steam to be dispensed by the first holes 7 must be greater than that dispensed by the second holes 9.

[0029] In the illustrated embodiment, the plate 1 is constituted by two separates parts 13, 14, a base element 13 and a covering element 14, advantageously both obtained by moulding. When the plate is mounted, between the base element 13 and the covering element 14 is interposed silicone sealant to assure that the plate is sealed.

[0030] The base element 13 defines the lower surface 2 and the lateral walls 15 of the plate 1 which in turn identify a compartment 16 inside the plate 1.

[0031] In this compartment 16 develops a kerb 17 which delimits two subcompartments 18 corresponding to the two steam dispensing chambers 5, 6. Once the covering element 14 is mounted, it co-operates with the kerb 17 (and with the silicone sealant interposed between them - not shown in the accompanying figures) and superiorly closes the chambers 5, 6.

[0032] As shown in Figure 1, between the kerb 17 and the lateral walls 15 of the plate 1 are also provided coupling holes 19 for fastening the covering element 14 to the base element 13.

[0033] In the base element 13 is also mounted a heating element 20 constituted by a U-shaped electrical resistance that traverses both chambers and has two connection terminals 21 in correspondence with the rear portion 3 of the plate 1.

[0034] Also with reference to Figure 1, it is readily apparent that the base element 13 also has reinforcing ribs 22 that develop transversely to the main direction of development.

[0035] Also in the base element 13 is obtained a seat 23 for a temperature probe.

[0036] Lastly, within the two chambers 5, 6 are shown evaporation elements 24, 25, which can be provided in

the most complete embodiments of the present invention.

[0037] In particular the plate 1 is provided with a plurality of first evaporation elements 24 constituted by cone frustum projections, whose purpose is to intercept the flow of steam within each chamber 5, 6 and cause the evaporation of any water droplets carried in the steam flow.

[0038] Preferably, the first evaporation elements 24 are concentrated, in both chambers 5, 6, in the vicinity of related steam inlet sections 11, 12. Advantageously, in the illustrated embodiment they are uniformly distributed, in each chamber 5, 6, in correspondence with an area extending from the rear portion 3 of the plate 1 to an intermediate portion thereof (also with reference to the main direction of development).

[0039] The second chamber 6 is also provided with a second plurality of evaporation elements 25 distributed therein in proximity with the second steam dispensing holes 9.

[0040] In regard to the covering element 14, it has mainly planar development and it has a lower face 26 (not shown herein) able to be coupled with the base element 13 in the manners described above, and an upper face 27 able to be associated with the body of the iron.

[0041] As is readily apparent from the accompanying figures, the covering element 14 has through holes 28 in correspondence with the coupling holes 19 and with the seat 23 for the temperature probe of the base element 13.

[0042] Through the rear part of the covering element 14 are also obtained the steam inlet sections 11, 12 whereto are associated two rigid sleeves 29 for connection to conduits that will carry the steam to the plate 1.

[0043] Lastly, to the covering element 14 are also associated two housings 30 for fastening the plate 1 to the body of the iron (in particular to the related grip).

[0044] In use, steam is thus carried by appropriate conduits to the inlet sections 11, 12 and enters the two heated chambers 5, 6. It then flows through the area provided with the evaporation elements 24, 25 in such a way that any water droplets can evaporate, lastly to reach the first and second dispensing holes 7, 9.

[0045] The present invention achieves important advantages.

[0046] Thanks to the fact that the heated element flows through both chambers, the difference in temperature of the steam flowing out of the first and of the second plurality of holes is minimised.

[0047] This effect is further enhanced by the side by side development of the two steam dispensing chambers.

[0048] Moreover, the presence of the evaporation elements within both chambers assures the evaporation also of any water droplets that may reach the chambers themselves from the steam generator.

[0049] It should also be noted that the present invention is relatively easy to construct and that the cost con-

nected with the implementation of the invention is not very high.

[0050] The invention thus conceived can be subject to numerous modifications and variations, without thereby departing from the scope of the inventive concept that characterises it.

[0051] All components can be replaced by other technically equivalent elements and in practice all materials used, as well as the shapes and dimensions of the various components, can be any depending on requirements.

Claims

1. Plate for irons comprising
 - a lower ironing surface (2);
 - a front portion (4) and a rear portion (3) identifying a main direction of development of the plate (1) itself;
 - a first and a second chamber (5), (6) for dispensing steam, obtained internally to the plate (1);
 - at least a heating element (20) inserted in said plate (1);
 - a first plurality of holes (7) for dispensing steam, in communication between the first chamber (5) and a dispensing portion (8) of the lower surface (2); and
 - at least a second steam dispensing hole (9) in communication between the second chamber (6) and another dispensing area (10) of the plate (1);**characterised in that** said heating element (20) traverses at least in part both said steam dispensing chambers (5), (6).
2. Plate for irons as claimed in claim 1 **characterised in that** each chamber (5), (6) has a steam inlet section (11), (12) positioned in proximity to the rear portion (3) of the plate (1), and **in that** said first and second chamber (5), (6) develop side by side from the respective steam inlet sections (11), (12) at least until arriving in correspondence with said dispensing portion (8) of the lower surface (2).
3. Plate for irons as claimed in claim 1 or 2 **characterised in that** it comprises a base element (13) defining said lower surface (2), and a covering element (14) removably fastened above said base element (13), said base element (13) and covering element (14) between them identifying said chambers (5), (6).
4. Plate for irons as claimed in claim 3 **characterised in that** said steam inlet sections (11), (12) are obtained through said covering element (14).
5. Plate for irons as claimed in any of the previous claims, **characterised in that** it further comprises,
 - in each chamber (5), (6), a plurality of first evaporation elements (24) projecting to intercept the steam flow within each chamber (5), (6) and cause the evaporation of any water droplets carried in the steam flow itself.
6. Plate for irons as claimed in claim 5 **characterised in that** said first evaporation elements (24) are concentrated, in both chambers (5), (6), in the vicinity of the related steam inlet sections (11), (12).
7. Plate for irons as claimed in claim 6 **characterised in that** said first evaporation elements (24) are uniformly distributed in each chamber (5), (6) in correspondence with an area thereof that extends from the rear portion (3) of the plate (1) to an intermediate portion thereof, with reference to the main direction of development.
8. Plate for irons as claimed in any of the previous claims from 5 through 7 **characterised in that** it further comprises a second plurality of evaporation elements (25) concentrated in proximity to the second hole (9).
9. Plate for irons as claimed in any of the previous claims, **characterised in that** said first plurality of holes (7) is closer to the front portion (4) of the plate (1) than to the rear portion (3) thereof.
10. Plate for irons as claimed in any of the previous claims **characterised in that** said dispensing area (10) is positioned anteriorly, with reference to the main direction of development, to the dispensing portion (8) of the lower surface (2).
11. Plate for irons as claimed in any of the previous claims **characterised in that** said second hole (9) ends on said lower surface (2).
12. Plate for irons as claimed in any of the claims from 1 through 10 **characterised in that** said second hole (9) ends frontally to said plate (1) in correspondence with said front portion (4), to dispense steam anteriorly to the plate (1) itself.
13. Plate for irons as claimed in any of the previous claims **characterised in that** it comprises a plurality of second holes (9).
14. Iron **characterised in that** it comprises a plate (1) as claimed in any of the previous claims.

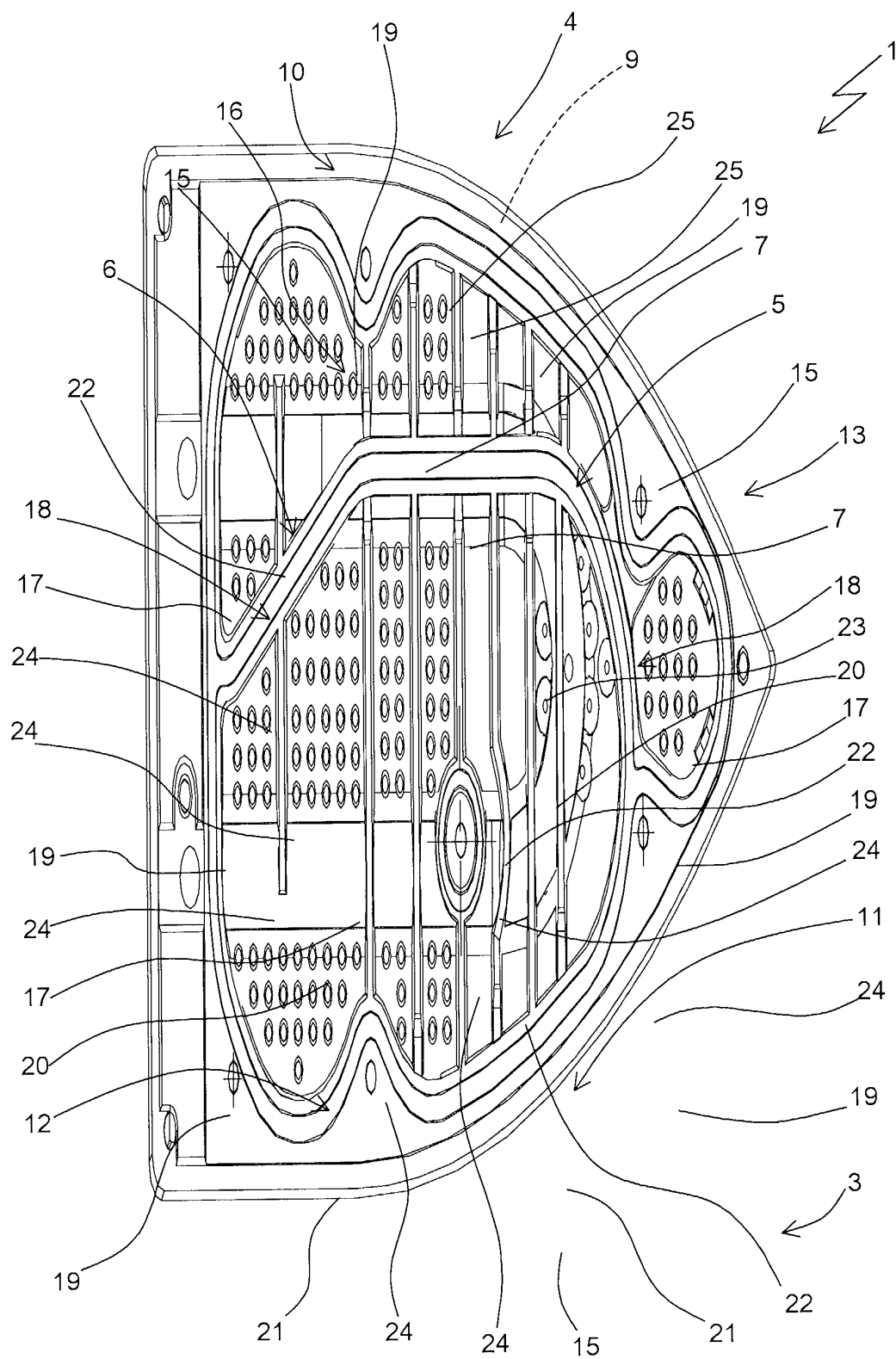


FIG. 1

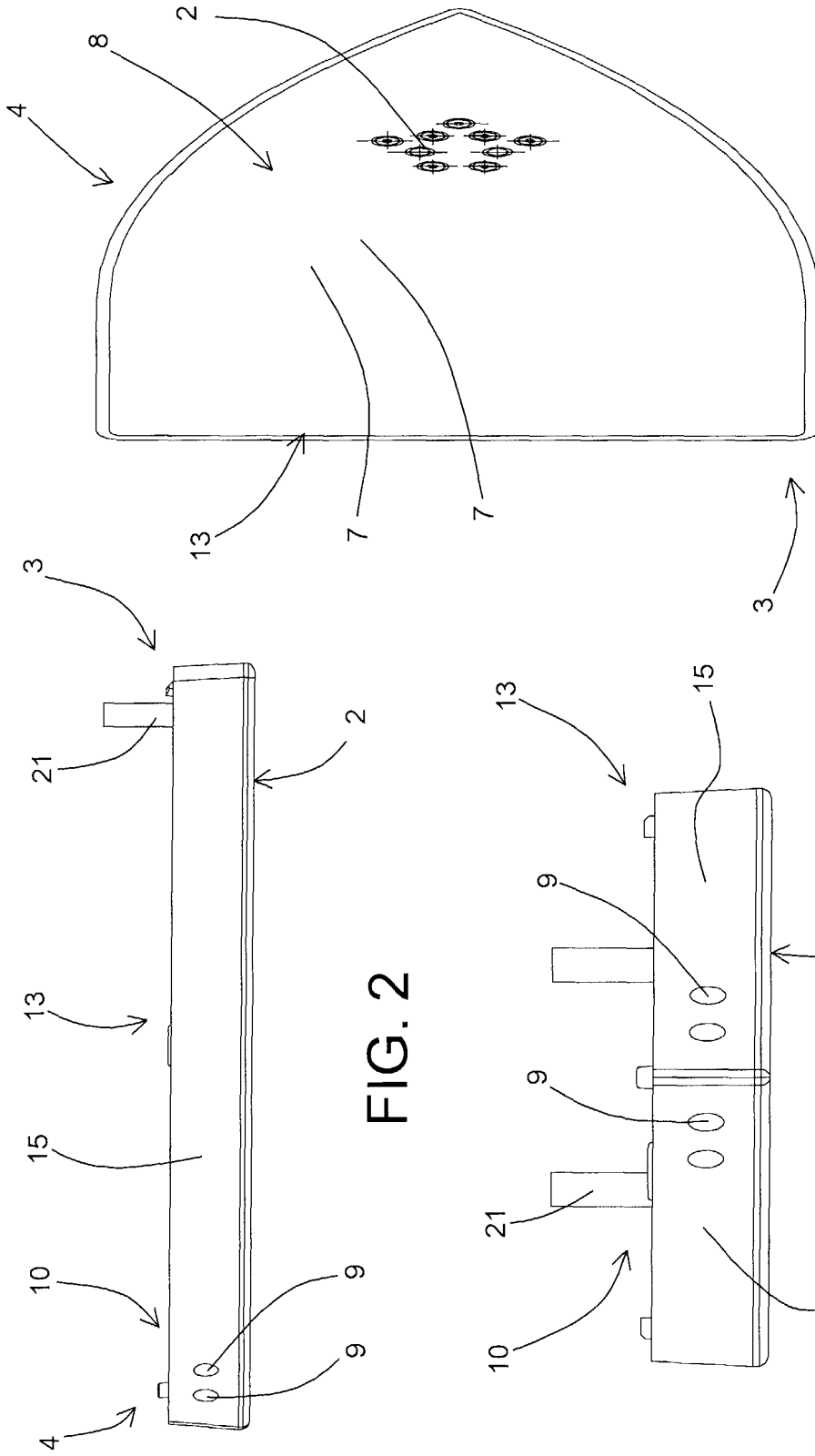


FIG. 2

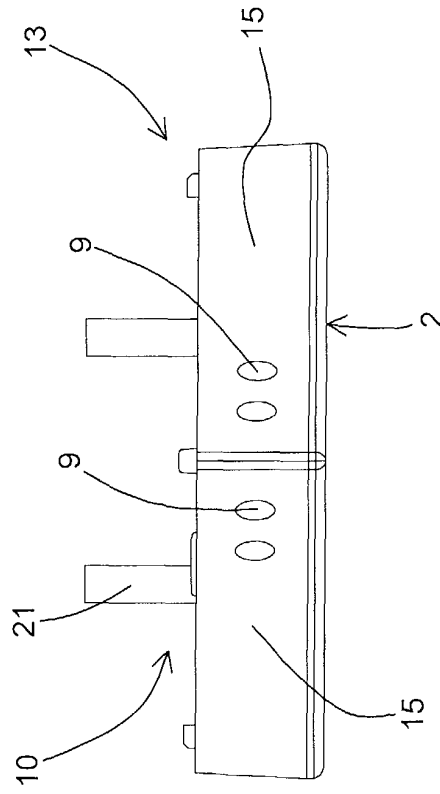


FIG. 3

FIG. 4

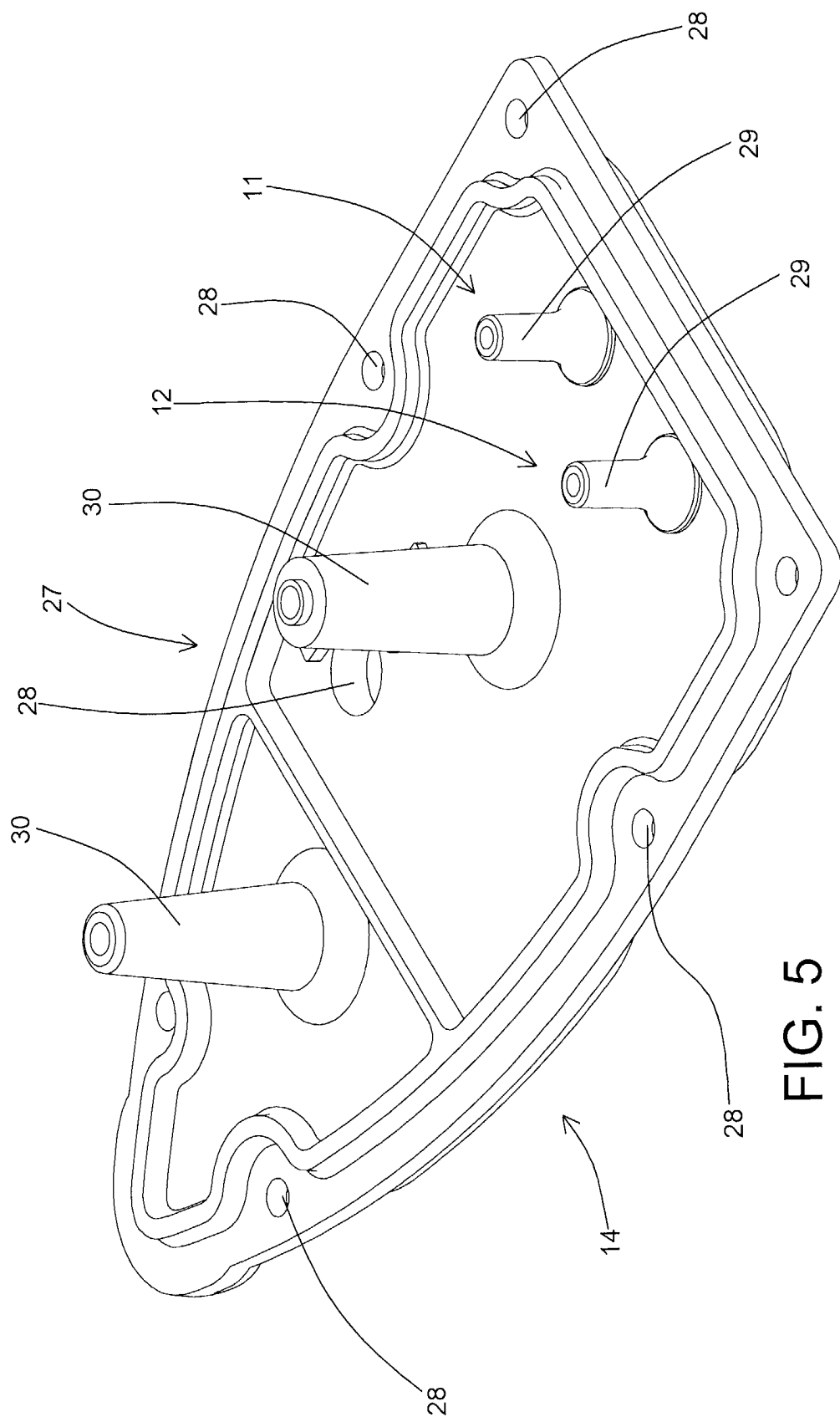
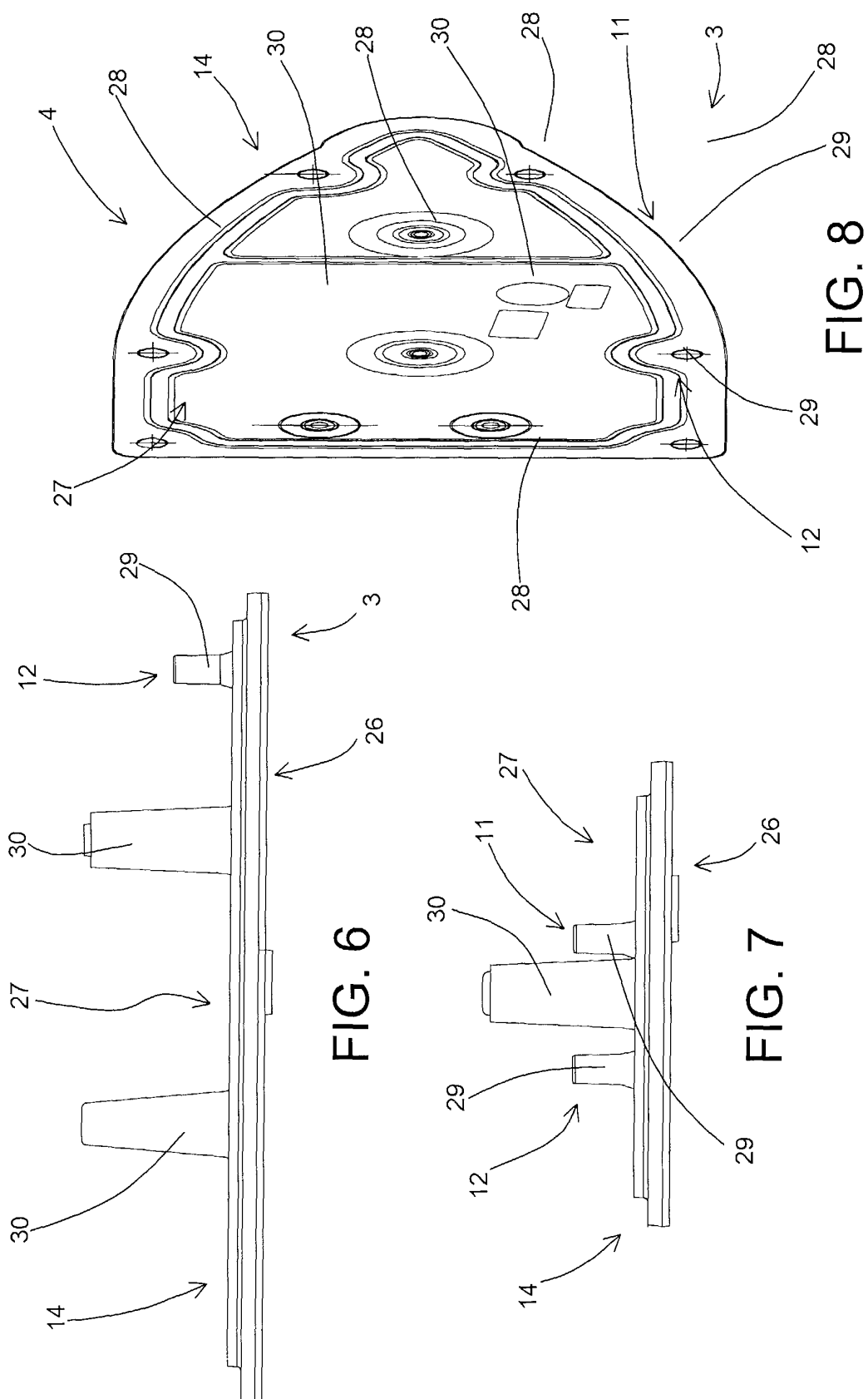


FIG. 5





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EUROPEAN SEARCH REPORT

Application Number
EP 03 42 5186

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)
X	US 2 724 198 A (VANCE JOHN E) 22 November 1955 (1955-11-22) * the whole document *	1,3,11, 13,14	D06F75/20
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			D06F
Place of search		Date of completion of the search	Examiner
THE HAGUE		9 October 2003	Ureta, R
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EP 03 42 5186

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09-10-2003

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