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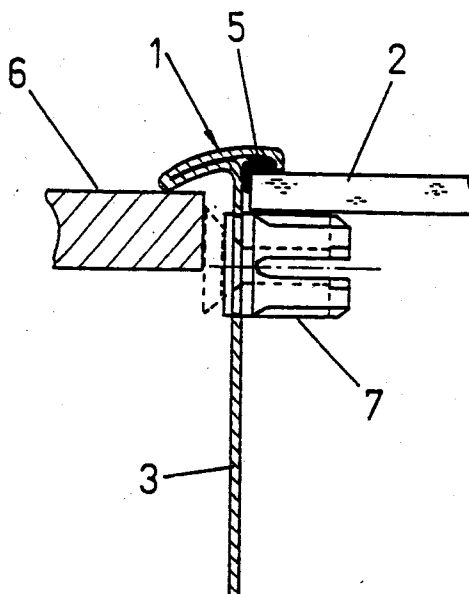
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(54) New frame for ceramic glasses and its manufacture procedure

(57) New frame for ceramic glasses and its manufacture procedure, that is of the kind of those frames that acts as a beautifying element in its fitting into the corresponding cavity of the top surface, in addition to support the ceramic glass, and so that the frame (1) is formed from a unitary base sheet, that because of its structure acts as a element of placement of the ceramic glass (2) and as a beautifying element, blocking up the perimetric

edge of the plate, and it has the means of fast fixing for the static placement of the ceramic glass in the frame (1), which is made up of a profile that defines a closed perimetric vertical gable (3) and a curved upper elvowing to the exterior of the frame, whose upper branch, of convex external surface, is prolonged to the interior of the frame for being finished off by a little perpendicular projecting (4) downwards.

**FIG. 2****EP 0 860 661 A1**

Description

OBJECT OF THE INVENTION.

As is expressed in the title of the present descriptive report, the following invention consists on a new frame for ceramic glasses and its manufacture procedure, being of the kind of those frames that are fitted into the corresponding cavity of the top surface where it is fitted, supporting the ceramic glass at the same time, so that the new frame has a structure that allows the total concealment of the perimetric edge of the ceramic glass under the beautifying frame.

In the other hand, in addition to obtain a perfect tightness between the beautifying frame and the ceramic glass, the cited tightness is obtained with the use of a minimum amount of sealing material which will be a monocomponent or a bicomponent of silicone, silicone foam or a similar element, placing it on a hollow that is perfectly delimited in the own profile that configures the frame that supports the plate and that acts as a beautifying element at the same time.

Likewise, the beautifying seat frame is obtained starting from a unitary plate, through consecutive operations that let form a closed frame, whose corners are joined and that in addition to act as the support of the ceramic glass, it acts as a beautifying element, blocking up the perimetric edge of the ceramic glass, as well as the silicone sealing cord, silicone foam or a similar element, which materializes the tightness.

Thus, the frame for ceramic glasses is made up of a perimetric vertical gable, that has upperly a curved elbowing to the exterior, whose upper branch is prolonged is prolonged lowerly to the frame, for being finished off by a little projecting like a right angle downwards, that perimetrically is leaned on the upper surface of the ceramic glass while on the perimetric vertical gable, it has a whole of mouldings in which the seat and subjection elements of the ceramic glass are placed.

FIELD OF APPLICATION.

The frame for ceramic glasses is applicable for the subjection of the own ceramic glass, so that the same one remains fitted into the corresponding cavity of the top surface that is done for the same one remains at the level of it, acting the frame as a beautifying element at the same time.

BACKGROUND OF THE INVENTION.

With the pass of the time, the ceramic glasses have been each time more used in cooking, but there are some drawbacks that still have not been solved adequately and thus at nowadays it was without some solution the fact of that perimetric sealing cord remain visible between the ceramic glass and the support frame, with the drawbacks that it implies.

In this way, conventionally the ceramic glasses are leaned on perimetrically on a frame that is obtained by inlaying starting from a base plate that acts as a beautifying element at the same time. This execution has a drawback in that if the support plate of the ceramic glass is materialized with marked angles, there are stresses accumulations that can cause the break of the same one, doing it useless, so that there is a tendency in practice to realize it with the angles not much marked.

This drawback is bigger in the vertexes of the seat base of the ceramic glass of the inlayed plate, so that for avoiding the contact among the ceramic glass and the vertexes of the seat base, the ceramic glass must be manufactured so that their vertexes be rounded, which increases considerably its cost.

This is thus, since the direct contact between the ceramic glass and the seat base can cause the break of the same one, so that a minimum break does the ceramic glass to remain useless, because it does not keep the minimum guarantees since in this situation has a behaviour totally unpredictable.

To solve these problems, the holder of the present dossier is also the holder of the Invention Patent P9201348 in which some "Improvements in the support plate for the cooking ceramic glass" are claimed, which are basically based on realizing a punching in the vertexes of the seat base of the ceramic glass in the inlayed plate, in order to when there is a partial loosening of a particle of the same vertex, the same one remains under the support plan of the ceramic glass in relationship to its seat base.

With this, the support plate of the ceramic glass can be manufactured by inlaying without very marked angles that can cause its break by the accumulation of stretchings in some points such as the vertexes.

In this way, the possible breaks of the ceramic glass, that can emerge during its manipulation before the installation because of the existing vibrations, are avoided and therefore considerable economic losses because of the high cost of the ceramic glass are also avoided.

In spite of this, there are still some drawbacks, and thus in the assembly of the ceramic glass in the support plate, respective flexible strips must be placed on the vertexes of the seat plate in the support plate of the same one, placing next a silicone cord manually or automatically on the seat base, for placing the ceramic glass on it.

Next, a second silicone cord must be placed in the space that remains between the perimetric edge of the ceramic glass and the seat plate, so that the amount of stored silicone is much bigger than amount that is necessary for closing all the space and leaving it at the level of the ceramic glass, so that later a scrupulous cleaning must be done manually for eliminating the amount of remaining silicone.

This must be thus for being able to absorb all the remains that can be both in the base plate and in the ceramic glass, for the amount of stored silicone always

remains at the level of the ceramic glass after the cleaning execution.

This execution has the drawback of the high cost of the discarded silicone that can be established as around the 50% of the placed silicone, as well as the high cost of the time that is spent in the cleaning, with the added cost of the stripping knives specially used for this purpose, and which have a short duration.

All that means a high economic cost because of the assembly cost of the ceramic glasses with their corresponding cleaning, with the added drawback of that the perimetric silicone cord remains visible since the beautifying frame of the support plate remains to the external part of the same one, because of the cited support plate has been obtained by inlaying.

Likewise, we can quote other Patents in which several different executions are described but that in the same ones, the element of perimetric seat remains visible between the ceramic glass and the support plate and thus, we can quote the French Patent number 2424486-A, in which several embodiments are described in the structure of the support plate but in all them, both the seat element of the ceramic glass and the perimetric cord of the sealing element are perimetrically visible.

We can also quote the Utility Model 285.008 with priority of the German Patent P3242026.9 in which a trough placement for cooking is claimed, with a cooking plate that have some cooking places, in particular a plate of vitreous ceramic in which a whole of characteristics referred to all the whole are claimed, and in which a seat frame moulded by pressure tapping is foreseen, but its union with the vitreous plate also remains visible, and whose support frame is fixed to the own hob through a whole of screws.

DESCRIPTION OF THE INVENTION.

In the present report, a new frame for ceramic glasses and its manufacture procedure is described, being of the kind of those frames that, in addition to support the ceramic glass, act as a beautifying element in its fitting into the corresponding cavity made in the top surface, so that the frame is formed starting from a unitary flat base sheet like a flat frame that acts as a element for the placement of the ceramic glass and as a beautifying element because of its shaping and its peculiar obtaining process, blocking up the perimetric edge of glass and having the means of fast fixing for the static placement of the ceramic glass in the frame.

Likewise, as a total closing in all the gable perimeter is obtained with the mechanical process that is proposed, it also let obtain a total thermic insulation on the top surface of wood or marble in which the ceramic glass for cooking is fitted.

The frame is formed by a profile that defines a closed perimetric vertical gable and a curved upper elvowing to the exterior of the frame, whose external up-

per branch, of convex external surface, is prolonged to the exterior of the frame so that it is finished off by a perpendicular projecting downwards, on which the ceramic glass will be coming across perimetrically.

The cited projecting which finishes off the elvowed upper branch of the profile that constitutes the frame defines, with the own upper branch of the elvowing and with the upper part of the perimetric gable, a hollow a silicone sealing cord, silicone foam, or some similar material is stored, so that the amount of sealing material can be perfectly controlled, avoiding some remains for cleaning or discarding, besides acting as a tightness element.

The means for the placement of the ceramic glass in the frame are defined by a whole of plugs, of plastic or metallic material and with a rectangular general plan, that are endowed of a central hole and a pair of a extreme arms as well as a neck close to the head of the same one in which there are a pair of lateral wings that will act as a stop in the placement of the plugs in the frame.

Thus the plugs of placement of the ceramic glass, are fitted by pressure into the respective holes of the closed perimetric gable of the profile that constitutes the frame in relationship to the inlet that defines the neck of the same one, so that the introduction of the corresponding cylindrical pivot into the central hole causes the opening of the extreme arms for the upper arm works on the internal surface of the ceramic glass during its opening, impeling it against the free extreme of the projecting that finishes off the upper branch of the curved elvowing of the profile that constitutes the frame.

Likewise, the means for the placement of the ceramic glass in the frame are defined by a whole of springs that are placed in some respective wholes of three holes for obtaining the pressure of its opposed extreme on the internal surface of the ceramic glass, impeling it against the free extreme of the projecting of the elvowed upper branch of the profile that constitutes the frame. The cited springs will have the corresponding covering for avoiding some possible damages on the ceramic crystal.

The new frame for ceramic glasses is manufactured starting from a flat unitary base sheet, through a process that consists on successive operations of cutting, stamping, pressing and punching with a determined development, so that because of successive cited operations, in the configuration of the profile some mouldings are defined in the vertexes of the lower branch of the upper elvowing of the profile, and the open stretches of the gable are overlapped among them, so that they are fixed by one or more inlayings, obtaining a perfectly closed perimetric gable which acts as a thermic insulator in relationship to the top surface in which the ceramic glass is fitted.

In this way, the frame acts as an element for the placement of the ceramic glass and also as a beautifying element, and hides the sealing cord, which will be a

monocomponent or a bicomponent of silicone, silicone foam or else a similar element that acts as tightness element.

Therefore, if we associate the peculiarity of the frame process and its design, the fixing of the glass and the application of the sealing element, all that as a whole means the optimisation of the waiting periods of the manufacture, the improvement of the productive efficiency, and therefore the decrease of the final cost of the product.

In order to complement the description which is done hereinafter and with the purpose of providing a better understanding of its characteristics, the present descriptive report is accompanied by a set of drawings, in whose figures the most significant details of the invention described in the present report are represented, in an illustrative and not limitative way.

BRIEF DESCRIPTION OF THE DESIGNS.

Figure 1.- It shows a plan view of the new frame for ceramic glasses, where we can observe the elvowed upper surface that acts as a beautifying element.

Figure 2.- It shows a detailed view of a cut of the frame for ceramic glasses, during its assembly in the cavity of the corresponding top surface, so that the ceramic glass is supported by means of a whole of plugs that are fitted into the corresponding holes of the closed perimetric vertical gable of the frame, although the stud which is introduced in the central hole of the plug is not totally represented.

Figure 3.- It shows a detailed view of a cut of the frame for ceramic glasses, during its assembly in the cavity of the corresponding top surface, where we observe as the ceramic glass is supported by a whole of springs that are placed in some respective sets of three holes of the closed perimetric vertical gable of the frame, which act on the internal surface of the ceramic glass so that the springs have a covering for avoiding some possible damages on the ceramic glass.

Figure 4.- It shows a frontal view of the plug head of plastic or metallic material for a fast fastening of the ceramic glass.

Figure 5.- It shows a lateral elevation view of the plug of plastic or metallic material for a fast fastening of the ceramic glass.

Figure 6.- It shows a lateral elevation view of the fast fastening plug of plastic or metallic material, being it turned 90° with regard to position of the figure 5, so that we can observe the extreme arms that define the central opening for introducing the corresponding cylindrical pivot, causing the separation of the same ones so that the upper arm presses on the ceramic glass.

Figure 7.- It shows a detailed plan view of a cut of the upper branch of elvowing of the vertex A of the figure 1 of the ceramic glass frame, where we can observe the moulding of the lower branch of the curved upper elvowing, as well as the overlapping of the two stretches of the

open gable that coincide with the vertex, for defining a gable perimetrically closed.

Figure 8.- It shows an elevation view of the ceramic glass frame, in relationship to a moulding that corresponds to the gable of the same one, for the fitting of one of the plugs of plastic material for obtaining the placement of the ceramic glass.

Figure 9.- It shows an elevation view of the ceramic glass frame, in relationship to a whole of three holes for the placement of the corresponding spring which is adequately covered for the placement of the ceramic glass.

Figure 10.- It shows a sectioned view of the ceramic glass frame, being the same one observed according the view B of the figure 7, in relationship to one of its vertexes, in which it remains open from the elvowing lower branch.

DESCRIPTION OF A PREFERRED EMBODIMENT.

In view of the above cited figures and in accordance with the adopted numbering, we can observe as the new frame (1) for ceramic glasses (2) is defined by a profile that forms a closed perimetric vertical gable (3) and a curved upper elvowing to the external part of the gable, so that the upper branch of the cited elvowing is prolonged to the internal part of the frame for being finished off by a little perpendicular projecting (4) downwards, which will be leaned on the upper surface of the ceramic glass (2).

Thus, the cited perimetric projecting (4) defines a hollow between vertical gable (3) and the upper branch of the elvowing to the same one, in which a sealing cord (5), of silicone, silicone foam or a similar element, will be placed so that this cord will act as a tightness element, and thus the amount of sealing element that is stored can be perfectly controlled.

The frame (1) of the ceramic glass (2) will be fitted in the corresponding cavity of the top surface (6), leaning perimetrically with regard to the free extreme of the upper elvowing.

The support and the placement of the ceramic glass (2) take place by means of a set of plugs (7) of fast fastening, of plastic material or any other such as metal, which are fitted in the corresponding holes (8) of the gable (3) of the frame (1), so that the cited plugs (7) have two arms (9) that are centrally open and a central hole (10) so that the introduction of the corresponding cylindrical pivot (11) into the cited central hole (10) causes the opening of the arms for the upper arm runs into and impels on the internal surface of the ceramic glass (2), impeling it against the perimetric projecting (4) of the upper branch of the elvowing of the profile that constitutes the frame (1).

The plugs (7) that support the ceramic glass (2) have a rectangular plant general shape with a pair of lateral wings (13) in its head and a neck (12) that remains in relationship to the hole (8) of the gable (3) of

the frame (1), being perfectly fastened in the same one thus, so that the introduction of the corresponding pivots (11) in the central hole (10) of the same ones causes the opening of the arms (9), and therefore the upper arm is pressing on the internal surface of ceramic glass (2), impeling it against the free extreme of the internal perimetric projecting (4) of the frame (1), being the tightness materialized by the sealing cord (5) that is placed between the cited projecting (4) and the own frame profile.

Definitively, the plugs in collaboration with the pivot that is fitted into its central axial hole fulfil a triple mission since they are useful:

- As support of the ceramic glass.
- As registration of the own ceramic glass.
- As fastening to the top surface since it is perfectly fitted in the corresponding cavity of the top surface.

The placement and the support of the ceramic glass (2) can be obtained by means of a whole of springs (14), that being leaned on the wholes of three holes (15) of the vertical gable of the frame, let the some ones impele the ceramic glass (2) against the internal perimetric projecting (4).

If it is necessary both the plugs and the springs, that can cause any damage in the ceramic glass because of their manufacture material, will be covered of a material for avoiding the direct contact and consistently the possible damage that can be caused.

The new frame (1)) is obtained starting from a laminated sheet that is realized by a whole of operations through a process that consists on successive operations of cutting, stamping, pressing and punching of an established development, so that in the configuration of the profile that constitutes the frame (1), the lower branch of the elvowing in its vertexes has a moulding (16), and the gable (3) of the same one has a stretch (17) in which the respective stretches of the gable, that will be joined through one or more inlayings, are overlaped, materializing a perimetric closing so that the same one acts as a thermic insulator in relationship to the top surface of wood or marble in which it is fitted.

This embodiment is perfectly observed in the figure 7 of the designs that is relative to a vertex A of the frame in which a cut has been done in relationship to the upper branch of the elvowing, so that thus we can observe the external curved stretch of the lower elvowing as well as the moulding (16) and the stretch (17) where the extremes of the gable (3) are overlaped.

In this way, there are not material deformations that can change the configuration of the same one, allowing the perfect seating of the frame according to all its perimeter and avoiding some accumulations of material or some shortages of material when the vertexes are bent..

Definitively, the profile that constitutes the frame (1) is obtained starting from the base laminated sheet after successives operations, according to an unitary piece that is totally closed.

The great advantage of the frame (1) configurated in the described way consists on besides acting as a support element of the ceramic glass by means of the plugs (7) or of the springs (14) of fast fastening, it let the same one act as a beatifying element without leaving visible any sealing cord, since the perimetric extreme of all the ceramic glass (2) remains hidden under the profile and perfectly sealed by the sealing cord (5), which also is hidden.

In the other hand, as the hollow of dump of the sealing cord (5), which is defined by a monocomponent or a bicomponent of silicone, silicone foam, or a similar element, is defined in a way perfectly delimited, the stored amount of sealing material can be defined so that there is not any residue and therefore without any sealing material be discarded, which means an important economic saving (use of a lesser amount of sealing material than with the conventional means) and a labour saving (it is not necessary to realize any cleaning for eliminating the remains of the sealing material, since there is not any reject material)

Definively, if we combine the peculiarity of the obtaining process of the frame and its structural design, the fixing of the ceramic glass and the application of the sealing element, all that as a whole means the optimization of the waiting periods of the manufacture, the improvement of the productive efficiency and therefore the final costs of the product.

Claims

1. NEW FRAME FOR CERAMIC GLASSES AND ITS MANUFACTURE PROCEDURE, being of the kind of those frames that act as beautifying element in its fitting into the corresponding cavity of the top surface besides to support the ceramic glass, and characterized in that the frame (1) is formed from a unitary base sheet, after some peculiar operations of cutting, stamping, pressing and punching, that because of its structure acts as an element for placing the ceramic glass (2) and as a beautifying element, blocking up the perimetric edge of the glass and it has the means of fast fixing for the static placement of the ceramic glass in the frame (1).
2. NEW FRAME FOR CERAMIC GLASSES AND ITS MANUFACTURE PROCEDURE, according to the first claim and characterized in that the frame (1)) is made up of a profile, that because of its peculiar obtaining process, defines a closed perimetric vertical gable (3) and a curved upper elvowing to the external part of the frame whose upper branch, of convex external surface, is prolonged to the internal part of the frame for being finished off by a little perpendicular projecting (4) downwards.
3. NEW FRAME FOR CERAMIC GLASSES AND ITS

MANUFACTURE PROCEDURE, according to the previous claims and characterized in that the projecting (4), that is finished off by the elvowed upper branch of the profile that constitutes the frame (1), defines with the own upper branch of the elvowing and with the upper part of the gable (3) a hollow for the lodging of a sealing cord (5).

4. NEW FRAME FOR CERAMIC GLASSES AND ITS MANUFACTURE PROCEDURE, according to the first claim and characterized in that the means for the placement of the ceramic glass (2) in the frame (1)) are defined by a whole of plugs (7) of metallic or plastic material of rectangular plant that are endowed of a central hole (10), defining a pair of extreme arms (9) as well as a neck (12) close to the head of the same ones where there are a pair of lateral wings (13). 10 15
5. NEW FRAME FOR CERAMIC GLASSES AND ITS MANUFACTURE PROCEDURE, according to the first and the fourth claims and characterized in that the plugs (7) are fitted by pressure into the respective holes (8) of the closed gable (3) of the profile that constitutes the frame, in relationship to its neck (12), so that the introduction of the corresponding cylindrical pivot (11) into the central hole (10) causes the opening of the arms (9), impeling the upper arm to the ceramic glass (2) for its internal surface against the free extreme of the projecting (4) that is finished off by the elvowed upper branch of the profile. 20 25 30
6. NEW FRAME FOR CERAMIC GLASSES AND ITS MANUFACTURE PROCEDURE, according to the first claim and characterized in that the means for the placement of the ceramic glass (2) in the frame (1) are defined by a whole of springs (14) that are lodged in some respective sets of three holes (15) pressing its opposed extreme on the internal surface of the ceramic glass (2), impeling it against the free extreme of the projecting (4) that is finished off by the elvowed upper branch of the profile, being the springs (14) covered with an adequate material for avoiding some possible damages on the ceramic crystal. 35 40 45
7. NEW FRAME FOR CERAMIC GLASSES AND ITS MANUFACTURE PROCEDURE, according to the first claim and characterized in that the frame (1) is manufactured from a unitary base sheet so that during the profile configuration, some mouldings (16) are defined in the vertexes of the lower branch of its elvowing, and at the same time, the open stretches (17) of the gable are overlaped and joined between them, defining a gable that is totally closed and that acts as thermic insulator in relationship to the top surface where it is fitted. 50 55

8. NEW FRAME FOR CERAMIC GLASSES AND ITS MANUFACTURE PROCEDURE, according to the first and fourth claims and characterized in that the plugs (7), in collaboration with the pivot that is fitted in its central hole, act as an element of support and registration of the ceramic crystal and as an element of fastening to the top surface where the plate is fitted.

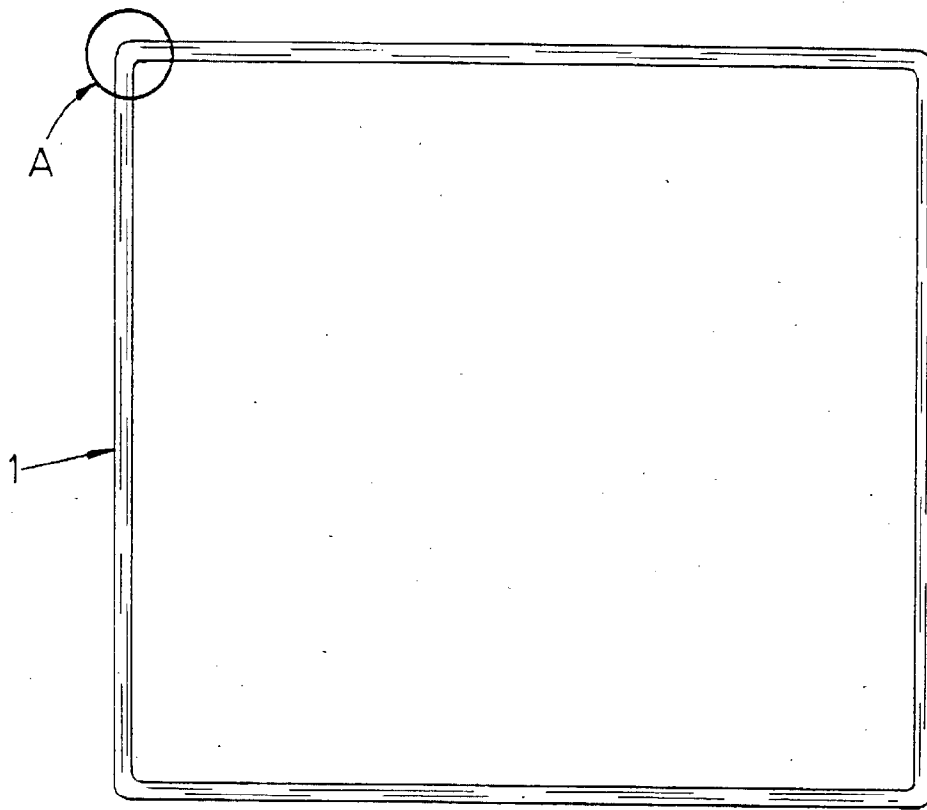


FIG. 1

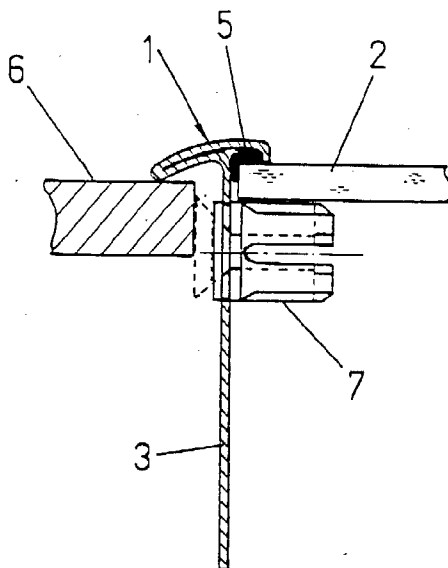


FIG. 2

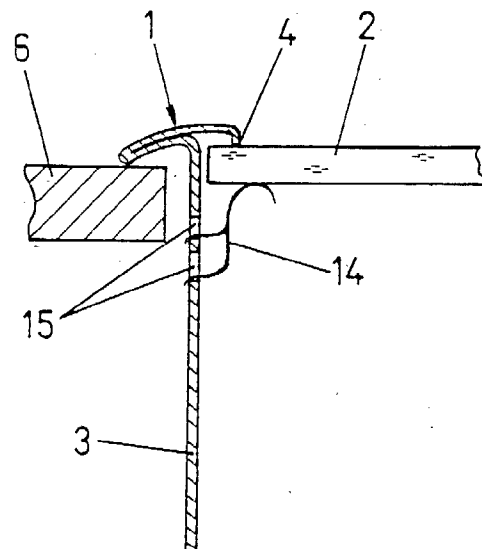
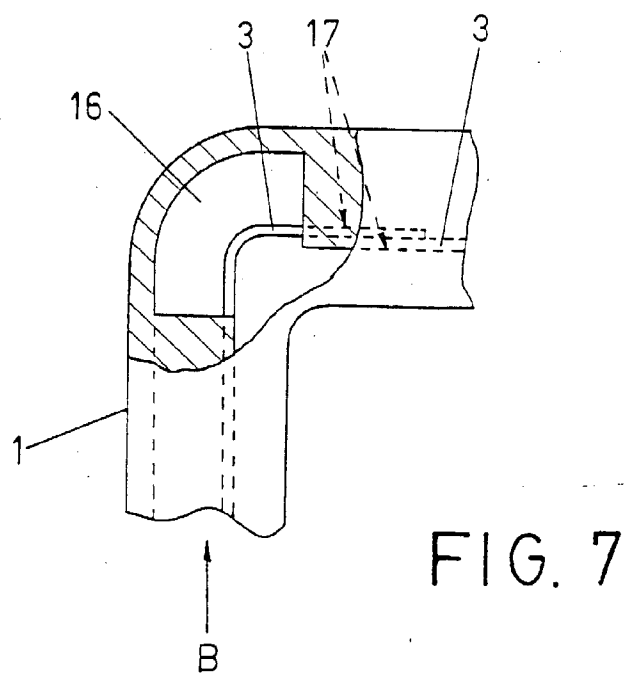
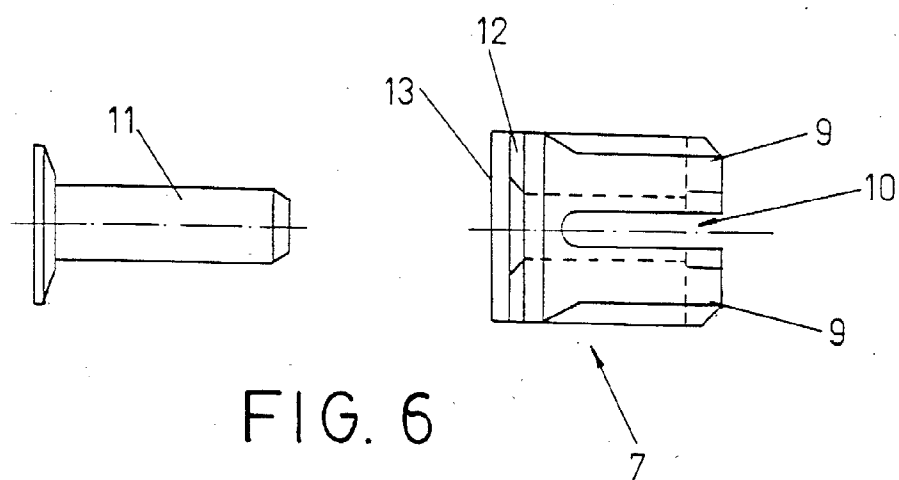
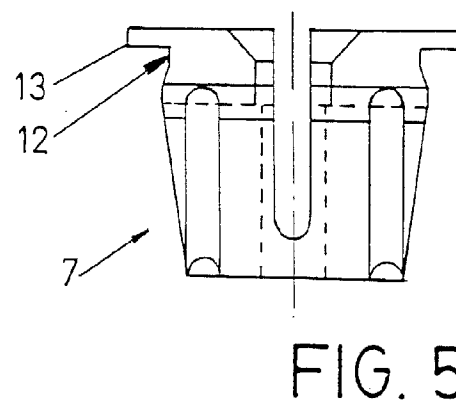
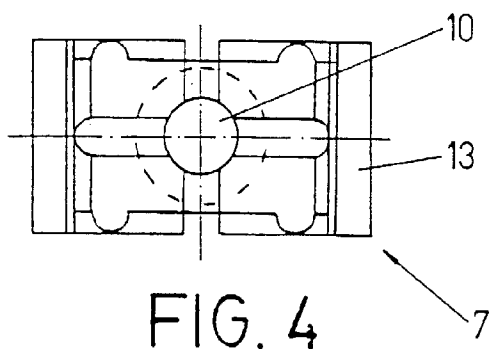


FIG. 3



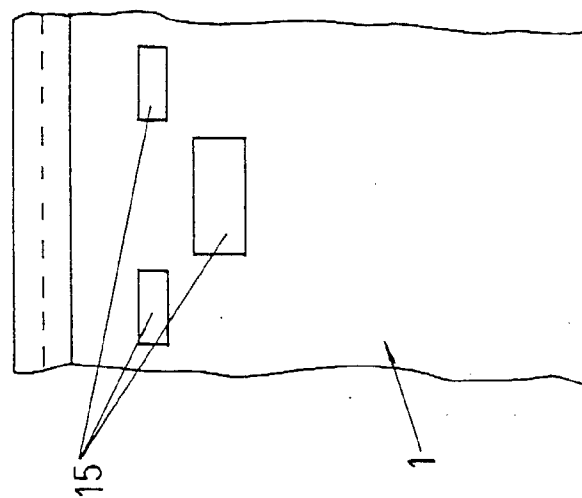


FIG. 9

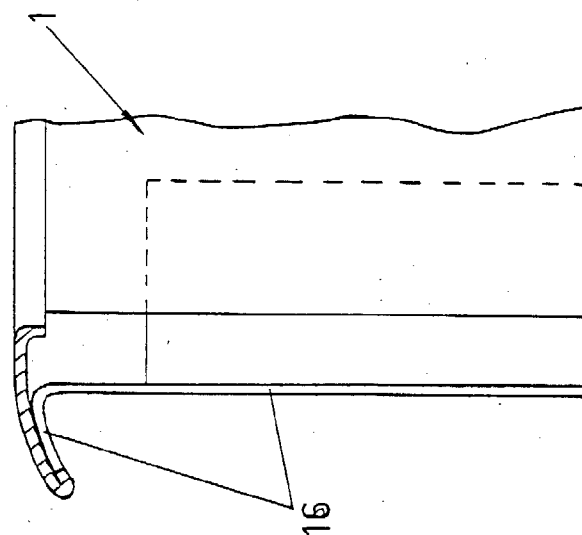


FIG. 10

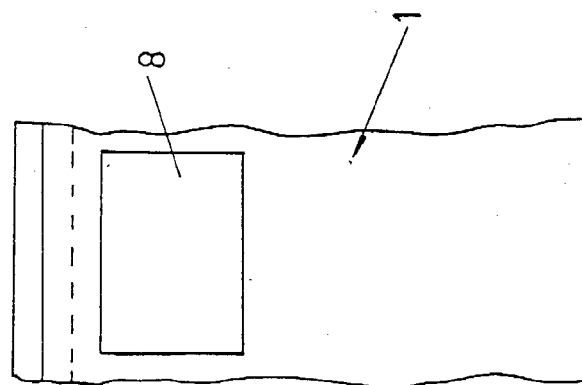


FIG. 8



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EUROPEAN SEARCH REPORT

Application Number
EP 98 50 0049

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.6)
X	DE 43 18 854 C (SCHOTT GLASWERKE) 23 June 1994 * abstract; figure 4 *	1-3	F24C15/10
X	EP 0 083 757 A (LICENTIA GMBH) 20 July 1983 * page 4, line 8 - line 16; figure 3 *	1,2	
X	DE 34 40 868 A (BOSCH SIEMENS HAUSGERAETE) 27 June 1985 * page 15, paragraph 2; figure 9 *	1,2	
A	DE 33 37 148 A (BOSCH SIEMENS HAUSGERAETE) 25 April 1985		
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			F24C H05B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 3 June 1998	Examiner Vanheusden, J
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