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(72) Inventor: **Monterisi, Carlo**  
**21100 Varese (IT)**

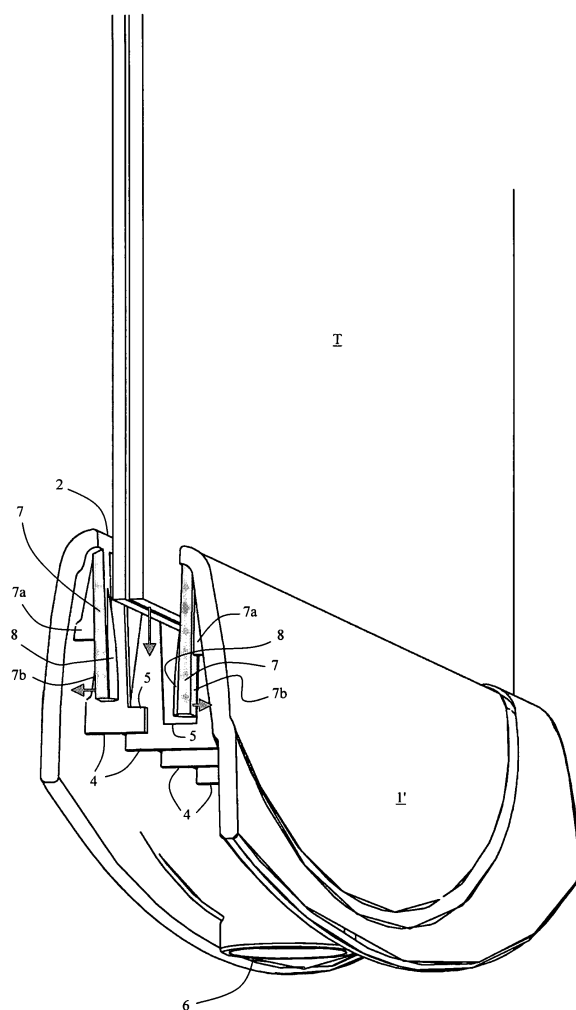
(74) Representative: **Pellegrini, Alberto et al**  
**Società Italiana Brevetti S.p.A.**  
**Via Avegno, 6**  
**21100 Varese (IT)**

(71) Applicant: **Synco S.p.A.**  
**21046 Gurone di Malnate (IT)**

(54) **Upright holder for flat transparent plastic panel**

(57) An upright holding rest for one or more flat transparent plastic panels (T) associated to a printed sheet coupled to or inserted between transparent panels is fabricable by plastic molding in a single piece and is able to hold the transparent plastic panel(s) (T) and the printed sheet in a perfectly upright position, tolerating significative variations of the total thickness of overlapped lower edge portions of the panels.

This enhanced performance of the upright rest is achieved by generating with its molding at least a plurality of spaced flexible ramps (7) on opposite inner surfaces of the two major sides of a perimetral portion or skirt (1') that defines the narrow rectangular slot (2) into which the overlapped lower edge portions of the panels are forcibly inserted elastically flexing the ramps (7). The spaced flexible ramps (7a) of one side are offset (interleaved) from the spaced flexible ramps present on the opposite side (7b) of the narrow slot-cavity (2).



**FIG. 4**

## Description

**[0001]** The present invention relates in general to display holders of price tags, promotional messages or indication commonly deployed in shops, receptions, airports, service counters and similar ambients of public activities. More in particular the invention relates to an upright holder of a flat transparent plastic panel for displaying printed matter.

**[0002]** Devices displaying prices, messages or indications commonly printed on paper to the public require to be usable with utmost ease, to function correctly, to be lightweight and of pleasant aspect and to have a low cost of fabrication.

**[0003]** Lightness and relatively low cost of fabrication are commonly sought by designing devices that may be entirely fabricated with plastic material by molding it in a single piece without requiring any time consuming finishing and/or assembling work.

**[0004]** Often these approaches though providing for satisfactory functionality and practicalness of use at low cost do not admit use of accessories and complements of the device having significative dimensional differences from those for which the holding device has been designed and fabricated.

**[0005]** In case of an upright holder for a flat transparent "pocket" of a transparent plastic laminate, introduction between the two overlapped panels (cheeks) of transparent plastic laminate (a pocket often being made by folding over itself a early heated sheet of transparent plastic) of a printed cardboard of excessive thickness may render difficult or impede insertion into the narrow rectangular open cavity of an upright holding rest. A fresh supply of flat transparent pockets of either excessive or too small a thickness of that for which the upright holding rest had been designed, may determine in one case the impossibility of using the pockets or in the other case a anti-aesthetic impossibility of sustaining the flat transparent pocket in a perfectly vertical position. Indeed, commercial transparent plastic sheets may have a thickness tolerance of up to about 0,3 mm which in case of folding over to produce a transparent pocket for a printed sheet implies a variability of thickness of up to about 0,6 mm to which a variability of the thickness of the printed sheet or cardboard may add.

**[0006]** To these criticalnesses and drawbacks has now been found an effective remedy in the form of a novel upright holding rest for one or more flat transparent plastic panels associated to a printed sheet coupled to or inserted between transparent panels that, though being fabricable by plastic molding in a single piece, is able to hold the transparent plastic panel(s) and the printed sheet in a perfectly upright position by tolerating even a significative variation of the total thickness of overlapped lower edge portions of the panels.

**[0007]** This enhanced performance of the upright rest is achieved by generating with its molding at least a plurality of spaced flexible ramps on opposite inner surfaces

of the two major sides of a perimetral portion or skirt that defines the narrow rectangular slot into which the overlapped lower edge portions of the panels are forcibly inserted elastically flexing the ramps. The spaced flexible ramps of one side are offset (interleaved) from the spaced flexible ramps present on the opposite side of the narrow slot-cavity.

**[0008]** Each ramp extends in depth starting from the upper rim of the narrow rectangular slot reaching with an elastically flexible cantilever portion down to the level of abutment of the lower edge portions of the overlapped panels over the upper edges of a plurality of traverses or stiffening bridges connecting the opposite major sides of the perimetral skirt, which practically limits the depth of the narrow rectangular cavity, open at the top, of the molded rest that can be invaded by the overlapped panels.

**[0009]** According to a preferred embodiment, the inner traverses or connecting bridges project from salient ribs defined over the opposite major sides of the inner surface of the perimetral skirt that extend vertically up to reach the rim of the opening at the top of the molded rest piece. The salient profile of some of these ribs, interleaved to the flexible ramps, is such as to cooperate with the flexible ramps in holding in a perfectly upright position the flat overlapped panels. This is accomplished by creating on the edge of certain of the salient ribs near the upper rim of the cavity, protrusions of height adapted to create spaced points of resistance along respective lines of contact with one outer surface of the overlapped panels alternated to the lines of contact of the same outer surface over the flexible ramps. These interfering protrusions or relieves at the upper end of certain of the ribs on one side of the cavity are offset (interleaved) to those present on certain of the ribs on the other side of the cavity.

**[0010]** The plane over which lay these spacingly offset points of resistance near the rim of the top opening of the cavity is overcome by forcing the overlapped lower edges of the panels into the slot cavity by virtue of a relative flexibility of the panels themselves.

**[0011]** Such interfering protrusions present on the edge of certain ribs in proximity of the upper rim of the slot gradually decreases in height in reaching down towards the traverse or bridge portion that spans from one rib to the rib opposite to it on the opposite inner surfaces of the two major sides of the perimetral skirt of the molded rest.

**[0012]** The invention is defined in the annexed claims.

**[0013]** **Figure 1** is an exploded view of a flat transparent pocket support.

**[0014]** **Figure 2** is a view of the assembled flat pocket support.

**[0015]** **Figure 3** is a three-dimensional view of the upright holding rest for flat transparent plastic panels of the present invention.

**[0016]** **Figure 4** is a cross-sectional three-dimensional view of the holding rest showing the flexible ramps of elastic clutching of the lower edge portion of a flat pocket.

**[0017]** Figure 5 and 6 are a view from the top and a view from the bottom of the holding rest of Figure 3.

**[0018]** Figure 7 is a partially cross-sectioned three-dimensional view of a preferred embodiment including also side rib portions of the stiffening traverses provided with profiled edge for cooperating with the flexible ramps.

**[0019]** Figure 1 shows a sample holder for a printed sheet to be inserted in a flat transparent pocket T that may be formed by a sheet of a transparent plastic material, for example of polyvinylchloride (PVC) metacrilate, polyethylene (PET) or similar material of thickness commonly comprised between 1,5 and 2,0 mm, folded on itself such that between the two cheeks or overlapped side panels, a printed sheet to be displayed can be inserted. Of course, a printed cardboard may be associated to a single transparent panel of front protection, for example of a thickness commonly comprised between about 3,0 and 4,0 mm and the two, held overlapping one on the other, can be introduced as a whole by exerting as light a force as will be described further below inside the upright holding rest 1.

**[0020]** Irrespectively of whether the printed sheet is coupled to a single transparent panel or protective screen or held between two transparent panels (cheeks), in the attached drawings and in the ensuing detailed description of sample embodiments, the assembly is represented and will be described as being in the form of a flat transparent pocket T, held upright by inserting the overlapped lower edge portions of the two panels that form it through the opening 2 at the top of the rest piece 1 constituted by a hollow body of molded plastic material provided with a central cylindrical socket 6 for mounting it onto the top end of a sustaining rod 3 that may rise from a stable basement or from any other plane (not shown in the drawings).

**[0021]** The hollow body 1 may be commonly fabricated by injection molding with an appropriate moldable polymer, for example ABS, polycarbonate, polystyrene, Nylon™, optionally pigmented or preferably not transparent.

**[0022]** Figure 2 is a view of the assembly upon joining the elements together.

**[0023]** The upright holding rest 1 made according to the present invention, is shown in Figure 3. The rest consists of a hollow plastic body 1, made by molding in a single piece. The hollow body 1 has a perimetral portion or skirt 1' having a rectilinear upper rim defining an upper opening 2 of a narrow rectangular cavity or slot of dimensions adapted to receive there through a lower edge portion of the flat pocket T of transparent plastic sheet.

**[0024]** Centrally, within the perimetral skirt is defined a cylindrical socket 6 (visible in Figure 4) for joining the upright holding rest 1 to the top of the supporting rod 3.

**[0025]** According to the shown embodiment, the profile of the lower rim of the major sides of the perimetral portion or skirt 1' is arcuate. The greater height of the central part permits to hide the cylindrical socket 6 receiving the end of the rod 3.

**[0026]** With reference to Figure 4, the two major sides

of the perimetral skirt 1' that has a cross-section practically rectangular with rounded corners, are internally connected by a plurality of spaced traverses 4 which beside stiffening and making more robust the hollow structure and permits maximum lightness, determines a certain maximum depth of insertion of the lower edges of the panels of the flat transparent pocket T, that will eventually be pushed down in abutment over the co-planar upper edges 5 of the inner traverses 4 that connects the inner surfaces of the two major sides of the rectangular perimetral skirt 1'.

**[0027]** The partially sectioned tridimensional view of Figure 4 permits to observe also the cylindrical socket 6 that is defined at the middle of the molded body 1.

**[0028]** According to an essential aspect of the structure of the present invention, the mold used for forming the plastic body 1 defines also a plurality of flexible ramps 7 interleaved to the inner traverses 4 and offset from similar flexible ramps 7 defined on the opposite inner surface of the major side of the perimetral skirt 1'.

**[0029]** Each ramp 7 extends at least partially in cantilever fashion from the rim of the top opening 2 as far as down as to reach or just surpass the plane of stop-in-abutment of the edges of the lower inserted panels onto the upper co-planar edges 5 of the stiffening traverses 4.

**[0030]** According to the embodiment shown in Figure 4, each ramp 7 has a rounded cross-section relief 8, of gradually increasing height in approaching the end of the cantilever part 7b of the ramp projecting down from a sustaining rib portion 7a.

**[0031]** At least part of the vertex of the relief 8 of each flexible ramp interferes with the outer surface of the respective transparent panel of the flat pocket T, along lines of contact that are spaced from each other and offset in respect to similarly spaced lines of contact on the outer surface of the other panel facing the opposite inner side of the hollow molded body 1 provided with a similar plurality of spaced flexible ramps.

**[0032]** According to the shown embodiment, the geometrical details and the relative disposition of the flexible ramp 7-8 between inner connecting traverses 4 with upper edge 5 on which the lower edges of the panels may be pushed in abutment by forcibly introducing the flat transparent pocket through the upper opening 2 of the hollow body 1, may be clearly observed in the views from below and from atop of Figures 5 and 6.

**[0033]** By virtue of the flexibility of the offset pluralities of cantilever ramps 7-8, the upright holding rest made according to the present invention, is capable of tolerating significant differences of overall thickness of the pocket and/or of a printed cardboard and of a plastic transparent screen coupled to the printed cardboard, within a range that may reach up to about 1 mm, though ensuring a perfectly upright holding of the panels in any case.

**[0034]** According to an optional though preferred embodiment of the upright holding rest of this invention, a sample of which is shown in Figure 7, the adaptability to moderately different overall thicknesses of the flat trans-

parent pocket or of coupled panels introduced into the upright holding rest provided by the flexible ramps 7-8 is aided by an ancillary elastic interference action on the opposite sides of the overlapped panels of a plurality of protrusions 9, purposely formed on the flank of salient ribs 4a from which the inner connecting traverses or bridges project across the cavity and on which the overlapped panels introduced through the upper opening 2 inside the hollow body 1 are forced.

**[0035]** As shown in the example, the relief 9 may be a rounded cross-section protrusion the height of which gradually decreases from a point of maximum height near the rim of the upper opening 2 of the perimetral skirt 1' of the hollow body to practically becoming null in approaching the respective bridge portion or traverse 4 extending from the pair of opposite ribs 4a.

**[0036]** As may be observed in the partially cross-section view of Figure 7, the interfering relief 9 is formed on the flank of the salient ribs 4a of alternated traverses 4 along the same inner side of the skirt 1'. Similarly, the same alternated arrangement of salient ribs 4a provided with the relief 9 is produced also on the opposite inner side of the skirt (not visible in Figure 7), in a way such to offset the respective lines of contact over the peak of the relief 9 on one and on the other of the outer surfaces of the flat pocket or coupled overlapped panels forced inside the cavity of the upright holding rest.

**[0037]** The alternate and offset arrangement of this ancillary order of points of interference with the opposite outer surfaces of the flat pocket or coupled panels forcibly pushed through the upper opening 2 of the rest, is created by considering the flexibility of the flat pocket or panels introduced therein such that the plane of resistance on which the spaced and offset points of contacts on the relief 9 be easily overcome by exerting a modest insertion force on the flat pocket or panels pushed through the opening 2 of the rest.

**[0038]** Therefore, according to this optional embodiment of the present invention, the plurality of spaced and offset flexible ramps 7-8 exerts an elastic compression on the panels forced inside the cavity of the rest by virtue of their ability to flex elastically, while the plurality of resistance points spaced and offset among each other determined by a slight interference of the highest vertex of the spaced and offset protrusions 9 over the opposite outer surfaces of the flat pocket or panels forced through the upper opening 2, lying on a plane immediately below the rim, are overcome by virtue of the flexibility of the panels themselves along their lower edge portions that permits to overcome the plane of resistance opposed by the spaced and offset points of interference by slightly bending alternately in one and in the other transversal direction.

**[0039]** The relative arrangement of the flexible ramps 7-8 and of the interfering protrusions 9 can be more precisely observed with the aid of the indicating numerals in the view from atop of Figure 5.

## Claims

1. An upright holding rest of plastic material molded in a single piece for a flat pocket of (T) of transparent plastic sheet for displaying printed matter, comprising an hollow body (1) on the upper side of which a rectangular opening (2) of a cavity of dimensions suitable to accommodate and sustain the lower overlapped edges of panels (T', T'') defining said flat pocket, and a cylindrical socket (6) for mounting the hollow body on the top of a support rod (3), said hollow body having a perimetral skirt (1') with rectilinear upper rim defining a rectangular opening (2) of said cavity; a plurality of traverses (4) connecting opposite two major sides of said perimetral skirt (1') for stiffening the hollow body and stopping-in-abutment on their upper edge overlapped lower edges of said panels (T', T'') inserted through said upper opening (2); a plurality of flexible ramps (7) interleaved to said traverses (4) and offset among each other on opposite inner surfaces of the two major sides of said perimetral skirt (1'), each flexible ramp (7) extending from the rim of said upper rectangular opening (2) partially in a cantilever fashion downward as far as reaching the plane of stop-in-abutment of said overlapped lower edges of the panels (T', T'') onto the upper edges (5) of said plurality of inner traverses (4).
2. The upright holding rest according to claim 1, wherein each of said flexible ramps (7) has a rounded cross-sectional relief (8) of height gradually increasing starting from a root end portion (7b) of the ramp near said rim of the rectangular upper opening (2) as far as the end of the flexible cantilever portion (7a) of the ramp; the vertex of said relief (8) of each ramp (7) interfering with the outer surface of a respective panel (T') along a line of contact spaced from that of other ramps on the same side of the cavity and offset from similar lines of contact over the surface of the other panel (T'') of the vertex of ramps present on the opposite side of the cavity.
3. The upright holding rest according to claim 1, wherein said stiffening traverses (4) span across ribs (4a) on opposite sides of the cavity that rise vertically up to reach rim of the upper opening (2) alternately offset ribs (4a) projecting from opposite major sides of said perimetral skirt (1') have a relief (9) near the rim of the upper opening (2) of height sufficient to interfere with the outer surface of the respective panel (T') of said flat pocket along spaced lines of contact offset from similarly spaced lines of contact with the outer surface of the other panel (T'') these offset points of resistance being overcome by forcing said overlapped panels (T', T'') through the upper opening

(2).

4. The upright holding rest according to claim 1, where-  
in said relief (9) on alternated ribs (4a) along a major  
side and offset from alternated ribs (4a) along the  
opposite major side of the perimetral skirt (1') is a  
rounded cross-section protrusion of height gradually  
decreasing from a maximum near the rim of the up-  
per opening (2) towards the relative traverse (4). 5  
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5. The upright holding rest according to claim 1, where-  
in said two major sides of the rectangular perimetral  
skirt (1') have an arched lower profile hiding from  
sight said cylindrical socket (6) for coupling on top  
of said supporting rod (3). 15

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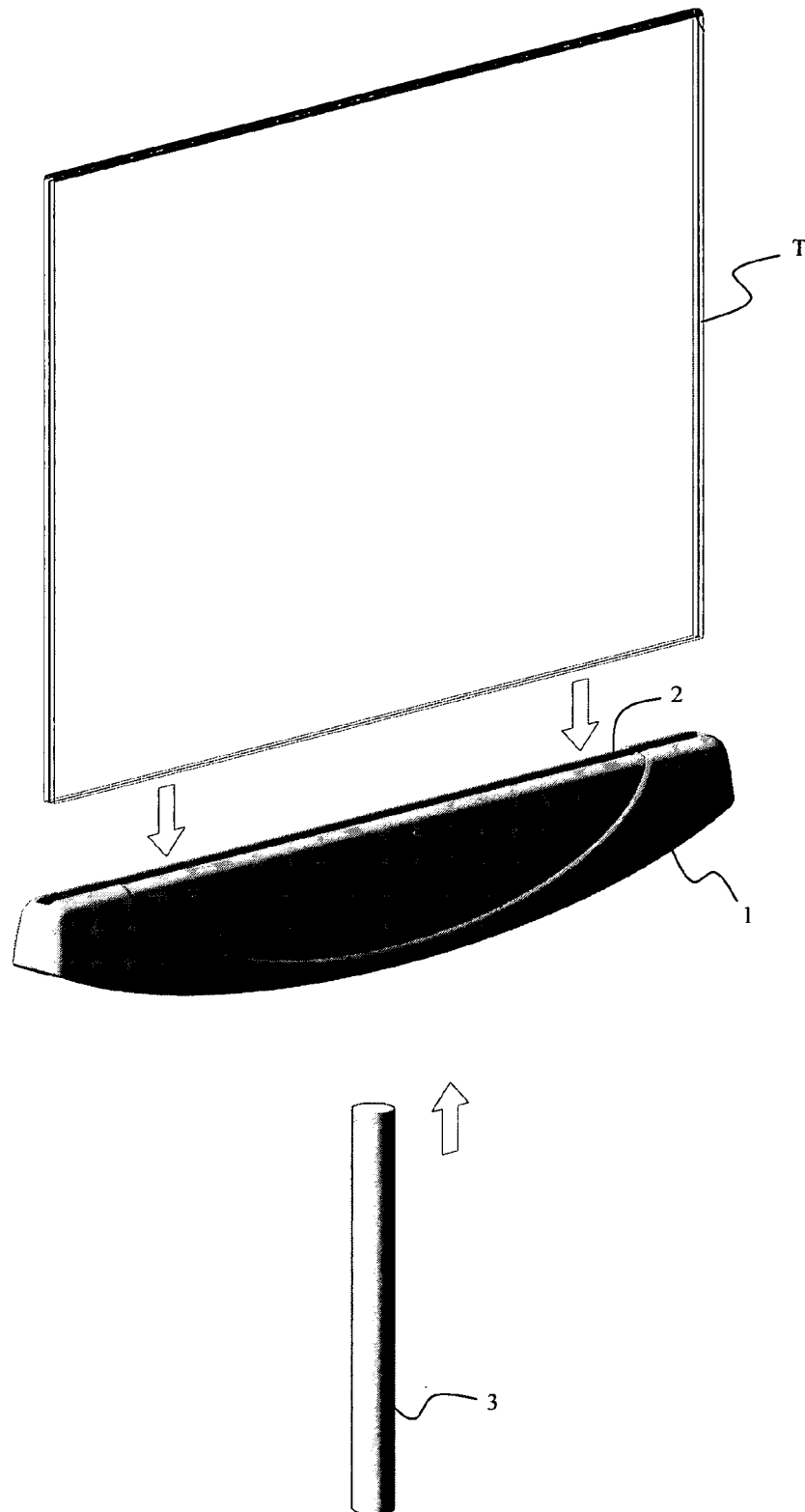
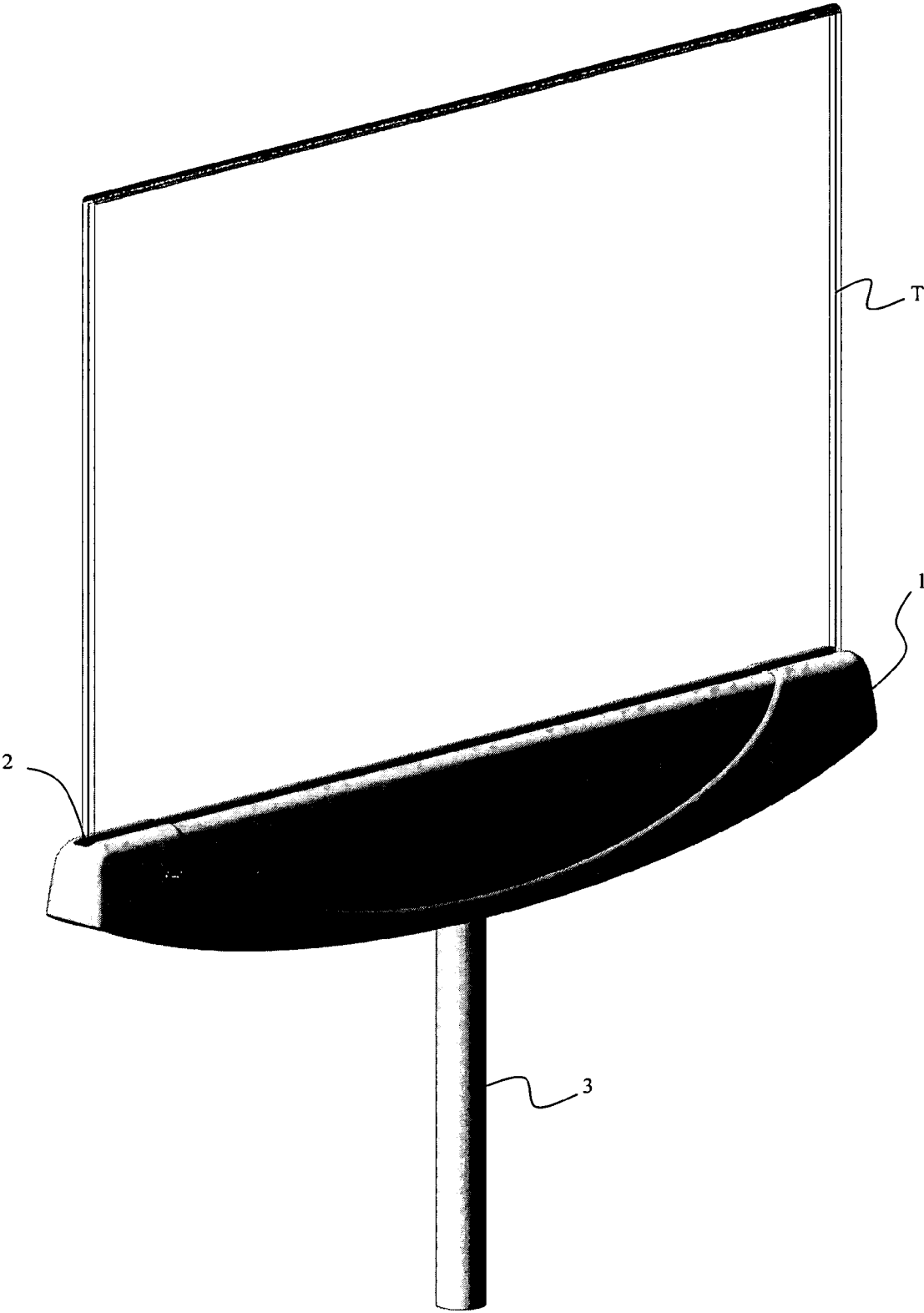


FIG. 1



**FIG. 2**

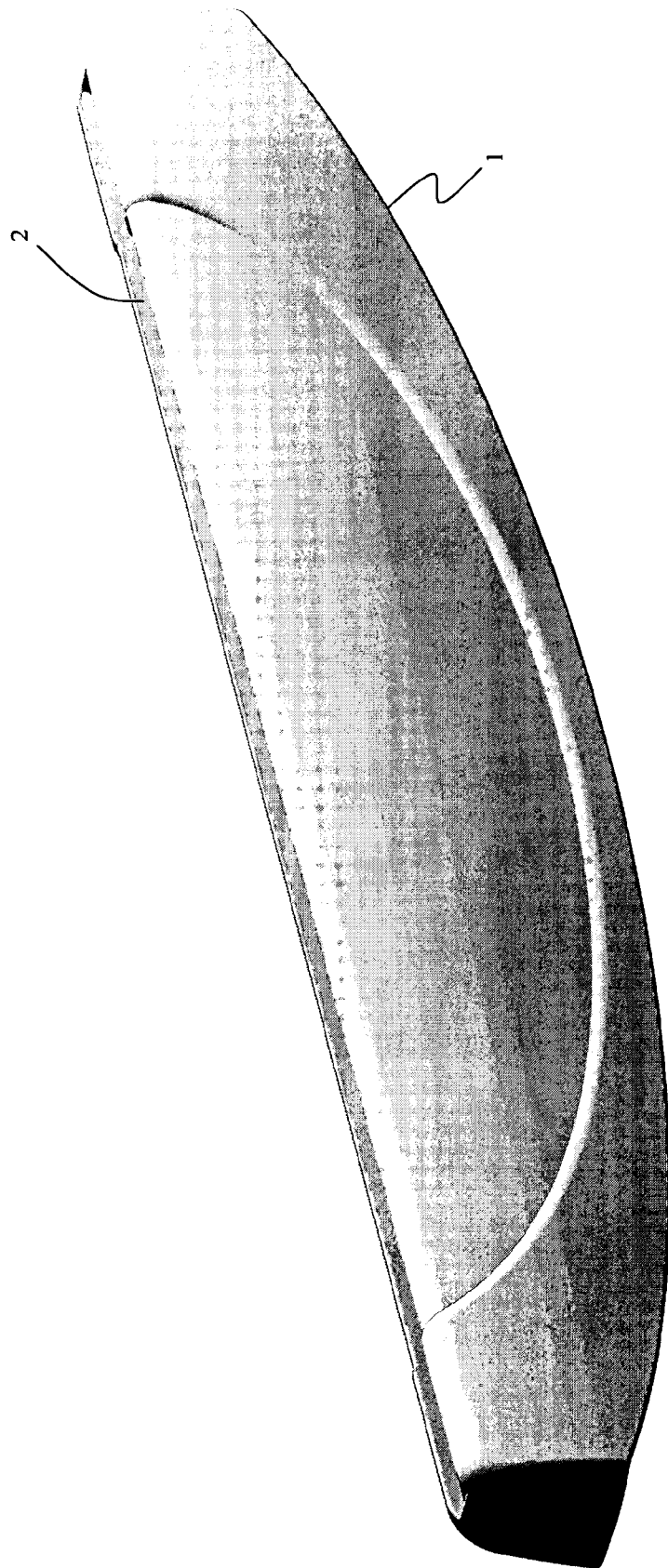


FIG. 3



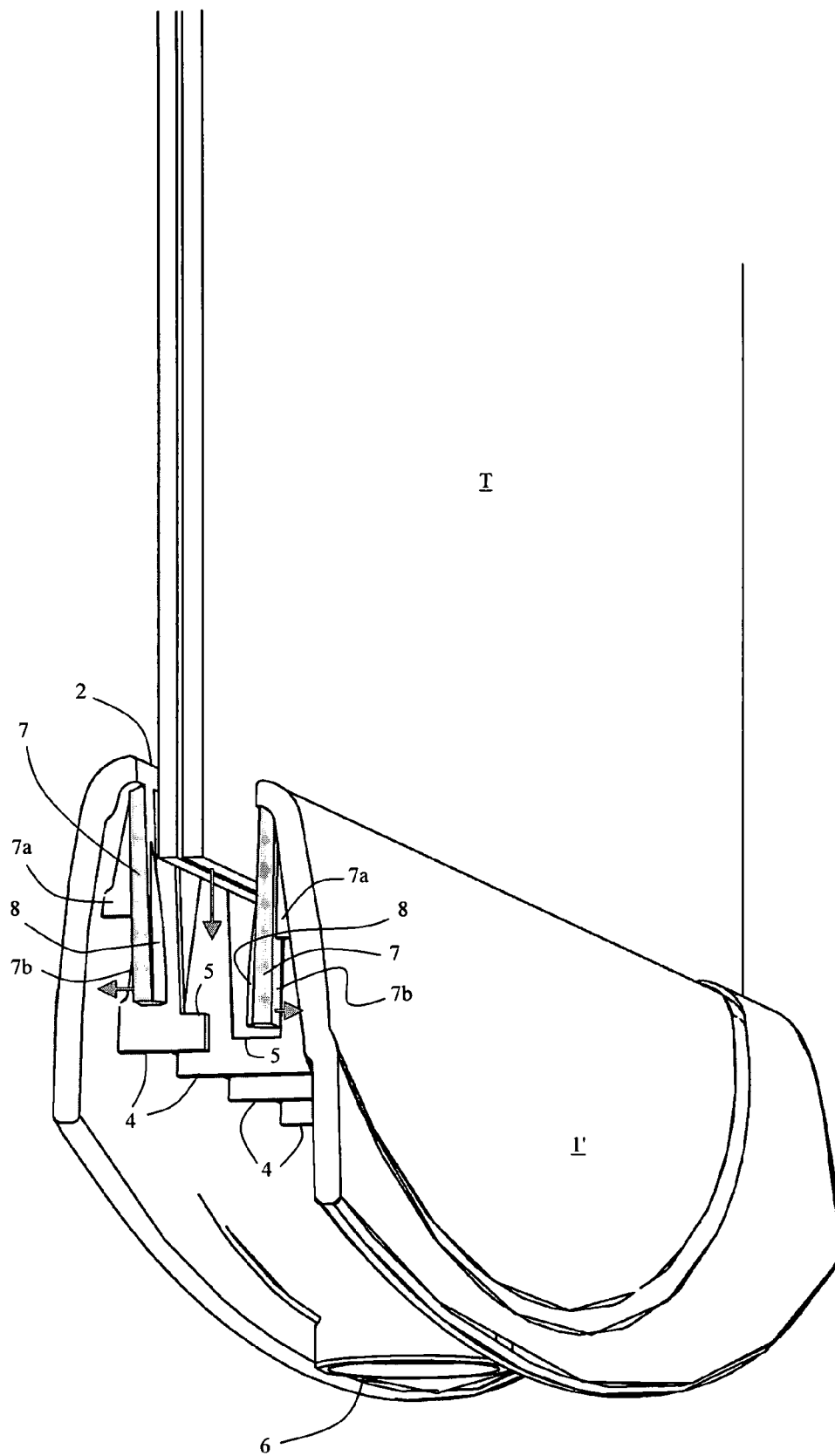


FIG. 4

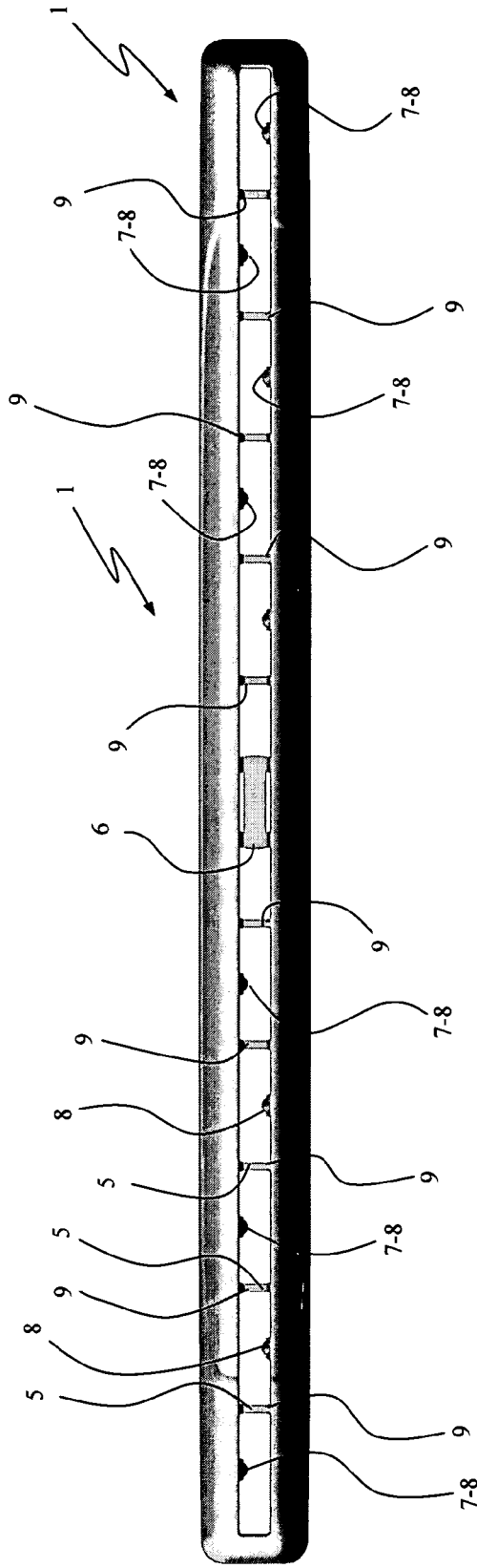


FIG. 5

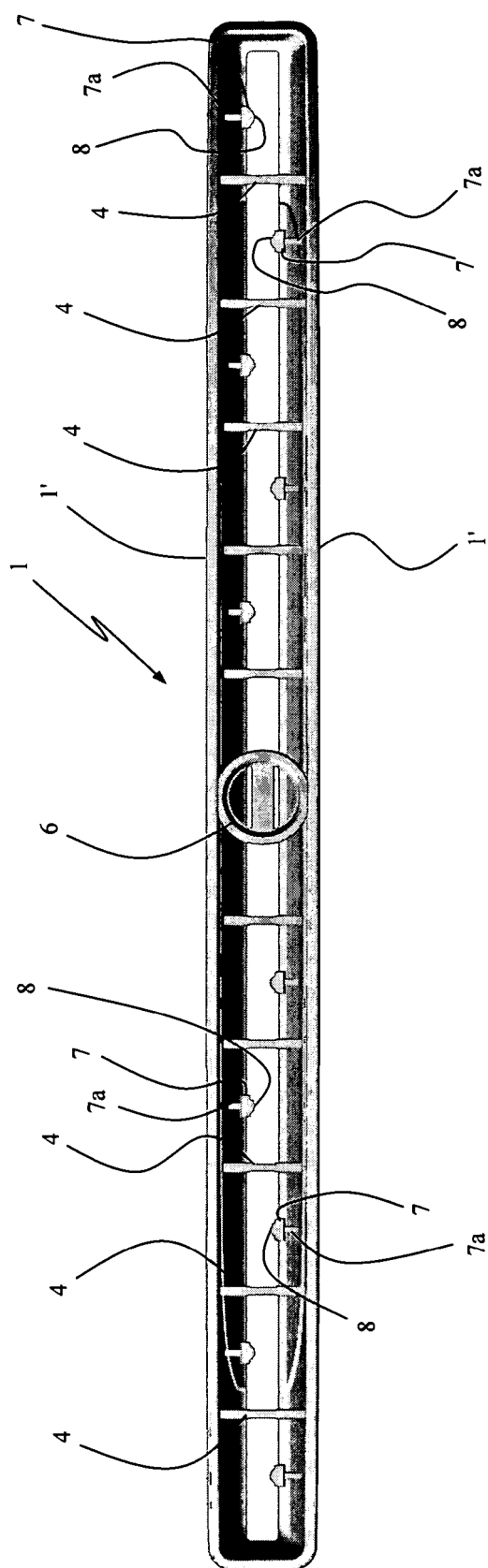


FIG. 6

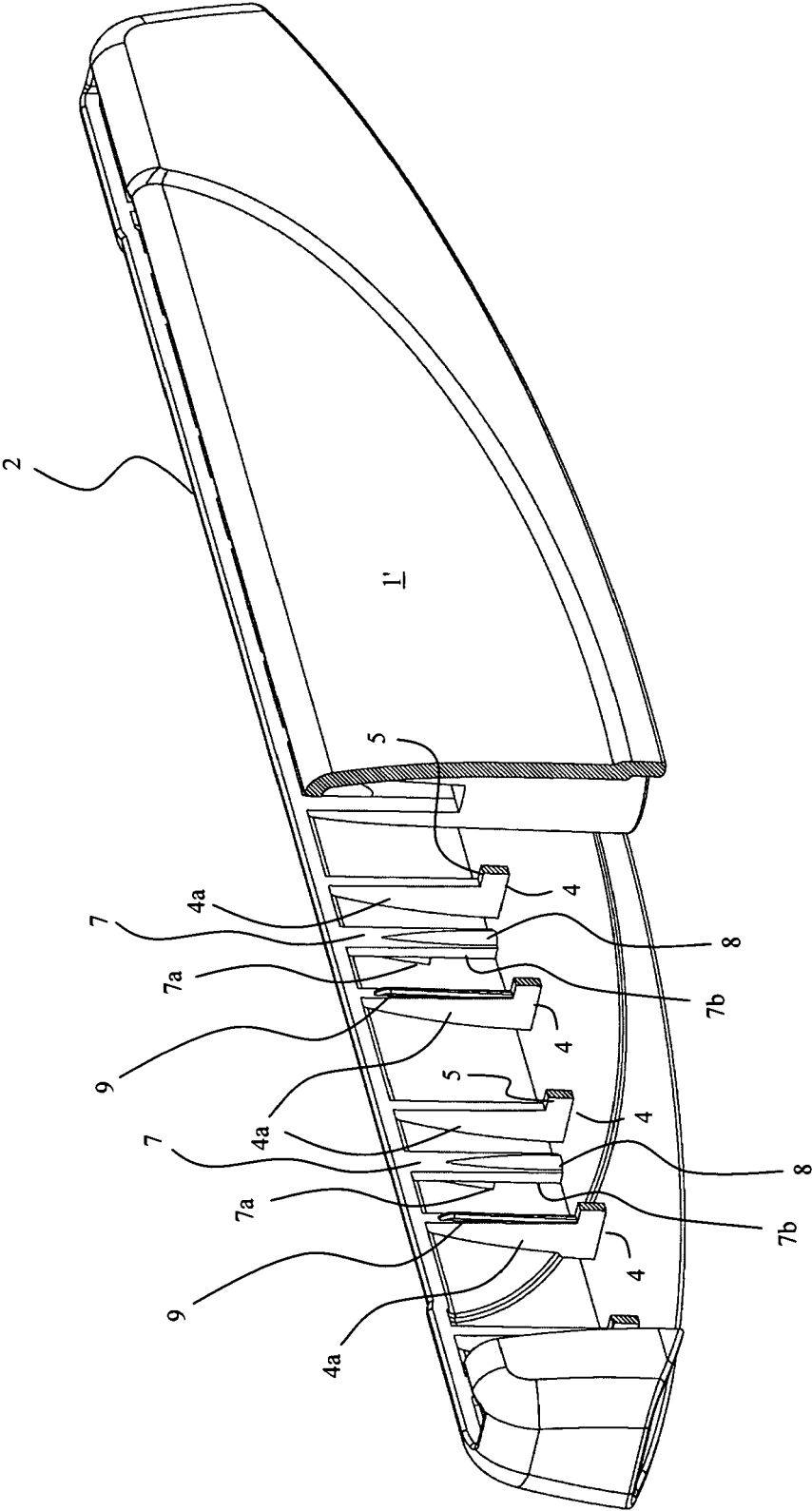


FIG. 7



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Office

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| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                        |                                                   |                                          |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                        |                                                   | G09F                                     |
| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                        |                                                   |                                          |
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