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(54) **Oven**

(57) An oven (10) comprises a frame (12) defining a recess (14) that is accessible via a front opening (16), and a door (18) mounted to the frame (12), such as to take at least one closed position of the front opening, and at least one opened position, wherein the front opening is accessible from the outside. The door (18) comprises at least one outer panel (22) and at least one inner panel (24) forming a gap (28) in which closed door lighting

members (32) are accommodated, which are placed at at least one door side (18) and spaced throughout this side. The closed door lighting members are adapted to generate a light beam directed towards the inside of the recess at least in the closed position of said door. Inside the door, at least one open door lighting member (44) is further accommodated, which is adapted to generate a light beam directed towards the inside of the recess (14) at least in one opened position (18) of the door.

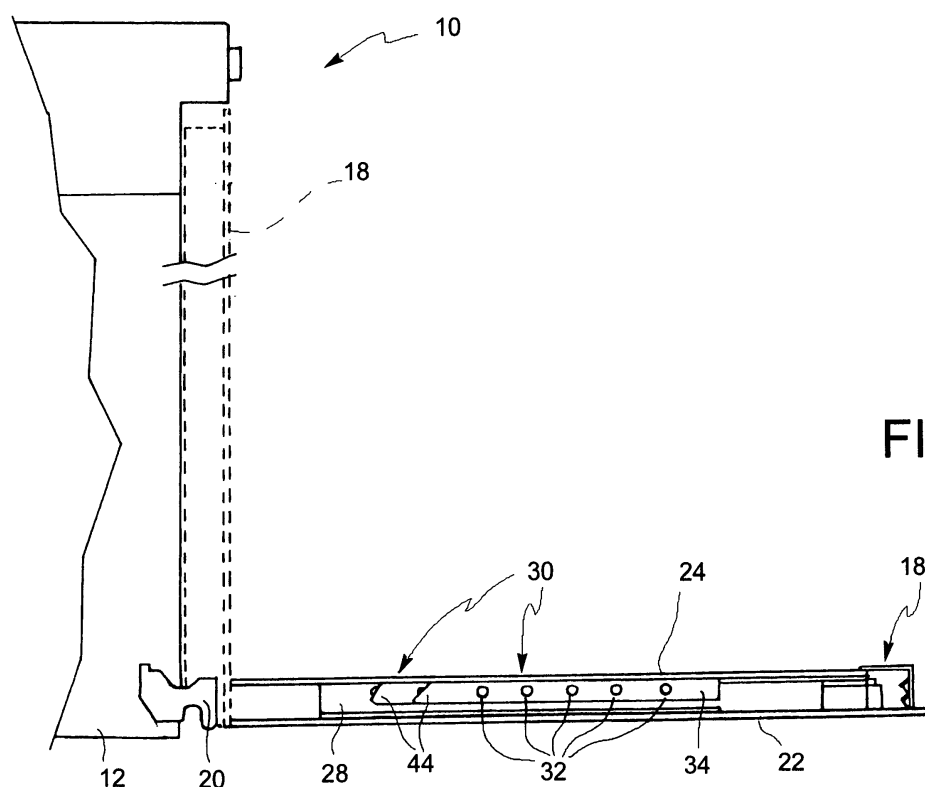


FIG. 3

Description

[0001] . The object of the present invention is an oven, particularly a cooking oven for household applications.

[0002] . It is known to use ovens in which the inner recess accommodating the food undergoing cooking can be illuminated by a light source that is associated with the oven structure and placed inside the same recess. The light source is typically operated after the oven has been turned on.

[0003] . The presence of a light source placed inside the oven recess generates drawbacks during the design and production steps of the same oven, a suitable protection of the light source having to be provided in order to protect it against high temperatures. The usual location inside the oven recess further reduces the possibility of providing more light sources and, consequently, reduces the extension and intensity of the illuminated area inside the recess.

[0004] . The problem at the heart of the present invention is to propose an oven which has such structural and functional features as to overcome the above-mentioned drawbacks cited with reference to the prior art.

[0005] . Such problem is solved by an oven in accordance with claim 1.

[0006] . Further characteristics and advantages of the oven according to the invention will appear from the description reported below of preferred exemplary embodiments, which are given by way of indicative and non-limiting examples, with reference to the annexed figures, in which:

[0007] . Fig. 1 and 2 illustrate respective perspective schematic views of an oven according to the present invention in two different operative conditions (closed door and partially open door);

[0008] . Fig. 3 and Fig. 4 illustrate respective schematic and partial views of possible embodiments of the oven according to the present invention, which are obtained by sectioning the same oven on a vertical plane which is substantially perpendicular to the oven door;

[0009] . Fig. 5 and Fig. 6 illustrate respective schematic and partial views of possible embodiments of the oven according to the present invention, which are obtained by sectioning the same oven on a horizontal plane;

[0010] . Fig. 7A illustrates a front view of the oven according to the present invention, with closed door;

[0011] . Fig. 7B illustrates a schematic and partial view of the oven in Fig. 7A which is obtained by sectioning the same oven on a vertical plane being substantially perpendicular to the oven door;

[0012] . Fig. 8 and 9 illustrate a side view and a top view of a possible embodiment of an oven detail according to the present invention, respectively;

[0013] . Fig. 10 illustrates a schematic view of a possible embodiment of an oven detail according to the present invention;

[0014] . Fig. 11 illustrates a schematic view of a possible embodiment of an oven detail according to the

present invention;

[0015] . Fig. 12 illustrates a top view of a possible embodiment of an oven detail according to the present invention;

5 **[0016]** . Fig. 13 illustrates a schematic and partially block view of a possible embodiment of an oven according to the present invention.

[0017] . With reference to the above-mentioned figures, an oven, particularly a cooking oven for household applications has been generally designated with 10. Fig. 1 and 2 illustrate a schematic perspective view of the oven exterior in two different use conditions (closed and partially open).

10 **[0018]** . The oven 10 comprises a frame 12 defining a recess 14 that is accessible through a front opening 16. A door 18 is mounted to the frame 12 such as to be able to take at least two positions: a closed position in which the door prevents access to the recess and closes the front opening (Fig. 1), and an opened position in which it is possible to access the recess, and the front opening is substantially not obstructed.

20 **[0019]** . In accordance with a possible embodiment, the door is rotatably mounted to the frame, for example, by means of hinges 20, as illustrated in the annexed figures. Generally, the opened position corresponds to a limit stop position of the door or, in any case, to a steady position of the same door. Between the closed position and the opened position, the door can take a plurality of intermediate positions which substantially correspond to partially opened positions of the oven.

30 **[0020]** . In Fig. 1 and 2 a possible embodiment of the oven has been illustrated, in which the hinges are placed below the front opening, and in which the door closed position corresponds to the position in which the door is in a substantially vertical plane, while the door opened position corresponds to the position in which the door is on a substantially horizontal plane or slightly away therefrom. In other terms, in the embodiment illustrated in Fig. 1 and 2, the door 18 is mounted to the frame 12 such as to be able to rotate around a substantially horizontal axis.

40 **[0021]** . Alternative embodiments can provide that the hinges are placed laterally to the front opening; thereby both the door opened position and the door closed position correspond to a position in which the door is disposed on a vertical plane. In other terms, the door can be mounted to the frame such as to be able to rotate around a substantially vertical axis. Alternatively, other optional arrangements or types of mounting the door to the frame can be provided.

50 **[0022]** . In accordance with a possible embodiment, the door is provided by means of at least one outer panel 22 and at least one inner panel 24. Such panels define the extension plane of the door which is substantially arranged as a closure of the front opening when this is in a closed position.

55 **[0023]** . In accordance with the embodiment illustrated in the annexed figures, the outer panel 22 and the inner panel 24 are placed substantially parallel to each other

and are supported by uprights 26 that are located on opposed sides of the door. Between the outer panel and the inner panel a gap 28 is defined.

[0024] . Advantageously, lighting means 30 are provided, which are placed inside the door 18 between the outer panel 22 and the inner panel 24. In other terms, lighting means 30 are provided, which are placed within the gap 28 of the door 18.

[0025] . The lighting means 30 are adapted to generate, in at least one position of the door 18, at least one light beam which focuses to an illuminated area located inside the recess 14.

[0026] . According to a possible embodiment, it is advantageously provided that the lighting means 30 comprise closed door lighting members 32.

[0027] . In other terms, lighting means are provided, placed inside the door 18, which are adapted to generate at least one light beam which focuses to an illuminated area located inside the recess 14 when the door is in a closed position.

[0028] . Advantageously, the closed door lighting members 32 are placed at a door side. In accordance with a possible embodiment, the closed door lighting members 32 are placed in the proximity of an upright 26 of the same door. Furthermore, the closed door lighting members 32 can be advantageously spaced throughout the corresponding door side.

[0029] . In accordance with a possible embodiment, the closed door lighting members 32 are placed along opposite sides of the door, thus forming two groups, the light beams of which cross each other in a highly illuminated area located in the centre of the recess. In this case, the closed door lighting members 32 are preferably placed at both uprights 26 of the door; furthermore, they can be advantageously spaced throughout the corresponding door side. In other terms, the advantageous arrangement of closed door lighting members allows creating cones of light beams penetrating with a crossed effect on the front of the door and inside the same door towards the centre of the recess when the door is closed.

[0030] . In accordance with a possible embodiment, the closed door lighting members 32 are mounted to a supporting structure 34 which can be connected, for example, to one of the panels and/or to the respective upright. In accordance with an advantageous embodiment, the supporting structure 34 comprises a portion 36 for coupling to the door, and preferably has an angled section, a first side 34a of which defining the coupling portion, and a second side 34b defining an actual support portion for the closed door lighting members 32.

[0031] . Fig. 5 and 6 comprise possible embodiments of the supporting structure. For example, the two sides 34a and 34b of the supporting angled structure can form an acute angle (Fig. 6) to each other, or the two sides of the supporting angled structure can form an obtuse angle (Fig. 5) to each other.

[0032] . Fig. 12 illustrates a further embodiment which will be described in detail herein below, and which, for

the part relating to the supporting structure of the closed door lighting members, illustrates a supporting structure which has an angled section in which the first side 34a and the second side 34b are placed at about 90°.

[0033] . Further embodiments are certainly possible in which the two sides 34a and 34b of the angled section of the supporting structure 34 are variously angled relative to each other.

[0034] . Generally, in the case where the closed door lighting members 32 are mounted to a supporting structure 34 comprising a portion 36 for coupling to the door, and having an angled section consisting of a first side 34a defining the coupling portion and a second side 34b defining the actual support portion, such an angulation is preferably carried out so that the closed door lighting members 32 are placed such as to generate a light beam directed towards the inside of the oven recess, preferably towards the middle of the same, when the door is in a closed position. In accordance with a possible embodiment, a first side 34a of the angled section of the supporting structure 34 corresponding to the coupling portion 36 is placed parallel to the door outer panel 22 or inner panel 24, while the second side 34b corresponding to the actual support portion is angled so that the closed door lighting members 32 generate a light beam directed towards the inside of the oven recess, preferably towards the middle of the same.

[0035] . Advantageously, the shape of the angled section of the supporting structure 34 is carried out so that a housing 38 is defined between the first and second sides of the supporting structure for supplying means 40 of the lighting means. In Fig. 9 a portion of the supply means has been illustrated, for example provided through an electronic circuit, particularly a printed circuit board.

[0036] . In accordance with a possible embodiment, the supply means of the closed door lighting members 32 can be operatively connected to actuating means 41 either of a manual type, or automatically operating as a function of the oven ignition.

[0037] . In accordance with a possible embodiment, the supply means of the closed door lighting members 32 can comprise ignition control means C as a function of the door position. Preferably, the control means are adapted to turn off the closed door lighting members when the door is opened, and to turn them on in the door closure step upon overtaking a certain intermediate position. In accordance with a possible embodiment, the control means can comprise sliding connection means interposed along the supply means, for example at the hinges 20 of the door 18. Alternatively, control means operating in the closed position of the door can be provided, for example by means of an electrical supply through a microswitch placed on the front of the same door and avoiding flexible connections.

[0038] . Alternatively, the closed door lighting members 32 can be indifferently turned on in any position of the door, when they are operated via the actuating

means.

[0039] . In accordance with a possible embodiment, the lighting means and, particularly, the closed door lighting members 32 are placed at the door outmost portion either in the proximity of or adjacent to the outer panel 22, as illustrated in Fig. 6 by way of example. Such an embodiment is particularly advantageous in the case of pyrolytic ovens. In this case, the door 18 can comprise at least one further panel 42 being placed within the door between the outer panel 22 and the inner panel 24. In the example of Fig. 6, two further panels 42 have been illustrated which are interposed between the outer panel 22 and the inner panel 24.

[0040] . In accordance with a possible embodiment, the closed door lighting members 32 are placed so that the light beam they generate passes through the at least one further panel, beside the inner panel. Alternatively, as illustrated for example in Fig. 6, the closed door lighting members 32 are placed so that the light beam they generate only passes through the inner panel.

[0041] . In accordance with an alternative embodiment, illustrated for example in Fig. 5, the closed door lighting members 32 are placed at the innermost portion of the oven in the proximity of the inner panel 24. In fact, due to the efficient natural ventilation of the door, it is possible to locate the closed door lighting members relatively adjacent to the door inner panel, which is particularly exposed to the oven high temperatures.

[0042] . According to an advantageous embodiment, the lighting means, and particularly the closed door lighting members 32, comprise at least one LED (or micro-lamp) that is inserted on a suitable circuit. Particularly, the closed door lighting members 32 are consisting of LEDs (Light Emission Diodes) that are placed on a suitable circuit.

[0043] . In accordance with a possible embodiment, the closed door lighting members 32, particularly the LEDs, are adapted to carry out variously coloured light beams. In this case, it can be advantageously provided that the oven further comprises a control unit 43 for the coloration of the closed door lighting members 32 acting as a function of the temperature reached inside the recess and/or of the cooking function being set. In this case, it is possible to vary and/or combine the base colours operated as a function of the temperature and/or preset cooking programmes.

[0044] . Particularly, it can be advantageously provided that the closed door lighting members 32, particularly the LEDs, are able to provide for chromatic compensation of light which is reflected to the user through the door such as to generate a real image of the dish inside the oven, even when coloured panels are provided on the door. In accordance with a possible embodiment, the chromatic compensation can occur by selecting the LEDs emitting a determined light being adapted to carry out the compensation. In accordance with a further embodiment, the chromatic compensation occurs via the adjustment of the RGB (red, green, blue) light modulable

in a single LED, or in three different LEDs, respectively of a red, green, and blue colour.

[0045] . In accordance with a possible embodiment, which can be provided both as an alternative and in combination with the previously described embodiments, the lighting means comprise at least one open door lighting member 44 which is housed inside the door 18, between the outer panel 22 and the inner panel 24. The open door lighting member is advantageously suitable to generate a light beam directed towards the inside of the recess 14 at least in the opened position of the door 18.

[0046] . Advantageously, the open door lighting member 44 can be placed at a door side, for example in the proximity of an upright of the same door, preferably at the part proximal to the oven frame.

[0047] . In accordance with a possible embodiment, the lighting means comprise at least one open door lighting member at a first door side and at least one open door lighting member at a second door side, opposed to the first side. In this case, the open door lighting members are placed such as to generate light beams directed towards the middle of the recess. Preferably, the open door lighting members, on opposite sides of the door, are placed such as to generate light beams directed towards the centre of the recess and which intersect to form a highly illuminated area placed substantially in the centre of the recess. In other terms, the open door lighting members are positioned angled such as to penetrate with the direct light cone, crossed inside a hypothetical centre of the recess to be illuminated.

[0048] . In accordance with a possible embodiment, the open door lighting members 44 are mounted to a supporting structure 46 comprising a portion 48 for coupling to the door. Advantageously, the supporting structure has an angled section, a first side 46a of which defines the coupling portion, and a second side 46b of which defines an actual support portion for the open door lighting members 44. In this case, the angulation is preferably such that the open door lighting members 44 are placed such as to generate a light beam directed towards the inside of the oven recess, preferably towards the middle of the same, when the door is in an opened position.

[0049] . In accordance with a possible embodiment, a first side 46a of the angled section of the supporting structure 46 corresponding to the coupling portion 48 is placed parallel to the outer panel 22 or the inner panel 24 of the door, while the second side 46b corresponding to the actual support portion is angled so that the open door lighting members 44 generate a light beam directed towards the inside of the oven recess, preferably towards the middle of the same, when the oven door is in an opened position.

[0050] . Advantageously, the shape of the angled section of the supporting structure 46 can be carried out so that a housing is defined between the first and the second supporting structure sides for the supply means of the lighting means, for example provided via an electronic circuit, for example a printed circuit board.

[0051] . In accordance with a possible embodiment, the supply means of the open door lighting members 44 can be operatively connected to actuating means 41 either of a manual type, or automatically operating as a function of the oven ignition. ,

[0052] . In accordance with a possible embodiment, the supply means of the open door lighting members 44 can comprise ignition control means C as a function of the door position. Preferably, the control means are adapted to turn off the open door lighting members when the door is closed, and to turn them on during the door opening step upon overtaking a certain intermediate position. In accordance with a possible embodiment, the control means can comprise sliding connection means that are interposed along the supply means, for example at the hinges 20 of the door 18.

[0053] . Alternatively, the open door lighting members 44 can be indifferently turned on in any door position, when they are actuated via the actuating means.

[0054] . In accordance with a possible embodiment, the lighting means and, particularly, the open door lighting members 44 are placed at the outmost portion of the door in the proximity of the outer panel 22. Such embodiment is particularly advantageous in the case of pyrolytic ovens. As described above for the closed door lighting members , also in this case the door 18 can comprise at least one further panel 42 being placed inside the door, between the outer panel 22 and the inner panel 24. Similarly to what has been described above for the closed door lighting members , the open door lighting members 44 are placed so that the light beam they generate passes through the at least one further panel beside the inner panel. Alternatively, the open door lighting members 44 are placed so that the light beam they generate passes only through the inner panel.

[0055] . In accordance with an alternative embodiment, the open door lighting members 44 can be placed at the innermost portion of the oven in the proximity of the inner panel 24.

[0056] . According to an advantageous embodiment, the lighting means, and particularly the open door lighting members 44, comprise at least one LED (Light Emission Diode) or microlamp. Particularly, the open door lighting members 44 are LEDs.

[0057] . In accordance with a possible embodiment, the open door lighting members 44, particularly the LEDs, are adapted to provide variously coloured light beams. In this case, it can be advantageously provided that the oven further comprises a control unit 43 of the coloration of the open door lighting members 44 acting as a function of the temperature reached inside the recess and/or the set cooking function.

[0058] . For example, the open door lighting members can be separated as regards the phase and/or colours relative to the closed door lighting members , giving an indication about the stand-by step or the set step, or about the high temperature when the door is open.

[0059] . In accordance with an advantageous embod-

iment, the oven according to the present invention both comprises at least one open door lighting member 44 and closed door lighting members 32 according to one of the above-described embodiments. In this case, it can be advantageously provided that switching means are provided between the closed door lighting members and the open door lighting members, or vice versa, as a function of the door closed or opened positions.

[0060] . In accordance with a possible embodiment, when both the at least one open door lighting member 44 and closed door lighting members 32 are provided, a individual supporting structure 52 can be advantageously provided, which is adapted to accommodate the closed door lighting members and at least one open door lighting member being placed on a side of the oven door.

[0061] . Advantageously, the individual supporting structure comprises a portion 54 for coupling to the door, a support portion 56 for the closed door lighting members , and a support portion 58 for the open door lighting members.

[0062] . In accordance with a possible embodiment, for example illustrated in Fig. 8 and 9, at least one length of the individual supporting structure 52 has an angled section, a first side of which defines the coupling portion, and a second side of which defines the actual support portion for the closed door lighting members . Furthermore, the individual supporting structure comprises a projection 60 being placed between the support portion 56 for the closed door lighting members and the support portion 58 for the open door lighting member. In accordance with a possible embodiment, the support portion for the open door lighting member is preferably inclined relative to the projection, such as to direct the light beam generated by the open door lighting member towards the middle of the recess.

[0063] . According to a possible embodiment, for example illustrated in Fig. 8 and 9, the projection 60 extends in a substantially perpendicular direction from the support portion 56 for the closed door lighting members , preferably away from the door edge. According to a further possible embodiment, for example illustrated in Fig. 12, the projection 60 extends from the coupling portion 54 and is inclined relative to the same such as to direct the light beam generated by the open door lighting member substantially towards the middle of the recess.

[0064] . Preferably, the projection 60 is inclined relative to the coupling portion 54, and the support portion 58 for the open door lighting member is in turn inclined relative to the projection 60 such as to direct the light beam generated by the open door lighting member substantially towards the centre of the recess.

[0065] . In accordance with a possible embodiment, the individual supporting structure 52 comprises a coupling portion 54 that is placed parallel to at least one of the inner or outer panels, from which, in an angled manner, a support portion 56 for the closed door lighting members extends, which is placed such as to direct the respective light beam towards the middle of the oven re-

cess. Furthermore, the coupling portion 54 extends at the end in order to form the above-mentioned projection 60 which is placed in a plane parallel to the outer panel or the inner panel and is inclined relative to the length of the coupling portion 54. This inclination allows directing the light beam generated by at least one open door lighting member towards the middle of the oven. Furthermore, it is advantageously provided that from such projection 60 the support portion 58 of at least one open door lighting member extends in an angled manner, such as to generate a light beam that is directed substantially towards the centre of the recess.

[0066] . Again, in other terms, it is advantageously provided that the individual supporting structure 52 has a single coupling portion 54 that is preferably placed in a plane parallel to the outer panel or inner panel, and comprises a projection 60 at the end thereof, which is preferably inclined relative to the main length of the coupling portion 54 towards the inside of the oven recess. A support portion 56 for the closed door lighting members and a support portion 58 for the open door lighting members, preferably distinct to each other, are then associated to the individual coupling portion 52. The support portion 56 for the closed door lighting members extends from the coupling portion generating an angled section, so that the light beam they generate is directed to the middle of the recess. The support portion 58 for the open door lighting members extends from the above-mentioned projection 60, preferably forming an angled section such as to direct the light beam generated by the closed door lighting member to the centre of the recess.

[0067] . Advantageously, in the case where open door lighting members and closed door lighting members are provided, by taking into account one side of the oven door, the closed door lighting members are advantageously placed in line along a prevailing part of the door side, while the members or at least one of the closed door lighting members are placed at a door end, preferably the one proximate to the oven frame, such that they result to be inclined and able to direct the light beam to the middle, or preferably to the centre of the recess.

[0068] . Also with the individual supporting structure, the first and second sides of the supporting structure can define a housing for the supply means of both open door and closed door lighting members.

[0069] . In accordance with a possible embodiment, the lighting means can be placed behind an outer shielding 62 applied to the edge of the outer panel 22 and forming an outer window 64 for providing visibility within the recess. Advantageously, both the closed door lighting members, and the open door lighting members can be placed behind the outer shielding.

[0070] . In accordance with a possible embodiment, the lighting means can be placed so that a main part of the light beam they generate gets through an inner shielding 66 applied to the door inner panel edge. Advantageously, both the closed door lighting members, and the open door lighting members can be placed so that a pre-

vailing part of the light beam they generate gets through the inner shielding.

[0071] . Advantageously, the outer shielding 64 has an extension greater than that of the inner shielding 66, and preferably the lighting means are placed behind an exceeding portion of the outer shielding relative to the inner shielding.

[0072] . In accordance with a possible embodiment, the lighting means are placed adjacent to the outer shielding, adjacent to the limit of the outer shielding profile.

[0073] . The mode of using the above described lighting means will be described below.

[0074] . As briefly mentioned above, the lighting means, i.e. both the closed door lighting members, and the open door lighting members are supplied by supply means that are operated through actuating means, for example either of the manual type (switch) or of the automatic type, which are operatively connected to the oven actuating means.

[0075] . Furthermore, in the case where the control means are provided, it is possible to change the state of the lighting means (switched On or Off) as a function of the door position. The control means can be provided by means of sliding contacts for example associated to the hinges, or via sensors detecting the door position and operating on the supply means and the actuating means.

[0076] . From what noted above, it is possible to appreciate how the provision of lighting means according to the invention allows overcoming the drawbacks cited with reference to the prior art, by providing efficient lighting means.

[0077] . The use of such systems allows creating cones of light beams penetrating with crossed effect on the front of the door and inside the recess.

[0078] . In addition to the lighting means position, it is generally particularly advantageous to provide open door lighting members which are adapted to illuminate the inside of the recess.

[0079] . The simultaneous presence of open door lighting members and closed door lighting members is particularly synergic, by combining the inherent advantages of the presence of the lighting means inside the door with a constant and efficient illumination of the recess in all the use conditions of the oven.

[0080] . A further advantage of the invention is the unusual structural simplicity of the same, particularly due to the use of LEDs, thus allowing a production with a highly reduced cost.

[0081] . It is obvious that variations and/or additions can be provided to what has been described and illustrated above.

[0082] . To the above-described preferred embodiment of the oven, one skilled in the art, aiming to meet contingent and specific requirements, will be able to make several modifications, adaptations, and replacements of members with others functionally equivalent, without departing, however, from the scope of the claims below.

Claims

1. An oven (10) comprising
a frame (12) defining a recess (14) accessible via a
front opening (16), and
a door (18) mounted to said frame (12) such as to
take at least one closed position of said front opening
and at least one opened position, in which said front
opening is accessible from the outside,
wherein said door (18) comprises at least one outer
panel (22) and at least one inner panel (24) forming
a gap (28),
characterized in that it comprises lighting means
(30) which are placed inside said door (18), between
the outer panel (22) and the inner panel (24),
wherein said lighting means are adapted to generate
at least one light beam focusing to an illuminated
area located inside the recess (14) in at least one
position of said door (18).
2. The oven according to claim 1, wherein said lighting
means (30) comprise closed door lighting members
(32), which are placed at at least one side of said
door (18) and substantially spaced throughout this
side, said closed door lighting members being adapt-
ed to generate a light beam directed to the inside of
said recess at least in a closed position of said door.
3. The oven according to claim 2, wherein said closed
door lighting members (32) are placed on opposed
sides of the door such as to form two groups, the
light beams of which cross each other, generating a
highly illuminated area located in the middle of said
recess.
4. The oven according to claim 2 or 3, wherein said
closed door lighting members (32) are mounted to a
supporting structure (34) comprising a portion (36)
for coupling to said door, and wherein said support-
ing structure has an angled section, a first side (34a)
of which defines said coupling portion, and a second
side (34b) of which defines an actual support portion
for said lighting members.
5. The oven according to claim 4, wherein said coupling
portion (36) is placed either parallel to the outer panel
or inside the door.
6. The oven according to claim 4 or 5, wherein the first
and second sides of said supporting structure (34)
define a housing (38) for supply means (40) of said
lighting members.
7. The oven according to one of claims 2 to 6, compris-
ing ignition control means (C) for said closed door
lighting members (32), said control means being
adapted to turn off said closed door lighting members
when the door is open, and turn them on during the
closure step of said door upon overtaking a certain
intermediate position.
8. The oven according to any preceding claim, wherein
said lighting means comprise at least one open door
lighting member (44) that is housed inside said door
(18), between the outer panel (22) and the inner pan-
el (24), said open door lighting member being adapt-
ed to generate a light beam directed towards the
inside of said recess (14) at least in one opened po-
sition of said door (18).
9. The oven according to claim 8, wherein said at least
one open door lighting member (44) is placed at one
side of said door (18), preferably from the part prox-
imal to the frame (12) of said oven.
10. The oven according to claim 9, wherein said lighting
means comprise at least one open door lighting
member (44) that is placed at one side of said door
and at least one open door lighting member (44)
placed at an opposed side of said door, said open
door lighting members being placed such as to gener-
ate light beams directed towards the middle of said
recess.
11. The oven according to claim 9, wherein said open
door lighting members (44) that are placed on op-
posing sides of said door are placed such as to gener-
ate light beams which intersect to form a highly
illuminated area that is substantially located at the
centre of said recess.
12. An oven according to one of claims 8 to 11, wherein
said open door lighting members (44) are mounted
to a supporting structure (46) comprising a portion
(48) for coupling to said door, and wherein said sup-
porting structure (46) has an angled section, a first
side (46a) of which defining said coupling portion,
and a second side (46b) of which defining an actual
support portion for said lighting members.
13. The oven according to claim 12, wherein said cou-
pling portion (48) is placed either parallel to the outer
panel or inside the door.
14. The oven according to claim 12 or 13, wherein the
first and second sides of said supporting structure
(46) define a housing (50) for the supply means of
said lighting members.
15. The oven according to one of claims 8 to 14, com-
prising ignition control means (C) for said at least
one open door lighting member (44), said control
means being adapted to turn off said at least one
open door lighting member when the door is closed,
and turn them on during an opening step of said door
upon overtaking a certain intermediate position.

16. The oven according to one of the preceding claims, wherein said lighting means comprise closed door lighting members (32), and open door lighting members (44), said oven further comprising means for switching between said closed door lighting members and said open door lighting members, or vice versa, as a function of the closed or opened position of said door.
17. The oven according to one of the preceding claims, wherein said lighting means are placed at the innermost portion of the oven in the proximity of said inner panel (24).
18. The oven according to one of claims 1 to 16, wherein said lighting means are placed in the outmost portion of the oven proximate to said outer panel (22).
19. The oven according to any preceding claim, comprising at least one further panel (42) that is placed inside said door between the outer panel (22) and the inner panel (24), and in which said lighting means are placed at the outmost portion of said door proximate to the outer panel (22).
20. The oven according to claim 19, wherein said lighting means are placed so that the light beam they generate passes through the at least one further panel (42) beside the inner panel (24).
21. The oven according to any preceding claim, wherein said lighting means comprise at least one LED.
22. The oven according to any preceding claim, wherein said lighting means are adapted to create variously coloured light beams, said oven further comprising a control unit for the coloration of said lighting means acting as a function of the temperature reached inside said recess and/or the set cooking function.
23. The oven according to one of the preceding claims, wherein said lighting means comprise closed door lighting members (32), and open door lighting members (44), said oven further comprising an individual supporting structure (52) that is adapted to accommodate both said closed door lighting members and said open door lighting members.
24. The oven according to claim 23, wherein said individual supporting structure (52) comprises a portion (54) for coupling to said door, and wherein said supporting structure has an angled section, a first side of which defining said coupling portion, and a second side of which defining a support portion (56) for said closed door lighting members (32).
25. The oven according to claim 24, wherein said individual supporting structure (52) comprises a support portion (58) for said open door lighting members (44).
26. The oven according to claims 24 or 25, wherein said individual supporting structure (52) comprises a projection (60) that is placed between the closed door lighting members and the open door lighting members, such as to direct the light beam generated by said at least one open door lighting member towards the middle of said recess.
27. The oven according to claim 26, wherein said projection (60) is inclined relative to the coupling portion (54) such as to direct the light beam generated by said at least one open door lighting member substantially towards the centre of said recess.
28. The oven according to one of claims 23 to 28, wherein the first and second sides of said individual supporting structure define a housing for the supply means of said lighting members.
29. The oven according to any preceding claim, wherein said lighting means are placed behind an outer shielding (62) that is applied to the outer panel (22) edge and forms an outer window (64) for providing visibility within said recess.
30. The oven according to claim 29, wherein said lighting means are placed so that a main part of the light beam they generate gets through an inner shielding (66) applied to the edge of the inner panel (24) of said door.
31. The oven according to claim 30, wherein the outer shielding (64) has a greater extension than that of the inner shielding (66), and in which said lighting means are placed behind an exceeding portion of said outer shielding (64) relative to said inner shielding (66).
32. The oven according to claim 7, wherein the control means comprise a microswitch placed on the front of the same door.
33. The oven according to claim 22, wherein the lighting means are adapted to provide for chromatic compensation of the light which is reflected to the user through the door, such as to generate a real image of the dish inside the oven, even when coloured panels of the door are provided.
34. The oven according to claim 33, wherein the lighting means comprise LEDs emitting a determined light adapted to carry out the compensation, said LEDs being selectable to provide for compensation.
35. The oven according to claim 34, wherein the lighting

means comprise LEDs of a red, green, and blue colour, respectively, which are selectable to provide for chromatic compensation via the adjustment and modulation of the RGB (red, green, blue) light.

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- 36.** The oven according to claim 34, wherein the lighting means comprise at least one LED, wherein the RGB (red, green, blue) light can be modulated, said LED being selectable to provide for chromatic compensation via the adjustment and modulation of the RGB light.

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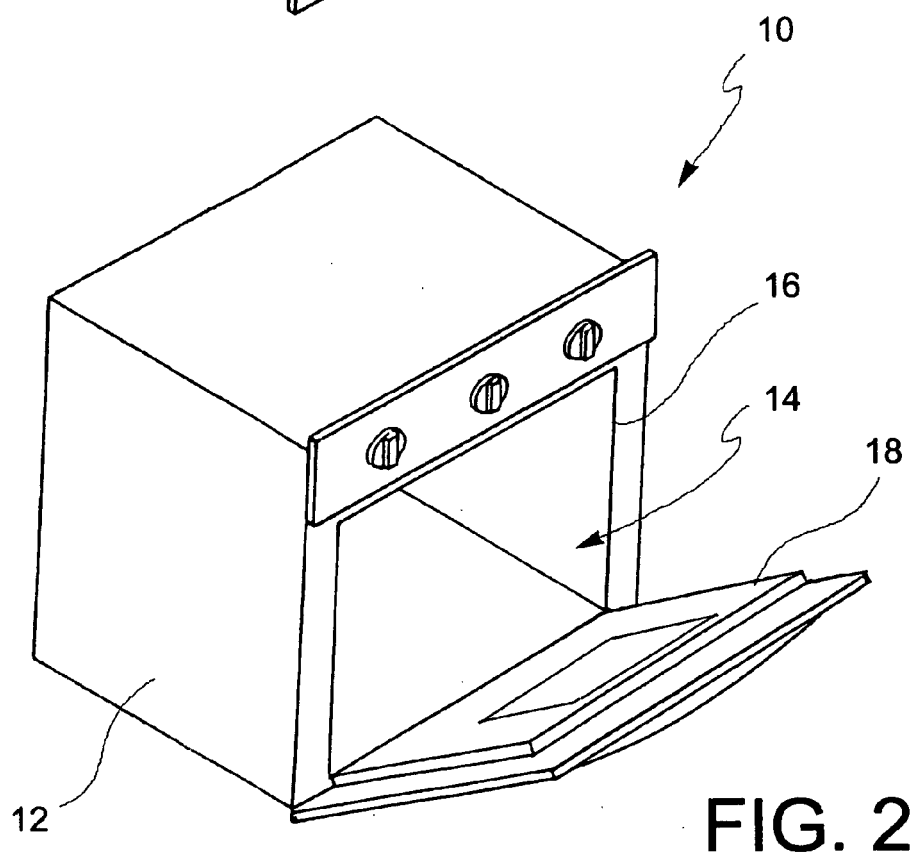
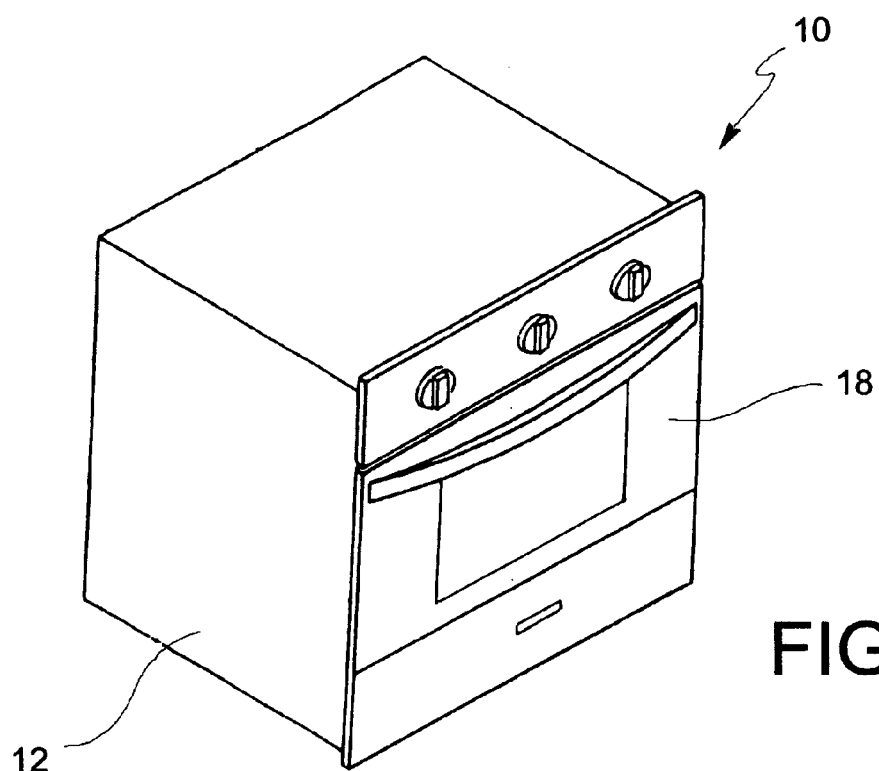
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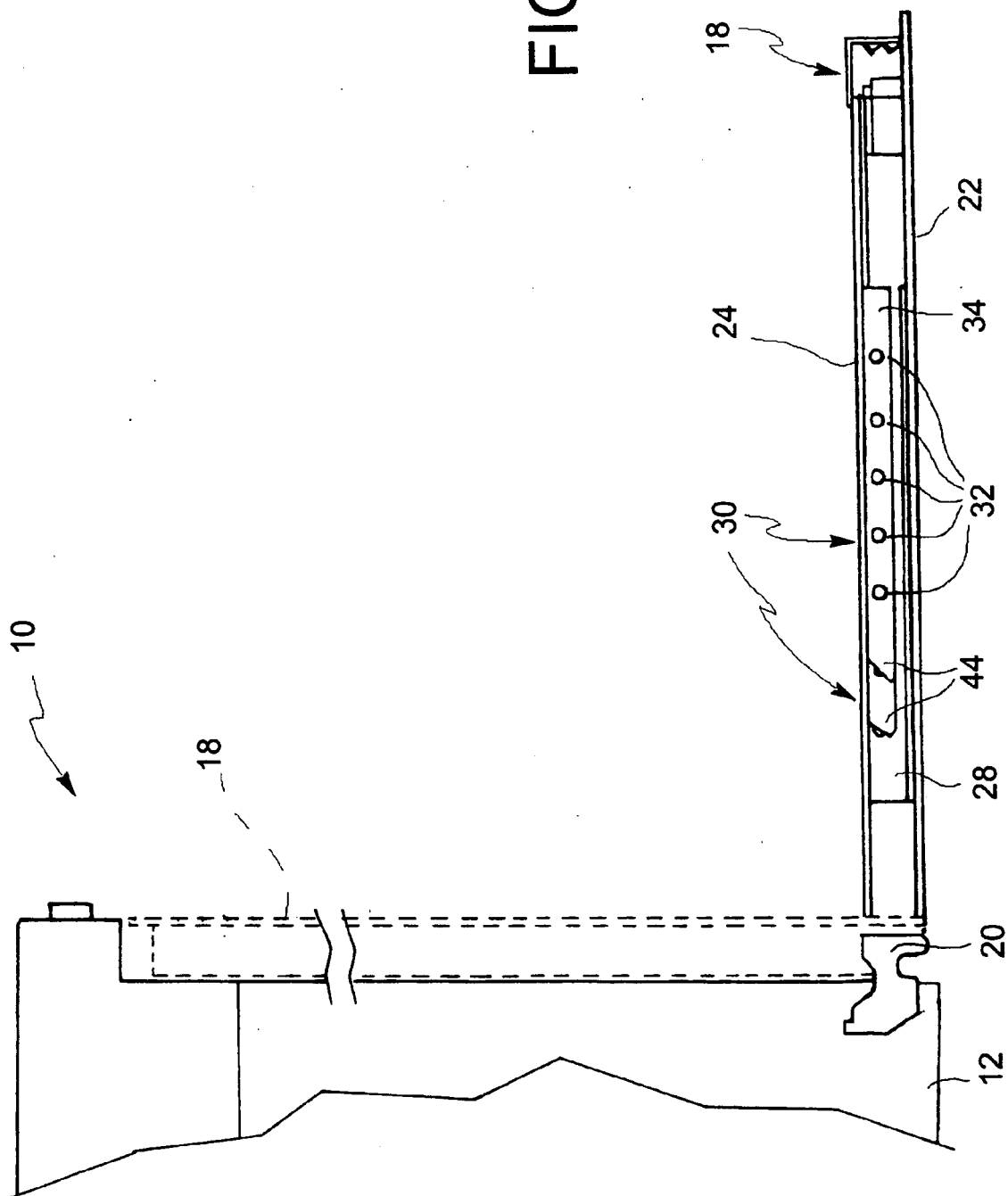


FIG. 3

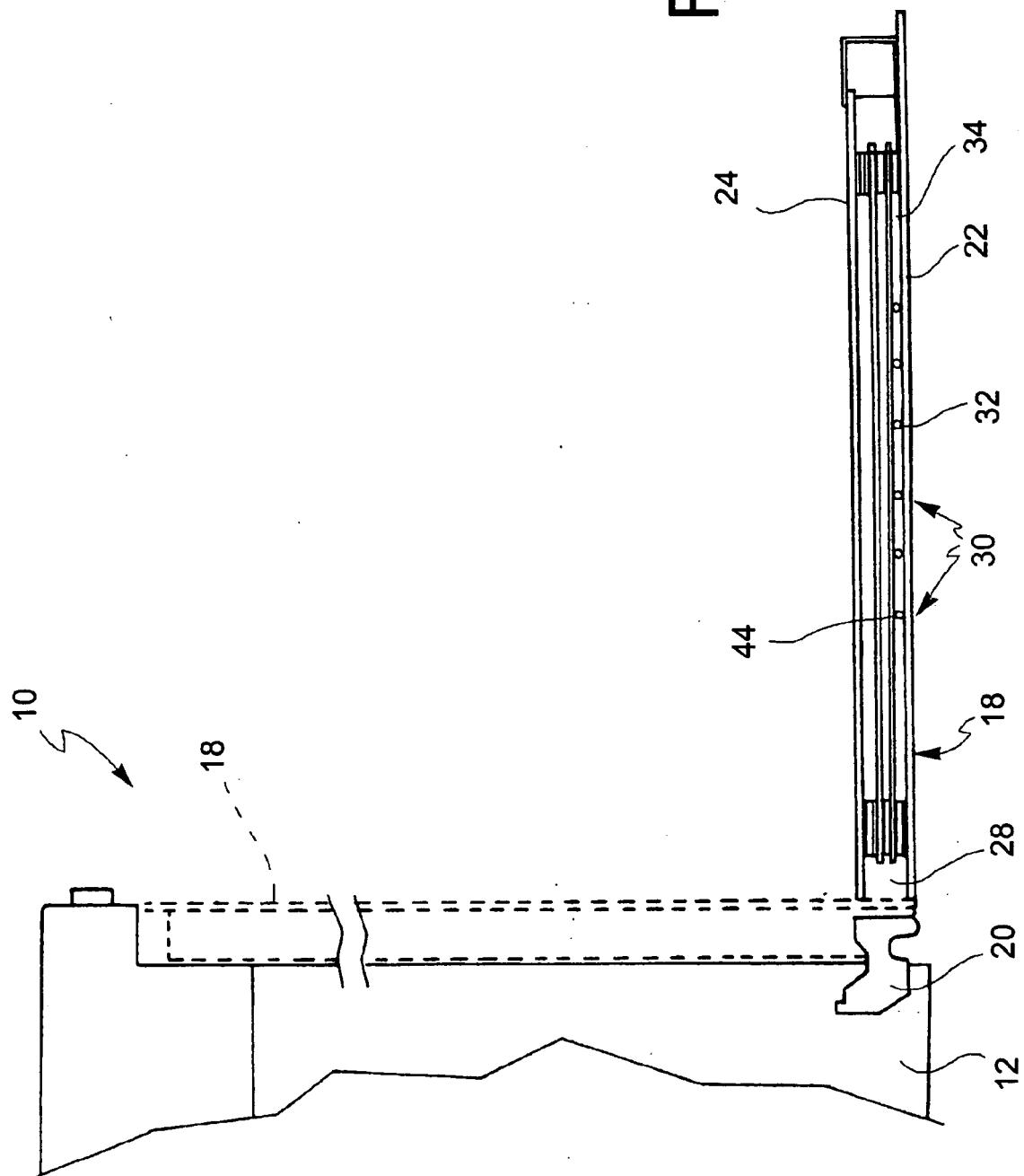


FIG. 4

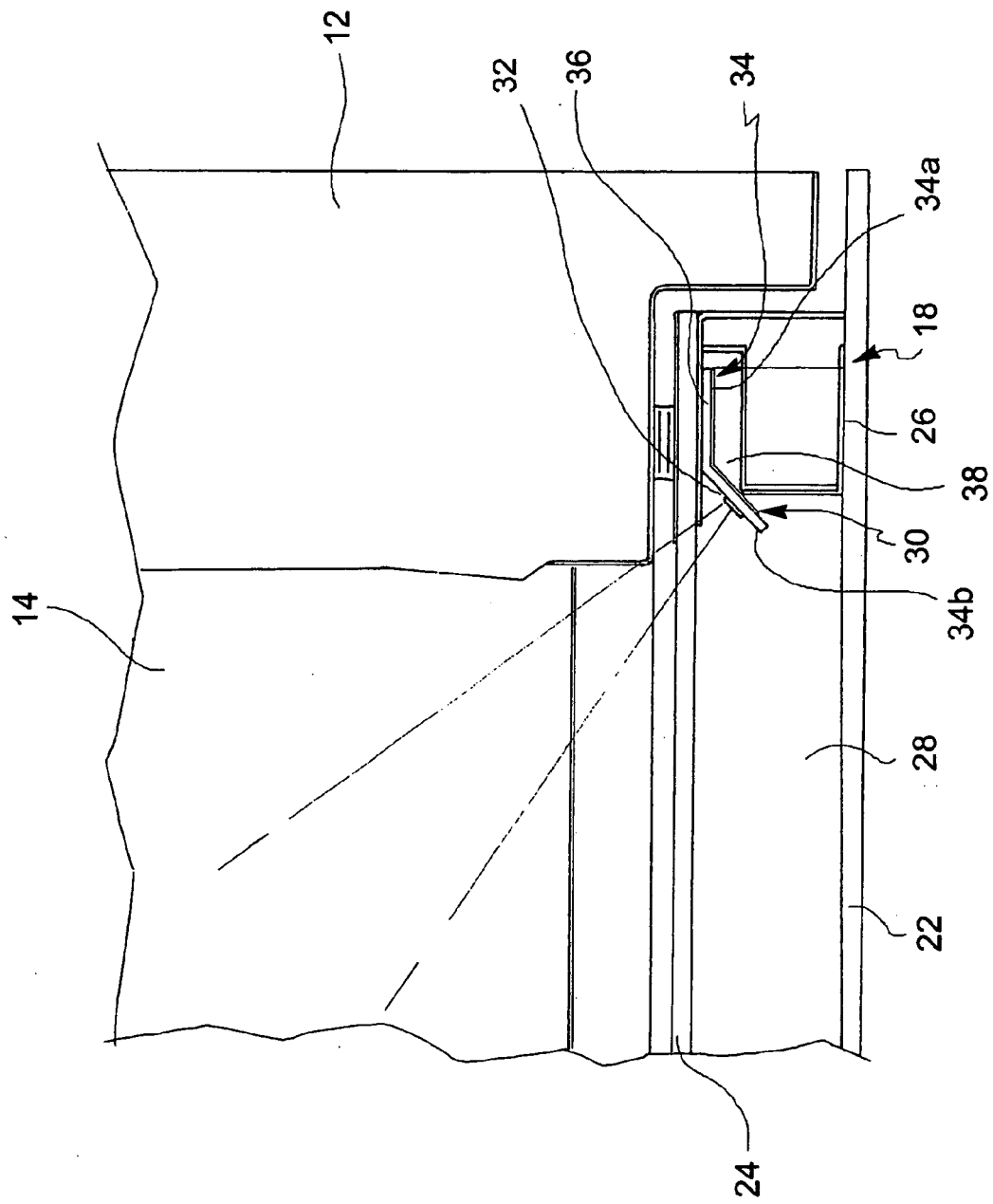


FIG. 5

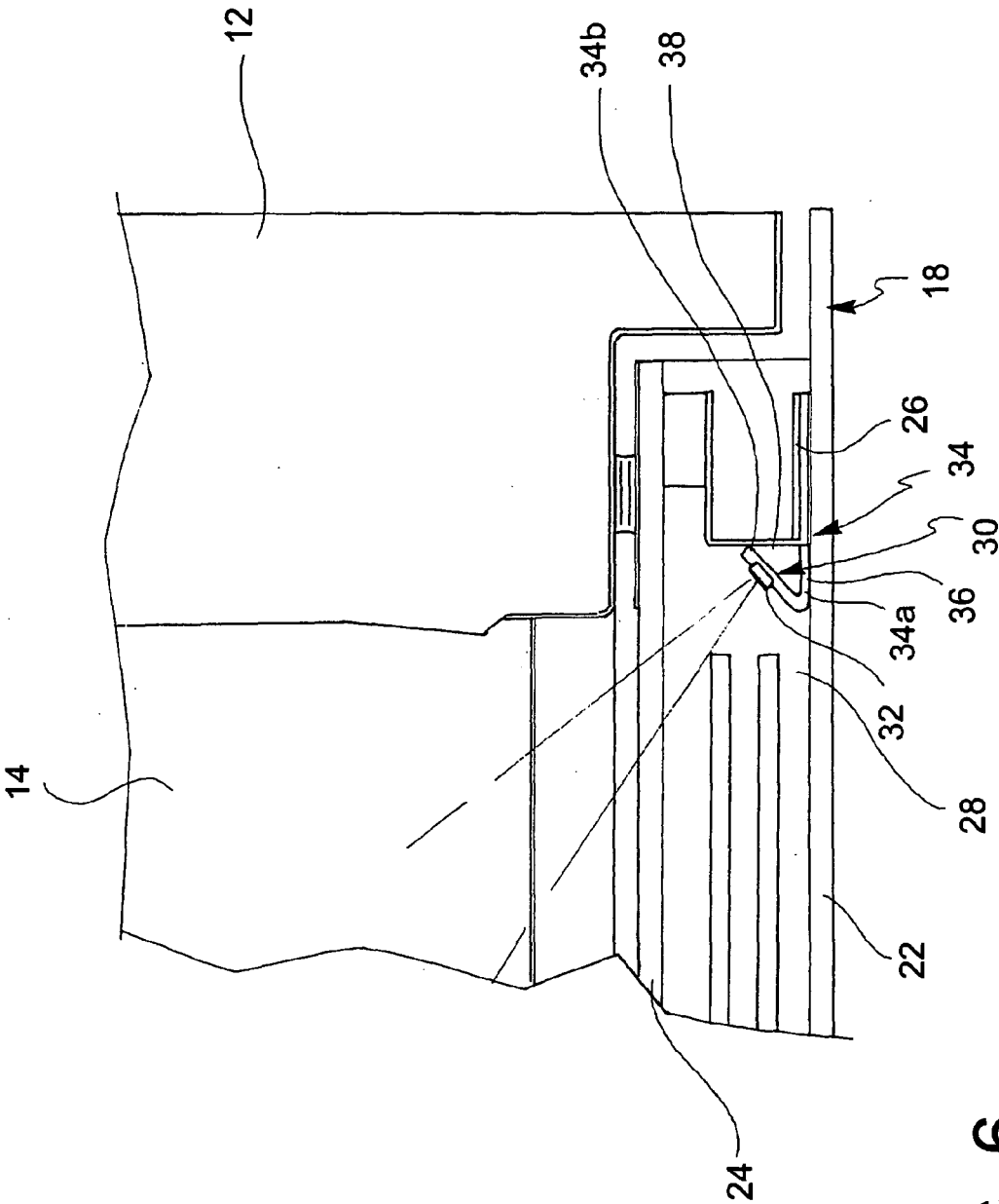
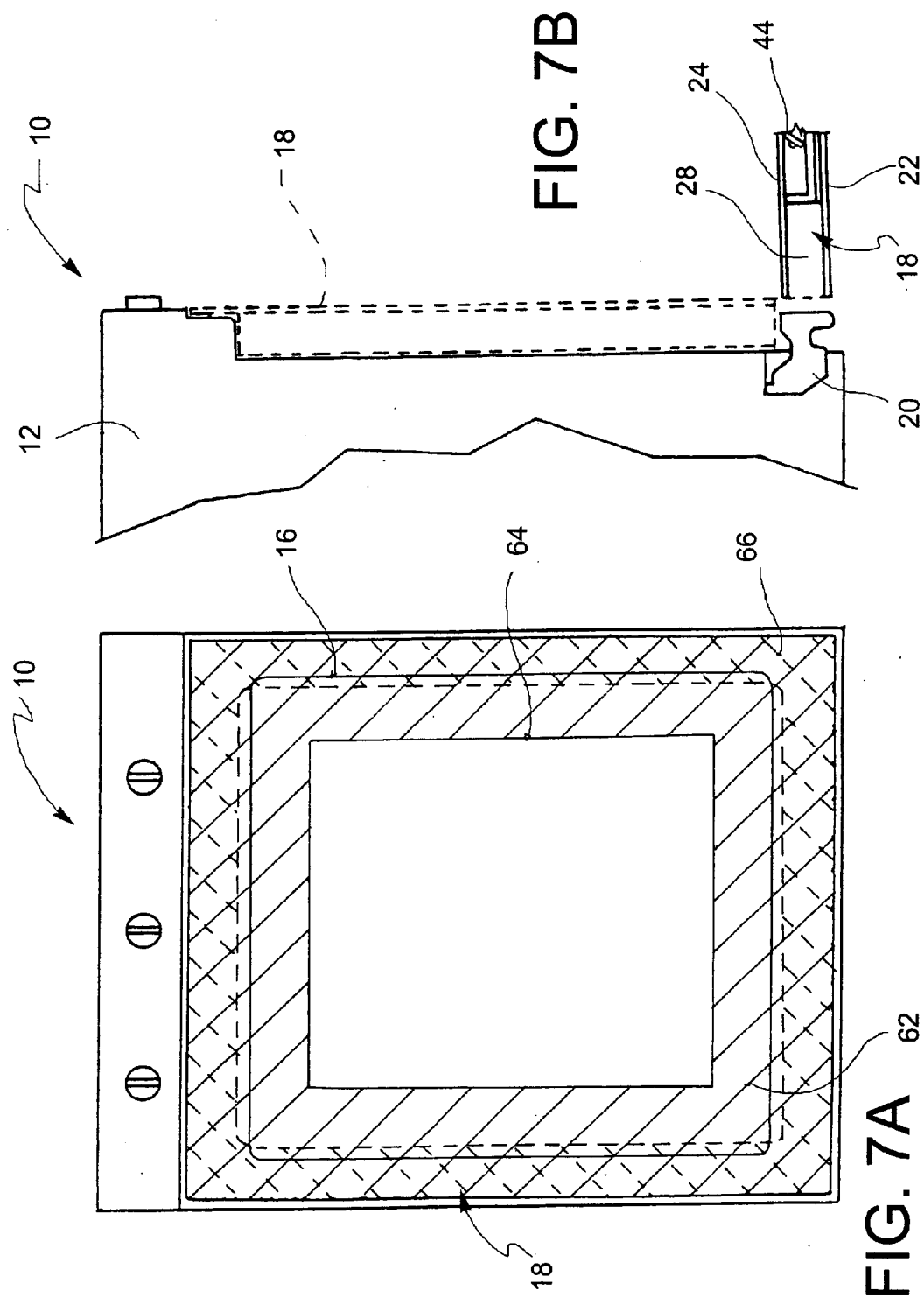
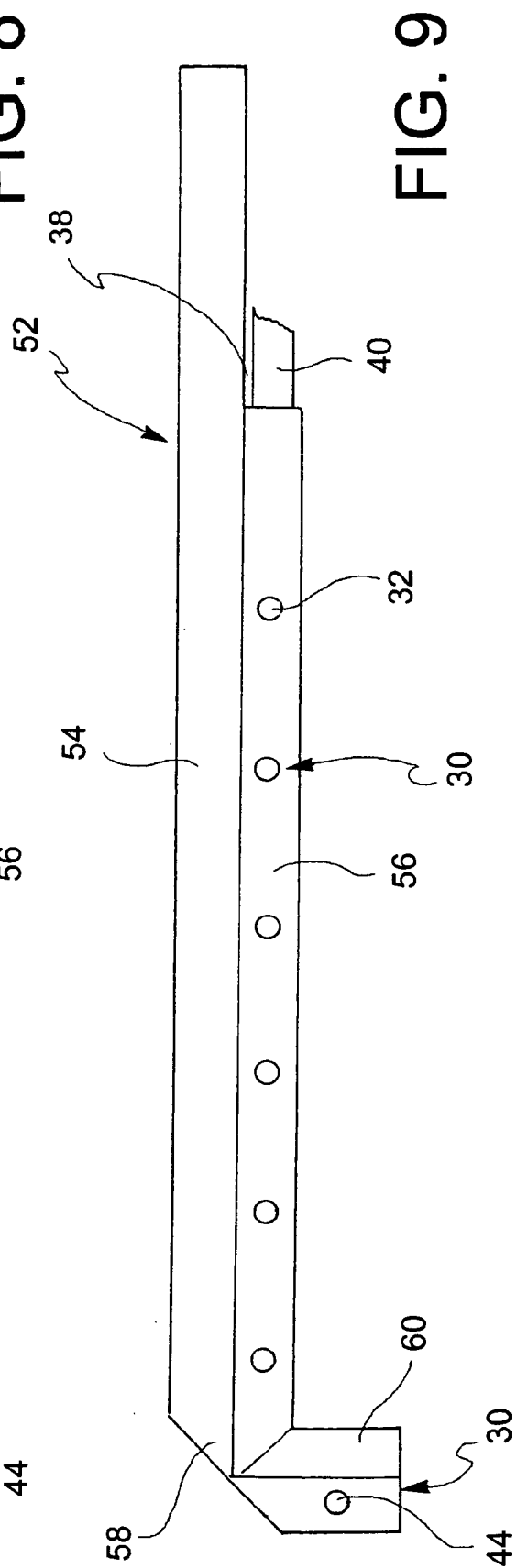
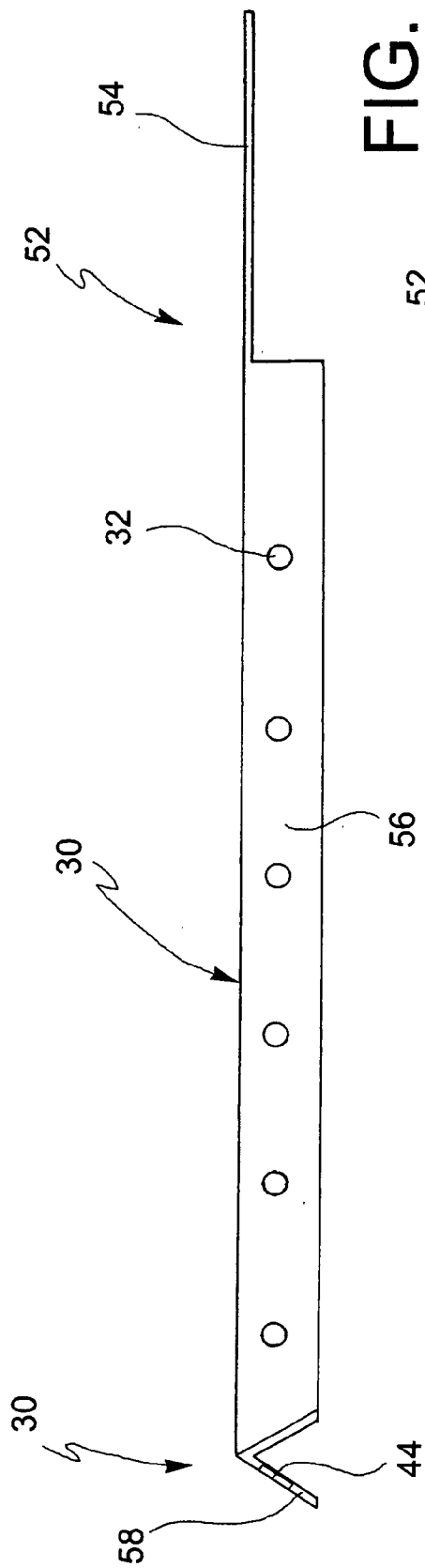


FIG. 6





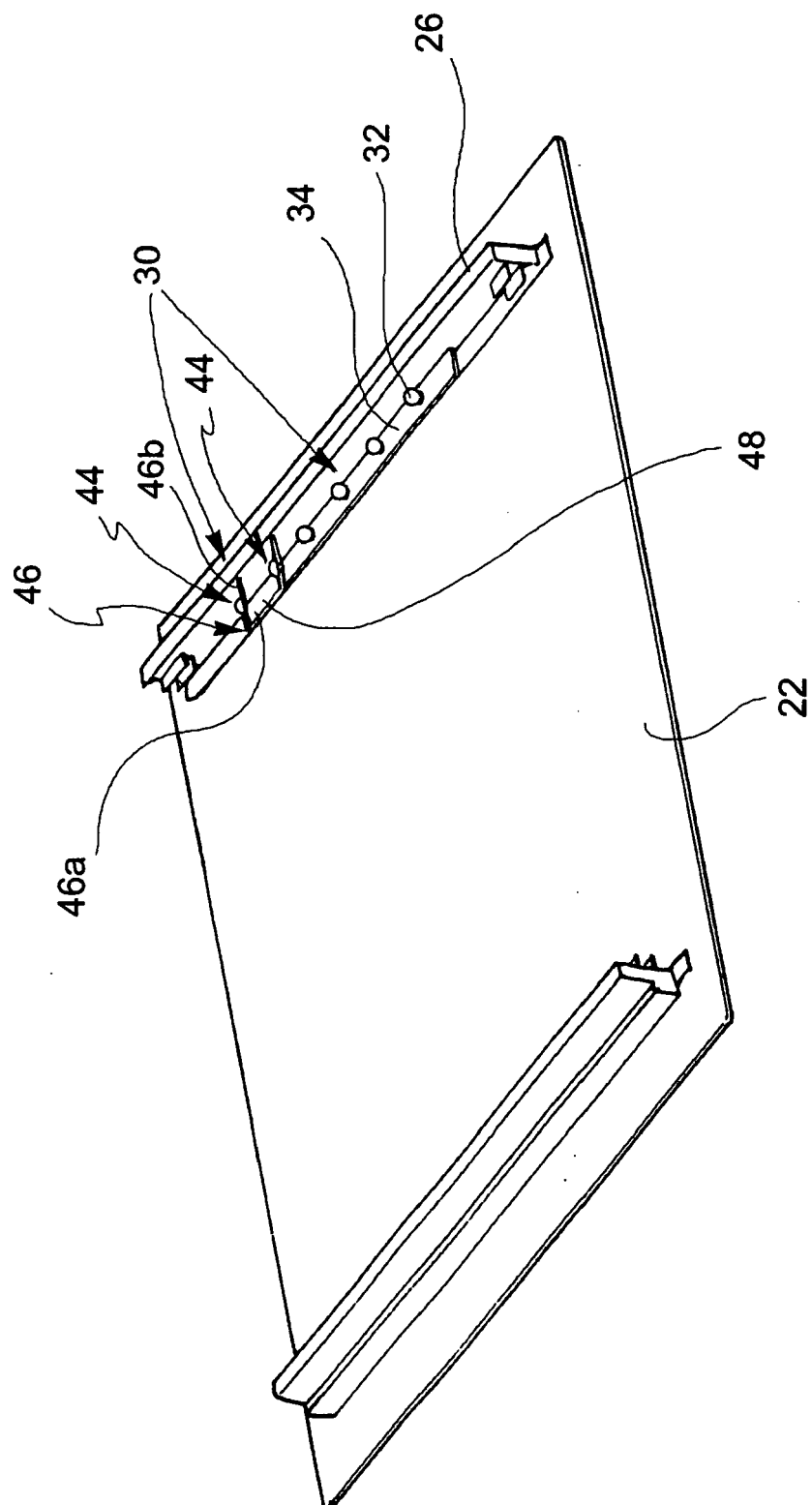


FIG. 10

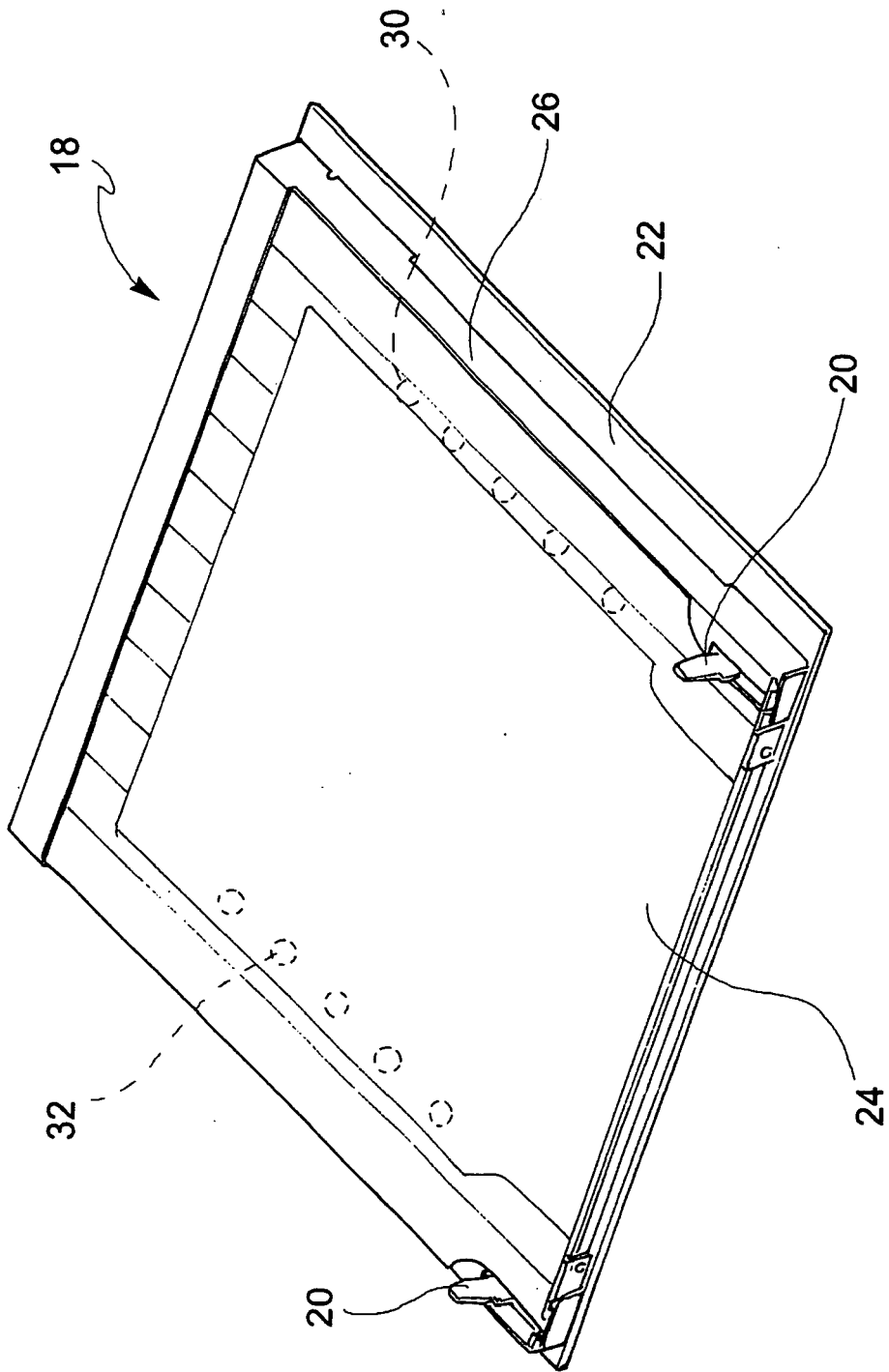


FIG. 11

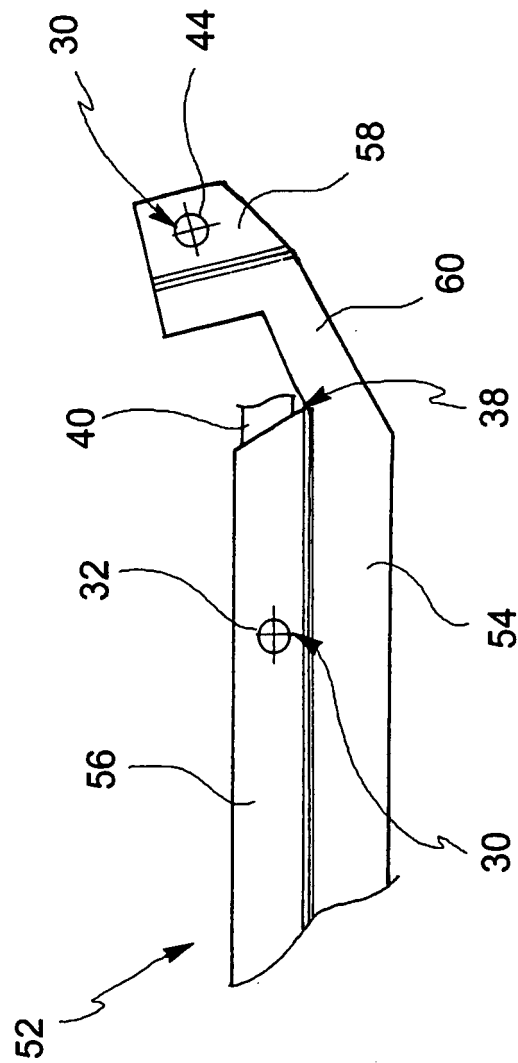
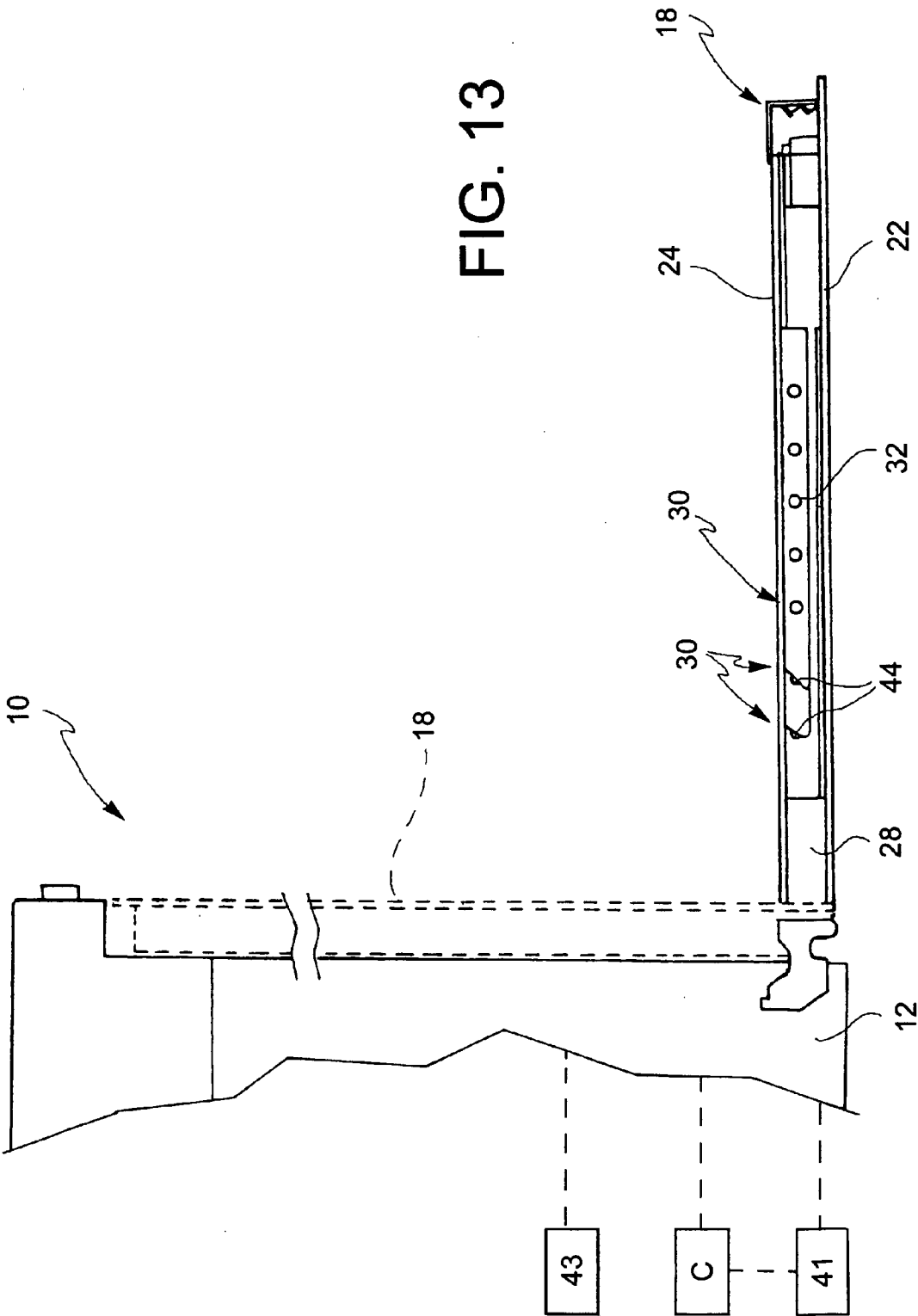


FIG. 12





European Patent
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EUROPEAN SEARCH REPORT

Application Number
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Place of search Munich		Date of completion of the search 19 November 2007	Examiner Blot, Pierre-Edouard
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