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(54) Rapidly assembled oven door

(57) An oven door (1) comprises a support frame (2) for a plurality of glazed surfaces (3, 4, 5), with the frame (2) there being associated hinge members (7) arranged to secure the door (1) to the body of the oven and enable it to move relative thereto. The frame (2) is formed from a profile bar of C cross-section bent into a rectangle.

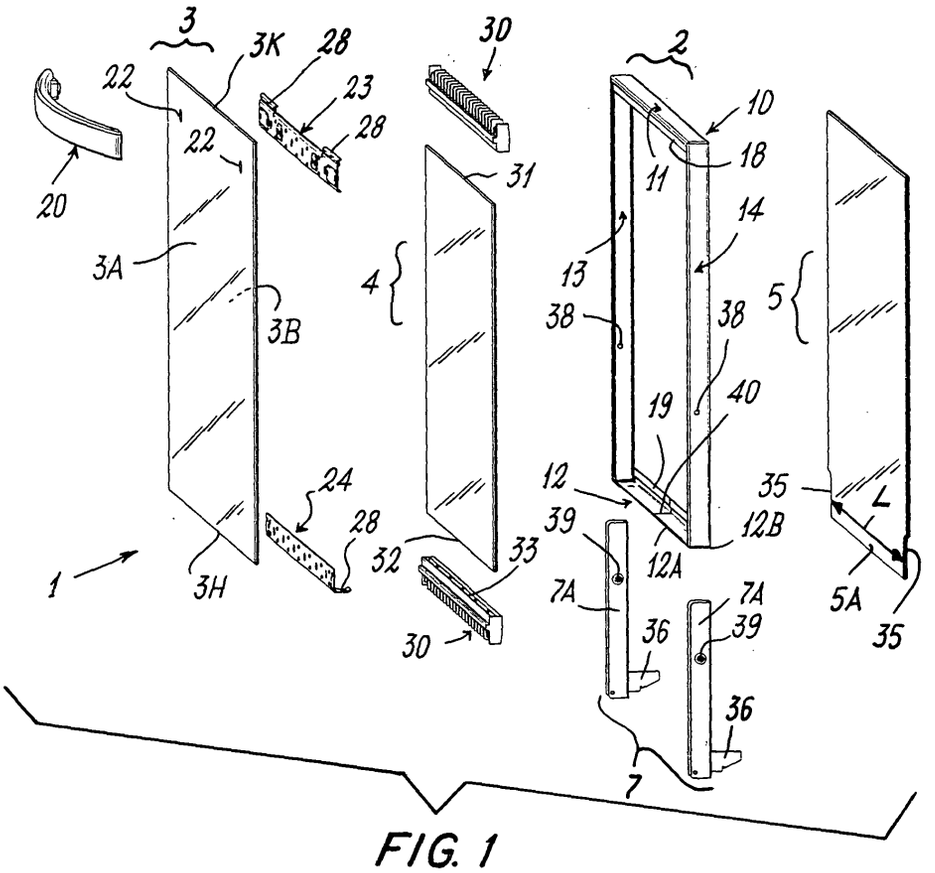

FIG. 1

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Description

[0001] The present invention relates to an oven door in accordance with the introduction to the independent claim.

[0002] Various types of oven doors are known for closing their usual cavity (or cooking chamber). An oven door usually comprises an annular structure or frame to which one or more glazed surfaces are secured. An object of the present invention is to provide an oven door which is of simple construction and rapid assembly while being of enhanced appearance. This and further objects which will be apparent to the expert of the art are attained by an oven door in accordance with the accompanying claims. The present invention will be more apparent from the accompanying drawing, which is provided by way of non-limiting example and in which:

Figure 1 is an exploded perspective front view of an oven door according to the invention; and
Figure 2 is a rear view of the door of Figure 1.

[0003] With reference to said figures, an oven door according to the invention is indicated overall by 1 and comprises a peripheral frame 2 of substantially rectangular shape, usually of metal, and a plurality of glazed surfaces which in Figure 1 are three in number and are indicated by the reference numerals from 3 to 5. Specifically, the first surface 3 is the most outer surface with respect to the cavity of an oven (not shown) with which the door is associated, the second surface 4 is the intermediate surface and the third surface 5 is the inner surface, i.e. that which faces the said cavity. The door 1 is associated with a fixed structure of the oven (in which the said cavity is provided) by means of hinge members 7.

[0004] More specifically, the frame 2 for supporting the three glazed surfaces 3, 4 and 5 (these also being substantially rectangular) comprises a profile bar 10 of C cross-section presenting long sides 11 and 12 and short sides 13 and 14. The profile bar 10 of C cross-section has its lower side (side 12) undercut towards the oven exterior to enable the intermediate glass to be inserted (as will be clear from the ensuing description). From opposing sides of the frame 2 there therefore extend, perpendicular to these sides, walls 18 and 19 on which the surfaces 4 and 5 are arranged to rest. It should be noted that the glazed surface 4 is positioned between these walls within the frame 2. The first surface 3, however, has larger dimensions than those of the frame 2 and projects from this latter, as can be seen in Figure 2. Between the surfaces 4 and 5, maintained spaced apart by the walls 19, an air volume is present to reduce heat transfer from the third surface 5 to the second surface 4.

[0005] The first glazed surface 3 is arranged to support a handle 20 fixed onto the outer face 3A of the surface 3 in any known manner. For example, screws (not shown) or equivalent fixing members such as rivets etc.) passing through holes 22 formed in the glazed surface 3 fix the handle 20 to a metal element 23 positioned in correspondence with the inner face 3B of the surface 3 and fixed thereto by adhesive (for example two-component glue). The element 23 is positioned in correspondence with a first side 3K (which, despite of the perspective view, is of greater length) of the surface 3, a second element 24 similar to the first being positioned in correspondence with the second greater-length side 3H of this surface and being fixed to the face 3B of this latter by adhesive. The elements 23 and 24 comprise projections 28 to be secured, for example by elastic deformation, to the bent edges of the frame 2.

[0006] The second glazed surface 4 cooperates with finned elements 30 positioned in correspondence with its opposing ends 31 and 32 (which, despite of the perspective view, are of greater length in Figure 1). These elements 30 are fixed to the surface 4 in any known manner, preferably by inserting said ends 31 and 32 into their seats 33; they are of thermoplastic material. The elements 30 are arranged to elastically react against the sides 11 and 12 of the frame 2, to absorb the deformations undergone by the glass during the use of the oven.

[0007] Finally the third glazed surface 5, facing the cavity interior, is secured to the frame 2 preferably by adhesive.

[0008] The surface 5 comprises an end portion 5A of reduced transverse width L or presenting lateral bevels 35 enabling the lugs 36 of the hinge members 7 to be positioned on the side edges of the surface 5, to cooperate with hinge counter-members associated with the fixed structure of the oven. Each hinge member 7 is associated with a corresponding side 13 and 14 of the frame 2 by screws (or equivalent fixing members) cooperating with holes 38 and 39 provided in the side 13 and 14 and in an arm 7A of the member 7 (from which the lug 36 projects perpendicularly). Each hinge member 7 is also secured lowerly to the frame 2 by screws passing through suitable holes (not shown) in the frame and screwed into the body of the hinge member 7. The C-section profile bar 10 of the frame lowerly presents two undercut apertures for the insertion of the hinge members 7. Finally, one of the sides 11, 12, 13 or 14 is divided into two portions by a cut or aperture 40, as the profile bar 10 closes on itself in this region. The C-section profile bar is welded in this region before mounting the glass panels.

[0009] By virtue of the invention, the assembly of the door 1 is rapid and reliable. For this assembly the glazed surface 5 is fixed to the frame 2 with two-component glue; the members 7 are then fixed to the frame 2 by two screws each; the second glazed surface 4 is then inserted into the frame 2, with the finned elements 30 being positioned to bear against the frame sides 11 and 12. This operation is facilitated by the deformability of said elements 30.

[0010] The third glazed surface 3 (external) already provided with the handle 20 and the two metal elements

23 and 24 is then fixed to the frame 2. This fixing is achieved by inserting the upper metal element 23 into the frame 2 and then fixing the assembly by two screws which clamp the lower metal element 24 to the frame. These screws, preferably of self-tapping type, are also screwed into the plastic finned element 30 of the inner glass panel 4.

[0011] The door constructed in this manner also has a pleasant appearance in that the glazed surfaces are associated with the frame without visible support means being present for these surfaces.

Claims

1. An oven door (1) comprising a support frame (2) for a plurality of glazed surfaces (3, 4, 5), with the frame (2) there being associated hinge members (7) arranged to secure the door (1) to the oven in correspondence with a cooking cavity of this latter, **characterised in that** the frame (2) comprises a profile bar (10) of substantially C cross-section bent in the form of a rectangle, at least two glazed surfaces (3, 5) being rested on and secured to opposing faces of the frame (2).

2. An oven door as claimed in claim 1, **characterised in that** a further glazed surface (4) is mounted in the interior of the frame (2).

3. An oven door as claimed in claim 1, **characterised in that** the profile bar (10) of the frame (2) presents a joining region (40) on a greater-length side (12) of the frame.

4. An oven door as claimed in claim 1, **characterised in that** on its outer face (3A) the first glazed surface (3) supports a handle (20).

5. An oven door as claimed in claim 1, **characterised in that** the first glazed surface (3) supports on its inner face (3B), in correspondence with opposing sides (3K, 3H), coupling elements (23, 24) for securing said surface to the frame (2), said elements being fixed to the glazed surface (3) preferably by adhesive.

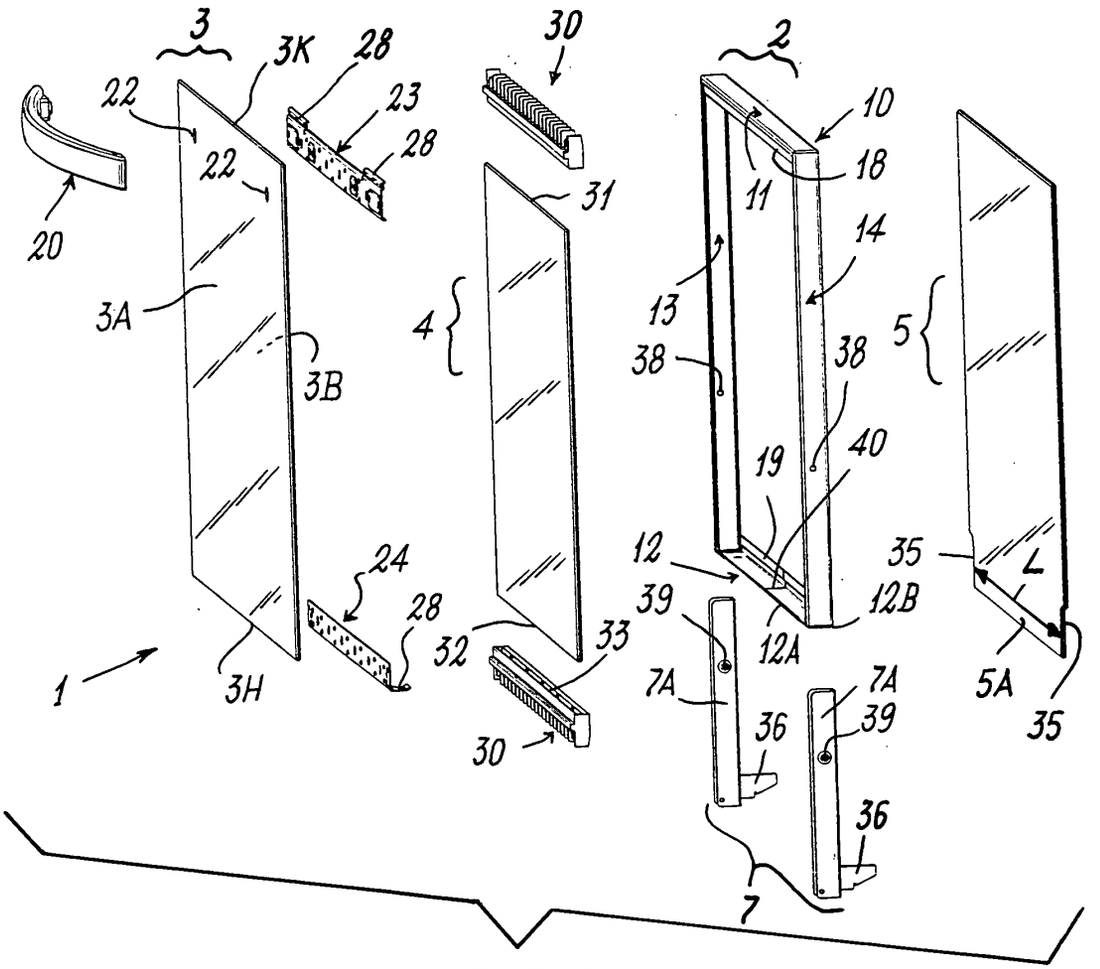
6. An oven door as claimed in claims 4 and 5, **characterised in that** the handle (20) is fixed to the glazed surface (3) by screws or similar members which pass through holes (22) provided in said surface and are connected to one (23) of the coupling elements (23, 24).

7. An oven door as claimed in claim 5, **characterised in that** each coupling element (23, 24) supports projections (28) which project towards the frame (2) and are coupled thereto.

8. An oven door as claimed in claim 4, **characterised in that** the second glazed surface (4) internal to the frame (2) cooperates, at its opposing ends (31, 32), with deformable elements (30) arranged to act against opposing sides (11, 12) of the frame (2).

9. An oven door as claimed in claim 8, **characterised in that** each deformable element (30) comprises a seat (33) arranged to contain a corresponding end (31, 32) of the second glazed surface (4).

10. An oven door as claimed in claim 4, **characterised in that** the third glazed surface (5) presents an end portion (5A) provided with lateral bevels (35) which reduce its transverse width (L) relative to the remainder of said surface (5), hinge lugs (36) of the hinge members (7) being present at said bevels.


3
3K
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2
22
23
10
22
28
18
11
31
20
14
3A
4
13
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3B
38
38
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19
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35
L
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12B
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12A
7A
7A
5A
1
3H
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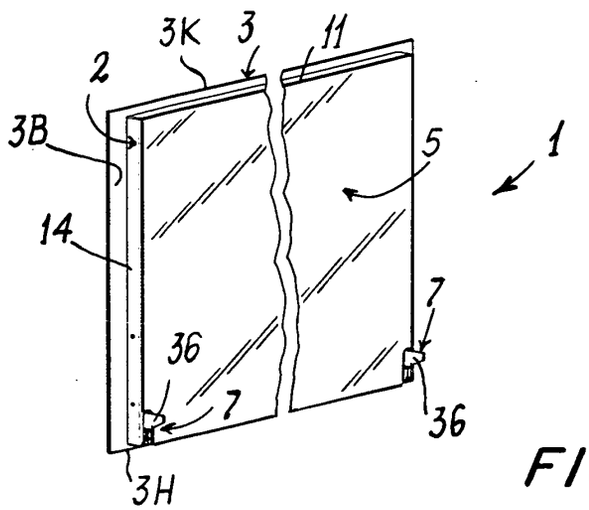
FIG. 1


3K
3
11
2
3B
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14
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36
36
7
3H

FIG. 2