

⑫ **EUROPEAN PATENT APPLICATION**

⑲ Application number: 83850129.4

⑤① Int. Cl.<sup>3</sup>: **D 06 F 39/12**

⑳ Date of filing: 16.05.83

③① Priority: 02.06.82 FR 8209604

⑦① Applicant: **USINES & FONDERIES ARTHUR MARTIN, S.A., 43, Avenue Félix Louat B.P. 131, F-60307 Senlis Cedex (FR)**

④③ Date of publication of application: 07.12.83  
Bulletin 83/49

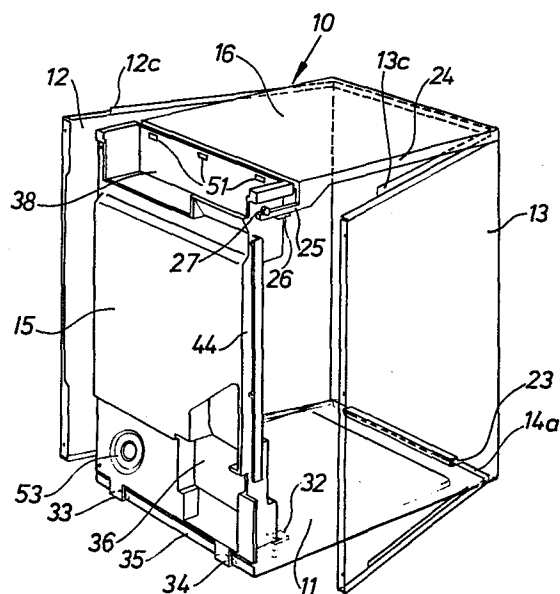
⑦② Inventor: **Snelders, Georges Victor, 26, rue Mme de Cormont, F-08170 Haybes (FR)**

⑥④ Designated Contracting States: **AT CH DE GB IT LI NL SE**

⑦④ Representative: **Hagelbäck, Evert Isidor et al, c/o AB Electrolux Patentavdelningen, S-105 45 Stockholm (SE)**

⑤④ **Top loaded washing machine.**

⑤⑦ A top loaded washing machine cabinet comprises a base, a back wall, a top cover including a loading opening covered by a door, a front wall and two side walls. The base, the back wall and the top cover are loosely secured to each other by hook-shaped fixing members being provided on one part and cooperating with hook-receiving locking means provided on the opposite part.



Top loaded washing machine

The present invention pertains to top loaded washing machines and more specifically to a cabinet for such a machine as indicated in the preamble of the appending Claim 1.

5 A washing machine of the kind referred to usually comprises a metal frame in the shape of an open-sided box, the bottom part of which consisting of a rigid plate. The frame supports all the parts included in the washing machine, and the open sides are covered by plates of sheet metal joined to the frame by screws or the like. Also joined to the frame in a similar way is a top cover including the loading door.

10 When assembling the washing machine cabinet a lot of screws must be mounted. This mounting has to be carried out manually and is time consuming. Moreover, the building-up of a frame to be covered by the side and top walls involves work that could be reduced by integrating the function of the frame in the wall assembly.

15 Further, in present top loaded washing machines the various electric and electronic components have to be mounted in different positions on metal parts secured to or being part of the frame. This mounting involves problems as to electrical security, and measures must be taken to have the components correctly insulated from the metal frame. Also the wiring interconnecting the various  
20 electric components must be properly insulated from the metal parts of the machine.

Hence, the main object of the invention is to provide a frameless washing machine cabinet of the kind referred to which can be assembled in an easy way, preferably on an automatic assembly line, and which includes a part made of  
25 electrically insulating material, preferably plastics material, on which most of the

electric components may be mounted. This object has been achieved in a washing machine cabinet having the features included in the appending claims.

Other objects and advantages will be apparent from the following description of an embodiment in connection with the appending drawings.

5        Fig. 1 is a perspective view of a washing machine cabinet with some parts disassembled.

         Fig. 2 is a side view of the cabinet of Fig. 1.

         Fig. 3 is a back view of the cabinet shown in Figs. 1 and 2.

         Fig. 3a is a section along the line 3a - 3a in Fig. 3 showing a drainage hose  
10 connection.

         In the drawings a cabinet 10 comprises a base 11, side walls 12, 13, a front wall 14, a back wall 15 and a top cover 16 including a loading opening 17 covered by a door 18. The two side walls 12, 13 and the front wall 14 are made in one piece which is secured to the back wall 15 by screw joints. In Fig. 3 holes 19, 20 in  
15 folded edges 12a, 13a of the side walls 12, 13 and aligned holes 21, 22 along the vertical edges of the back wall are to be interconnected by screws, not shown. The lower edge 14a of the front wall is bent through 90° and engages a recess 23 in the base 11. The lower edges 12b, 13b of the side walls are folded to form a bottom surface bearing on the base. The upper ends of the side walls are bent  
20 inwards-upwards to form edges 12c, 13c which extend inside the top cover 16 and are covered by side walls 24 of the top cover. In the same way the upper end of the front wall 14 is bent to form an edge 14b directed upwards and covered by a down-bent front edge 16a of the top cover.

         The top cover is mounted on the back wall by two supporting arms 25, one of  
25 which is shown in Fig. 1 and Fig. 2. The supporting arms, which are symmetrically disposed, each bears on a supporting surface formed by projections 26 on the back wall 15. At each side of the cabinet a circular stud 27 engages with a correspondingly formed recess 28 in the supporting arm 25 to lock the top cover in the mounted position. The top cover 16 is secured to the front wall by screws or  
30 the like joining the down-bent front edge 16a to the front wall 14.

         The back wall 15 has supporting portions 29 that rest on a supporting surface 30 on the base 11. The back wall is secured in place by hook members 31 provided on the back wall, the said hook members being inserted into holes 32 in the base so as to cooperate with edges of the holes to prevent upward movement  
35 of the back wall. L-shaped lugs 33, 34 provided on the back wall have each one leg extending under the base and the other leg secured to the back side edge 35 of the base by screws or the like, not shown.

In its right lower part the back wall is provided with a recess defining a room 36 in which electric components 37 are mounted. Another recess in the upper part of the back wall defines a room 38 in which other components, such as a water inlet magnetic valve 39, are mounted. The room 38 is covered from above  
5 by an operating panel 40 on which are mounted operating and indicating means. As an example Figs. 2 and 3 show a programmer 41 being mounted on the operating panel 40, the programmer having a setting knob 42. A wiring 43 interconnecting the electric components 37 with the components mounted in the room 38 and on the operating panel 40 is placed in a channel 44 extending along the right edge of  
10 the back wall. In the assembled machine the channel 44 is covered by the bent-over edge 13a of the side wall 13.

The operating panel 40 is swingably mounted on the back wall by two hinges 45, one of which is shown in Fig. 3. The mounting panel also at each side is provided with a curved strip 46 having a correspondingly shaped slit 47 which  
15 engages with a locking screw 48. By this arrangement the operating panel may be set to different angular positions called for to suit different design requirements for alternative models of the same basic washing machine concept. In the set position the operating panel is locked by the screw 48 and a cover 49 is applied to complete the operating panel arrangement. The cover 49 has tabs 50 which may  
20 be inserted in holes 51 in the upper part of the back wall 15. The cover has a flat part 52 which when mounted covers the room 38 in the back wall 15. The flat part is secured to the back wall 15 by screws or the like, not shown.

For draining off water from the washing machine the cabinet has a water through connection 53 consisting of a short tube 54 made integral with the back  
25 wall 15. From outside a pipe joint in the shape of an L-shaped tube 55 is inserted in the short tube 54 and sealing is achieved by an O-ring 56 being mounted in a groove 57 of the L-shaped tube 55 and at its outer periphery abutting the inner surface of the tube 54. The L-shaped tube 55 has a flange 58 which when the tube 55 has been inserted in the tube 54 falls into an angular groove 59 to be  
30 axially clamped between the back end of the tube 54 and a circular retaining edge 60 provided on a conical part 61 being integral with the back wall 15. To make insertion of the tube 55 possible the retaining edge is split into two parts by cut-outs 62. The clamping pressure between parts 54 and 60 is selected so as to secure the tube 55 in place, however permitting the tube 55 to be turned relative  
35 to the tube 54. Suitable hoses may be connected to the free ends of the tubes 54 and 55 respectively.

From the foregoing description it will become clear that the invention provides a washing machine cabinet that does not require a frame as used

heretofore. Instead the different parts forming the cabinet are secured to each other by cooperating projections, holes, studs and recesses. Only to a limited extent screws or the like have been used to join parts together. Accordingly, the assembly of the washing machine including the cabinet of the invention has been

5 drastically simplified and as a consequence the assembly costs have been reduced.

## Claims

1. Top loaded washing machine cabinet comprising a base, a back wall, a top cover including a loading opening covered by a door, a front wall and two side walls, characterized in that the base, the back wall and the top cover are loosely secured to each other by hook-shaped fixing members being provided  
5 on one part and cooperating with hook-receiving locking means provided on the opposite part.
2. Cabinet according to Claim 1, characterized in that the back wall as well as the top cover are made of plastics material, the back wall having at least one hook means insertable in a corresponding hole provided in the base, the  
10 hook means and the hole cooperating to prevent upward movement of the back wall, the back wall further having at least one supporting portion resting on a supporting surface on the base.
3. Cabinet according to Claim 2, characterized in that the back wall has at least one additional hook means of L-shape, one leg of which extending  
15 inwardly under the base and the other leg of which being secured to a side wall of the base by a detachable joint, such as a screw joint.
4. Cabinet according to Claim 3, characterized by two additional hook means being symmetrically arranged on the back wall.
5. Cabinet according to any of the preceding claims, characterized in  
20 that the back wall is provided with supporting surfaces for hook members provided on the top cover, the hook members having locking recesses which cooperate with locking projections on the back wall.
6. Cabinet according to Claim 5, characterized in that at each side the back part of the top cover is provided with elongate supporting arms  
25 constituting the hook members, each supporting arm resting on the supporting surface at a distance from the free end of the supporting arm, said arm close to its free end being provided with a recess which from below engages with a locking stud extending sideways from the back wall.
7. Cabinet according to any of the preceding claims, characterized in  
30 that the front wall and the side walls form a single unit, the free vertical edges of which being bent to be secured to the back wall by screw joints or the like, wherein the upper ends of the side walls and the front wall are bent to form a supporting surface for the top cover as well as a vertical edge which extends parallel to the main part of the respective wall and projects inside a vertical edge  
35 surrounding the top cover, the top cover and the front wall being interconnected by at least one screw joint or the like.

8. Cabinet according to any of the preceding claims, characterized in that the back wall has at least one room in which electric and electronic components are mounted, the room being closable by a cover fixed by screw joints or the like.
- 5 9. Cabinet according to Claim 8, characterized in that one room is provided in the lower part and an additional room in the upper part of the back wall, electric and electronic components being mounted in both rooms and the upper room being closed from above by an operating panel supporting operating and indicating means, the back wall along one of its vertical edges being provided  
10 with a channel taking up the wiring interconnecting components in the lower room with components and operating and indicating means in the upper room, the channel being closed by a bent vertical edge of one of the side walls.
10. Cabinet according to Claim 9, characterized in that the operating panel comprises a supporting plate carrying the operating means such as knobs and  
15 push-buttons and indicating means and cooperating with a cover enclosing the supporting plate, said cover having a vertical part closing the additional room.
11. Cabinet according to Claim 10, characterized in that the supporting plate is pivotally mounted in the upper part of the back wall, the inclination of the supporting plate being settable within an angular range intermediate a plane  
20 parallel to the plane of the top cover and a plane parallel to the plane of the back wall.
12. Cabinet according to any of the preceding claims, characterized in that the back wall has an integral through tube having a free end positioned within the cabinet and connectable to the drainage system of the washing machine, the  
25 tube sealingly and rotatably mounting a pipe joint, the outer end of which being connectable to a drainage hose.
13. Cabinet according to Claim 12, characterized in that the pipe joint has a flange which cooperates with hook members in the back wall to retain the pipe joint in the tube.

1/3

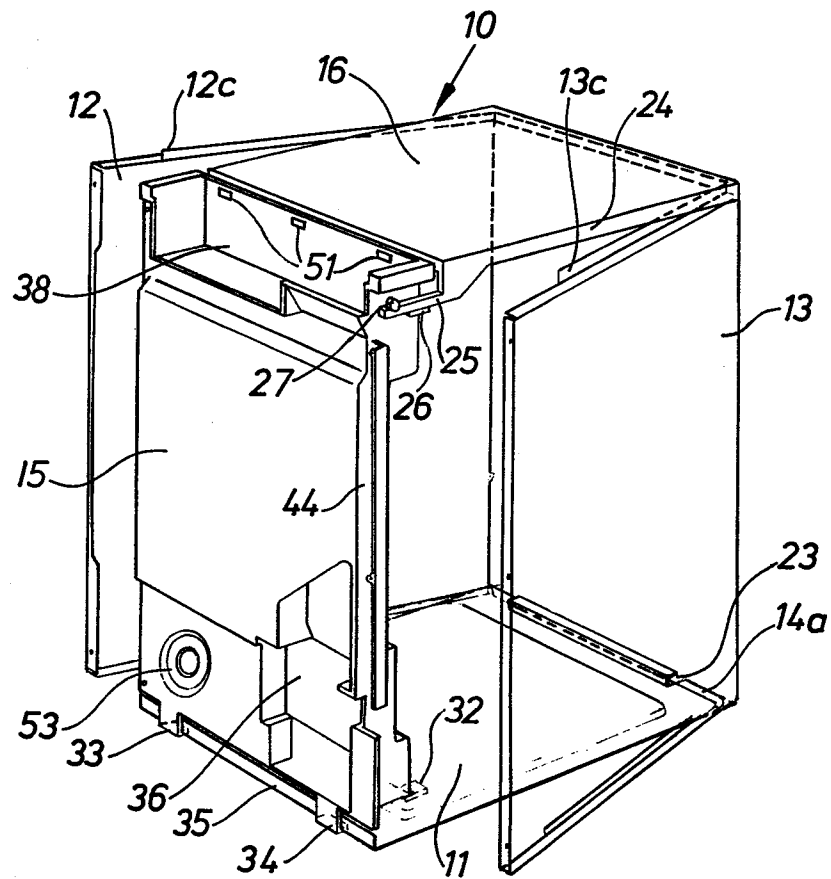


Fig. 1



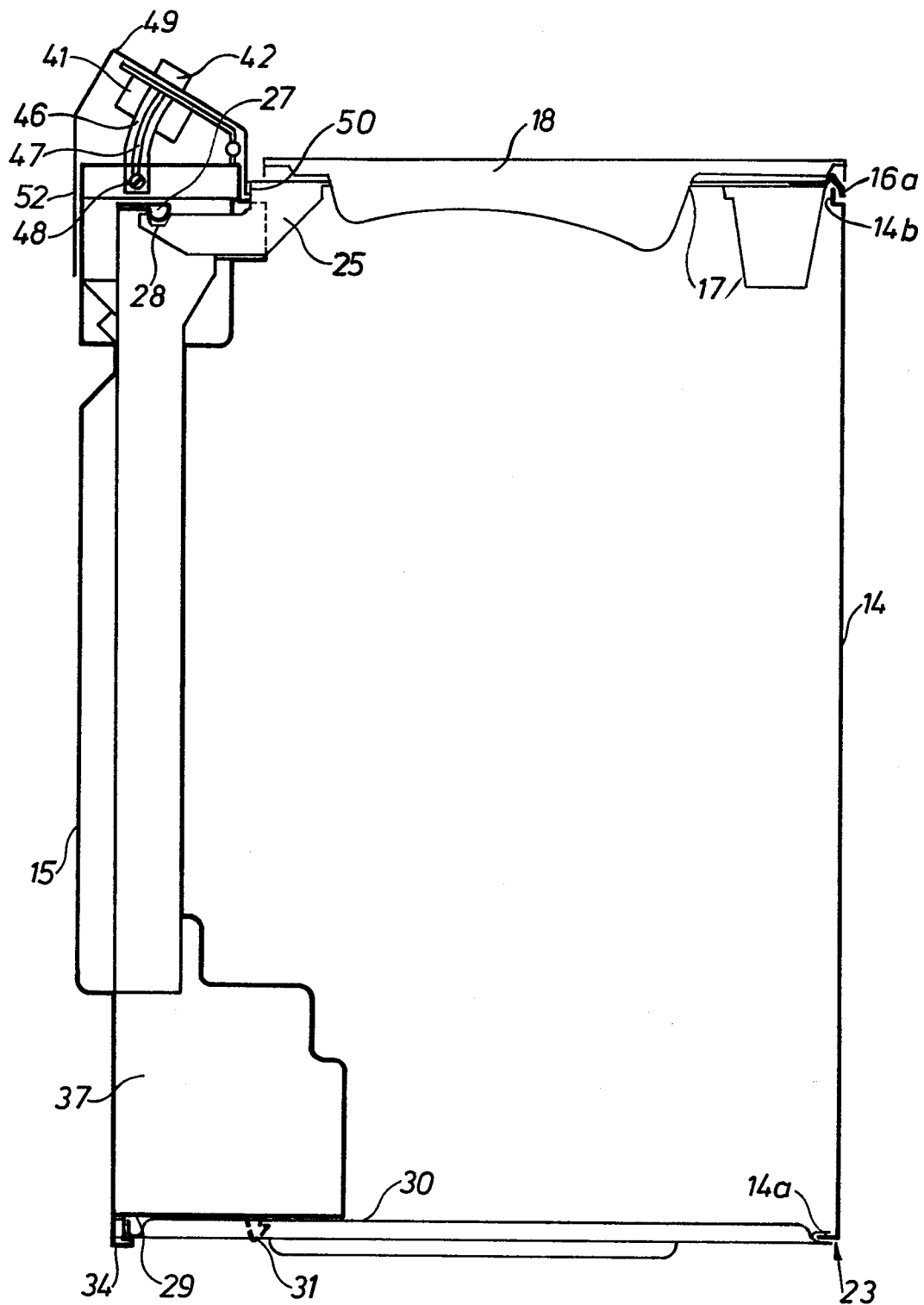


Fig. 2

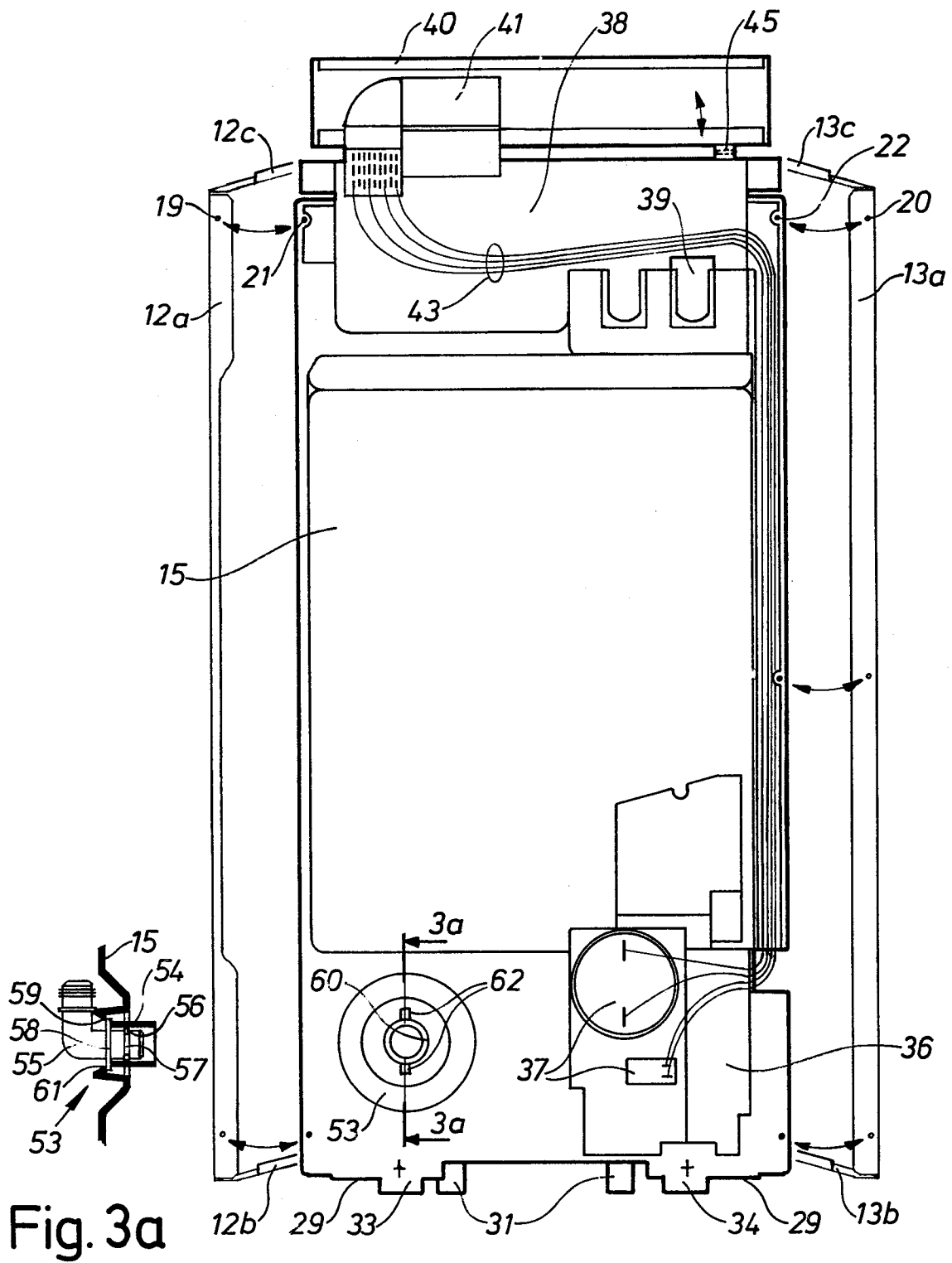


Fig. 3a

Fig. 3