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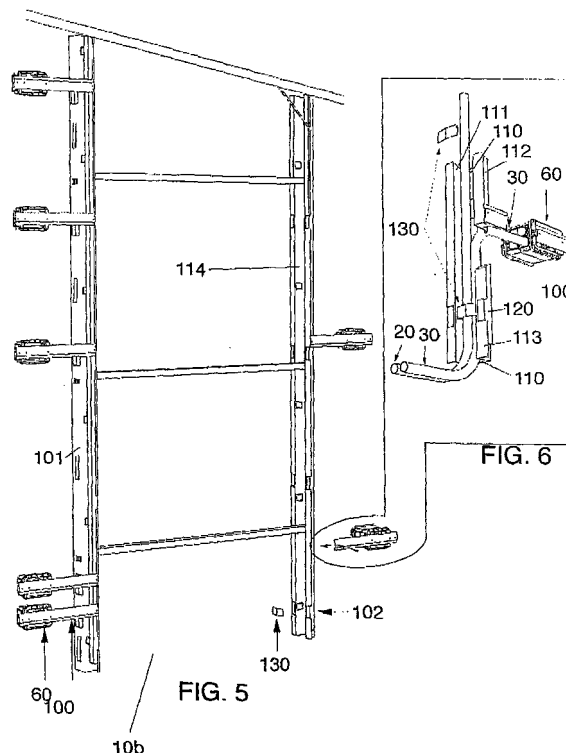
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(54) **Preassembled counterframe for internal wing door and for disappearing sliding door with fairlead technical profile and with box for air conditioner installation**

(57) Counterframe, for an interior door, including two parallel jambs consisting of a first and a second metal profile, connected at the upper end by an orthogonal connecting element and a counterframe for disappearing sliding door including a case intended to receive the plaster or plasterboard coating, an upper crosspiece containing a sliding track, a rabbeted jamb profile that houses the doorpost, in which at least one metal jamb profile has a deep, continuous and rectilinear U-shaped seat turned towards the interior of the counterframe, in which at least one tubular duct held inside said U-shaped seat by clips and with, along the base of the U-shaped seat, some removable sheet metal portions, is longitudinally housed. In one version of the counterframe, the orthogonal connecting element consists of a support box with or without box of the internal split, which is obtained from the coupling of two sheet metal panels which at the two ends are closed by bottom plates which are connected to the fixing upper ends of the first and second jamb profiles.



Description

[0001] This invention refers to a preassembled counterframe for internal wing door and for disappearing sliding door with fairlead technical profile and with box for air conditioner installation. Domain

[0002] Internal doors are well-known; with reference to a partitioned environment they allow, when shut, the definition without interruption of the different areas of the partitioned environment whereas, when open, they allow access. Generally speaking, internal doors are subdivided into wing models and sliding models, the first are the most common whereas the latter, differently from the first, allow the safeguard of spaces. As for wing doors, the parts which make them up are the wing, the counterframe, the fixed frame, the butt-strap or the wire-protector, and finally the movable frame as a part of the hinged wing. The wing is the door portion that can be opened and usually consists of the movable frame and of the blocking plate or panel. The wing moves on a vertical rotation axis and generally, being in interiors, they are made of wood, hollow-core or mirror panelled. The articulation between the wing and the fixed frame can be of the type with spline or flush, where the latter, differently from the first, allows a rotation of the wing by nearly 180°. On the other hand, the counterframe, to which the fixed frame is joined, consists of wooden, metal, or even combined profiles, fixed, with walled-up clamps, and arranged for the assembly of the door fixed frame. The latter, too, consists of profiles that, fixed to the counterframe, carry the binds for the articulation of the movable frame.

[0003] Internal doors, relatively to a partitioned environment, allow, when shut, the definition without interruption of the different areas of the partitioned environment whereas, when open, they allow access. As a rule, internal doors are subdivided into wing models and sliding models, the first are the most common while the latter allow, differently from the first, to safeguard spaces. At present, there is a wide diffusion of doors of the sliding type, which can be used in many architectonic solutions, particularly in those where the limiting of internal spaces together with a minimalist tendency turn out to be relevant elements in the building design. The use of such types of doors enables the use of those spaces that otherwise should be reserved to allow a conventional opening of doors on hinges.

[0004] As a rule, sliding doors of the disappearing type are structured so as to include a series of fixed elements, intended to be integrated into the building structure as well as to constitute, being coated, a wall, and a series of movable parts, which are intended to be used during the installation phase of the door, and which will be subsequently removed. In substance, for example a counterframe is integrated, as a fixed element, into the building structure. The traditional counterframe is made up of at least one case intended to constitute the structure in which the door panel will be contained once the latter is

made to slide until reaching the open position. There is also a rabbeted jamb intended to be fixed to the wall near the vertical profile of the doorframe, opposite the positioning profile of the mentioned case, in order to enable, once shut, the door panel to move next to it. Furthermore, above the case is engaged, being joined to said bearing structure, an upper crosspiece supporting a longitudinal sliding track. The presence of a sliding track is necessary to allow the effective opening and shutting movement of the sliding door. The door is suspended to the mentioned sliding track by means of conventional means, usually of trolley type. In order to allow the door opening and shutting movement, the sliding track, placed on the upper part of the doorframe structure, is provided with sliding means.

[0005] Air conditioning equipment is well-known as well. For example at our latitudes, it is increasingly used not only in working places and in business trades, but also in private houses, with the aim of making home life more comfortable. Generally speaking, said equipment can be monoblock, or divided into two units, essentially a heat-pump and a diffusion device or internal split, and can affect one or more areas of a partitioned environment. In both cases for its rational application an arrangement closer to the boxes is preferred, that is to say to already arranged or anyway rationally arrangeable electric connections, therefore the common habit of arranging the air conditioner in the upper part just above the lintel has increasingly spread, so that, on the one hand, the feeling of temperature change perceived by the user when crossing the intercommunicating rooms is reduced and, on the other hand, it is somehow possible to reduce the path necessary for the wiring of the air conditioner equipment, for example with the possibility to use the necessary boxes close to the light points usually present at the doorway sides. Finally, it is an area that is freer from obstacles than others.

Prior art

[0006] On the applicant's website www.defaveri.it you will find numberless illustrative solutions of counterframe. In particular, the model called "ZX" is representative of a common counterframe. If we examine it, the counterframe appears as an upturned U-shaped structure deriving from the connection of three metallic elements, respectively two vertical jamb profiles and a horizontal crosspiece, joined at right angles to the two upper ends of said jamb profiles. Each profile has a transverse plane section, essentially omega-shaped, in order to present on the face directed towards the interior of the counterframe, the rectilinear seat intended to receive the parts constituting the door fixed frame. Inside the seat, some pockets obtained through shearing and folding, into which some tongues are introduced, obtained at the ends of two transverse templates that give stability to the assembly during the installation and which will later be removed. Finally, on the external face of each jamb profile

and of the crosspiece, some wooden planks, functional to the installation, are joined.

[0007] In patent literature, the use of the counterframe profile to increase the technical capabilities of the counterframe is well-known. ITAN2006A000066 (Brazzoli) describes a counterframe equipped for the possible installation of equipment of various kinds on the blend stop or on the adjacent wall. The solution proposes a counterframe that allows the insertion of pipes or sheaths between the masonry, the counterframe and the door frame. A first solution requires some U-shaped supports to be joined to the counterframe along the internal face to enable the vertical passage of pipes and their retaining behind the profile. The pipes come out of the counterframe, passing through the latter, which is slotted, and are subsequently connected to the boxes to arrange on the wall. A second solution concerns an "L"-section counterframe. The use of L-shaped accessories behind the counterframe is required to enable the passage and the fixing of said pipes along the vertical of the counterframe. A third solution requires the placement - along the external face of the counterframe - of clips that fix the pipes. ITRN2005A000030 (Pollini) describes door and window finishes made up of posts or frames including at least one internal hollow intended to allow the passage of electric cables and at least one passing-through opening suitable to allow the housing of at least one corresponding connecting electrical component. The finishes are provided with at least one complementary box with passing-through opening and a duct housed in the hollow suitable for containing electric cables. ITRN2006A000052 (Matino) suggests a jamb for counterframes of disappearing sliding doors that includes a hollow suitable for allowing the passage of electric cables and the housing of at least one corresponding connecting electrical component. A related electrical connecting device includes a sheath for the housing of electric cables, at least one box for at least one corresponding connecting electrical component and a jamb.

[0008] RU2301314 (Maksimov) proposes a frame suitable for being used in home doors, including a duct housing, on whose side, upper and lower parts, some hollows are made.

[0009] JP601 38342 (Katou et al.) proposes an air conditioner connection. It aims at preventing the formation of flaws in a house and the deterioration of connections, through a system in which a connecting element to connect an external and an internal device, is introduced into a housing of a decorative frame. Finally, ITTR2007A000006 (Soldani et al.) proposes a counterframe provided with a box for the installation of air conditioners of wall split type. The solution concerns the creation of a particular box, of plastic material, that can be assembled directly on the wooden or metal counterframe, with such a coupling that the structural rigidity between the two elements is ensured.

[0010] From everything stated above, we shall therefore consider as known:

- o A door frame or counterframe whose profile is shaped so as to contain cables directed sideways or towards the exterior of the counterframe;
- o A profile to be used in home doors, that includes a duct housing;
- o A frame for aesthetic use as well to allow the support of an air conditioner or internal split and of its connections, including a door frame to which a box or case of plastic material for wall split is joined;
- o A conventional counterframe consisting of jamb profiles with related wall clamps, upper crosspiece and removable connecting templates between the jamb profiles;
- o A counterframe for sliding doors, of the type for plaster or plasterboard, made up at least of a case, an upper crosspiece containing a sliding track, a rabbeted jamb profile.

Drawbacks

[0011] According to the applicant, the above-described solutions have some drawbacks. In particular, the well-known counterframes for wing doors only aim at enabling the anchorage of the fixed frame, in other words they have not offered different functions for a long time, and in particular, as for sliding door counterframes, they do not seem suitable for facilitating the whole installation, even with the contribution of other operations that are usually correlated to them. This is the case, for example, of the necessary arrangement and laying of wirings for the electrical boxes, which are usually placed at the sides and near the opening. In fact, it is well-known that, as is the custom, on one, two or both walls through which the opening - reclosed by the door - is made, some boxes must be arranged at the same height, often aligned one each side and conveniently connected to one another, into which the modules that integrate sockets and control push buttons of various kinds, both high and low, will later be inserted. The boxes must enable the connection to the power supply system, and always require the previous execution of chases along the masonry to allow the integration of ducts or pipes, through which the connection and supply cables etc. will later be passed. This is obviously a laborious operation, that requires a lot of manual ability and skilled staff, which significantly affects both required execution times and related costs.

[0012] A second drawback concerns the ducts and the connections already laid inside the relative chases, therefore integrated into the wall perimeter at the door sides. This is a situation that exposes them to usual dangers, due to the unskilfulness of people who, unaware of the location of lines, tend to drill walls everywhere. Therefore, it is not infrequent to drill holes exactly on them, consequently damaging at least the ducts if not even the supply lines, circumstances which can obviously imply objective dangers and system malfunctions.

[0013] Another drawback can be traced back to the fact that the lines that lead to the boxes cannot be

checked or, better, when an intervention is required, even just to repair a banal failure along the system, it will be necessary, first of all, to find the exact location of the ducts and then to break the plaster to reach them in the underlying area.

[0014] Another drawback concerns the fact that the installation of the air conditioner, that is of the seat suitable for containing and fixing the internal split, where provided, in the area just above the doorway, at present is carried out in different ways and at different times from the usual counterframe setting. Actually, these circumstances very significantly affect times and costs as well as the execution quality of the work.

[0015] Considering all this, the enterprises of the sector reasonably need to find innovative solutions able to overcome at least the above mentioned problems.

Summary of the invention

[0016] These and other aims are achieved through the present invention according to the features described in the enclosed claims, solving the arising problems by means of a counterframe, for an interior door, including two parallel jambs consisting of a first and a second metal profile, connected at the upper end by an orthogonal connecting element and a counterframe for disappearing sliding door including a case intended to receive the plaster or plasterboard coating, an upper crosspiece containing a sliding track, a rabbeted jamb profile that houses the doorpost, in which at least one metal jamb profile has a deep, continuous and rectilinear U-shaped seat turned towards the interior of the counterframe, in which at least one tubular duct held inside said U-shaped seat by clips and with, along the base of the U-shaped seat, some removable sheet metal portions, is longitudinally housed. In one version of the counterframe, the orthogonal connecting element consists of a support box with or without box of the internal split, which is obtained from the coupling of two sheet metal panels which at the two ends are closed by bottom plates which are connected to the fixing ends of the first and second jamb profiles. **Aims**

[0017] In this way, through this considerable creative contribution, whose effect represents an immediate and not negligible technical advance, different and notable aims are achieved.

[0018] A first aim was to obtain a counterframe suitable for the installation of internal wing doors and for sliding doors, in which at least one jamb, on the face directed towards the interior of the counterframe, is provided with a space to firmly lodge, through an effective restraint system, the ducts, such as tubes or pipes, letting electric lines or even fluids pass through them, as well as allowing earthing arrangement. In this way, with the created technical space, the layer avoids breaking the wall for the execution of the chases suitable for arranging the ducts of connection to the switch and socket boxes and to the technical hollows close to the door, and simply sets only the counterframe already prepared for the electrician's

intervention. As far as prior art is concerned, differently from ITAN2006A000066 (Brazzoli) the pipes, ducts or cables are housed inside and not outside the profile, that is to say along the seat obtained on the inner face of the counterframe jambs, whereas in ITAN2006A000066 (Brazzoli) said pipes are only next to and fixed to the corresponding jamb by means of U-shaped or L-shaped stirrups or bolts. Therefore, ITAN2006A000066 (Brazzoli) does not provide a continuous and uniform housing, and thus the pipes can be particularly exposed to the aggression of degenerative phenomena or subject to damages of various kinds due to unskilfulness, in conclusion being not particularly protected. As regards ITRN2005A000030 (Pollini) and ITRN2006A000052 (Matino), they propose a duct doorpost or jamb, however, the ducts or hollows are obtained from the opening on the wall side, not directed towards the interior of the counterframe, with the aim of housing switches and sockets. On the contrary, in the solution object of this invention this is not possible, because each jamb must be assisted by stirrups for the positioning and support of the switch and socket boxes that protrude at right angles from the counterframe profile and are fixed to it. In this way a conventional arrangement of electrical sockets and of switches is possible, behind the jamb, differently from ITRN2006A000052 (Matino) where, on the other hand, the sockets and switches are arranged along and near the jamb. Enabling the conventional wall arrangement of the switch and socket boxes, which is one of the aims of this invention, allows the user to keep a usual and uniform configuration with reference to the other sockets and switches inside the wall perimeter which are all notoriously placed at a certain distance from the door post or frame, a circumstance that simplifies their location, the arrangement of multiple solutions and safe operation.

[0019] A second aim of the counterframe with fairlead profile is to protect the ducts and the supply lines that run through them as, being housed along the metal structure, their exposure and the probability to damage them, due to the unawareness of their position, are significantly reduced.

[0020] A third aim concerns the previous arrangement, along at least one jamb and at standard height, of the holes for the exit of the ducts that supply the various electric points that can be placed on the wall.

[0021] A fourth aim concerns the fact that an easy check of pipes is made possible, as they are not walled up, by simply removing the door post.

[0022] A fifth aim concerns the fact of having already arranged above the door, a structure to finish - and therefore not complete - in this case a box to plaster with a space suitable for the passage of pipes and the built-in box holder, a box that is usually walled up distinctly from the counterframe. In the solution suggested by ITTR2007A000006 (Soldani et al.), it is a box or case of plastic material, which is joined to the counterframe, whereas in the solution object of this invention, it is a structure that is suitable for the support of the box and is

an integral part of the counterframe.

[0023] Another aim can be referred to the stirrups for the arrangement and support of the switch and socket boxes, which are used as support and alignment. The technician currently arranges the box by means of plaster paying attention to their alignment.

[0024] To conclude, these advantages have the not negligible merit of obtaining a counterframe with a good technological content, which favours and simplifies its installation, speeding up execution times with a significant reduction of labour costs.

[0025] These and other advantages will emerge from the following detailed description of a preferred solution with the aid of the enclosed schematic drawings, whose execution details are not to be considered as restricting but only and exclusively as illustrative.

Content of the drawings

[0026]

- o Figure 1 is a front and whole view of the counterframe for wing door object of this invention with fairlead profile;
- o Figure 2 is a side view of the counterframe of Figure 1;
- o Figure 3 is a plan view of the counterframe of Figure 1;
- o Figure 4, is a side-front view of the counterframe of Figure 1;
- o Figure 5 is a side-front view of a first version of the counterframe of Figure 1, along whose jambs some stirrups for the support of switch and socket boxes are joined;
- o Figure 6 is a detail view, inner side, of the counterframe of Figure 5 to which two ducts are joined;
- o Figure 7 is a detail view, outer side, of the counterframe of Figure 5;
- o Figure 8 is a front and whole view of a third variation to the counterframe object of this invention, provided with box supporting the internal split;
- o Figure 9 is a side view of the counterframe of Figure 8;
- o Figure 10 is a plan view of the counterframe of Figure 8;
- o Figure 11 is a side-front view of the counterframe of Figure 8;
- o Figure 12 is an exploded view of the counterframe of Figure 1;
- o Figure 13 is a detail view of the particular A of Figure 12;
- o Figure 14 is a detail view of the particular B relative to the connection of the crosspiece to the two jamb profiles;
- o Figure 15 is an exploded view of the counterframe of Figure 8;
- o Figure 16 is a detail view of the particular A of Figure 15;

o Figure 17 is a detail view of the particular B relative to the assembly of the box on the jamb profiles of the counterframe of Figures 15 and 8;

o Figures 18, 19, 20 and 21 are views of one of the fixing clips of the ducts to the jamb profiles of the counterframe of Figures 1, 5 and 8;

o Figures 22, 23, 24 and 25 are views of the support stirrup of the switch and socket box joined to the counterframe of Figure 5;

o Figures 26 and 27 are detail views of an example of application of the clips to the jamb profiles of the counterframe;

o Figure 28 is a whole view of the counterframe for disappearing sliding door, object of the invention with fairlead jamb profile;

o Figure 29 is a detail view of the rabbeted jamb profile of the counterframe of Figure 28, with the support stirrup of the switch and socket box;

o Figure 30 is a whole view of the counterframe for disappearing sliding door of Figure 29 that is pre-arranged for air conditioner installation;

o Figure 31 is a detail view of the anchorage device of cables or pipes of the counterframe for sliding door of Figures 28 and 30;

o Figure 32 is a detail view of the rabbeted jamb profile of the counterframe of Figures 28 and 30, with the support stirrup of the switch and socket box;

o Figure 33 is a detail view of the break along the jamb profile for the clip insertion;

o Figure 34 is a detail view of the perforated sheet metal along the rabbeted jamb profile.

Practical execution of the invention

[0027] The present innovation refers to a counterframe (10a), and its variations (10b, 10c, 10d, 10e), (Figures 1, 5, 8) and (Figures 28, 30) that is functional to the pre-arrangement of walls for the following installation of an internal door, of the wing type and for sliding doors. The counterframe (10a, 10b, 10c), consists of two metal fairlead technical jamb profiles (101 and 102), vertically oriented and mirror-like, with a rectilinear development, connected by a connecting element (103, 40) that in the solution of Figures 1 and 5 consists of a crosspiece (103), whereas in the solution of Figure 8 is represented by a support box (40) with or without box of the internal split. Every jamb profile (101, 102) has a transverse plane section (see Figures 5 and 6) that essentially is U-shaped which develops longitudinally obtaining the seat (114), with a bottom (110) from which two sides (111, 112), parallel to each other and at right angles with the bottom (110), rise. Each side (111, 112), of every jamb profile (101, 102), has at its end, the edge (113) outward bent and folded at right angles, in a discontinuous way, so as to obtain on each side, a respective seat, outside the sides (111, 112), along which a rectilinear wooden plank is received (120).

[0028] Each jamb profile (101, 102) (see Figures 1, 5,

6 and 8) is opposed and mirror-like with respect to the other, so as to provide towards the interior of the counterframe (10a, 10b, 10c) the U-shaped seat (114), defined by the sides (111, 112) and bottom (110), said U-shaped seat (114) is deep enough to house on the bottom (110) at least one tubular duct (20, 30), without protruding from said sides (111, 112). The diameter of the duct (20, 30) is not greater than the measure of the depth of the U-shaped seat (114), so that the duct (20, 30), or even at least one cable, can be housed and longitudinally secured inside said U-shaped seat (114). More specifically, the fixing of the duct (20, 30) inside the U-shaped seat (114) on one, two or both jamb profiles (101, 102) occurs by means of clips (130) and of tongues (116), and can either be carried out after the setting of the counterframe (10a, 10b, 10c) only, or be an integral part of it, consisting of at least one duct (20, 30) which can also be preassembled. As for the clips 130 (see Figures 1 8, 21), each of them is made up of a small metal plate, obtained through sheet metal press shearing, with a substantially rectangular shape folded so as to obtain two symmetric wings, that are arranged at an obtuse angle between 91° and 179°. Centrally, corresponding to the "Z" folding axis, lies a hole (131), whereas along the two smaller sides (132, 133) are obtained, on each smaller side, two protrusive points (134, 135). Each clip (130) (Figures 6, 26 and 27) is introduced into the U-shaped seat (114) of the respective jamb profile (101, 102) and transversally placed across the ducts (20, 30), with the blunt angle directed towards the interior of the U-shaped seat (114), so that the respective points (134, 135) stand along the inner faces of the sides (111, 112) inserted in slits (116a). Some foldable tongues (116) concur to the fixing of the duct (20, 30), and are cut out along at least one of the two sides (111, 112) (Fig. 13), in this case in the same position on both sides, and aim at favouring the blocking function of the ducts (20, 30), whereas the related slit (116a) obtained at the base of each foldable tongue (116), needs the related clip (130) to effectively arrange at least one of the two pointed ends (134, 135).

[0029] Every jamb profile (101, 102) is provided, on the bottom (110) of the U-shaped seat (114), with pre-traced portions of removable sheet metal (104), where the latter are arranged at standard heights and longitudinally aligned, so that, when required, the removal (Figures 6, 26) is made possible in order to enable the passage of the duct (20, 30) or even of the simple connecting cable or of any other connecting means through the jamb profile (101, 102). On the pre-traced portions of removable sheet metal (104) (Fig. 7) are engaged, at the sides of the jamb profiles (101, 102) of the counterframe (10b) (see Fig. 5), some stirrups (100) supporting the switch and socket box (60). In this case, the stirrups (100), that consist of rectilinear segments of metal profile with omega-shaped section, are joined to the jamb profiles (101, 102) with the end (100a) near the external side of one of the two sides (111, 112) of at least one of the two jamb profiles (101, 102). Even more specifically, to favour spirit

levelling, the stirrups (100), at the ends (100a), are provided with joints (100b) (see Fig. 23) into which a part of the edge (113) of the jamb profiles (101, 102) is introduced.

[0030] In Figures 1 and 5, that depict the counterframe (10a, 10b) in the version without box holding the internal split (40), the jamb profiles (101, 102), are joined on the upper part (see Fig. 14) by a connecting element (103), which consists of a crosspiece with metal profile substantially having the same section as the jamb profiles (101, 102) (Fig. 12). More specifically, the connection between the connecting element (103) and the jamb profiles (101, 102) (Fig. 14) is obtained inserting the pair of foldable wings (115), at the upper end (101 a, 102a) of the jamb profiles (101, 102), into openings (118) obtained on the heads (103a, 103b) of the connecting element (103) (see Figures 12, 14). More specifically, the two heads (103a, 103b) of the connecting element (103), that are partially devoid of the folded edge (113), overlap the upper ends (101a, 102a) of the respective jamb profiles (101, 102), so that the wings (115) are inserted into the openings (118), and therefore folded on the edge (113), while the protruding lip portion (117) of the respective jamb profiles (101, 102) closes the heads of the connecting element (103).

[0031] The counterframe (10c) displayed in Figures 8, 15, similarly includes the two jamb profiles (101, 102), joined at the upper end (101 a, 102a) to the box (40) that is intended for the support of the box of the internal split. In this case, the box (40) is obtained by parallelly connecting two shaped sheet metals (401, 402), hooked up to each other along the upper profile and closed on the head by a corresponding bottom plate (403) on each side (Fig. 17). Each of the two shaped sheet metals (401, 402) has a rectangular opening (404) and supports, on the respective external face, below the opening (404), longitudinally anchored, a spacing stave (405). The spacing stave (405) by means of locks (406) placed across it, supports an electro-welded metallic net (407) supporting the plaster, open on the rectangular opening below (404). The bottom plate (403), that closes the heads of the box (40), is obtained from a profile with U-shaped section and with, along the two parallel sides, some tongues (408) that during the assembly enter the seats (409) obtained near the vertical edges of the two shaped sheet metals (401, 402). The box (40) fixing to the upper end (101 a, 102a) of the jamb profiles (101, 102) occurs as displayed in Figure 17. More specifically, the upper end (101 a, 102a) of the jamb profiles (101, 102), that includes the lip (117) as prolongation of the bottom (110), enters the back part of the bottom plate (403). In this way the lower profile of the box (40) leans with its edge (113a) on the corresponding edge (113) of the jamb profiles (101, 102), so that the tongues (115) enter corresponding slits (119), obtained along the edge (113a) of the box (40) and then rotated by 90° closing the assembly. Finally, sealing screws can be used to firmly secure the box (40) to the jamb profiles (101, 102). Finally, in this case too, the

counterframe (10c) can be provided with similar stirrups (100) supporting the switch and socket box (60).

[0032] With the aim of stabilizing the counterframe (10a, 10b) and (10c), between the two jamb profiles (101, 102) a series of spacing crosspieces and templates (50) is joined with the involvement in the solution (10a, 10b, 10c) of a removable anti-deformation angular rod (51). The anti-deformation angular rod (51) at one end is secured to one of the two jamb profiles (101, 102), whereas at the other end is secured to the connecting element (103). Finally, each spacing crosspiece and template (50) is provided, at its two ends, with a downward folded tongue which is introduced into corresponding pockets located near the bottom (110) of the jamb profiles (101, 102).

[0033] As for the solution of counterframe for disappearing sliding door (10d) (Fig. 28), and its variation with arrangement for air conditioner installation (10e) (Fig. 30), it is functional to the pre-arrangement of walls for the following installation of a door, of the sliding type. The counterframe for disappearing sliding door (10d, 10e) includes a case (70) intended to receive the plaster or plasterboard coating, an upper crosspiece containing a sliding track (71), a rabbeted jamb profile (72) that houses the door post. At least the rabbeted jamb profile (72) is the fairlead technical profile with, on the side facing the case, a deep seat (114) with a U-shaped transverse plane section, continuous and with rectilinear development, in which at least one cable or tubular duct is longitudinally received (30), held inside the U-shaped seat (114) by clips anchorage means (130) and with, along the base of the U-shaped seat (114), some perforated portions (104) (Fig. 34) of removable sheet metal. In one version of the counterframe for sliding door (10e), the upper crosspiece containing a sliding track (71) holds the support box (40) with or without box of the internal split. The box (40) is, like for the solution of the counterframe (10c), obtained through the coupling of at least two sheet metal panels, closed at the two side ends by bottom plates connected to the upper ends of fixing to the case (70) on the one hand and to the rabbeted jamb profile (72) on the other hand. Along the rabbeted jamb profile (72), turned towards the external side, at least one stirrup (100) is joined for the support of the switch and socket box (60), said stirrup (100) is engaged perpendicularly to the rabbeted jamb profile (72) (Figures 28, 32).

Key

[0034] 10a, 10b and 10c counterframe for wing door, 101 and 102 metal profiles, 103 crosspiece connecting element, 40 box connecting element, 1 00 stirrup supporting switch and socket box, 100a stirrup supporting switch and socket box anchorage end, 100b stirrup joints, 110 bottom,

111 and 112 sides, 113 edge, 1 20 wooden profile, 114 U-shaped seat (114), 20, 30 tubular duct, 130 clips, 116 tongues, 116a slits, 11 7 jamb profile lip, 131 hole, 132 and 133 two smaller sides, 134 and 135 protrusive points, 104 pre-traced portions of removable sheet metal, 115 foldable tongues, 101 a, 102a upper ends of the jamb profiles 101, 102, 118 openings, 103a and 103b heads, 119 box slits, 401, 402, shaped sheet metals, 403 bottom plate, 404 rectangular opening, 405 spacing stave, 406 locks, 407 electro-welded net, 408 tongues, 409 seats, 113a edge, 50 spacing crosspieces and templates, 51 angular rod, 60 switch and socket box, 10d, 1 0e counterframe for disappearing sliding door 70 case, 71 upper crosspiece containing a sliding track, 72 rabbeted jamb profile.

Claims

1. Counterframe (10a, 10b, 10c) for an interior wing door, including two parallel jambs consisting of a first and a second metal profile (101, 102), connected at the upper end by an orthogonal connecting element (103, 40), and counterframe (10d, 10e) for sliding door including at least one case (70), in which the metal profile (101, 102, 72) longitudinally has a rectilinear seat (114), that houses at least one tubular duct (20, 30) held inside the seat (114), where said counterframe (10a, 10b, 10c, 10d, 10e) is **characterised in that** each seat (114) of the jamb profile (101, 102, 72) is directed towards the interior of the counterframe (10a, 10b, 10c, 10d, 10e) and has a U-shaped section on transverse plane, with a bottom (110) from which two sides (111, 112), parallel to each other and at right angles with the bottom (110), rise, and furthermore in which each jamb profile (101, 102, 72) is provided, on the bottom (110) of the U-shaped seat (114), with pre-traced portions of removable sheet metal (104), arranged at standard

heights and longitudinally aligned.

2. Counterframe for an interior door, according to claim 1, **characterised in that** the U-shaped seat (114), defined by the sides (111, 112) and bottom (110), is sufficiently deep to house on the bottom (110), without protruding from the sides (111, 112), at least one tubular duct (20, 30), where the diameter of the duct (20, 30) is not greater than the measure of the depth of the U-shaped seat (114).
3. Counterframe for an interior door, according to the previous claims, **characterised in that** the tubular duct (20, 30) inside the U-shaped seat (114) is fixed by means of clips (130) and tongues (116).
4. Counterframe for an interior door, according to the previous claims, **characterised in that** the upper part of the jamb profiles (101, 102, 72) of the counterframe (10a, 10b, 10d) is connected by a connecting element (103, 71) that consists of a crosspiece with metal profile having the same section as the jamb profiles (101, 102, 72) in which the connection between the connecting element (103, 71) and the jamb profiles (101, 102, 72) is obtained inserting the pair of foldable wing (115), obtained at the upper end of the jamb profiles (101, 102, 72) into openings (118) obtained on the heads of the connecting element (103, 71).
5. Counterframe for an interior door, according to claims 1 to 3, **characterised in that** the counterframe (10c, 10e) at the upper end of the jamb profiles (101, 102, 72) is joined to the box (40) that is intended for the support with or without box of the internal split.
6. Counterframe for an interior door, according to claims 1 to 3 and 5, **characterised in that** the box (40) is obtained by parallelly joining the two shaped sheet metals (401, 402), hooked up to each other along the upper profile and closed on the head by a bottom plate (403) on each side, and in which each of the two shaped sheet metals (401, 402), is provided with a rectangular opening (404) and, on the respective external face, supports, below the opening (404), longitudinally anchored, a spacing stave (405) that, by means of locks (406) placed across it, supports an electro-welded metal net (407) supporting the plaster, open on the rectangular opening below (404).
7. Counterframe for an interior door, according to claims 1 to 3 and 5, 6 **characterised in that** the bottom (403) that closes the heads of the box (40) is obtained from a U-shaped profile with, along the two parallel sides, some tongues (408) that during the assembly enter the seats (409) obtained in proximity of the ends of the shaped sheet metals (401, 402) and in which the fixing of the box (40) to the upper end of the jamb profiles (101, 102, 72) makes the lip (117), as prolongation of the bottom (110), enter the back part of the bottom plate (403) so that the lower profile of the box (40) leans with its edge (113a) on the corresponding edge (113) of the jamb profiles (101, 102, 72); the tongues (115) are introduced into corresponding slits (119), obtained along the border (113a) of the box (40) and then rotated by 90° closing the assembly.
8. Counterframe for an interior door, according to the previous claims **characterised in that** the clips (130) are made of small metal plates, obtained through sheet metal press shearing with a substantially rectangular shape, folded at an angle of less than 180° and with, centrally, corresponding to the folding axis, a hole (131), whereas along the two smaller sides (132, 133) are obtained, on each smaller side, two protrusive points (134, 135); each clip (130) is introduced in the U-shaped seat (114) into the holes (116A) of the respective jamb profile (101, 102, 72) and transversally placed across the ducts (20,30), with the concave side directed towards the interior of the seat (114) so that they rest along the internal faces of the sides (111, 112).
9. Counterframe for an interior door, according to the previous claims **characterised in that** the foldable tongues (116) are cut out along at least one of the two sides (111, 112) with a related slit (116a) obtained at the base of each of them inserting at least one clip (130) with protrusive points (134, 135).
10. Counterframe for an interior door, according to the previous claims **characterised in that** on the pre-traced portions of removable sheet metal (104) are engaged, at the sides of the jamb profiles (101, 102, 72) of the counterframe (10a, 10b, 10c, 10d, 10e), some stirrups (100) supporting the switch and socket box (60), joined to the jamb profiles (101,102, 72) with the end (100a) near the external side of the sides (111, 112) of the jamb profiles (101, 102, 72), and furthermore in which the stirrups (100), at the ends (100a), are provided with joints (100b) into which a part of the edge (113) of said jamb profiles (101,102, 72) is inserted.

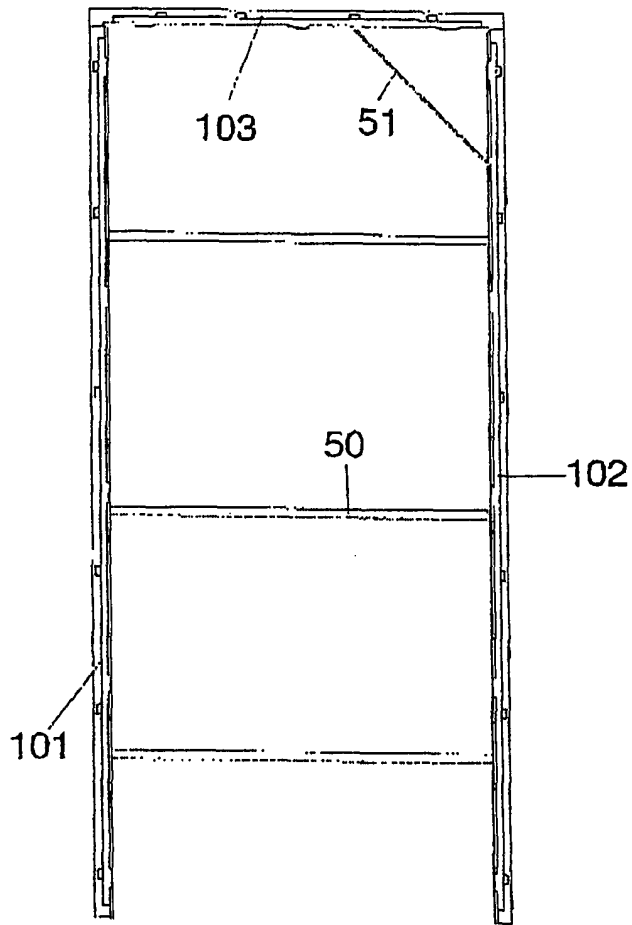


FIG. 1

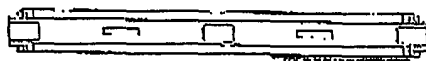


FIG. 3

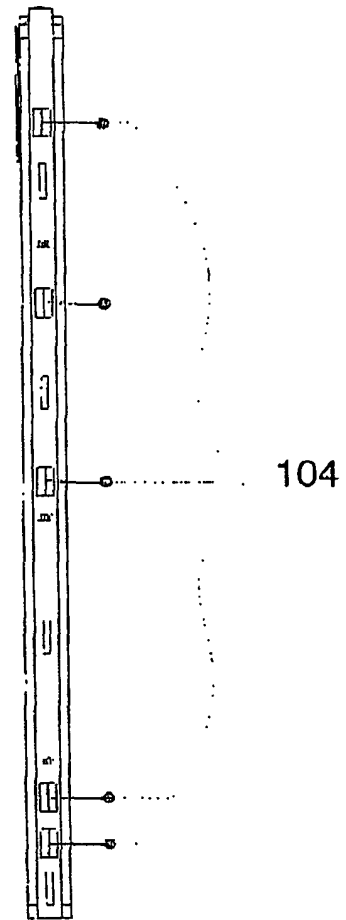


FIG. 2

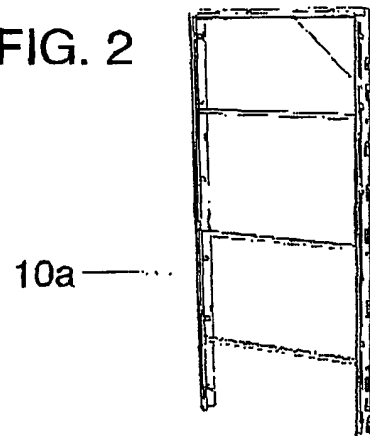
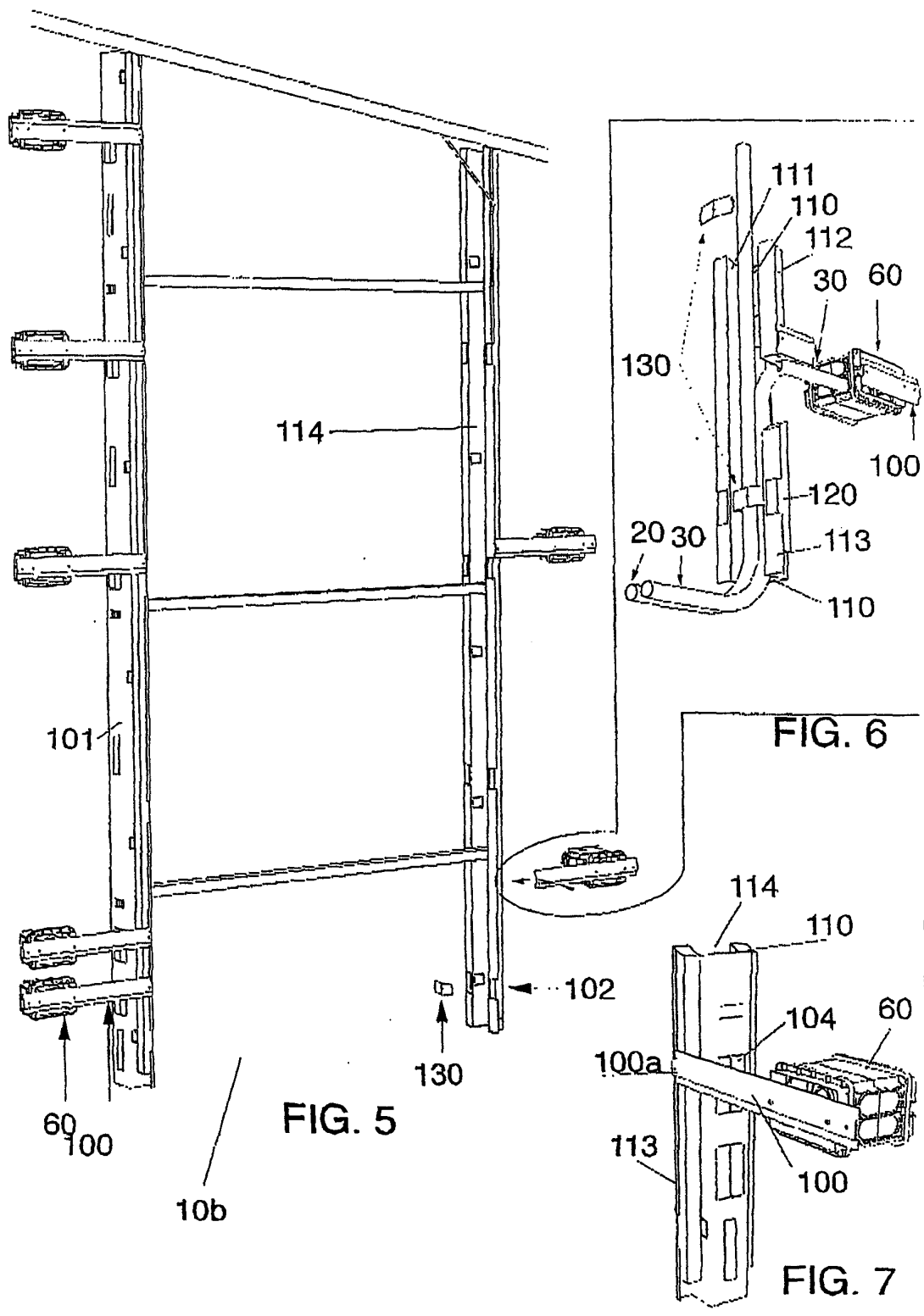


FIG. 4



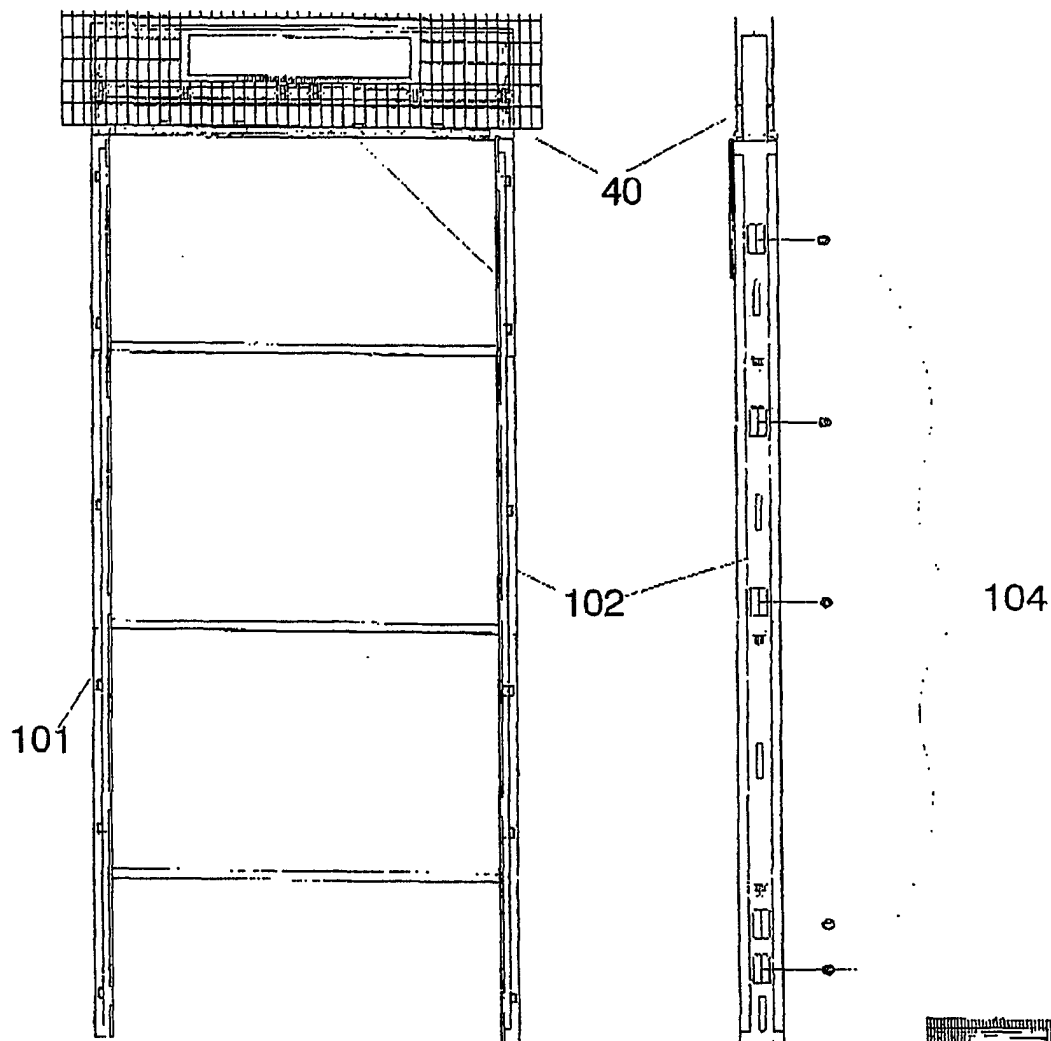


FIG. 8

FIG. 9

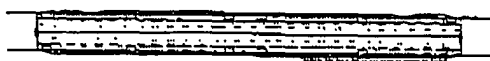


FIG. 10

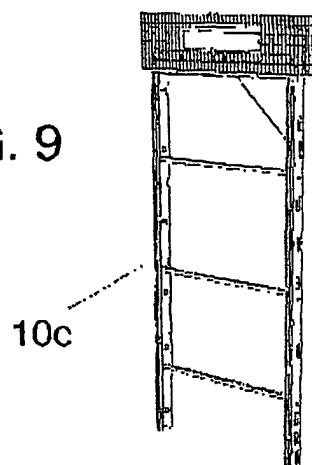
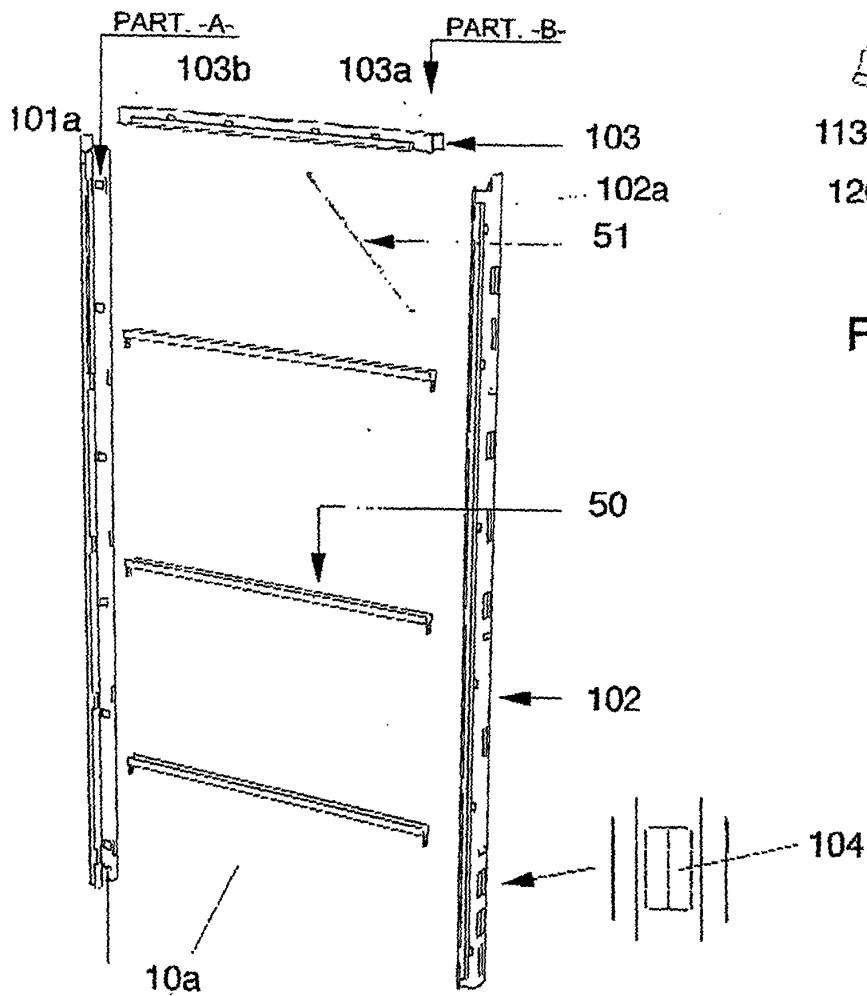
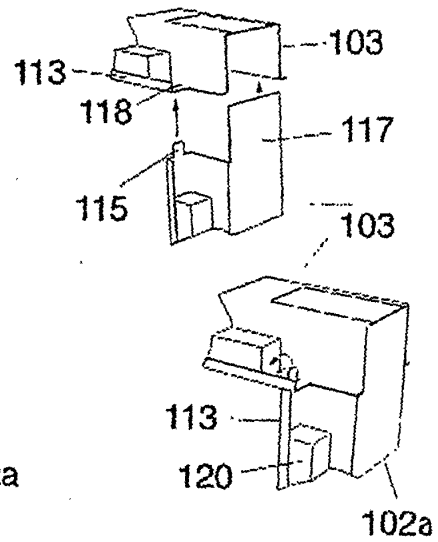
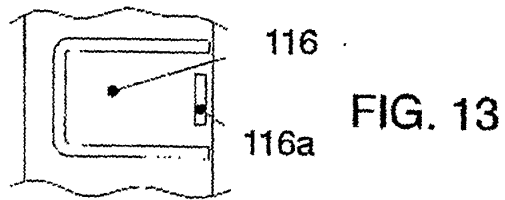
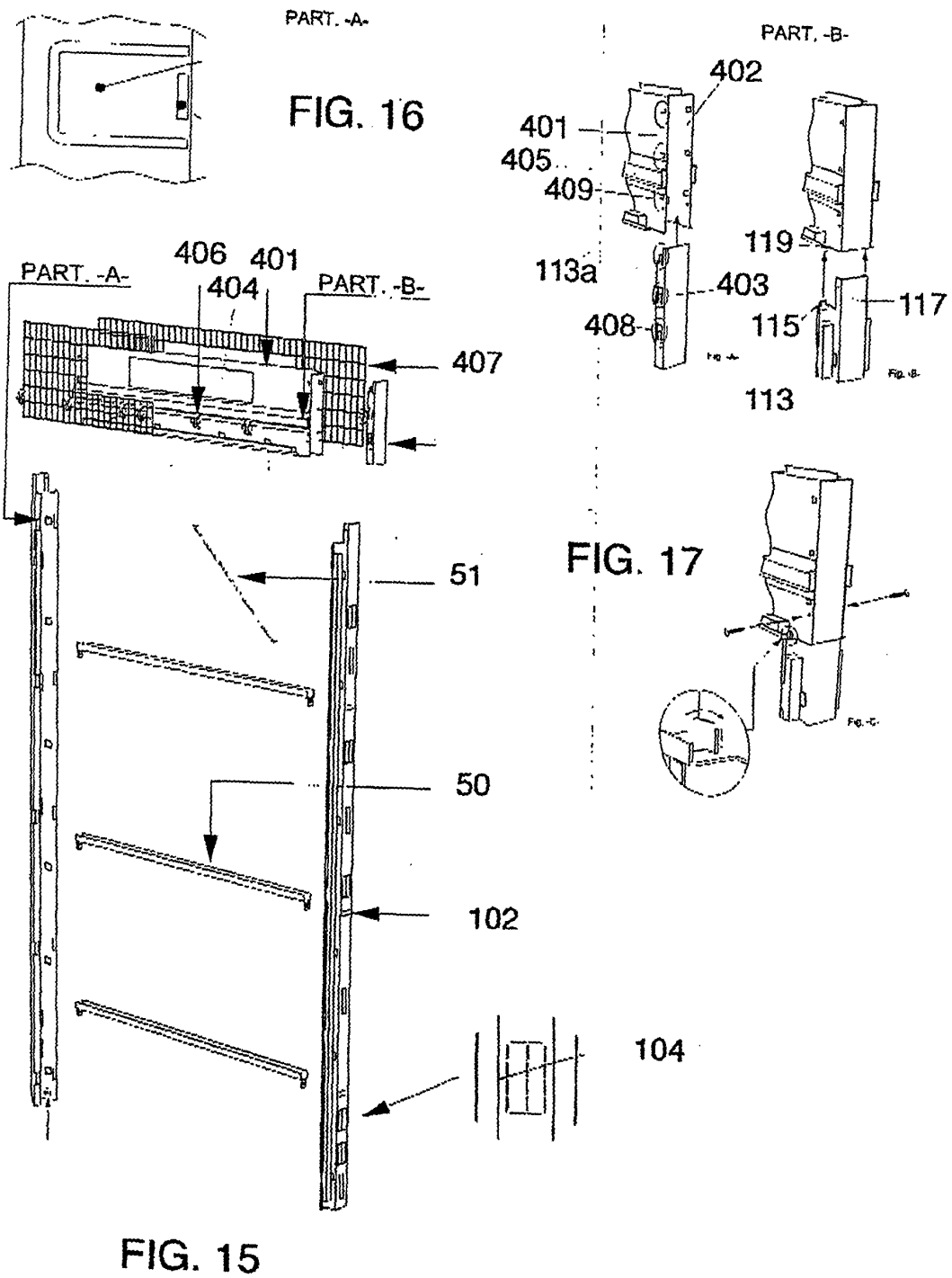


FIG. 11





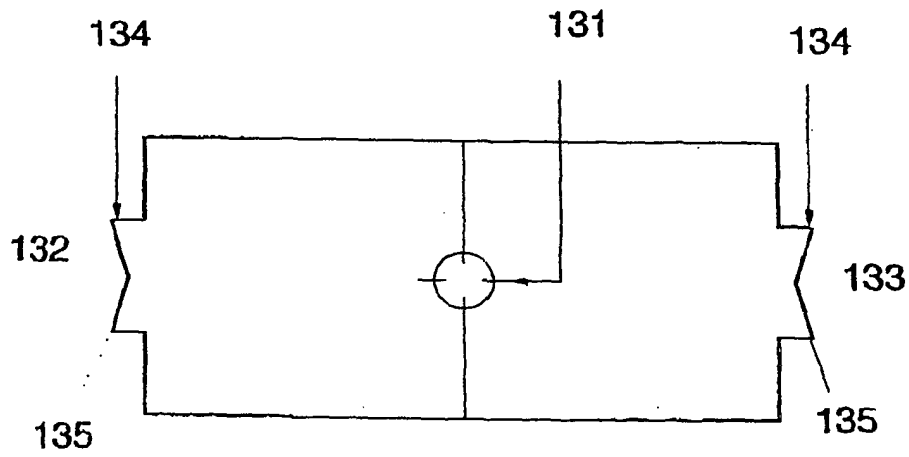


FIG. 18

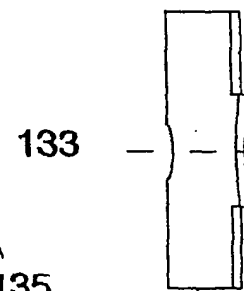


FIG. 19

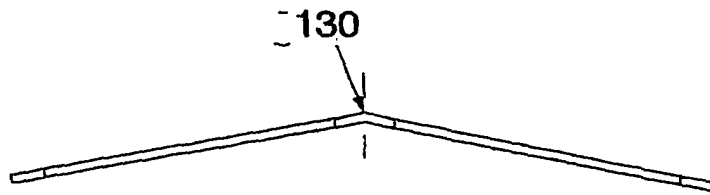


FIG. 20

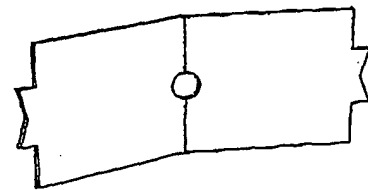


FIG. 21

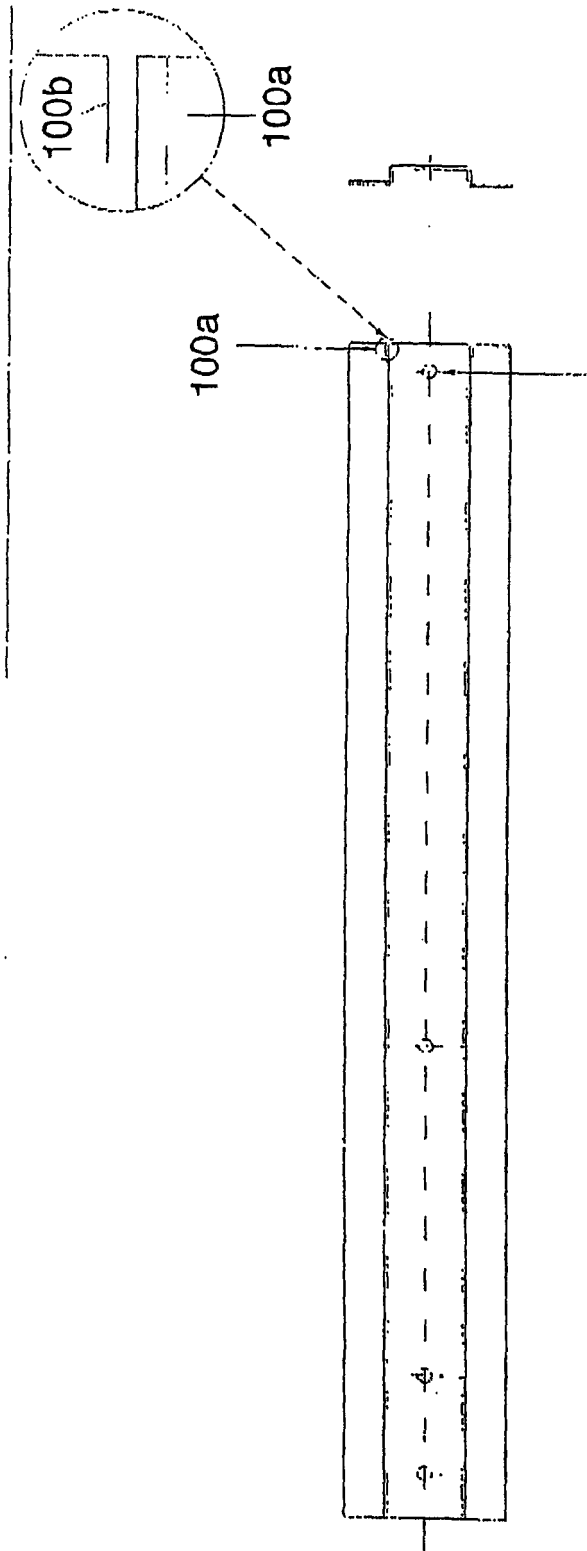


FIG. 23

FIG. 22



FIG. 24

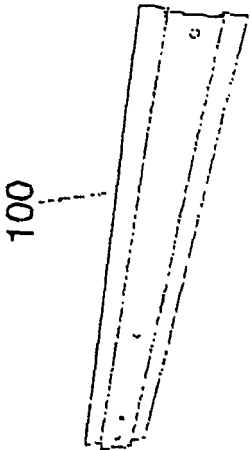


FIG. 25

100

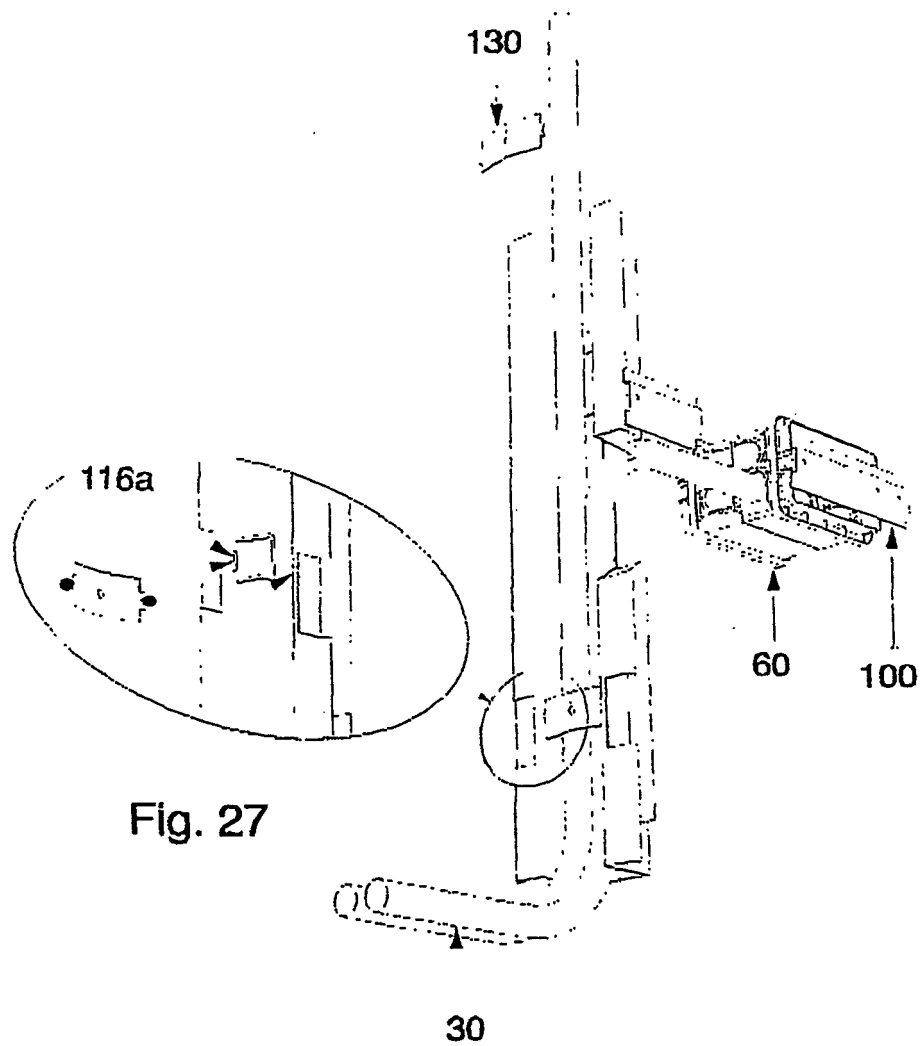
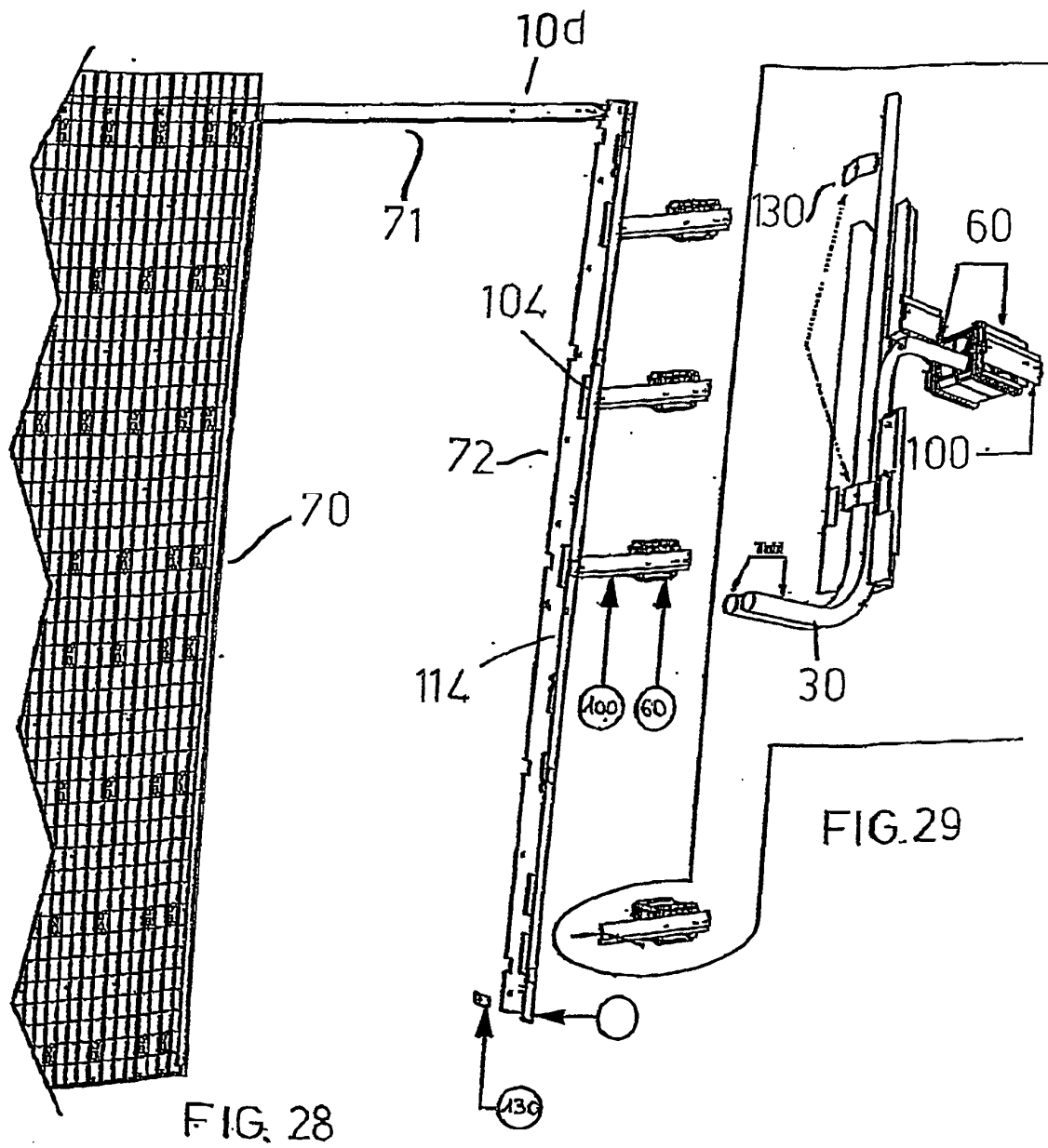
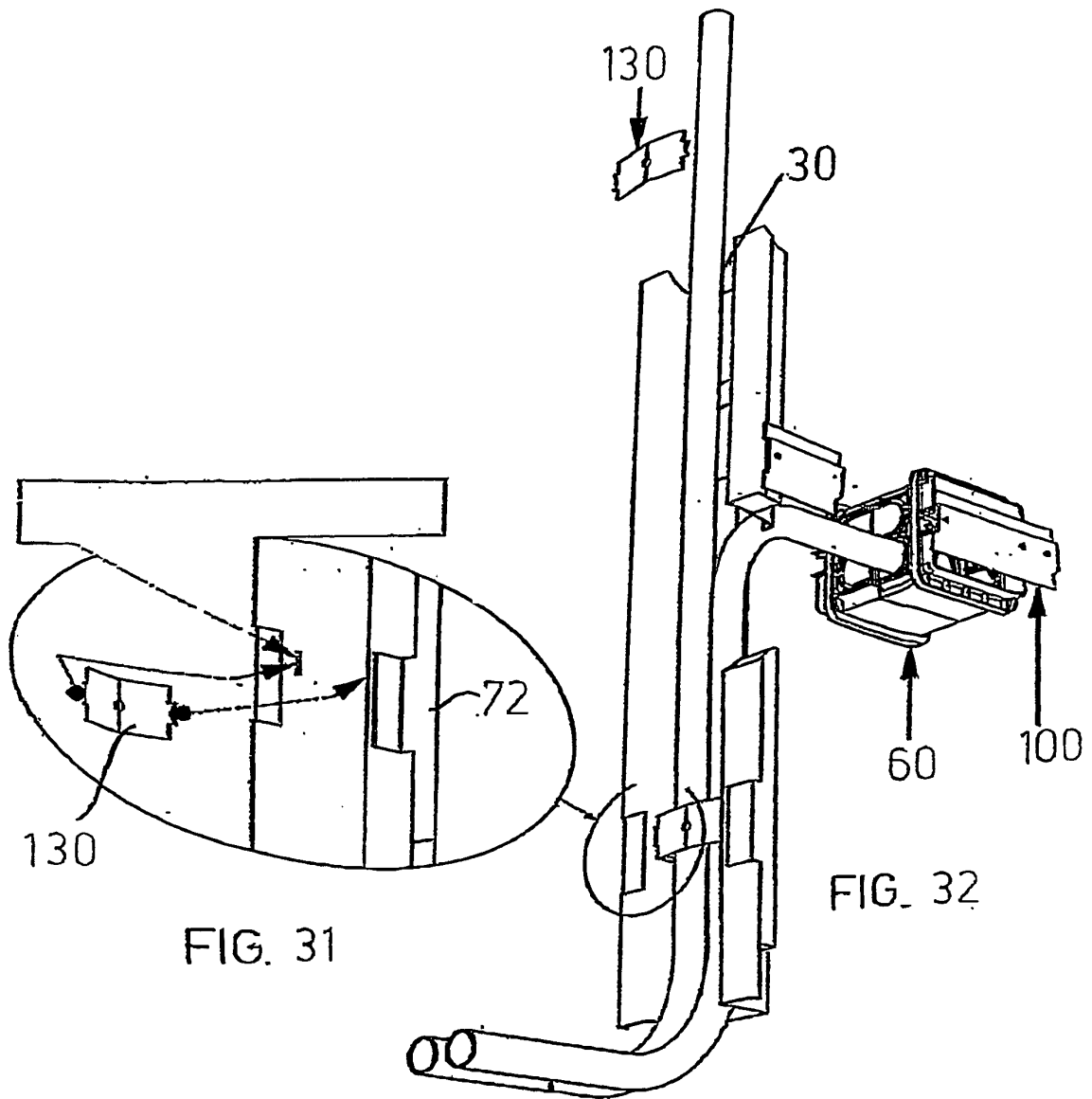
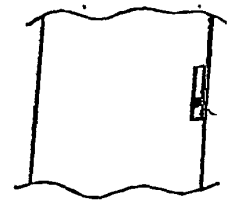


Fig. 27

Fig. 26

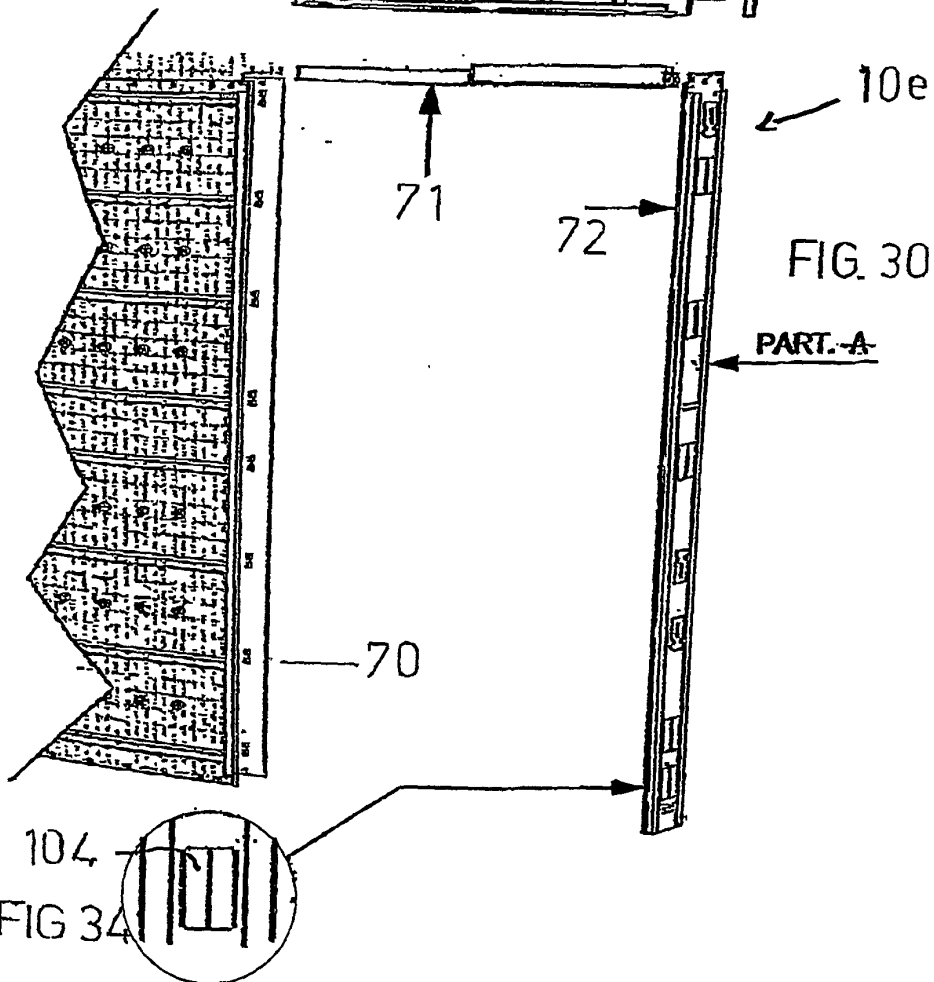
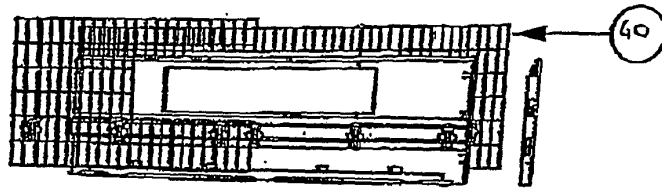






PART. A

FIG. 33



104
FIG 34

REFERENCES CITED IN THE DESCRIPTION

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