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(54) Set of coupleable section for the realisation of furniture doors and the like

(57) Peripheral profiles for furniture doors of the sliding type (16) or of the hinged type (17), or also for other like applications, obtained by the combination of at least two or three sections (X), (Y) and (Z). Said sections have configurations that comprise, combined with one another: grooves (3) for the restraint of the edges of panels and/or glass panes (7) or the like; grooves (3) for the restraint of brackets and/or junction means in general and possible grooves (22, 28) wherein are engageable with a self-threading system, the screws for the connection of accessories related with the various compositions, such as for instance wheels (31) and sliding blocks (24) for sliding doors, hinges (18) for foldable doors, and the like.

The brackets and the junction means, the hinges, wheels, sliding blocks and the like are all connectable by means that neither damage nor disfigure with holes or the like the external on-sight surfaces of said profiles.

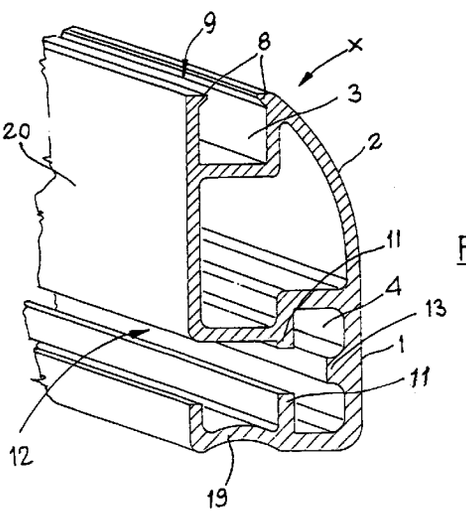

FIG.1

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Description

This invention relates to a set of sections coupleable with one another for the realisation of furniture doors and like structures. More particularly, the present invention relates to a set of sections coupleable with one another for the realisation of sliding doors and foldable hinged doors for furniture in general and for the realisation of structures and/or like elements, whose means for the connection of the brackets and/or junction means and/or the auxiliary sliding or hinged elements do not requires drillings on the external on-sight surfaces of said sections.

The sections comprise an on-sight front part, preferably shaped, coupleable according to an aligned or angle coupling by means of inclined cuttings; and a back part which, though showing different configurations, is also coupleable, according to the structure to be formed and/or the accessories to be adopted. The configurations of the back parts of the sections, coupleable with one another, comprise: grooves for the restraint of the edges of the central closing panels from wood, glass panes or other suitable material; grooves for the restraint of angle connection brackets or linear junction means, and possible grooves of self-threading engagement of screws for the connection of accessories related to the specific realisations, such as, for instance, wheels, sliding blocks, hinges and the like.

There are on the market several configurations of sections from metal, plastic materials or other suitable materials, through which it is possible to realise frame-structures for many applications: from doors and windows for housing, public facilities, shops, exhibition stands and the like, to structures for special applications, such as greenhouses, protection cabins, shelters and the like. However, in spite of the wide range of available sections, it still happens that for some applications no sections exist that are suitable for specific aims, or that those available may be utilised only on prior submission of the same to modification and/or adaptation interventions.

These drawbacks are particularly evident in the realisation of finalised structures, such as for instance those of panels for sliding doors and/or foldable hinged doors of an economical and standardised type. In the case in point, in fact, all the sections that are available at present do not show configurations fit for their mutual combination and for a quick, economic and satisfactory realisation of said structures, without the need of carrying out external operations of drillings, application of screws or other connection means, application of brackets or covering profiles or the like. These external intervention and the application of brackets or covering profiles, besides causing time and cost losses, are often aesthetically disagreeable.

Object of this invention is to eliminate the above drawbacks. According to this invention, this and still other objects are achieved by means of the characterising part of claim 1. According to this invention, the set of coupleable sections for the realisation of peripheral profiles for doors and like structures are substantially in number of three and each section has an on-sight front configuration having an identical profile which may be coupled also with angle orientations, with adequate inclined cuttings, and a back configuration comprising several configuration of profiles, always aligneable and coupleable with one another, with or without alignement. In particular, the set of coupleable sections of this invention comprises:

a) a first section (X) having a back configuration comprising a peripheral groove for the restraint of panels, glass panes and the like, a closed opposite side wall coupled to a groove for housing brackets and/or junctions in general, separated from one another by an intermediate closed flush wall;

b) a second section (Y) having a back configuration comprising a corresponding peripheral groove for the restraint of panels, glass panes and the like, a corresponding closed opposite side wall coupled to a corresponding groove for housing brackets and/or junctions in general, separated from one another by an intermediate lower area wherein there is present a continuous cutting for the self-threading engagement of screws, aligned near to said first peripheral groove; and

c) a third section (Z) having a back configuration substantially similar to the one described for the Y section, but with the continuous cutting of sealf-threading engagement for screws aligned near to the centre of the intermediate lower part.

All sections X, Y and Z may comprise protruding grooves aligned in the middle of the grooves for the restraint of panels, glass panes and the like, and a housing for brackets and/or junctions in general.

The advantages obtained by the set of coupleable sections of the present invention lie essentially in that said sections are sectional relatively to one another according to any wished configuration, are engageable with one another with elementary means of easy application and connection and may be provided with the most different accessories, specific for the different applications. The combination and fixing of the sections may be carried out through screws and/or pressure, and are therefore of simple and economical constitution, easy and quick application, with no need for workings of said sections, leaving therefore intact, undamaged and not otherwise disfigured their on-sight surfaces.

The construction and functional characteristics of the set of sections of this invention will be better understood thanks to the following detailed description, wherein reference is made to the attached drawings which represent a preferred non limiting embodiment of

said set of sections, and wherein Figures 1, 2, 3 are partial perspective views and cross-sections of each of sections X, Y and Z.

Figure 4 is a cross-section of a couple of sliding doors realised with the combination of sections X and Z;

Figure 5 is a cross-section of a foldable hinged door, realised with the combination of sections X and Y.

Figure 6 is a perspective overall view of a container, or piece of furniture, provided with sliding doors.

Figure 7 is a perspective overall view of a container, or piece of furniture, provided with foldable hinged doors.

The figures illustrate a set of coupleable sections for the realisation of doors and the like, made up by three different sections (X), (Y) and (Z). In their on-sight front view said sections (X), (Y)and (Z) are shaped in the same way and have a mixed orientation, comprising a first rectilinear length (1) and a second connected length (2).

In the back part, said sections (X), (Y) and (Z) have a first groove (3), substantially adjoining said second connected length (2), and a second opposed groove (4) behind said first rectilinear length (1).

The first groove (3) is so sized as to house and engage the peripheral edges (5) of panels or glass panes or the like (7), which constitute the central part of the door covering, or the like. Preferably, the first groove (3) is provided with a profile (8) facing access (9) and may also be provided with protruding bottom ribs (10) (cf. Fig. 2) on which said panels, glass panes or the like (7) engage, resting on the same and locking the same.

The second opposite groove (4) comprises two bent profiles (11) at the sides of access (12) and a protruding bottom rib (13), aligned with said access. In the second groove (4) there are located the brackets or junctions (14) used for the fixed connection of the lengths of sections which form said doors and the like. In particular, brackets (14), constituted by L-shaped metal plates, are utilised for the orthogonal connection of the sections on which 45° inclined cuttings adjoined to one another have been obtained.

The orthogonal arms of plates (14) are introduced in the second adjoining grooves (4) of couples of sections, after which they are caused to adhere by pressure engagement on the inner surfaces of the bent profile (11) by means of threaded dowels (15), which, coupled to corresponding holes obtained in said plates, exercise their action by engaging with their points the protruding central ribs (3).

In the back part comprised between said first (3) and said second (4) grooves, the sections (X), (Y) and (Z) of this invention have a conformation different from one another, while being however adjoinable and coupleable to one another. Said back part comprised between grooves (3) and (4) is designed to adequately perform the functions of restraint and/or connection of accessories to be applied to frames formed as said for the realisation of slidingly openable doors (16) or doors foldable (17) on hinges (18), provided with fastening sleeves (24).

For these reasons, section (X), in its back part comprised between the first (3) and the second (4) grooves has an intermediate closed wall (20), flush with the internal edge of said first groove (3), and comprises a second closed side wall (19) which extends beyond the limit edge of the second groove (4).

Section (X) is therefore particularly suitable for the realisation of the lower and upper edges of doors (17) foldable on hinges (18), for the realisation of the orthogonal free front edge of said doors, and for the vertical front and back edges of sliding doors (16).

Section (Y), in its back part comprised between the first (3) and second (4) grooves, is provided with a lower area (21) on which, near the first groove (3), there is obtained a continuous cutting (22) for the engagement of self-threading screws (23). Aligned with the external limit edge of the second groove (4), there is provided also in this section an external closed side wall (19').

Section (Y) is therefore advantageously utilisable for the realisation of a vertical back upright of doors (17) foldable on hinges (18).

Sleeves (24) of hinges (18) are aligned in the wished position along the lower area (21), to be then fixed to profile (Y) by means of self-threading screws (23) which engage in said cutting (22).

Section (Z), utilisable for the sliding doors, comprises in its back part between the first (3) and the second grooves, a lower area (26) on whose central part there is provided a continuous cutting (28) for the engagement of self-threading screws (23).

The limit end of groove (4) is provided, as a replacement for the closed side wall (19) or (19'), with a resulting free edge (29) whose specific function is to create a free way (30) along which freely protrude the guide-ends (31) provided with wheels (32) or end (33), provided with sliding blocks (34), of conventional carriages (35) usually utilisable on sliding doors (16).

In the case in point, along the upper and lower edges (26') of the basis bodies (25'), conventional rail-like sections (36) are applied.

Carriages (35) are connected to sections (Z) in the wished position by means of self-threading screws (23) that engage along cutting (28).

The peripheral profiles of sliding doors (16) and of foldable hinged doors (17) are obtained by the combination and mutual approchement of at least two of said sections (X), (Y) and (Z) (7).

As can be noticed from Figures 5 and 7, doors (13) foldable on hinges (18) are substantially formed by three lengths of section (X) which make up the upper,

lower and front edge, and by a length of section (Y) which forms the back edge on which hinges (18) are connected. The three lengths of section (X) and the fourth length of section (Y) are orthogonal composed with one another, mutually connected by the L-shaped angle plates (14), pressure locked by the threaded dowels (15), and form the peripheral profile of the panel, glass pane or the like (7) The intermediate closed walls (20), flush with the inner edges of the first grooves (3) of sections (X) and the closed external side walls (19), (19') of both sections (X) and (Y), constitute a continuous inner finishing profile and the rabbet of doors (17) relatively to edges (26) of the basis body (25) on which said doors are applied.

The sliding doors (16), represented by way of example in Figures 4 and 6, are realised in a substantially similar manner.

In the case in points, the doors are substantially formed by two lengths of section (X), which make up two vertical uprights, and by two lengths of section (Z), which make up two horizontal uprights.

Also for the sliding doors (16), the two lengths of section (X) and the two lengths of section (Z) are combined orthogonal to one another and mutually connected by the L-shaped angle plates (14), pressure-locked by dowels (15), and form the peripheral profile of the panel, glass pane or the like (17). The closed external side walls (19) of the two sections (X), utilised to form the vertical uprights of the panels, constitute on-sight finishing profiles.

Sections (X), (Y) and (Z) may be realised from any material suitable for the intended use; they may be from metal, such as aluminium, brass and the like, from plastic material, such as PVC and the like, or from other materials having the suitable characteristics.

Even though the present invention has been described and illustrated with specific reference to the realisation of panels for sliding doors or foldable hinged doors, according to a configuration given by way of non limiting example, it is obvious that the sections of the invention may be utilised for the realisation of any structures, with either orthogonal or non orthogonal configurations, using any accessories for the mutual engagement and for particular utilisations and/or applications.

The particular characteristic of the sections of this invention lies in that all the means of mutual engagement of the sections and the accessories coupleable to said sections are engaged through means that do not require external working interventions, and neither damage nor disfigures with holes or the like the on-sight external surfaces of said sections.

Besides, it is obvious that the on-sight front part of the sections may have any configuration whatever.

All of these characteristics and changes fall within the protection scope of the following claims.

Claims

1. A set of three sections (X), (Y) and (Z) for the realisation of furniture doors and like structures, having configurations combinable and coupleable to one another, and provided with front profiles (1, 2) identical and matching, back grooved profiles (3, 4) also substantially equal and matching, and back profiles (20, 21, 27), intermediate relatively to said back grooves (3, 4), different from one another with respect to the aspect and the profile, but in any case coupleable to form sectional structures; wherein said back profiles (20, 21, 27), intermediate relatively to said back grooves (3, 4), comprise a closed intermediate wall (20) and a closed side wall (19) for section (X); a lower area (21) with a continuous cutting (22) for self-threading screws (23) for section (Y) and a lower area (27) with a continuous cutting for self-threading screws (23) for section (Z); said back grooves (3, 4) are so configured that the first one can engage in the same the peripheral edges of panels, glass panes or the like (7) and the second one can pressure-engage the side edges (11) of brackets or junctions (14) provided with threaded holes with locking dowels (15); and said sections (X), (Y) and (Z) are combinable, coupleable and connectable to one another according to the configurations wished through connection means and the use of possible accessories (35), with no need for workings, drillings or other interventions that may damage and/or disfigure the on-sight surfaces of said sections.

2. The set of sections according to claim 1, characterised in that section (X) has a front configuration comprising a rectilinear length (1) and a connected length (2) and a back configuration comprising:

   - a first peripheral groove (3) for the restraint of panels, glass panes, and the like (7) and possibly provided with a protruding bottom rib (10);
   - an intermediate closed wall (20) flush with the inner edge of said groove (3);
   - a second opposite groove (4) with an access (12), two bent profiles (11), lateral relatively to said access (12), and possibly a bottom rib (13), aligned with said access (12); and
   - a closed side wall (19) which extends beyond the edge of the second groove (4).

3. The set of sections according to claim 1, characterised in that section (Y) has a front configuration comprising a rectilinear length (1) and a connected length (2), equal to that of section (X), and a back configuration comprising:

   - a first peripheral groove (3) for the restraint of panels, glass panes, and the like (7) and possi-

bly provided with a protruding bottom rib (10);

- a second opposite groove (4) with an access (12), two bent profiles (11), lateral relatively to said access (12), and possibly a bottom rib (13), aligned with said access (12);
- an intermediate lower area (21) wherein there is provided a continuous engagement cutting (22) for self-threading screws (23); and
- a closed side wall (19') which extends beyond the edge of the second groove (4).

4. The set of sections according to claim 1, characterised in that section (Z) has a front configuration comprising a rectilinear length (1) and a connected length (2), equal to that of sections (X) and (Y), and a back configuration comprising:

- a first peripheral groove (3) for the restraint of panels, glass panes, and the like (7) and possibly provided with a protruding bottom rib (10);
- a second opposite groove (4) with an access (12), two bent profiles (11), lateral relatively to said access (12), and possibly a bottom rib (13), aligned with said access (12);
- an intermediate lower area (27) wherein there is provided a continuous engagement cutting (28) for self-threading screws (23); and
- a free end edge (29) forming a way (30) for the guides (31, 33), provided with wheels (32) and sliding blocks (34).

5. Peripheral profiles for furniture doors (16, 17) obtained from the combination and mutual approaching and fastening of at least two of sections (X), (Y) and (Z), according to any of the preceding claims.

6. The peripheral profiles for furniture doors (17), foldable on hinges (18) according to claim 5, made up by three lengths of section (X), which form the upper, lower and front uprights, and by a length of section (Y), which form the back upright and on which hinges (18) are fastened; said lengths of sections (X) and (Y) being composed orthogonal with one another and mutually connected by L-shaped angle plates (14), pressure-locked on the internal surface of the bent profiles (11) by means of threaded dowels (15).

7. The peripheral profiles for sliding furniture doors (16), according to claim 5, made up by two lengths of section (X), which form the two vertical uprights, and by two lengths of section (Z), which form the two horizontal uprights; said lengths of sections (X) and (Z) being orthogonal composed with one another and mutually connectable by L-shaped angle plates pressure-locked on the internal surface of the bent profiles (11) by means of threaded dowels (15).

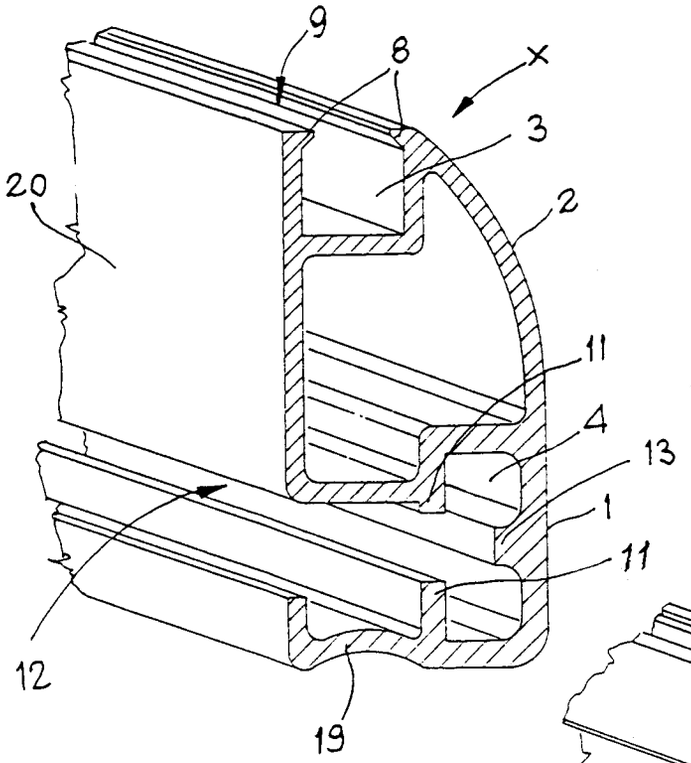

FIG. 1

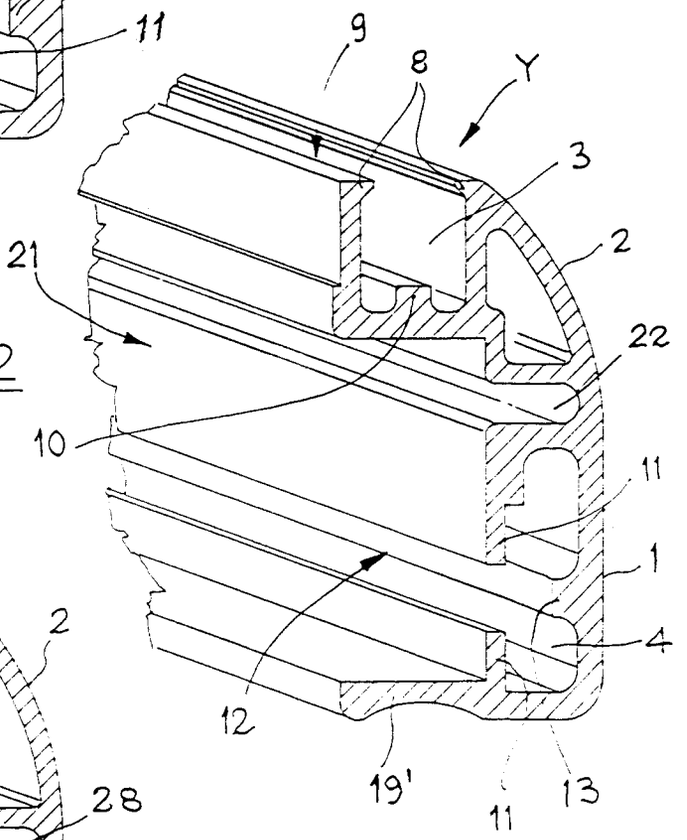

FIG. 2

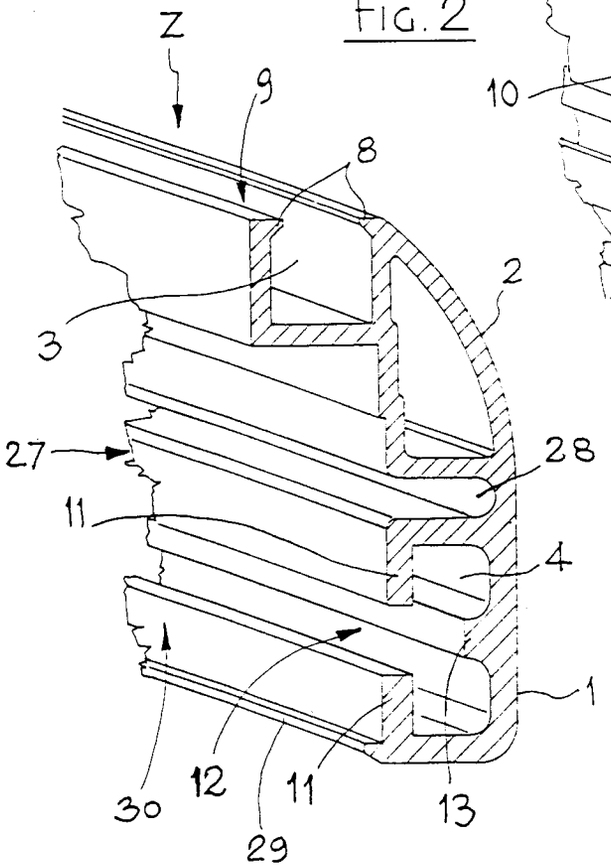

FIG. 3

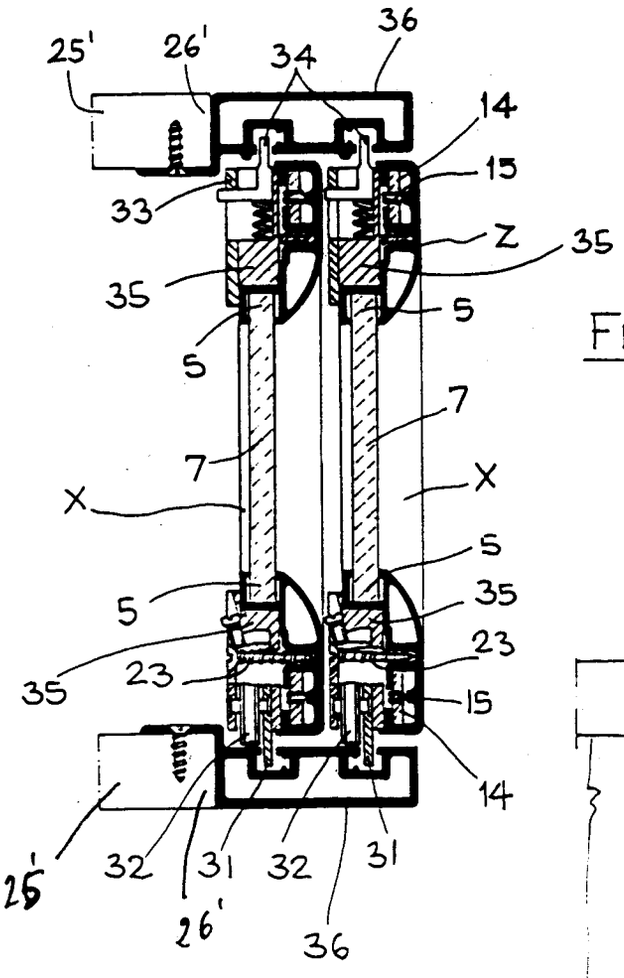
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FIG. 4

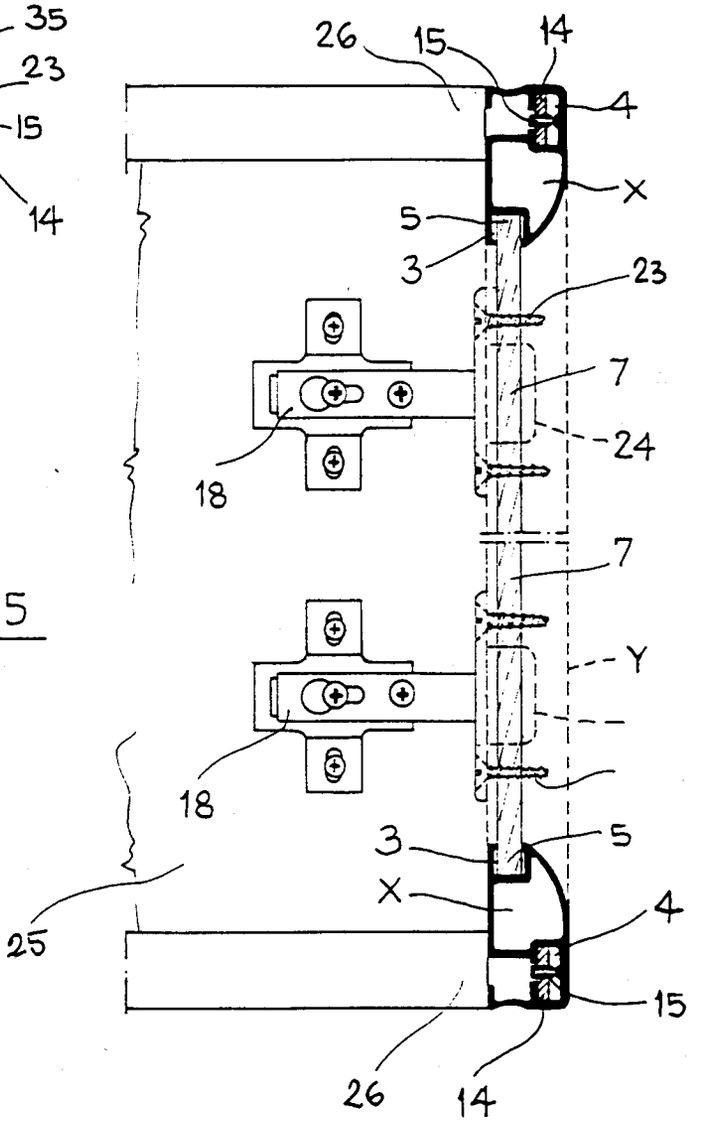
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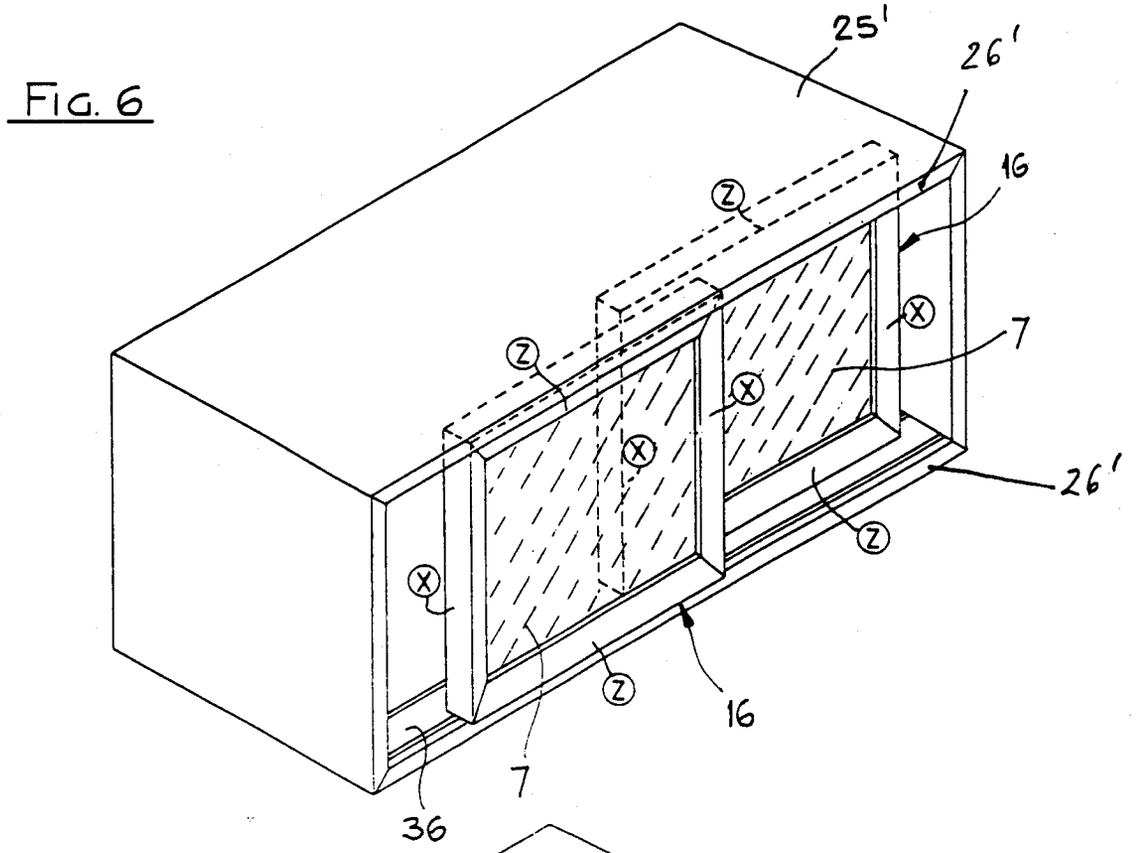
FIG. 5

FIG. 6



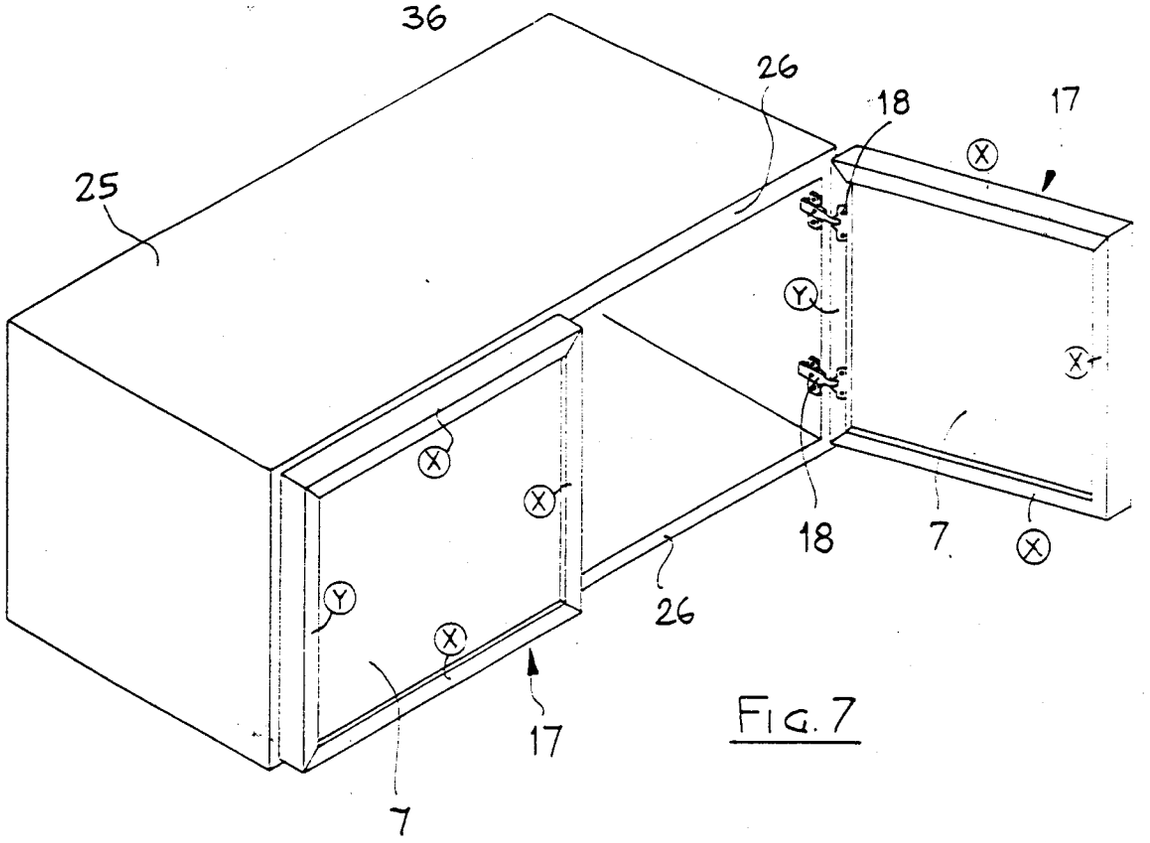


FIG. 7