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D'AGOSTINI ORGANIZZAZIONE n. 17 via
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I-33100 Udine(IT)(54) **Improved counterframe for sliding doors particularly of a type that are out of sight when not in use.**

(57) They are composed by two series of elements of which the first is destined to be an integrated part and the second usable only in the phase when the door is not being used or when it must be reused, characterized in that the fixed elements are composed of:

- a large case (B) being obtained with at least one preformed metal sheet;
- a base traverse (E) and a profile under the case (B) which is the base of the large case, being that the lower end of said large case is attached to said profile;
- an upper traverse (C) longitudinal runner, on one side connected to the large case, on the other supported by at least one mullion (D);
- at least one mullion (D), defining the amplitude of the door, on one side supporting the end of said longitudinal runner (C), on the other anchored to the base traverse (E);
- anchorage means consisting of at least one net (13), fixed to the large case associated with it.

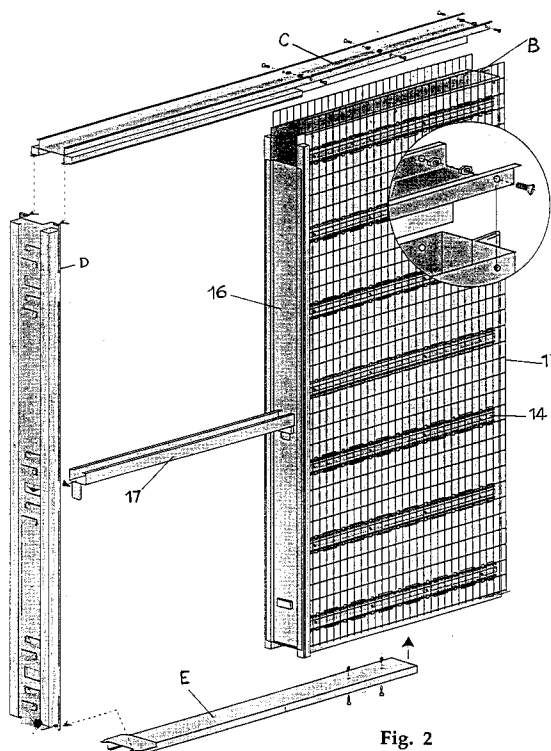


Fig. 2

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The object of this invention is an improved counterframe for sliding doors particularly of a type that are out of sight when not in use.

The innovation finds particular, even if not exclusive, application in the sector of doorframes for buildings.

In prior art are known doorframes that consent the application of the respective frames in buildings. In particular are known counterframes to be integrated in building structures which realize a means of support and anchorage for the frame of said door. Among these are known also sliding doors of a type that are out of sight when not in use and that can be substantially of two kinds, the first, surely more traditional, provides a wall in which there is a longitudinal seat to close away a sliding door by means of a pair of upper and/or lower runners. An analog door that is out of sight when not in use is also obtained by means of the realization between the two walls of the respective receiving seat, consenting equally an embedding function. Such solutions, even though being quite efficient, involve different problems, first of all the fact that they require a long time to be installed, consequently determining high realization costs with particularly complex structures and not always possible due to the difficulty of space.

To resolve in particular the above said problems, counterframes have been integrated in building structures which involve the use of some elements in preformed metal sheets combined in various ways and in particular comprising: a large case to be attached to the wall with a mullion in a counterposition to the large case which delimits the opening and on which upwardly is attached, being screwed to said supporting structure, a longitudinal runner. In a lateral position to said large case a net is then attached in a successive phase on both sides by means of the gripping power of the final layer, in this case the plaster. The fixation of the net to the large case is generally obtained by means of fixations somewhat empiric with some vertical staves directly obtained to press on the metal sheet sides, a kind of a Greek fret on said case. A second system consists in the association of the net to the box without spacer elements by means of welded points, a method that is mainly utilized for very thin nets. However also these solutions are not exempt from drawbacks, noticeable particularly in the assembly of the single components, which require a long time for installation and in the last cases cited, the possibility, moreover somewhat frequent, that in the weld points of the net to the box, as time goes past, form rust causing the detachment of the net and consequently the crumbling or the formation of cracks in the plaster.

The aim of said invention is to resolve the

above mentioned drawbacks.

This and other aims are reached with said innovation according to characteristics of the annexed claims solving the exposed problems by means of an improved counterframe for sliding doors particularly of a type that are out of sight when not in use, in which supporting structure includes:

- a large case obtained by means of the coupling of two metal sheets preformed, both placed along the vertical profile;
- a base traverse and a profile under the case which is the bearing of said case being that the lower ends of said case are attached to the profile under the case .
- an upper traverse runner longitudinally associated to said case being supported on the opposite side by at least one mullion;
- at least one mullion defining the amplitude of the door, on one side bearing said longitudinal runner, on the other anchored to the base traverse;
- traversal anchorage means of at least one net to the case being joined to it by means of riveting.

In such a way, by this important creative contribution that realizes an immediate technical progress, different advantages are achieved, among them of which is less time for the execution of the supporting structure and the obtainment of such a simplified solution which has an evident qualitative increase. In other words, defining minor realization costs along with particular detailed advantages evident in the anchorage system of the net to the case, which excludes the possibility of the formation of rust, due to the absence of contact points obtaining furthermore a perfect coplanar of the net.

These and other advantages will appear in the following specified description of the preferential solutions for the realization with the help of the enclosed schematic drawings of which execution details are not to be considered limitative but only exemplificative.

Figure 1 represents a prospective view of the counterframe integrated in building structures

Figure 2 represents a full view of the counterframe which in the previous Figure is dissociated from the building structure.

Figures 3 and 4 represent the prospective views of a large case in the two versions with and without vertical wood laths.

Figure 5 represents a view of a section of the two preformed metal sheets for the realization of the illustrated case in the previous Figures;

Figure 6 represents a view of a section of the two preformed metal sheets combined to realize said case.

Figure 7 represents a front view of a stave spacer of the type to be associated to the large case for the spaced support of the net.

Figure 8 represents a front view of the net attached with some meshes on a stave spacer .

Figure 9 makes evident a section of a stave spacer with the flaps to fold inserted between the mesh of the net.

Figures 10 and 11 represent respectively the prospective views of a mullion defining the opening of the case, and of a cover that closes the entrance of the large case when the sliding door is not being used.

Figure 12 represents a prospective view of an upper traverse and of a longitudinal runner for the sliding door associated to it.

Figure 13 represents a view of a section of the single element components of said upper traverse and longitudinal runner of the previous Figure.

Fig. 14 represents a view of a section of the elements so assembled.

Figure 15 represents a prospective view of the base traverse.

Figure 16 represents a view of a section of the large case assembled to said base traverse and the profile under the large case, and also to the upper traverse runner guide.

Figure 17 represents a view of a section of a profile of the lower part of the large case.

Figure 18 represents a prospective view of the profile of the lower part of the large case.

Figure 19 represents a view of a section of the base traverse held in correspondence at the end of the coupling of the base traverse to said mullion.

Figure 20 represents a particular, prospective view of the net to be attached to the large case.

Making reference also to the Figures, it is disclosed that an improved counterframe (A) for sliding doors, particularly of a type that are out of sight when not in use, is made substantially of two series of elements and in particular the first fixed ones being destined to be integrated as part of the building's structure and the second ones only to be used when the sliding door is not in use or must be reused. The first series essentially consists of a large case (B), obtained by means of the association of two metal sheets (1) preformed with an L-shape, and clamped longitudinally (2), being that this side is connected to the building's structure in which said counterframe is incorporated. The ends which are opposite to the longitudinal clamps (2) are furthermore bent with a conformation essentially like a "C", to accommodate a wood lath (3) which allows the fixation of a frame and "cover" for the embellishment of the frame. Some holes are made in correspondence with the upper

side of the large case (4) on both the metal sheets that consent the orthogonal fixation of a traverse (C) by means of screws (4'). The traverse in particular is composed of three elements: a first upper profile support (5) with the length of the traverse, conformed like a 'C' and with the ends bent to 90°, an underlying counterprofile (5') associable to the first with a length at least equal to the amplitude of the door and a runner (5'') also this the same length. Said three elements are assembled by means of screws (6) of a type in stainless steel to avoid oxidation. The counterprofile (5') has on the opposite side of that of which is fixed to the large case (B), some little teeth (7) which are to be inserted in the apposite fissures (7') made on the ends of the mullion (D). This last provides a profile with the form of a "C" turned up orthogonally at the ends to allow the vertical association of a pair of wood laths, while along said profile some cramps are also obtained to wall (8), that form the other side, opposite to that of the large case (B) in contact with the building structure. The lower part of the profile (D) has some analog fissures (7'') to allow the association of a base traverse (E). Also this is composed by a profile substantially with the form of a "C" (9), and a counterprofile under the case (10) conveniently connected to the first. The profile under the case (10) shaped like a "C", has its ends folded on themselves, leaving one space between the wall of the profile and the edge folded like this to some millimeters in a way to realize a longitudinal seat (11) to hold, on both the sides, the lower edge of the large case (B) which is disposed under this. Furthermore the base traverse (9) forms on one end a small plaque (12) with relative cog teeth in corresponding fissures (7') obtained under the mullion (D). When the structure is completed, to allow the coating of the large case (B), for example with some plaster, as a gripping means, a net is applied on the external surface of the same (13) of a zinc plated type and electrowelded. The net (13) is anchored to the large case (B) by means of traversal staves (14) or spacer elements, secured laterally on the metal sheets (1) coplanar in respect to the level of the large case (A) and parallel, by means of riveting (15) or another equivalent means. The section conformation of at least one of said stave (14) is such to obtain a base (14') to fix the stave to the metal sheets of the large case (A) where in this point the riveting is made and a pair of symmetric flaps , (14'') obtained in correspondence of two counter profile spacers, in respect to the surface (11'). The distance between the two symmetric flaps (14'') is such to allow in this case their insertion into the interior of the mesh of the relative net (13), and more in particular the flaps are disposed (14'') alternatively in proximity of the horizontal rods. Successively the flaps (14'')

are folded on said horizontal rods (13') of the net, fixing them. Finally the elements necessary when the counterframe is not in use (A), but are considered to be reused, include:

- a cover (16) as a closure means of the large case (B) to be disposed in correspondence of the opening of the case, and to take away as soon as the counterframe is anchored to the building structure; 5
- at least one template (17), of the known type to be attached in the opportune pockets, made on one side on said cover and on the other on the mullion (D). 10

Claims

1. A COUNTERFRAME FOR SLIDING DOORS PARTICULARLY OF A TYPE THAT ARE OUT OF SIGHT WHEN NOT IN USE and that can be used in building structures, of the type composed by two series of elements of which the first as fixed elements, is destined to be an integrated part of the wall and the second usable only in the phase when said counterframe has to be integrate in the wall and after integration, removed, characterized in that the fixed elements are composed of:

- a large case obtained with at least one performed metal sheet (B);
- a base traverse (E) and a profile under the case (10) which is the base of the large case, being that the lower end of said large case (B) is attached to said profile (10); 30
- an upper traverse longitudinal runner (C), on one side connected on said large case (B) to cover it and, on the other supported by at least one door mullion (D); 35
- said door mullion (D), defining the amplitude of the door and, on one side supporting the end of said longitudinal runner (C) and, on the other anchored to said base traverse (E); 40
- traversal anchorage stave means (14) of at least one net (13) to said large case (B) associated with it. 45

2. A counterframe according to claim 1., characterized in that said large case (B), is obtained by means of the combination of two preformed metal sheets (1) L-shaped, and longitudinally cramped (2), and of which the opposite ends are furthermore folded with a conformation essentially like a "C", having the possibility to accommodate vertically a wood element (3). 50 55

3. A counterframe according to claim 1., characterized in that said traversal runner (C) is composed of three elements:

- a first upper profile support (5) with the length of the traverse;
- an underlying element counterprofile (5') associable to the dimensions which are at least equal to the amplitude of the door;
- a runner (5'') of the type for a sliding door with the same length and in which said elements are assembled one to the other by means of screws (6).

4. A counterframe according to claims 1 and 3, characterized in that the counterprofile (5') has on the side opposite to that of the fixation to the large case (B), teeth means (7) that are to be inserted in the provided fissures (7') made on both the ends of said mullion (D). 15 20

5. A counterframe according to claim 1., characterized in that said mullion (D) is composed of a "C" shaped profile turned up orthogonally at the ends realizing a seat for eventual wood lathes. 25

6. A counterframe according to claim 1., characterized in that said traverse base (E) is composed of a "C" shaped profile (9), and a counterprofile under the case (10) conveniently combined with the first, and in that the profile under the case (10), has its ends folded on themselves, realizing a longitudinal seat (11) to accommodate on both sides, the lower edge of said large case (B). 30 35

7. A counterframe according to claims 1 and 6., characterized in that a small plaque is obtained on said traverse base (12) with relative cog teeth in the corresponding fissures (7') made under said mullion (D). 40

8. A counterframe according to claim 1, characterized in that on the external surface of said large case (B) a metallic net is attached (13) being anchored by means of the traversal staves (14) or element spacers coplanar in respect to the lateral surfaces of the large case (A) and parallel surfaces. 45

9. A counterframe according to claims 1 and 8, characterized in that the section conformation of said stave (14) provides a base (14') for the support for the metal sheet of said large case (A), and a pair of symmetric flaps, (14'') obtained in correspondence of two counterprofile spacers, in respect to the surface (14'). 50 55

10. A counterframe according to previous claim, characterized in that the distance between the two symmetric flaps (14'') is slightly less than the amplitude of the meshes. 5
11. A counterframe according to the previous claims, characterized in that said staves (14) are attached to said large case (B) by means of riveting (15). 10
12. A counterframe according to the claims 9-10, characterized in that the flaps (14'') are bent on the horizontal rods (13') of said net (13). 15
13. A counterframe according to the previous claims, characterized in that said removable elements to be reused (A), are; 20
- a cover (16) as a closure means of the large case (B) to dispose in the inner vertical door-side opening of said case (B); 25
 - at least one template (17), of the type to be attached in opportune pockets, obtained on one side by the said cover (16) and on the other on said mullion (D). 30
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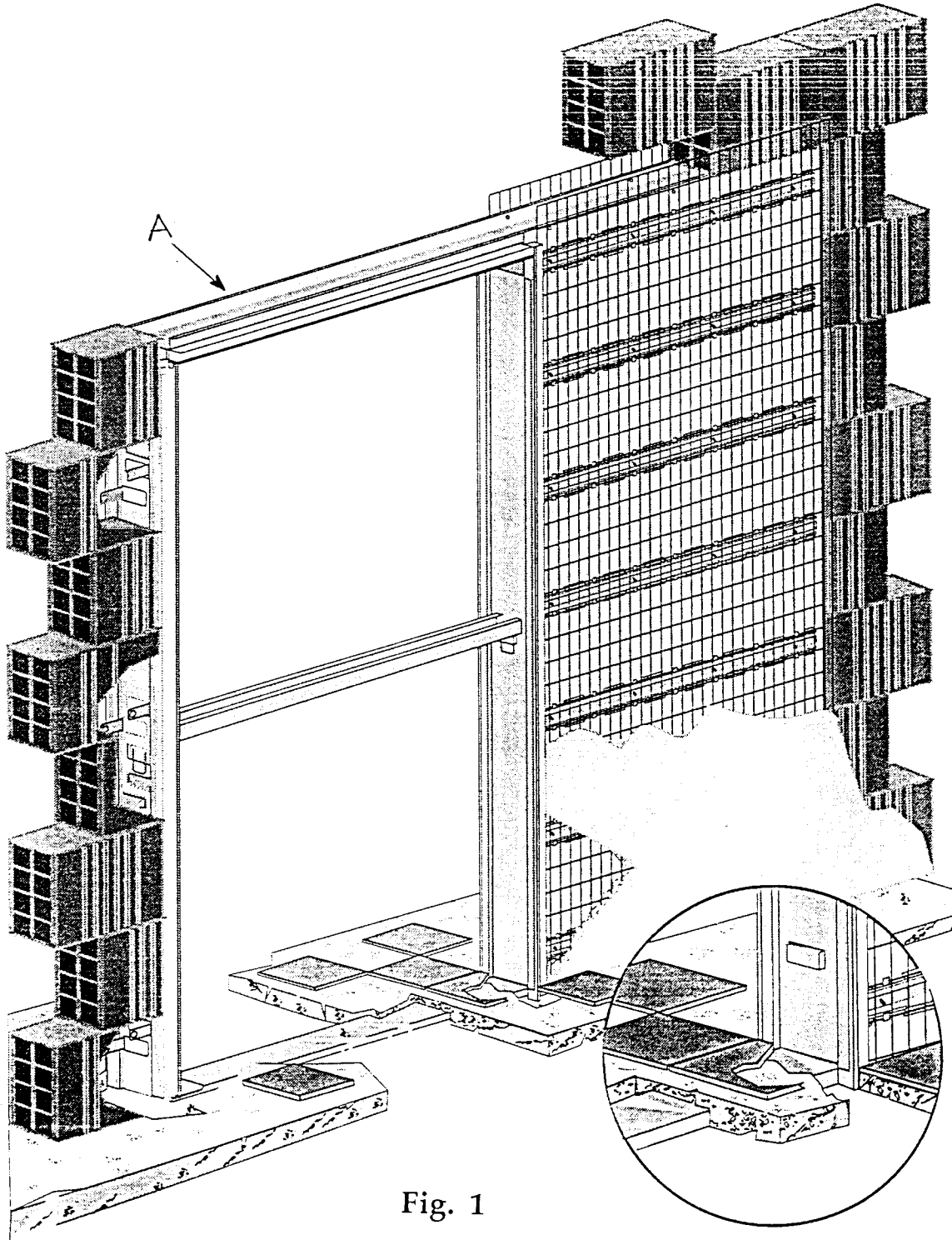


Fig. 1

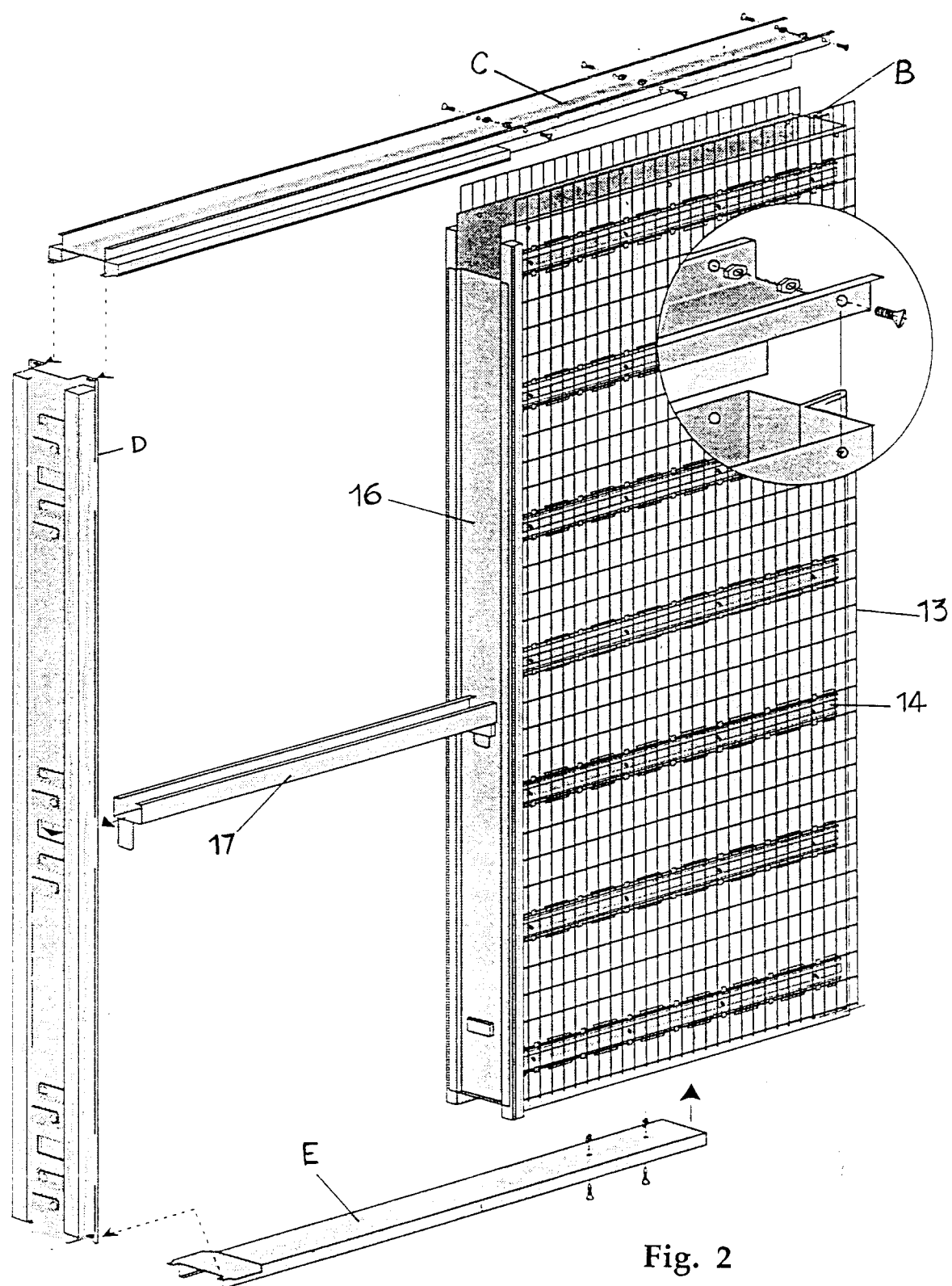
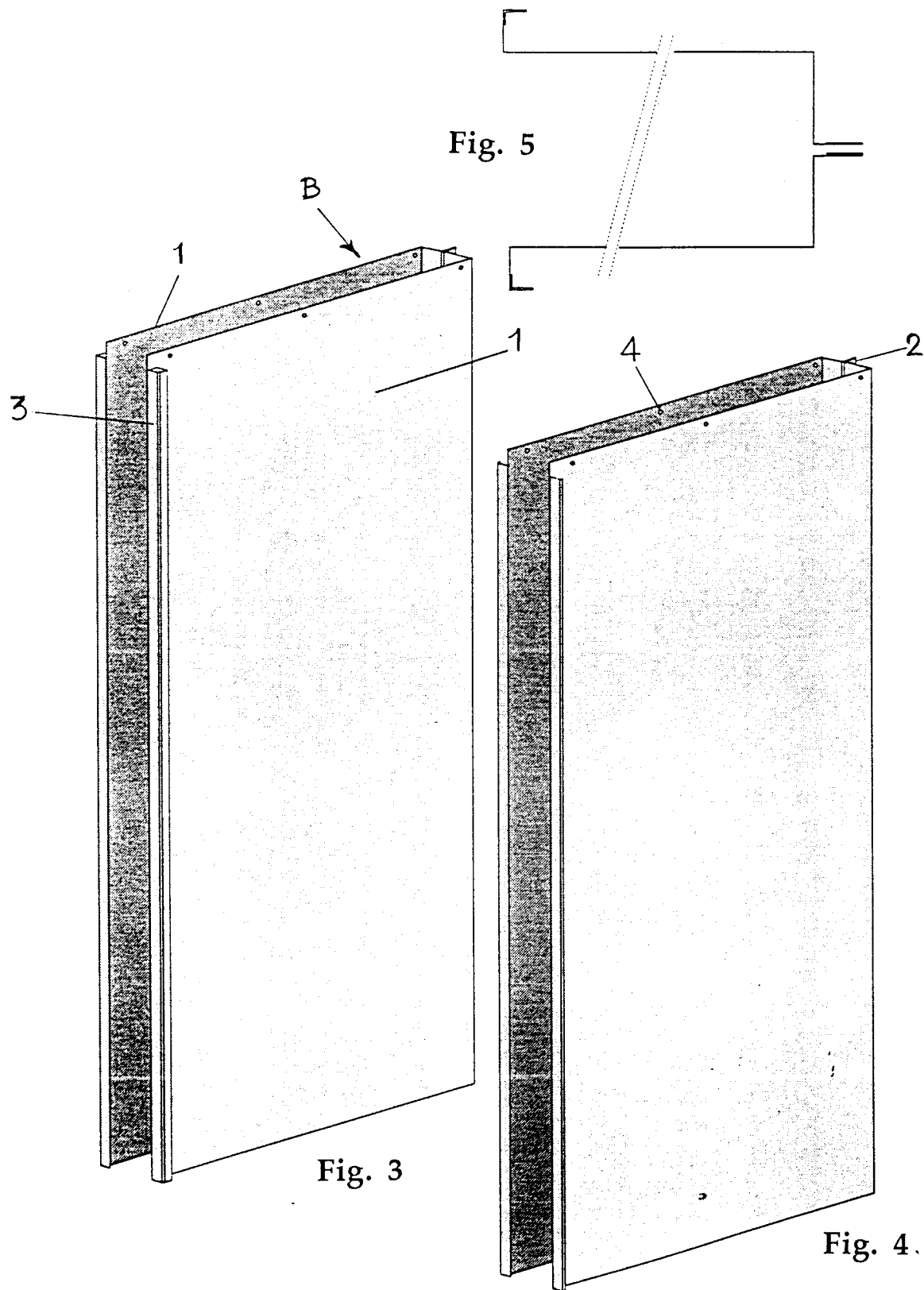


Fig. 2



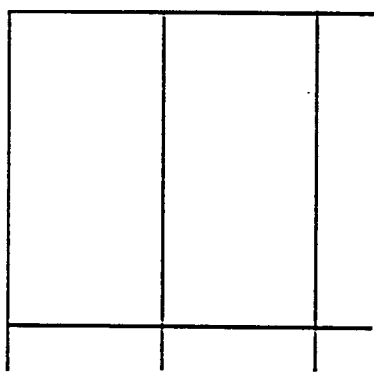
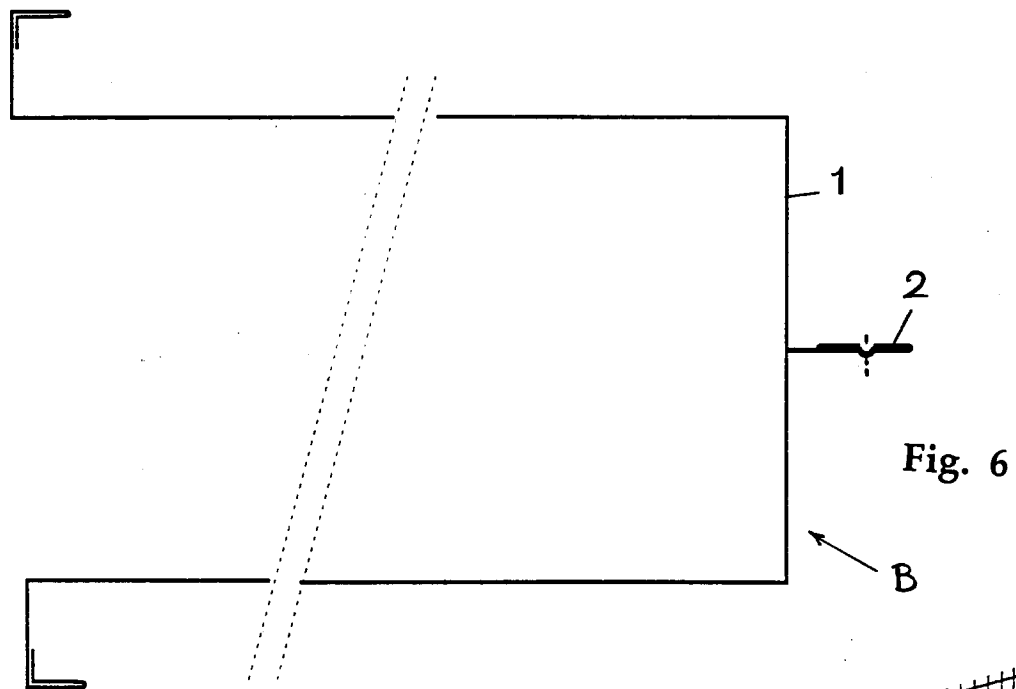
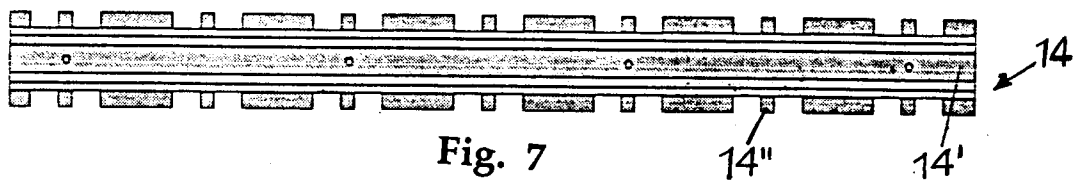
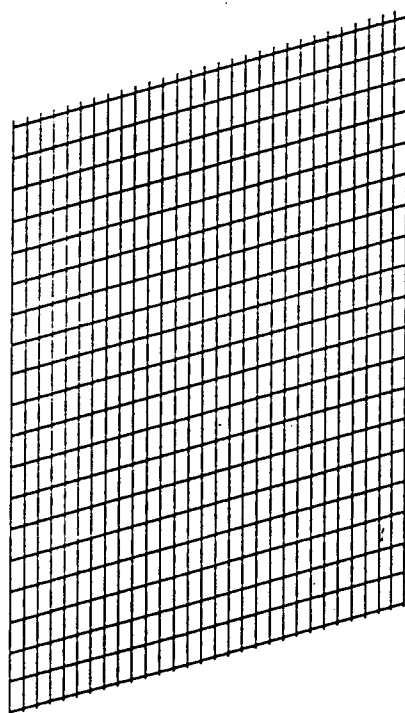
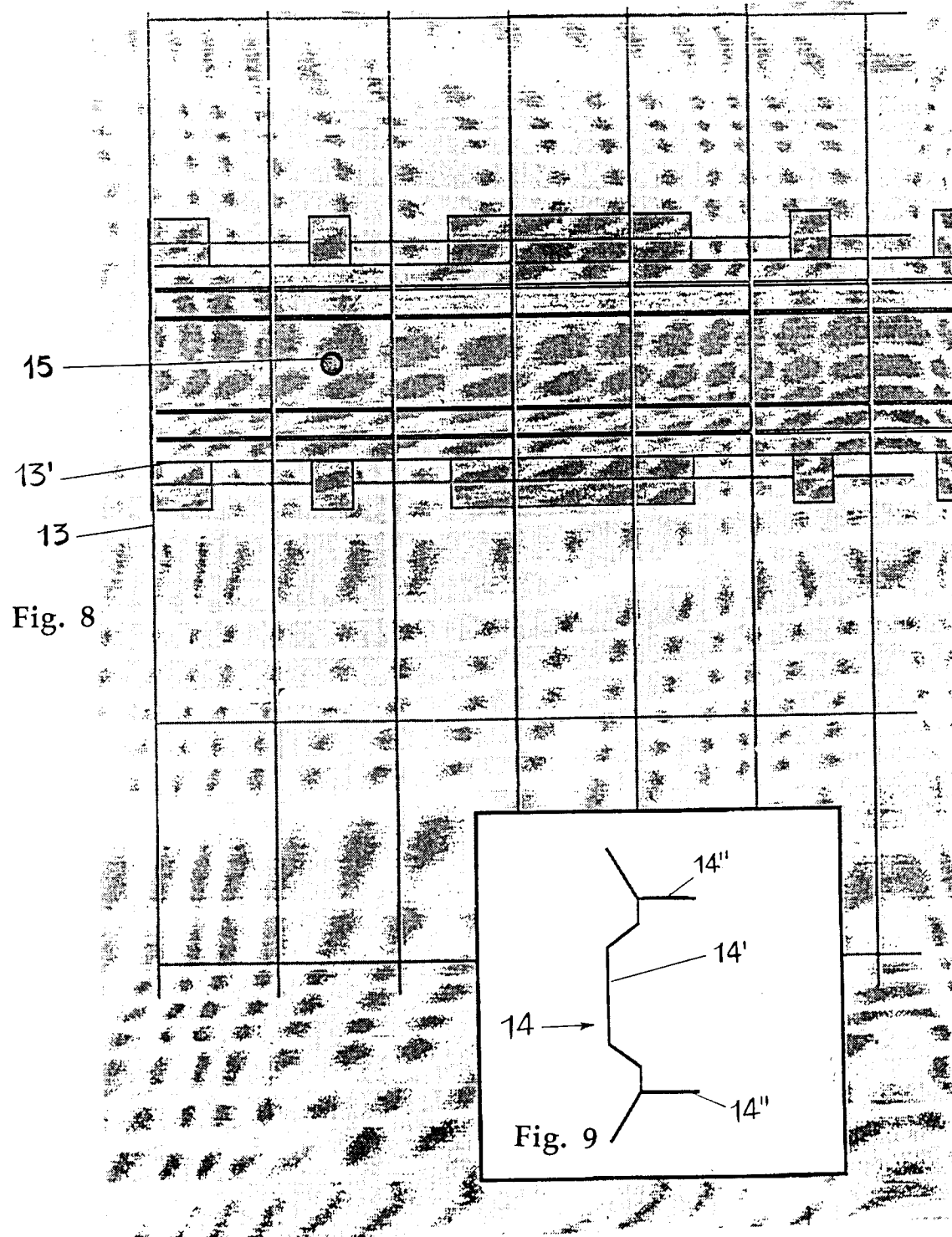
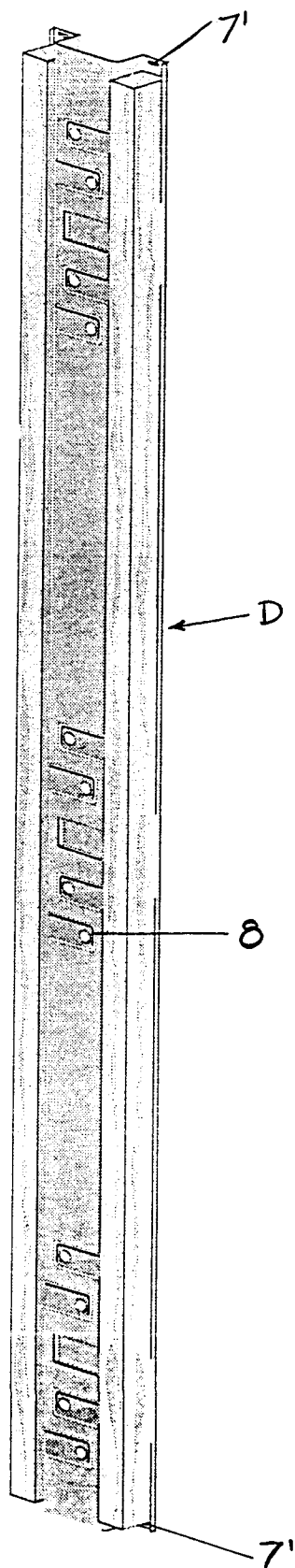


Fig. 20







16 →

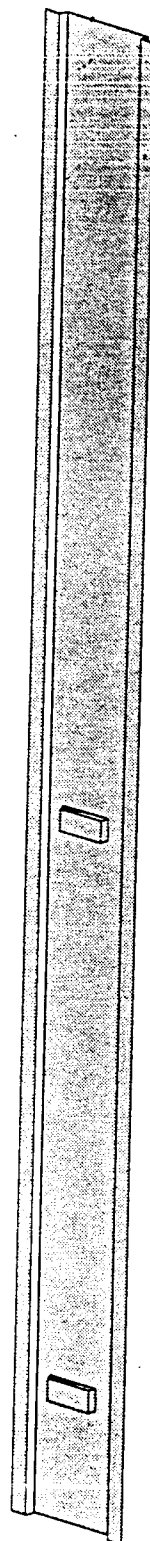


Fig. 11

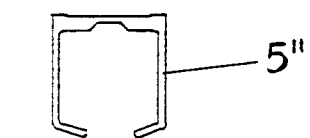
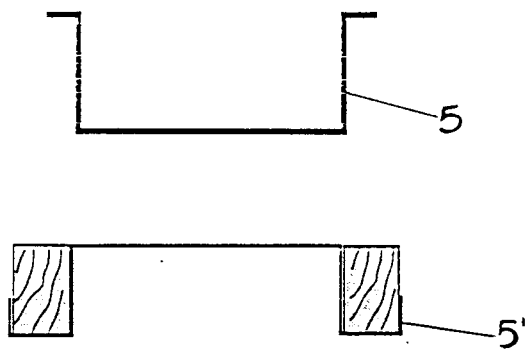


Fig. 13

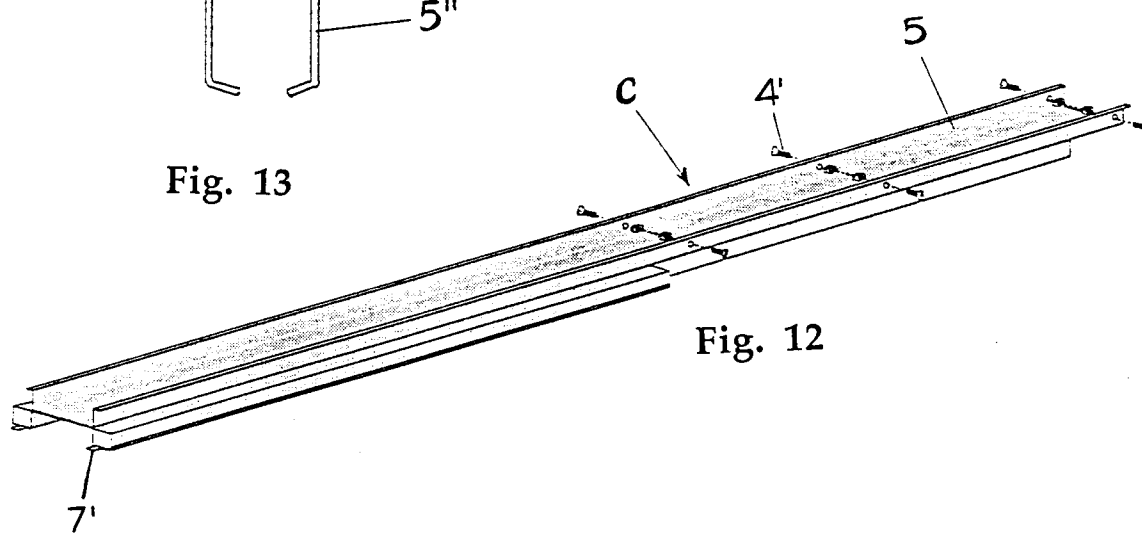


Fig. 12

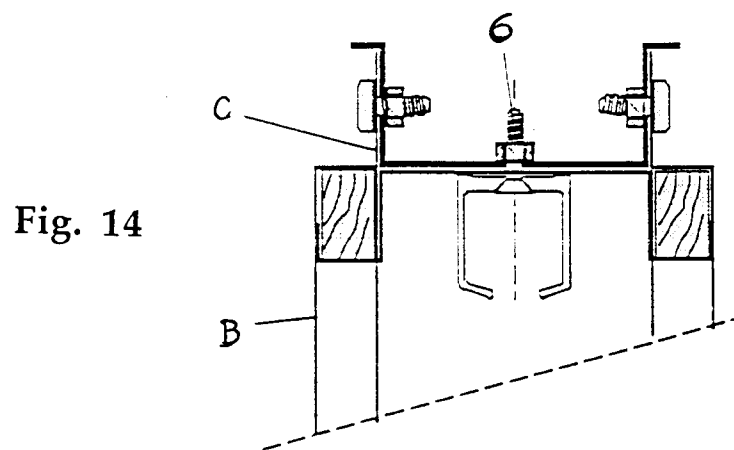


Fig. 14

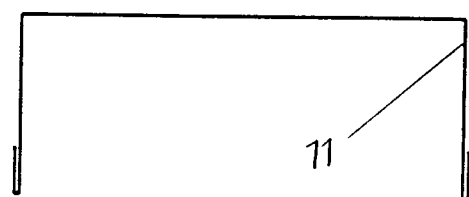


Fig. 17

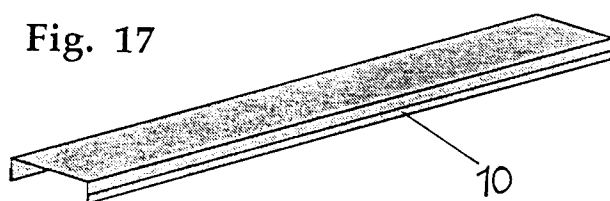


Fig. 18

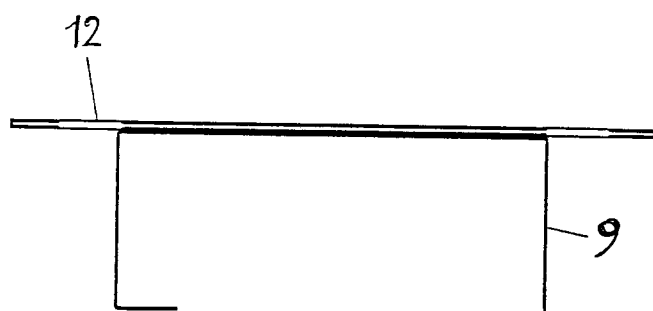


Fig. 19

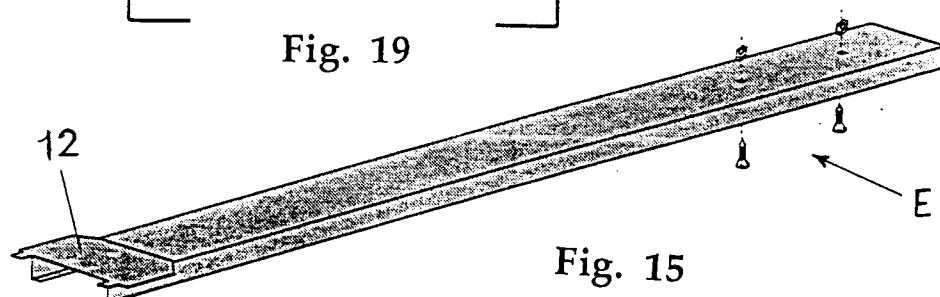


Fig. 15

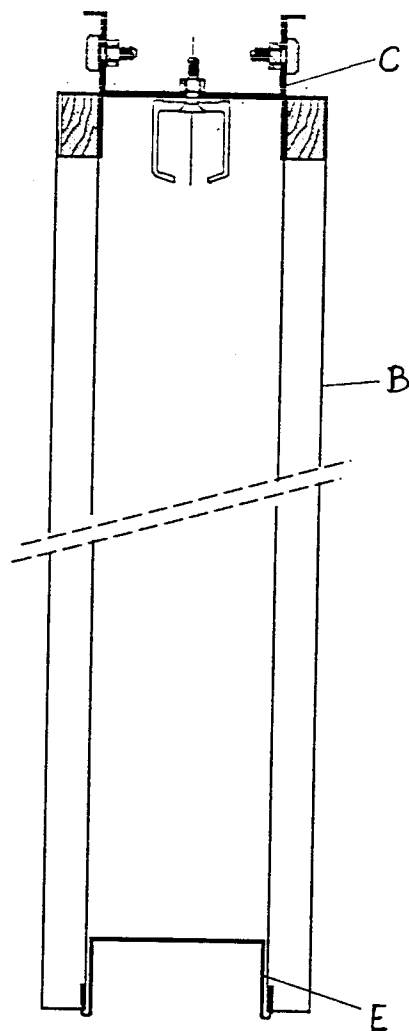


Fig. 16