

United States Patent

Varlonga

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[54] **BEARING SECTIONS FOR THE COVERING WITH MARBLE PLATES, PANELS AND THE LIKE OF WALLS BOTH UNINTERRUPTED AND INTERRUPTED BY DOORS, WINDOWS AND THE LIKE**

[72] Inventor: **Giovanni Varlonga**, Via B Verro n. 90, Milano, Italy

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[51] Int. Cl. E06b 1/18

[58] Field of Search.....52/211, 213, 479, 480, 481, 52/487, 488, 496, 497, 492, 509

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Primary Examiner—Alfred C. Perham

Attorney—Craig, Antonelli & Hill

[57] ABSTRACT

Bearing sections consisting of vertical sections, horizontal sections used when the building walls are not interrupted by frames, horizontal sections used when the building walls are interrupted by frames, and connecting sections. The bearing sections are of particular shapes and have teeth or appendices which allows the sections to be connected together as well as the building walls to be covered by, for example, marble plates in a dry manner.

5 Claims, 5 Drawing Figures

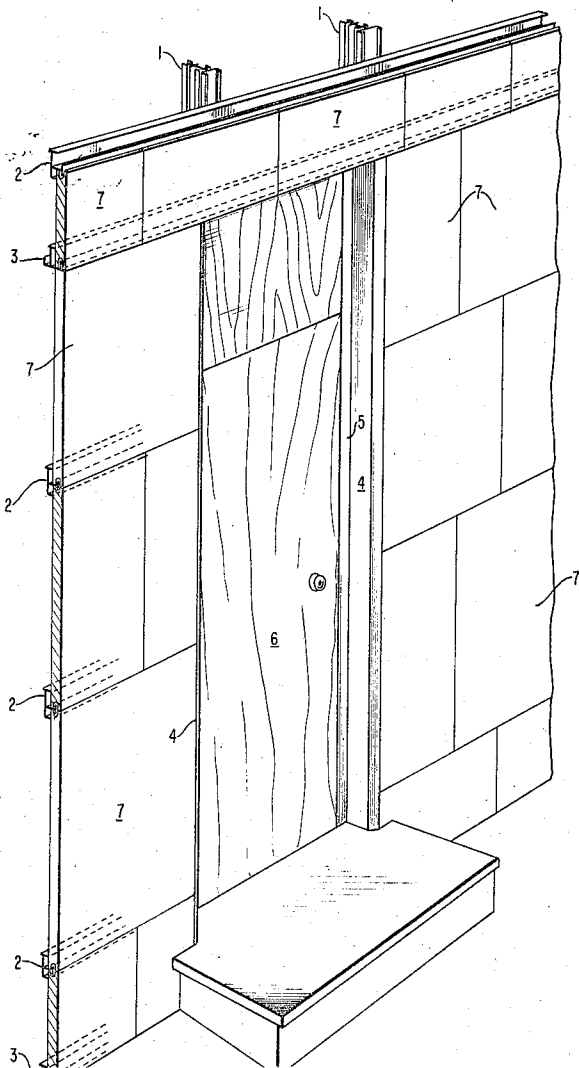
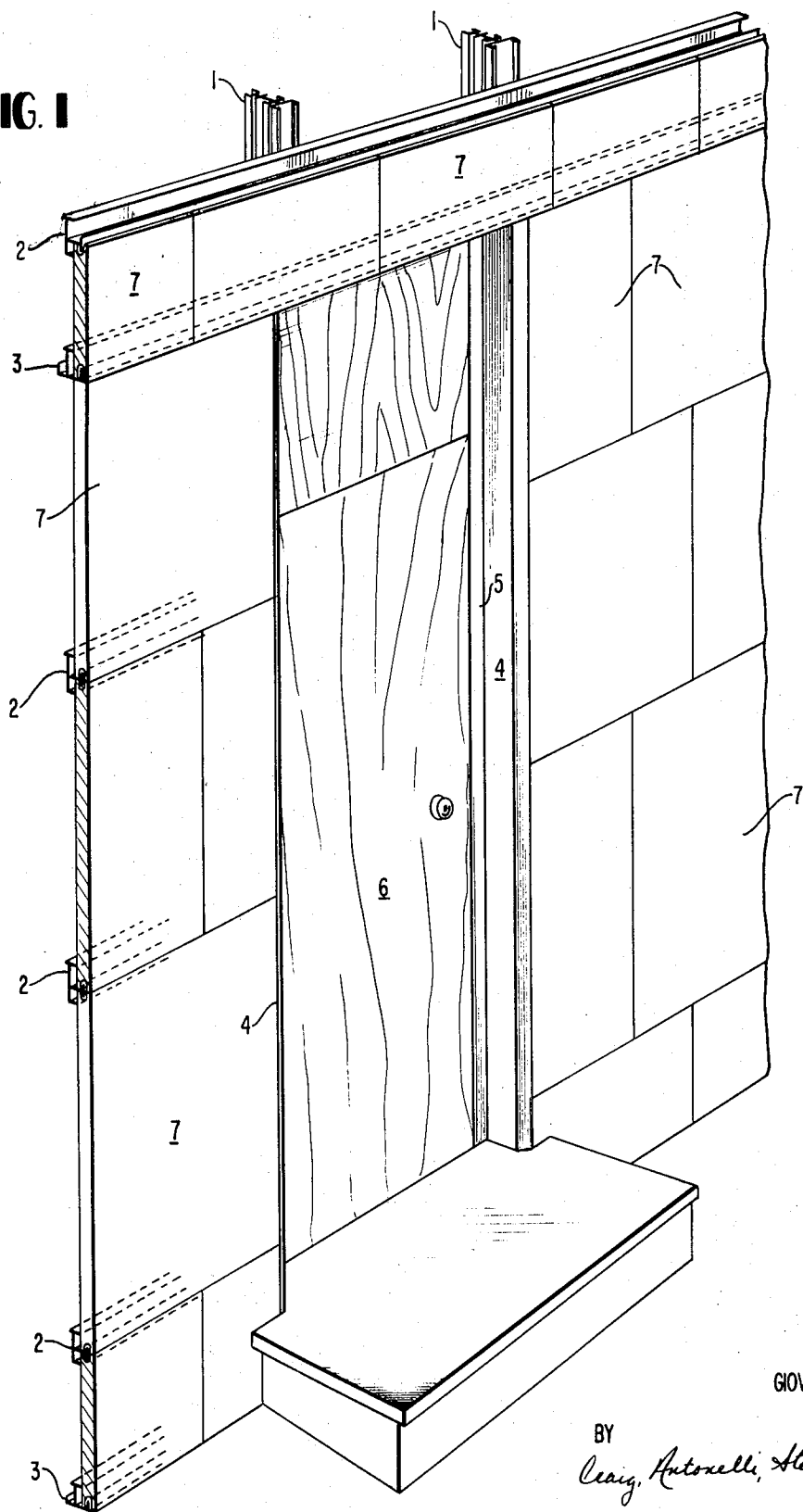


FIG. 1



INVENTOR
GIOVANNI VARLONGA

BY
Craig, Antonelli, Stewart & Hill

ATTORNEYS

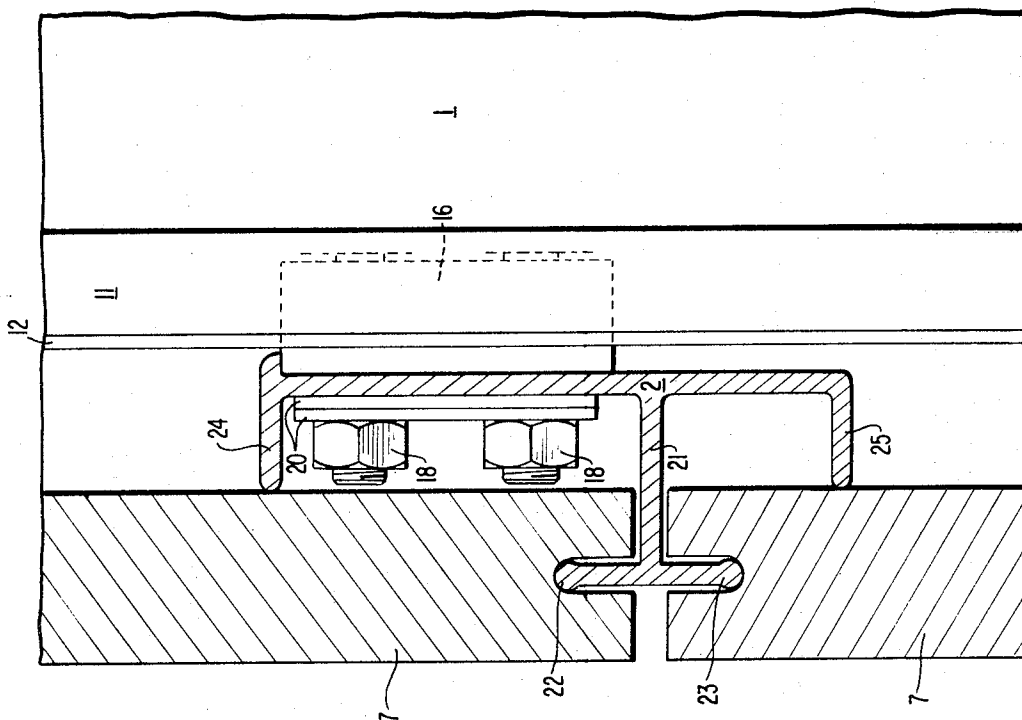


FIG. 3

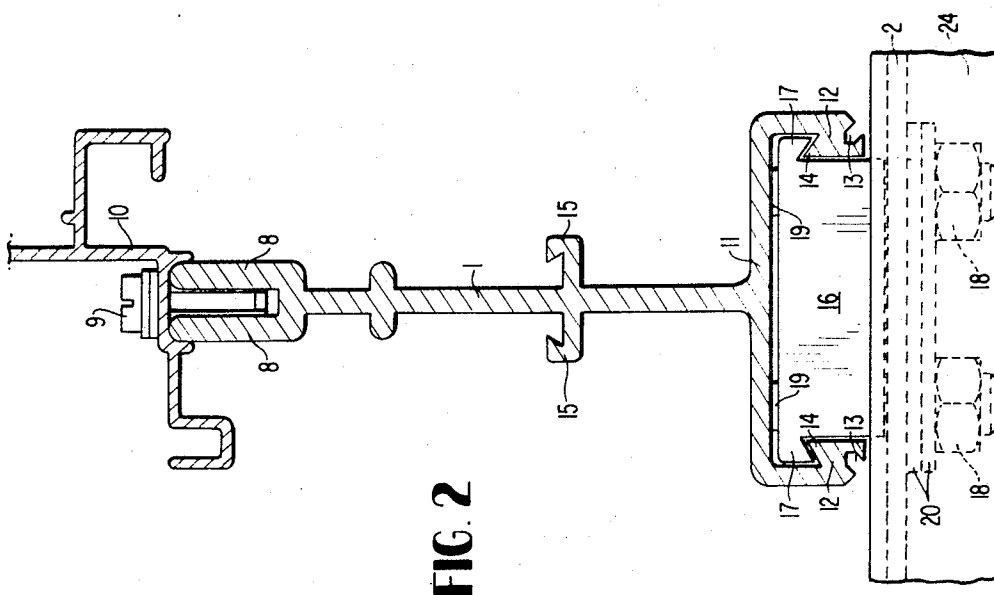


FIG. 2

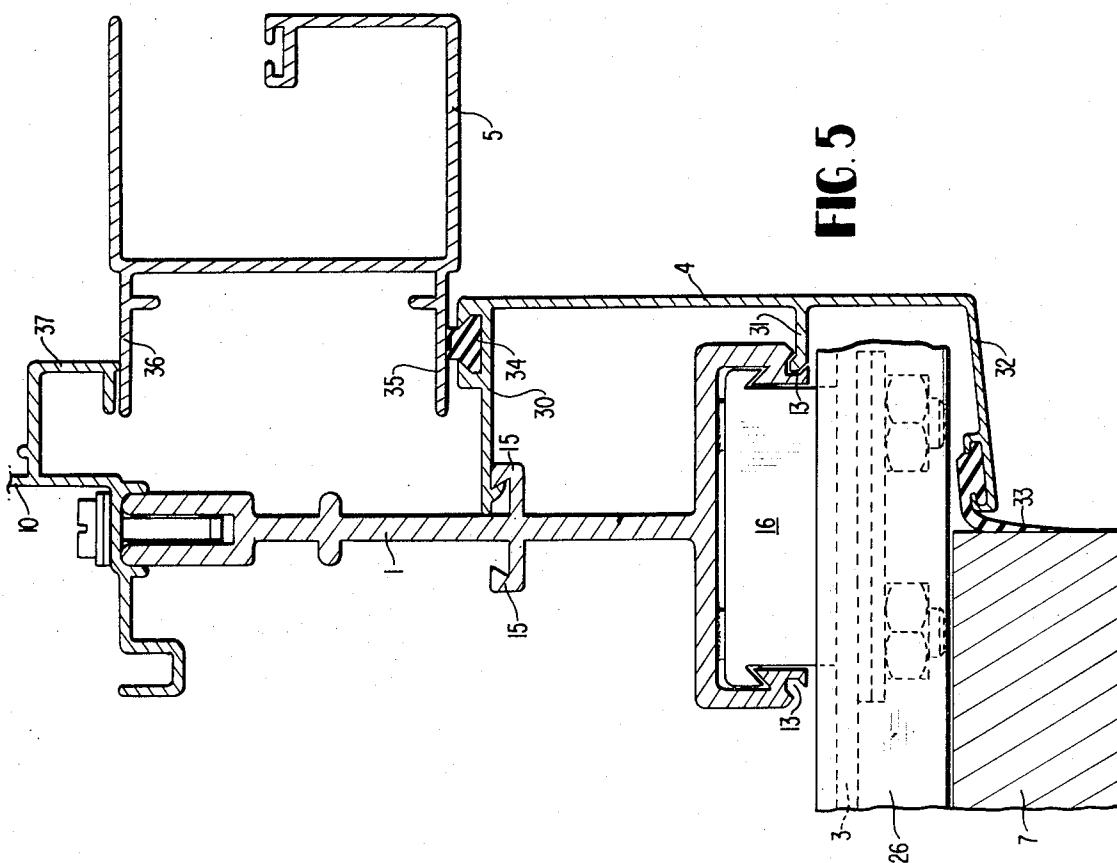


FIG. 5

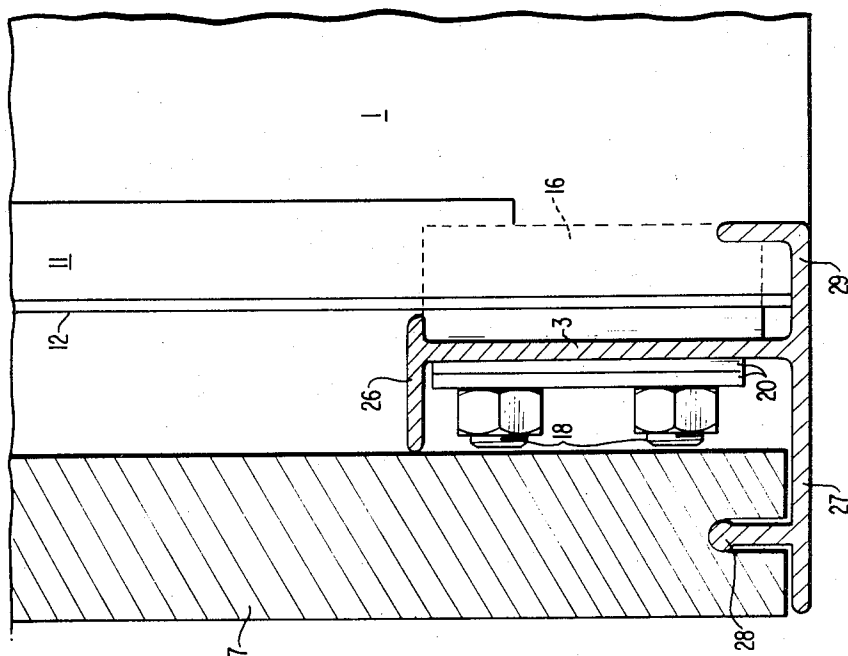


FIG. 4

INVENTOR
GIOVANNI VARLONGA

BY
Craig, Antonelli, Stewart & Hill
ATTORNEYS

BEARING SECTIONS FOR THE COVERING WITH MARBLE PLATES, PANELS AND THE LIKE OF WALLS BOTH UNINTERRUPTED AND INTERRUPTED BY DOORS, WINDOWS AND THE LIKE

The present invention relates to bearing sections, and more specifically, to bearing sections having a particular shape by means of which it is possible to effect an easy and quick dry covering of building walls with marble plates, panels and the like.

The present invention anticipates the use of both vertical bearing sections and horizontal bearing sections as well as connecting sections which are provided with suitable appendices or projecting portions and indentations, thus allowing the dry covering or assembly not only of uninterrupted or continuous walls but also, mainly, or discontinuous walls, that is, walls interrupted by frames such as doors, windows and the like. In accordance with the present invention, the vertical bearing sections, which are fixed by threaded connecting means such as screws to anchoring square plates protruding from the slabs of the walls to be covered so as to form a series of vertical and parallel uprights, have essentially U-shaped heads. By means of hook-shaped appendices and bolts, suitably-shaped metal blocks are engaged and dry assembled or fastened to the U-shaped heads of the vertical bearing sections through the metal blocks. In turn, the horizontal bearing sections are locked to the metal blocks. The vertical bearing sections are further provided with appendices and indentations for an easy dry fastening or assembling of the connecting sections to which the frames are tightly applied.

The connecting sections, according to the present invention, have suitable appendices or limbs and indentations in order to engage the corresponding indentations and appendices of the vertical bearing in a dry manner. Further, the present invention anticipates that the connecting sections will be provided with packings for the sealings of the frames and for the resilient seal which compensates for the connection with the covering panels.

The horizontal bearing sections, which are horizontally bolted through the metal blocks to the vertical bearing sections, form, together with the vertical bearing sections, a grating or grid with rectangular meshes having mutually spaced distances which are proportional to the height dimensions of the covering panels. The horizontal bearing sections also have at the end of the sections thereof two shoulder wings for two adjacent covering panels and a T-shaped wing, projecting outwardly from the core or body portion of the sections, the two wings of which enter in a dry manner into corresponding grooves made respectively along the lower and upper sides of the two adjacent covering panels which are thus safely supported.

Also in accordance with the present invention, two different types of horizontal bearing sections are used, one type being used where there are no frames and the second type being used where, on the other hand, frames are present in the wall structure. The features of the horizontal bearing sections of the second type are not essentially different from the above-mentioned features of the first type. However, in the second type of bearing sections, the projecting wing has a t-shape without a lower shoulder wing, instead of having a T-shape. In addition, an L shaped wing is provided on the

horizontal bearing section opposite to the lower t-shaped projecting wing.

BRIEF DESCRIPTION OF THE DRAWINGS

These and further features, advantages and objects will become more apparent from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only, an embodiment in accordance with the present invention, and wherein:

FIG. 1 is a partial perspective view of a covering with panels of a wall having a door, by utilizing bearing sections in accordance with the present invention;

FIG. 2 is a sectional view of the vertical bearing section, according to the present invention, and the fastening thereof to the square plate and also the important locking thereto of the horizontal bearing section through a metal block;

FIG. 3 is a sectional view of the horizontal bearing section employed, in accordance with the present invention, where there are no frames, and shows the manner in which the covering panels are anchored thereto;

FIG. 4 is, in a manner similar to FIG. 3, a sectional view of the horizontal bearing section, in accordance with the present invention, which is used in the situations where there are no frames, that is, where there are continuous or uninterrupted walls; and

FIG. 5 is a general sectional view of the connecting section, according to the present invention, and shows the manner in which the connecting section is fastened to the vertical bearing section, the manner in which the connecting section is connected to the covering panel, and the manner in which the door frame is applied tightly thereto.

DETAILED DESCRIPTION OF THE DRAWINGS

With reference now to the drawings and in particular to FIG. 1, there is illustrated the vertical bearing sections 1, the horizontal bearing sections 2 of the type used where there are no frames, the horizontal bearing sections 3 of the type used where there are frames, the connecting sections 4 for the tight introduction and fitting of the frame 5 of the door 5 and the covering panels 7 of the wall.

The vertical bearing sections 1 are applied in a suitable manner both vertically and mutually parallel with respect to each other along the wall to be covered. The vertical bearing sections 1 have fork-shaped back ends 8, as seen in FIG. 2, wherein screws 9 are introduced so that the sections 1 are dry fixed or assembled to the protruding anchoring square plate 10 of the wall slabs. At the front portion or side, the sections 1 have U-shaped heads 11, with two appendices or limbs 12 being located on the opposite side of the U-shaped heads, having an approximately T-shaped cross-section defining two teeth 13 and two hooks 14. The two teeth 13 together with the hook-shaped appendices 15 provided along the stem of the sections 1, serve for the fastening of the connecting sections 4 to the vertical bearing sections 1. The two hooks 14 serve, on the other hand, to engage the metal blocks 16 inside the heads 11. For this purpose, suitable hook-shaped appendices or portions 17 are provided on the sides of the metal blocks 16.

The metal blocks 16, which serve to dry connect the horizontal bearing sections 2 to the vertical sections 1, may be fastened in any position along the heads of the vertical sections 1 by connecting means such as, for example, four bolts 18 which pass through predetermined holes on the core or body portion of the horizontal bearing sections 2 corresponding to those on the metal blocks 16. The bolts 18 compress the hook-shaped portions or appendices 17 of the blocks against the corresponding hooks 14 of the appendices or limbs 12 on the heads of the vertical bearing sections 1. In order to prevent inadvertent loosening and to facilitate the tightening of the bolts 18, a roughened or serrated portion 19 is provided on the bottom of the heads 11 of the vertical sections 1, corresponding to the toothed heads of the bolts 18, and plates 20 are interposed between the core or body portion of the horizontal bearing sections 2 and the bolt nuts.

The horizontal bearing sections 2 are connected with the vertical bearing sections 1 through the metal blocks 16 so as to be arranged horizontally and are spaced proportionally to the height dimensions of the covering panels 7 which the horizontal bearing sections 2 are to support. In this manner, the horizontal and vertical bearing sections define a rectangular grid or mesh grating. The horizontal bearing sections 2, as seen in FIG. 3, have a T-shaped wing 21 projecting outwardly from the core or body portion of the horizontal bearing sections 2. The two wings 22, 23 of the T-shape serve to support and to keep the covering panels 7 in position. Along the upper and lower sides, the covering panels 7 have grooves corresponding to the T-wings for the entrance thereof. The horizontal bearing sections 2 also have two shoulder wings 24, 25 respectively, at the ends of their cross-section which serve as a ledge for two adjacent covering panels in order to keep them in a perfect vertical orientation.

Corresponding to the door lintel 6 and to the base of the wall to be covered, horizontal bearing sections 3 of the type shown in FIG. 4 are connected to the vertical bearing sections 1, again through the metal blocks 16, instead of using the type of horizontal bearing sections 2 as above discussed. The sections 3 bear only a single series of covering panels 7 and have a single shoulder wing 26 corresponding to the upper portion of the covering panel cross-section. Instead of a T-shaped projecting wing 21, the horizontal bearing sections 3 is provided with a *t*-shaped projecting wing 27 having only a single *t*-wing 28 which serves, once introduced into the corresponding grooves which are provided along the lower sides of the covering panels 7, to bear and to keep the panels in perfect position. Opposite to the projecting wing 27, L-shaped wings 29 are provided on the horizontal bearing sections 3 which serve to fill the spaces caused in connection with the frames. In the present case, for example, the wing 29 serves to close the space in front of the lintel of door 6. Finally, connecting sections 4 which extend vertically for the entire height of the doorposts 6 are hooked to certain vertical bearing sections which correspond to doorposts 6.

The connecting sections 4, as seen in FIG. 5, have a hook-shaped appendix or limb 30 and a tooth limb or appendix 31 which is hooked to one of the aforementioned hook-shaped appendices 15 and to one of the teeth 13 of the vertical bearing sections 1, respectively.

In this manner, the connecting sections 4 become unitary or solid with respect to the structure of the vertical sections 1. The connecting sections 4 are also provided with an appendix or limb 32 ending in a jaw wherein a packing 33 is inserted. The packing 33 serves both as a connection and as a resilient seal for the covering panels 7 which delimit the edge of the opening of door 6. Also on the connecting sections 4, it is anticipated that a cavity having a trapezoidal section will be provided on the limb or appendix 30. A packing 34 is inserted into the cavity and presses against the wing 35 of the frame 5 of door 6. In addition, the wing 36 leans or abuts against the appendix or limb 37 of the anchoring square plate 10 which serves thereby as a shoulder. As a result, the frame 5 of the door 6 is tightly clamped. In summary, the connecting sections 4 serve to close the spaces existing in the zones in front of the frame sides, in addition to serving as a connection and a resilient seal of the covering panels which delimit the sides as well as a stop for the frames themselves.

While I have shown and described only one embodiment in accordance with the present invention, it is understood that the same is not limited thereto but is susceptible of numerous changes and modifications as known to a person skilled in the art, and I, therefore, do not wish to be limited to the details shown and described herein but intend to cover all such changes and modifications as encompassed by the scope of the invention.

I claim:

1. An anchoring system for holding wall coverings, such as marble plates, panels and the like, in place on building walls, the wall coverings being formed as a plurality of relatively flat panels; said anchoring system comprising:

at least one relatively flat wall panel,

a series of substantially parallel vertical bearing sections extending vertically along the wall to be covered, said vertical bearing sections having rear, middle and front portions, the rear portion of each of said vertical bearing sections being anchored to the wall;

a series of substantially parallel horizontal bearing sections extending horizontally along the wall to be covered, said horizontal bearing sections having rear and front portions, the rear portion of each horizontal bearing section being attached by attachment means to the front portion of a plurality of vertical bearing sections such that a rectangular grid is formed by the bearing sections, said horizontal bearing sections being spaced one from the other a distance corresponding to the vertical height of the wall panels to be secured, the front portion of each of the horizontal bearing sections including engaging means to engage the edges of the wall panels to hold them in place;

the attachment means for attaching the respective vertical and horizontal bearing sections together comprising connecting block means disposed between the vertical and horizontal bearing sections, fastener means engaged through apertures in both the horizontal bearing sections and the connecting block means to fasten the connecting block means and the horizontal bearing sections together, first abutment means disposed on said

5

connection block means, second abutment means disposed on the respective forward portions of said vertical bearing sections, said second abutment means being adapted to engage said first abutment means and thereby fasten the connecting block means to the vertical bearing section; and a connection section including sealing means for sealingly connecting wall panels to a door or like frame, said sealing means including a first and second resilient seal, said connection section including an integral connecting piece having a substantially smooth flat outer surface portion for partially filling the space between the panels and a door frame, said connecting piece further including three spaced projections extending inwardly in a direction substantially perpendicular to said outer surface, a first forward projection of said connecting piece including groove means for holding the first resilient seal in contact with respective wall panels, a second middle projection of said connecting piece including abutment means for engaging in a groove on the front portion of a respective vertical bearing section, and a third rearward projection including abutment means for engaging a groove on the middle portion of the said respective vertical bearing section, the second and third projections being operable to secure the connecting piece to the respective vertical bearing section, said second resilient seal being positioned

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between said connecting piece and said door frame.

2. An anchoring system according to claim 1, further characterized in that said third projection includes groove means for holding the second resilient seal in contact with the door frame.

3. An anchoring system according to claim 2, further comprising a door frame having two inwardly substantially parallel projecting integral wing sections, a first forward wing section being in contact at its forward edge with said second resilient seal and a second rearward wing section being in contact at its rearward edge with a shoulder provided on an anchoring plate attached to the rear portion of said vertical bearing section, whereby the door frame is tightly clamped in position between said resilient seal and said shoulder.

4. An anchoring system according to claim 1, characterized in that the abutment means of said second projection and the abutment means of said third projection form resilient jaws for gripping the respective abutments on the vertical bearing section therebetween.

5. An anchoring system according to claim 1, further characterized in that said first abutment means are integral shoulder portions extending laterally from said connection block and said second abutment means are integral projections extending inwardly from a generally U-shaped front portion of said vertical bearing structure.

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