United States Patent [19]

Gallo

[11] **3,905,169**

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[54] **CRYPT FRONT REMOVABLE MOUNTING MEANS**

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[52] **U.S. Cl.** **52/137;** 52/509; 52/139; 52/704; 52/235

[51] **Int. Cl.** **E04b 1/40;** E04c 1/00

[58] **Field of Search** 52/378, 379, 509, 698, 52/702, 704, 365, 366, 136, 137, 138, 139

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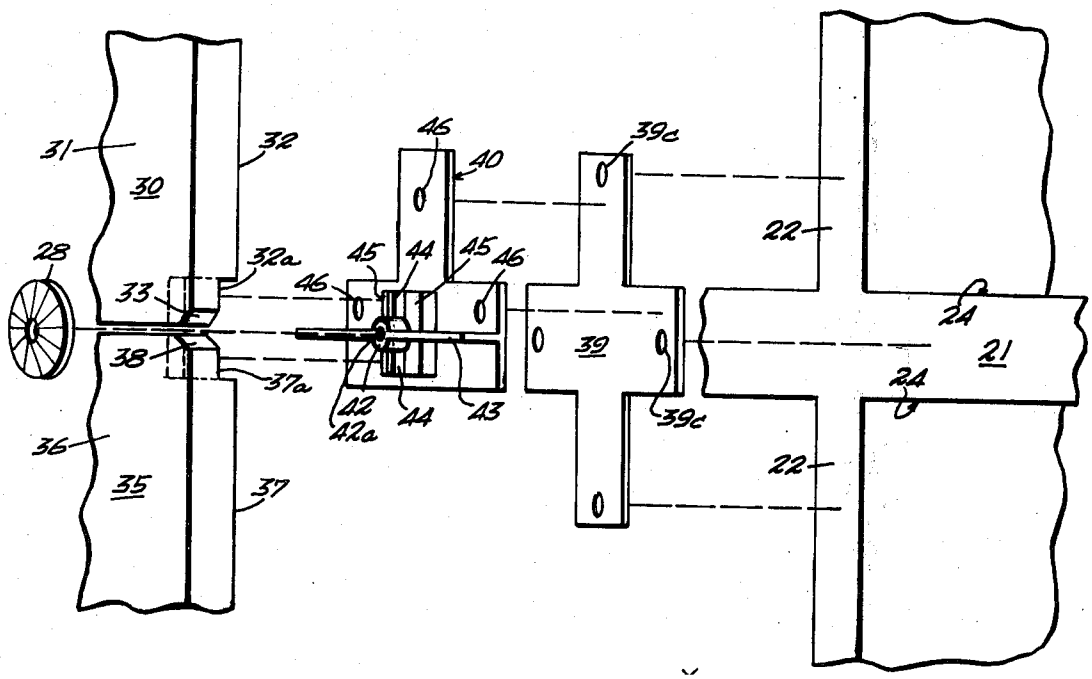
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Primary Examiner—Frank L. Abbott
Assistant Examiner—James L. Ridgill, Jr.
Attorney, Agent, or Firm—Erwin M. Barnett

[57] **ABSTRACT**

Backing plates are positioned in mortar in a predetermined vertical plane and secured by expansion bolts after the mortar sets to provide flat coplanar surfaces for receiving support brackets for crypt fronts thereagainst and in positions accommodating slight differences in dimensions and proportions between the copartmented crypt structure and the individual fronts.

7 Claims, 20 Drawing Figures



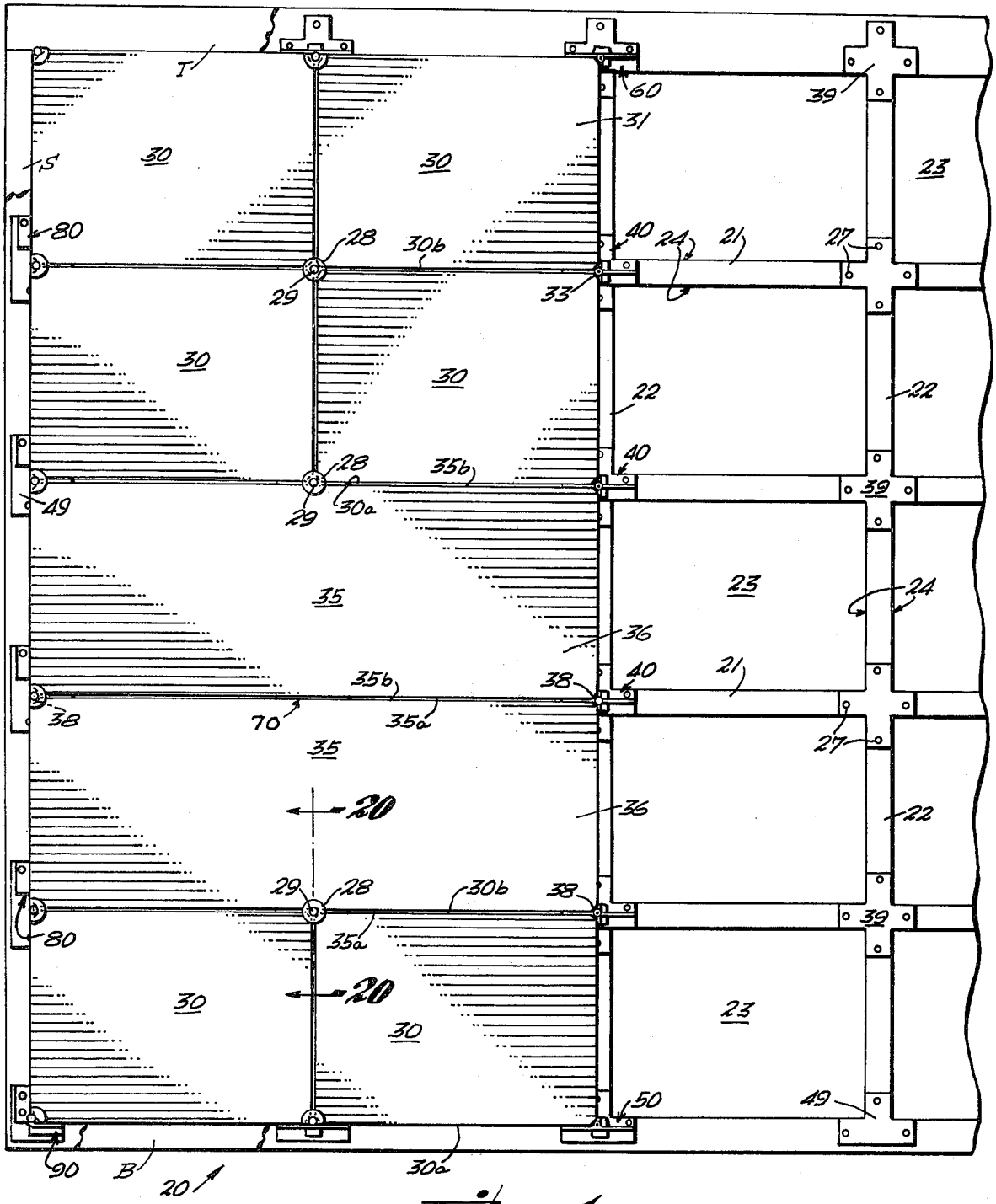

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Fig. 1

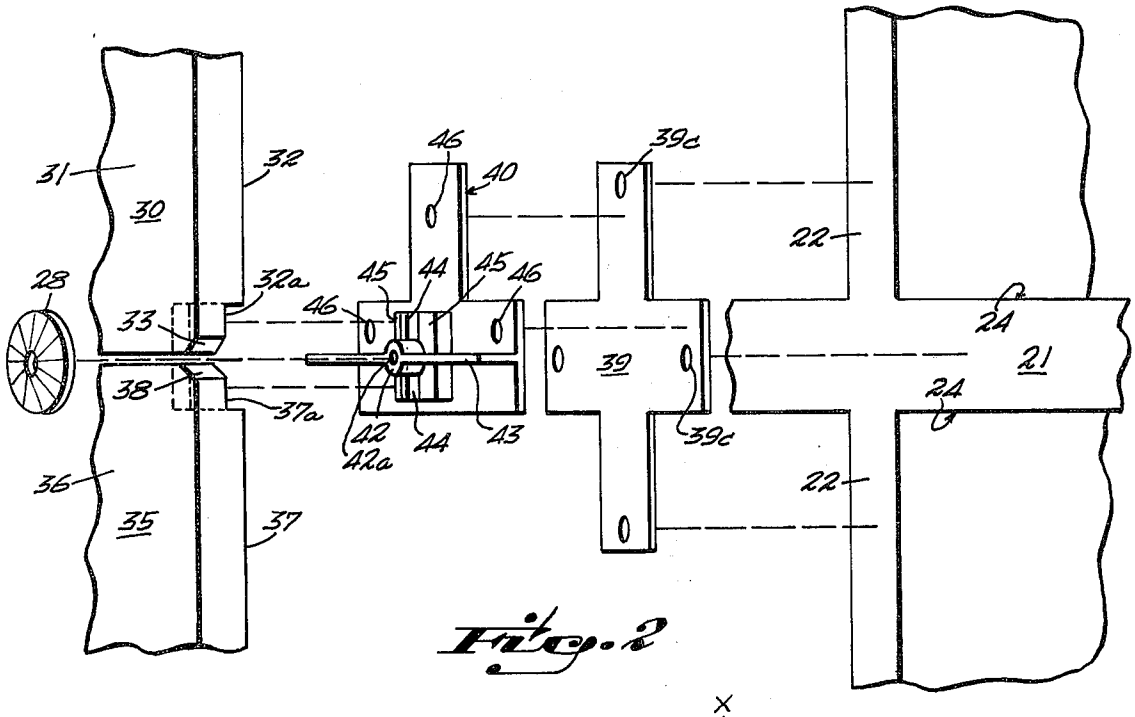


Fig. 2

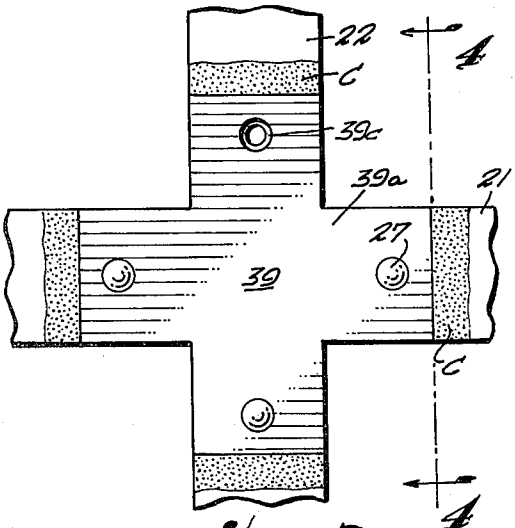


Fig. 3

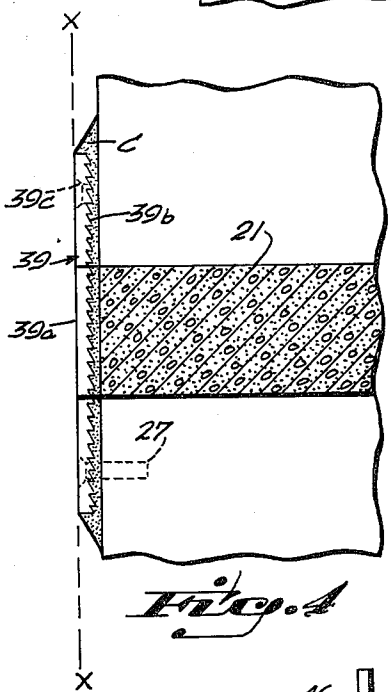


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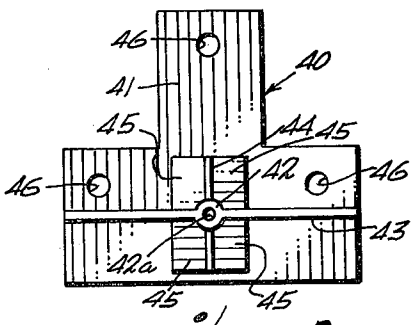


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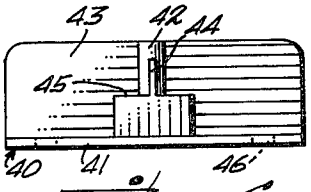


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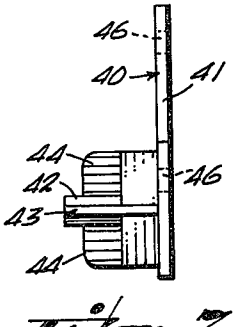


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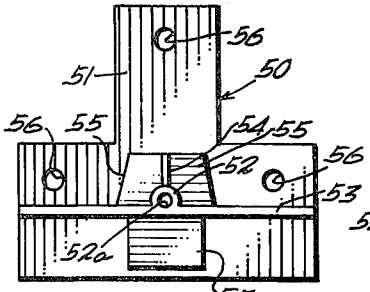


Fig. 8

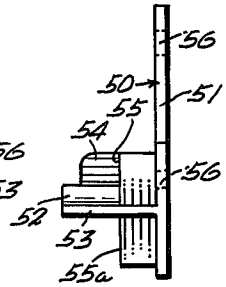


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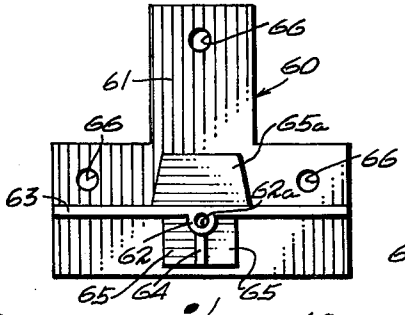


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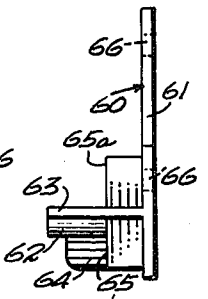


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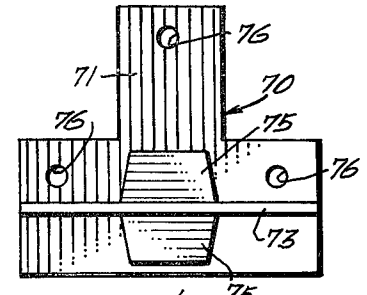


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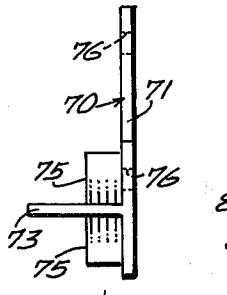


Fig. 13

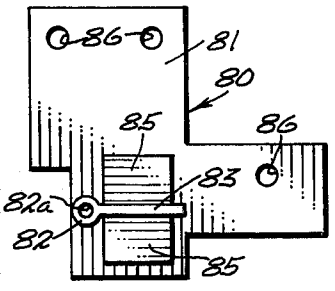


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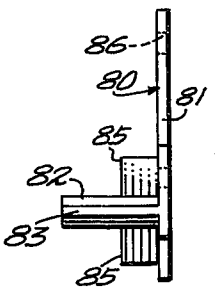


Fig. 15

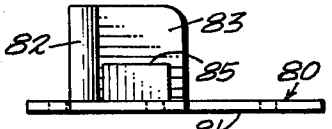


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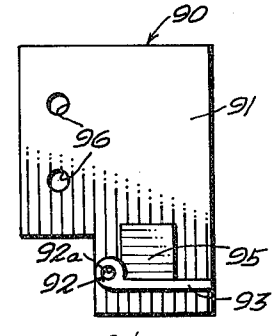


Fig. 17

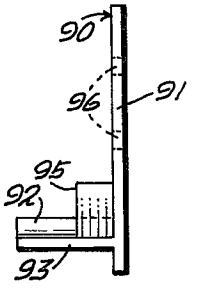


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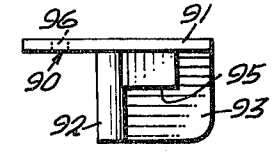


Fig. 19

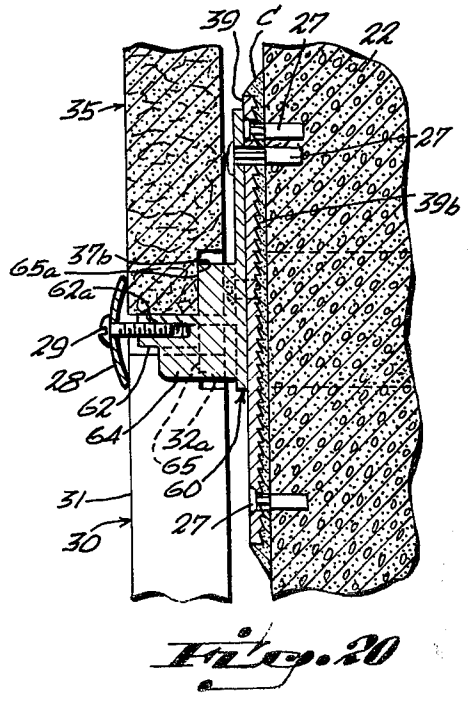


Fig. 20

CRYPT FRONT REMOVABLE MOUNTING MEANS

BACKGROUND OF THE INVENTION

1. Field of the invention

The invention relates generally to burial vaults having a plurality of open front compartments providing crypts arranged in horizontal rows and vertical tiers, and is directed to a method of construction and means for removably fastening a face plate or front of marble or the like material to each crypt in a coplanar relation, each front serving to conceal one, or, in the case of husband and wife, two adjacent compartments, and being individually removable and replaceable, and cooperating with adjacent fronts to provide a decorative vertical wall structure. In more particularity the invention applies to crypts sized for depositories of standard size caskets.

2. Description of the prior art

The invention seeks to correct disadvantages of prior art practices and devices, as for example, use of female threaded anchors preset in the poured concrete of the crypt structure to receive support bracket attachment bolts. These anchor threads tend to collect concrete or other foreign matter causing time loss and annoyance in the initial mounting of the brackets. A more serious problem results when the anchors are slightly misorietated or the front surface of the poured concrete crypt structure, against which the brackets are to be mounted, deviates from the predetermined vertical alignment plane, either or both of which conditions frequently occur. Under these conditions the mounted brackets are spaced from said concrete surface leaving a length of the retaining bolt between bracket and concrete free for slight distortion and hence displacement of the bracket so that difficulty is encountered when replacement of the marble front is attempted.

SUMMARY OF THE INVENTION

Among the objects of the invention is to provide an improved method for installing a vertical wall of the character described having mounting means which are secured in rear surface abutment relation to the poured concrete crypt structure and in coplanar alignment with each other. The method and fittings permit rapid construction by craftsmen, elimination of the preset anchors and their problems hereinbefore described, and meet a long felt need to simplify the mounting of removable fronts.

The invention features the combination of brackets having flat rear surfaces secured in abutment on backing plates premounted in vertical coplanar relation on the open front end of a compartmented crypt structure. The forward facing side of each of the brackets includes a forwardly extending boss having an internally threaded bore for removably receiving the anchoring screw of a rosette, a horizontal ledge extending laterally from the bore for supporting the bottom edges of a marble front, a rib extending vertically from the bore serving as a lateral stop against which a side edge of the front abuts, and an aligning shoulder stop for engaging a rear side portion of the marble front.

The method of initial installation of the vertical wall of marble fronts comprises the steps of mounting the backing plates in coplanar relation on a layer of mortar or cement applied to the concrete crypt structure, securing the plates by expansion bolts after the mortar hardens, and then installing the marble fronts tier by tier. Preformed openings for the expansion bolt mounting are all located above the ledge of the bracket enabling each bracket to be accurately positioned with respect to the previously installed lower tier of fronts. Holes are then drilled through the backing plate and into the concrete to register with such properly positioned bracket openings and the expansion bolts secured therein with the lower tier of fronts remaining in place.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a fragmentary front elevational view of a compartmented crypt structure illustrating an installation of fronts or closure panels for the crypts as a vertical wall, the fronts on the right side being removed to show the underlying mounting means.

FIG. **2** is an enlarged fragmentary exploded perspective view of the crypt structure, backing plate, bracket, fronts and rosette shown in FIG. **1.**

FIG. **3** is an enlarged fragmentary front elevational view of the backing plate mounted on the crypt structure at a partition intersection.

FIG. **4** is a sectional view taken on line **4—4** in FIG. **3.**

FIGS. **5, 6,** and **7** are front elevational, bottom plan, and side elevational views, respectively, of a four corner bracket.

FIGS. **8** and **9** are front and side elevational views, respectively, of a two corner upper and middle lower bracket.

FIGS. **10** and **11** are front and side elevational views, respectively, of a middle upper and two corner lower bracket.

FIGS. **12** and **13** are front and side elevational views, respectively, of a middle upper and middle lower bracket.

FIGS. **14, 15,** and **16** are front and side elevational and bottom plan views, respectively, of a side wall bracket.

FIGS. **17, 18,** and **19** are front and side elevational and top plan views, respectively, of a corner wall bracket, and

FIG. **20** is an enlarged sectional view taken on line **20—20** in FIG. **1** showing details of the bracket mounting of a double front above a pair of single fronts.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring in detail to the drawings, **20** generally denotes a mausoleum structure sectionalized by horizontal and vertical partitions **21** and **22** into vertically disposed horizontal tiers of crypts **23** having open front ends **24,** each for receiving a casket (not shown) into the respective crypt. As seen in FIG. **1,** an overall decorative vertical front wall for the mausoleum is composed of individually and removably mounted single or double closure panels or fronts **30** or **35,** for single or pairs of adjacent crypts, respectively. Suitable brackets, selected from the six different configurations shown in FIGS. **5** to **19,** inclusive, and hereinafter described in more detail, have horizontal ledges upon which rest opposite corners of the bottom edges **30***a* and **35***a* of each of fronts **30** and **35,** respectively. Another bracket is located midway along bottom edge **35***a* providing additional support for each double panel **35.** Rosettes **28** by means of center screws **29** removably fasten to the brackets as retention means for the cor-

ners of fronts 30 and 35 securing the latter against horizontal movement out of the predetermined vertical plane of support.

Each single front 30, made of marble, simulated marble or other like material, has a flat and polished outfacing surface 31 and a rear surface 32 which may be slightly irregular, but has four corner areas 32*a* cut to provide a flat surface depression parallel to surface 31 and a uniform thickness through said areas. The actual corners have chamfers 33. Each double front 35 has comparable polished and rear surfaces 36 and 37, corner areas 37*a*, chamfers 38 and additional midline rear surface areas 37*b* cut to provide the same uniform thickness as at corner areas 37*a* and located adjacent the bottom and top edges 35*a* and 35*b*.

A feature of the invention is backing plates 39 which are firmly set in layers of mortar or cement C against the concrete of the crypt structure with their front surfaces 39*a* all lying in a predetermined vertical plane *x*—*x*. The rear surfaces 39*b* are suitably roughened, as by horizontal ribbing or scoring shown in FIG. 4 as being saw-toothed in cross-section, for the purpose hereinafter more fully described. Symmetrically spaced outwardly flaired openings 39*c* may be provided for receiving expansion bolts 27. Backing plates 39 are positioned at the intersections of the horizontal and vertical partitions 21 and 22 and as seen in FIGS. 2 and 3 are generally cross-shaped to extend short distances horizontally and vertically along the respective partitions. A T-shaped backing plate 49 of similar construction is used adjacent the bottom and sides of the structure.

Bracket 40 is most frequently used of the six configurations shown due to its function as the juncture of any four corners 33 and/or 38 of fronts 30 and/or 35, respectively, and is shown in FIGS. 2, 5, 6 and 7 to comprise a flat T-shaped plate-like body 41 proportioned to normally have its rear surface fit, in an inverted T position, flat against the upper portion of backing plate front surface 39*a* and within the edges thereof. Boss 42 projects outwardly at right angles to the plane of body 41 and has an internally threaded bore 42*a* for receiving a center screw 29 of a rosette 28. Boss 42 is located on body 41 as a hub from which horizontal ledge 43, vertical rib 44 and four quarter shoulders 45 radiate. Body 41 may also be preformed with a plurality of openings 46, here shown as three in number, symmetrically spaced and all located above horizontal ledge 43 for the purpose hereinafter described.

Brackets 50 and 60, shown in FIGS. 8 and 9, and FIGS. 10 and 11 both function as the juncture of two corners 33 and/or 38 of fronts 30 and/or 35, respectively, on one tier and a midline rear surface area 37*b* of a double front 35 on the adjacent tier. Brackets 50, 60 have elements similar to those of brackets 40, namely, bodies 51, 61 from which bosses 52, 62 having threaded bores 52*a*, 62*a*, and horizontal ledges 53, 63 project, and formed with openings 56, 66. To accommodate midline rear surface area 37*b* of double front 30, bracket 50 has a lower shoulder 55*a* located beneath horizontal ledge 53, while bracket 60 has a corresponding upper shoulder 65*a* located above horizontal ledge 63. Similarly, ribs 54 and 64 extend in only one direction from bosses 52 and 62, respectively. Thus, rib 54 extends upwardly between quarter upper shoulders 55 and rib 64 extends downwardly between quarter lower shoulders 65.

As will be clear from FIGS. 1, 12 and 13, bracket 70 has openings 76 in body 71 also formed above horizontal ledge 73, the latter serving as a midline support for bottom edge 35*a* of double front 35 and has a pair of shoulders 75 extending on opposite sides of ledge 73 to engage midline rear surface areas 37*b* of a pair of adjacent double fronts 35.

FIGS. 14, 15 and 16 illustrate a side bracket 80 in which body 81, openings 86, boss 82 with its bore 82*a*, horizontal ledge 83 and shoulders 85 are all located for use of the bracket along the extreme left side of the vertical wall structure, it being understood that a similar bracket but with the parts reversed in mirror image would be utilized along the right side.

Likewise, bracket 90, shown in FIGS. 17, 18 and 19 is used in the lower left corner while a similar mirror image bracket would be provided for the right corner. Bracket 90 has openings 96 formed in body 91 from which boss 92 with bore 92*a*, horizontal ledge 93, and a single shoulder 95 project.

In accordance with the invention, no presetting of anchors or other special handling is required prior to the pouring and curing of the concrete. After removal of the forms from the set concrete, backing plates 39, and plates 49 for the bottom tier and along the opposite side walls, are applied on layers of mortar or cement C to the open front ends of crypts 23 at the intersections of horizontal and vertical partitions 21 and 22, and with the aid of well known masonry practices are brought into accurate vertical coplanar alignment with each other in a predetermined plane *x*—*x*. In this manner irregularities in the mounting surface of the poured concrete are corrected. After cement C has set, holes are drilled in the concrete through openings 39*c* and expansion bolts 27 inserted therein and expanded to an anchored condition by hammering thereon in the conventional manner. As illustrated in FIGS. 3 and 4, which show three of the four bolts 27 in anchored position, the counter-sunk outward flair of openings 39*c* are sized and shaped to normally accommodate the volume of the head of expansion bolt 27 which may be readily deformed by additional hammering to conform thereto so as not to project outwardly beyond the surface 39*a* and its plane *x*—*x* thereby enabling any one of brackets 40, 50, 60, 70, 80 or 90 to lie flat in any adjusted position against surface 39*a*.

To this end, if required, any projection of the head of bolts 27 may be filed or ground down by a suitable tool.

The method of installation permits each bracket to be individually checked in position with respect to previously placed fronts 30 or 35 of its adjacent lower tier to determine the precise location of the holes to be drilled through backing plate 39 and into the underlying concrete. However, for the bottom tier, precise locations for corner brackets 90 and brackets 50 and/or 70 are first determined, hole positions marked to register with bracket openings 96, 56 and 76 and holes drilled through backing plates 49 and into the concrete. Respective brackets 90, 50 and/or 70 are firmly secured in position with expansion bolts 27. Now, as fronts 30 and/or 35 are placed in succession on ledges 93, 53 and/or 73 of the mounted bottom tier of brackets with corner areas 32*a* and 37*a* contacting respective shoulders 55 and 95 and midline areas 37*b* contacting shoulders 75, suitably selected brackets 40, 50, 60, 70 or 80 are fitted to the top edges 30*b* and 35*b* and respective corners of said fronts by slipping the lower

portion of the bracket behind its respective area **32***a*, 37*a* or **37***b*. An accurate positioning of each bracket is facilitated when the fit is made between two adjacent fronts. The proper hole locations may then be marked on backing plates **39** to register with bracket openings **46, 56, 66 76** or **86,** all of which are readily accessible when the lower tier fronts are in place, the holes drilled and the brackets secured in accurate alignment. Rosettes **28** are attached for retaining the fronts in place by threading screws **29** into bores **42***a*, 52*a*, 62*a*, 82*a* or **92***a* as installation progresses.

The entire vertical wall is installed tier by tier with fronts **30** and/or **35** arranged in a predetermined pattern following the procedure of progressively fitting and mounting brackets along upper edges and corners of fronts as they are positioned on the previously mounted brackets in preparation for the next tier. The installer's concern with vertical alignment of fronts **30** and **35** is limited to the setting of backing plates **39** and **49** in cement C. Thereafter, the uniform distance that shoulders **45, 55, 55***a*, 65, 65*a*, 75, 85, and 95 project from their respective bracket bodies and the uniform thickness of fronts 30 and 35 through corner areas 32*a*, 37*a* and midline areas **37***b* assure vertical alignment when rosettes **28** are pulled in tight to position fronts **30** and **35** on the respective ledges so that areas **32***a*, 37*a* and **37***b* contact their respective shoulders. As is clear from FIG. **20,** said shoulder projecting distance is sufficient to accommodate all possible variations in overall thickness of fronts **30, 35** and provide clearance between rear surfaces **32, 37** thereof and underlying bracket structure. When the installation of all the fronts on all tiers is complete, bottom, side and top trim strips B, S and T may be permanently mounted to finish the wall and conceal the brackets along the borders as will be clear from FIG. **1.**

Removal of any individual single front **30** or double front **35** is readily accomplished by loosening the center screws **29** of rosettes **28** on the four corners of such front and easing the latter forwardly out of its position on the bracket ledges. Because brackets **40, 50, 60, 70,** 80 and **90** lie flat against backing plates **39, 49** and the latter are substantially embedded in the concrete structure as filled out by the layer of cement C, all play between the bracket and the concrete structure is nonexistent and relative displacement or shifting of a bracket from its original position due to the weight of fronts **30** or **35** after installation is a practical impossibility. This facilitates removal and especially replacement of the front which is readily accomplished by merely easing the latter back in place on its ledges and securing the corners by tightening the rosette screws **29.**

Backing plates **39, 49** and brackets **40, 50, 60, 70, 80** and **90** may be cast as integral structures or otherwise fabricated of a non-corrosive metal alloy, such as, gunmetal, bronze of the like.

The crypt wall construction having fronts removably secured on flat-back brackets mounted against prealigned backing plates which are substantially embedded in an underlying layer of fill-in cement is seen to achieve the several objects of the invention and to be well adapted to meet conditions of practical use. As various possible embodiments might be made in the disclosed construction, it is to be understood that all matter herein set forth and shown in the accompanying drawings are to be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. Mountings for individually removable fronts of a vertical wall of a mausoleum structure compartmented by vertical and horizontal concrete partitions into rows and vertical tiers of individual crypts, said fronts having rear surface corner areas precut to provide a uniform thickness thereat, each of said mountings comprising a backing plate embedded in a layer of cement applied to said structure at an intersection of said partitions, each backing plate having an exposed flat surface aligned in a common predetermined vertical plane a bracket having a flat body portion lying flat against said exposed surface of each of said backing plates, fastening means extending through said body portion and backing plate into said structure to anchor the bracket to said structure, said bracket having a horizontal ledge extending at right angles to said body portion for supporting a bottom edge of one of said fronts, a shoulder projecting a predetermined distance from said body portion to engage said precut rear surface area of the front, and a boss associated with said ledge having an internally threaded bore for removably engaging a rosette center screw therein, whereby said shoulder serves to positively align a forward facing surface of said front in a plane parallel to said predetermined plane when a rosette is tightened by its said center screw.

2. The mounting defined in claim **1** in which said bracket has preformed spaced openings receiving said fastening means formed as expansion bolts, all located above said ledge.

3. The mounting defined in claim **1** in which said ledge extends from opposite sides of said boss and a rib extends vertically from said boss for locating two adjacent fronts on said ledge.

4. The mounting defined in claim **1** in which said boss is located symmetrically on a midportion of said ledge and a rib extends upwardly and downwardly from the boss, said shoulder being sectionalized in four parts, one located in each quadrant defined by said ledge and rib, whereby the bracket serves as a four corner juncture.

5. The mounting defined in claim **1** in which said boss is located symmetrically on a midportion of said ledge and a rib extends vertically in one direction from the boss, said shoulder being sectionalized in three parts, two parts being located in each quadrant defined by said ledge and rib, whereby the bracket serves as a two corner juncture of fronts on one tier and a midline of a double front on an adjacent tier.

6. The mounting defined in claim **1** in which said backing plate has a roughened rear surface preventing relative movement of the aligned backing plate during setting of the cement.

7. The mounting defined in claim **6** in which said backing plate is formed with spaced counter-bored openings through which expansion bolts are received and countersunk for permanently securing the backing plate in said aligned position.

* * * * *