

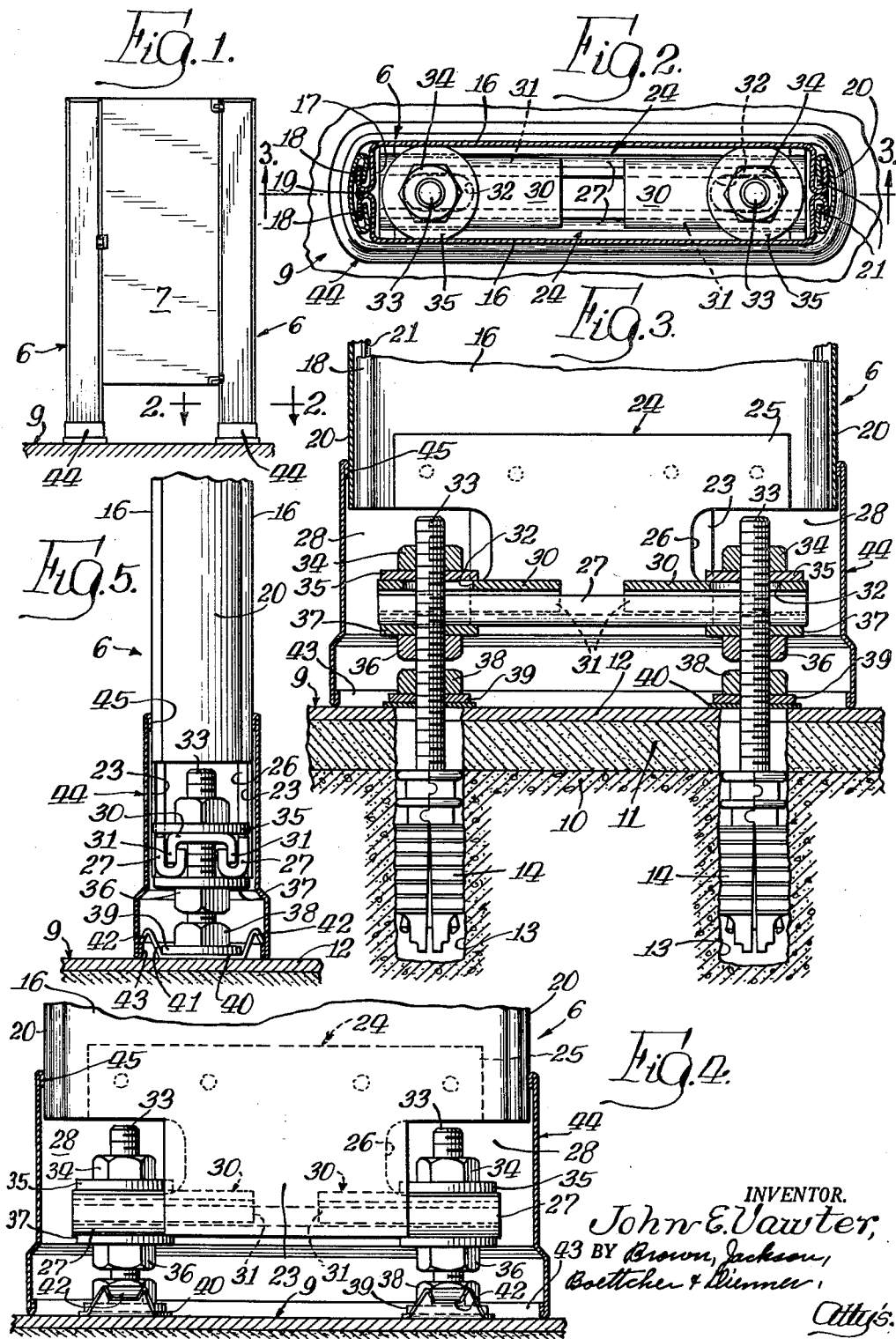
Oct. 29, 1963

J. E. VAWTER

3,108,664

STILE AND MOUNTING THEREFOR

Filed Dec. 6, 1960



INVENTOR.
John E. Vawter,
 BY *Brown, Jackson,*
Boettcher & Binner,
Attys.

1

3,108,664

STILE AND MOUNTING THEREFOR

John E. Vawter, Elkhart, Ind., assignor to Henry Weis Manufacturing Company, Inc., Elkhart, Ind., a corporation of Delaware

Filed Dec. 6, 1960, Ser. No. 74,106

4 Claims. (Cl. 189-42)

This invention relates to stiles, and has to do more particularly with stiles and mounting means therefor as used for supporting doors and partitions in constructing toilet, shower, dressing and other analogous small compartments.

The usual practice in constructing compartments of the character mentioned is to anchor a ring, a steel bar with both ends broached, or an open frame to the supporting structure, such as a floor, and then secure the end of the stile, by welding, to the frame. That is objectionable for numerous reasons. The necessity for securing the stile, usually formed of panels with an enamel finish, to the frame is apt to cause impairment of the finish, particularly if welding is used. If the stile is floor anchored, the lower ends of the panels, usually formed of rather thin—20 gauge, for example—enameling iron, are subjected to destructive rusting or corrosion due to floor washing solution and water entering between the anchoring frame and the stile panels. That may be caused by inaccurate fit between the stile end and the anchoring frame and, also, by capillary action. Further, if the outer enamel coating of the stile panels is impaired by welding or otherwise, rusting or corrosion of the panels from the outer faces thereof may occur at such impaired areas. If the stile is ceiling anchored, rusting may not as rapidly occur as when floor anchored, but will occur due to condensation of moisture on the stile and seepage of such condensate between the stile panels and the anchor frame. In either case, the anchoring means is not accessible with the stile in place and accurate adjustment for truing up the stile is difficult.

My invention is directed to a stile and mounting means therefor whereby the above noted difficulties in respect to the known structures above mentioned are avoided. It is an object of my invention to provide means whereby the stile may be firmly anchored to a floor or other supporting structure without risk of impairment of the enamel or other finish of the panels. A further object is to support the end of the stile in spaced relation to supporting structure thereby eliminating, or greatly reducing, rusting or corrosion of the stile end and associated parts, particularly in the case of floor anchored stile. An additional and important object of my invention is to provide stile mounting and anchoring means which permits of the stile being adjusted both vertically and horizontally when in place, for truing up, with expedition and facility. It is also an object of my invention to provide a protective boot or fitting, of generally known type, which may readily be secured in place after the stile has been properly adjusted and secured, and which encloses the end portion of the stile and associated parts, effective for excluding moisture to a large extent while imparting a neat and attractive appearance to such end portion of the stile. Further objects and advantages of my invention will appear from the detail description.

In the drawings:

FIGURE 1 is a front view of two stiles and mounting means therefor embodying my invention, with a door therebetween mounted on one of the stiles;

FIGURE 2 is a transverse sectional view, on an enlarged scale, taken substantially on line 2—2 of FIGURE 1, but omitting the filling or core of the stile;

2

FIGURE 3 is a sectional view taken substantially on line 3—3 of FIGURE 2, certain parts being shown in elevation and the supporting structure or floor being shown fragmentarily in section;

FIGURE 4 is a front view of the lower portion of the stile and its mounting means on an enlarged scale relative to FIGURE 1, the protective foot fitting being shown in section and the supporting structure or floor being shown fragmentarily in section, certain parts being shown in elevation; and

FIGURE 5 is a side view of the lower portion of the stile and its mounting means, also on an enlarged scale relative to FIGURE 1, the protective foot fitting being shown in section and the supporting structure or floor being shown fragmentarily in section.

In FIGURE 1, I have shown two stiles 6 with a swinging door 7 therebetween suitably mounted on one of the stiles, the latter being shown as anchored to a floor, by way of example, it being understood that the stile may be anchored to a ceiling or any other suitable supporting structure, as is known. The stiles and the door shown in FIGURE 1 may be considered as illustrative of one of the small compartments above referred to.

Referring to FIGURE 4, the floor 9 is shown as comprising a lower base portion 10 of concrete, an upper relatively thin finishing section or layer 11, also of concrete though it may be of wood or other suitable material, and a covering 12 of ceramic tile or other suitable material. The floor 9 is provided with suitably disposed bores or recesses 13 which receive expandible anchors 14 of known type appropriately disposed for reception of anchor bolts threaded therein and effective for expanding the anchors 14 tightly against the surrounding walls of the recesses 13.

The respective stiles 6 comprise opposed panels 16 of enameling iron of appropriate gauge provided interiorly and exteriorly with a coating of acid resisting porcelain enamel applied thereto in accordance with standard practice. The side edge portions of the panels 16 are bent inwardly at right angles to provide flanges 17, the inner edge portions of which are bent outwardly to provide channel elements 18 extending lengthwise of panels 16, similar flanges and channel elements being provided at the upper ends or top of panels 16, assuring that the stile is floor anchored. A filler or core (not shown) formed of corrugated paperboard or other suitable material is disposed between the panels 16 and is cemented under pressure to the inner faces thereof. The channel elements 18 are spot welded together at 19 at appropriate points and finishing molding strips 20 of arcuate cross section are applied to the sides and top of the stile. The finishing strips 20 may be formed of stainless steel or other appropriate material and are provided, at each side thereof, with inwardly extending flanges 21 which seat on the flanges 17 of panels 16 and engage into the channel elements 18 thereof. The upper ends of the side finishing strips 20 are beveled and are welded to the beveled ends of the top finishing strip, providing therewith a frame which fits neatly about the sides and the top of the stile. While the stile preferably is constructed as stated, it may be of any suitable construction, within the broader aspects of my invention, as will be understood.

Each of the panels 16 is provided at its lower end with a downward extension 23 of generally rectangular shape and of substantially less width than the panel 16 and equidistant from the sides thereof. Support plates 24 of generally H-form are fixed, conveniently by spot welding, to the inner faces of the panels 16, at the lower end thereof, and to the inner faces of the extension 23. The plates 24 may be secured to the panels by any suitable

3

conventional form of welding, though spot welding is preferred as being less injurious to the metal finish and appearance of the panels. Each of the plates 24 comprises an upper head 25 seating on and secured to the lower end of the corresponding panel 16 at the inner face thereof, a reduced neck 26 of less width than extension 23 seating on and secured to the inner face of the latter, and a channel element 27 integrally attached to the lower end of neck 26 extending inwardly from extension 23 and opening upwardly or toward the other end of panel 16. The support plates 24 are centered relative to the panels 16, as will be understood, and the channel elements 27 are of a length, i.e. extent transversely of the panels 16, approximating the width of the latter but preferably terminate a short distance from the sides of the panel. The provision of the downward extension 23 of panel 16, of reduced width, in conjunction with the support plate 24 and parts carried thereby, gives ready access to the space between necks 26 of plates 24 while also providing at each side of the extensions 23 an opening or space 28 of material extent both vertically and horizontally between the lower ends of the panels 16 and the channel elements 27 assuring ready access to the panel mounting and anchoring means, as will appear presently.

Two anchor plates 30 of inverted channel cross section extend between channel elements 27 with their side flanges 31 seating therein. Each of the plates 30 is provided with a lengthwise slot 32 which receives an anchor stud or bolt 33. A nut 34 is threaded on each stud 33 at the upper portion thereof and seats on a washer 35 seating on the upper face of the anchor plate 30. The stud 33 and nut 34 together provide an anchor bolt effective for exerting downward pressure on the anchor plate 30 and, through the latter, on the support plates 24 and the panels 16. A second nut 36 is threaded on each of the studs 33 below the channel elements 27 and seats on the underface of a washer 37 bridging the distance between the channel elements 27 and seating thereon at its upper face. The nut 36 and washer 37 provide, in conjunction with nut 34 and washer 35, means for clamping tightly together the anchor plate 30 and the channel elements 27, the maximum height of the latter being appropriate to that end. A third nut 38 is threaded on stud 33 below nut 36. Nut 38 seats on the upper face of a washer 39 seating at its lower face on the upper face of a spring clip 40 through which the stud 33 passes. The clip 40 is provided at opposite sides thereof with upwardly and outwardly extending resilient arms 41 having at their upper ends downwardly and outwardly inclined fingers 42. The fingers 42 are disposed to engage the upper edges of upwardly and inwardly extending flanges 43 provided at the lower end of a foot or finishing fitting 44 formed of stainless steel or other suitable material. The upper portion of fitting 44 is suitably formed and dimensioned to fit snugly about the lower end portion of stile 6 and to enclose the extensions 23 and associated parts, the lower portion of fitting 44 being of increased width, as shown, and enclosing the portions of studs 33 and associated parts extending downward beyond the extension 23. After the stile 6 has been properly mounted and anchored the fitting 44, which may be positioned on the stile 6 at a suitable height during the mounting and anchoring thereof, is slid downward to its position seating on the supporting structure or floor. During such downward movement of fitting 44 the fingers 42 and arms 41 are flexed inward and as the fitting 44 reaches its lowermost position the fingers 42 snap outward over the upper edges of flanges 43, effective for securing the fitting in position. Should it be desired to raise the fitting 44 for cleaning, repairs or other purposes, that may be accomplished by moving it upward a short distance, thereby deflecting the arms 41 and the fingers 42 slightly inward, after which a blade or other suitable instrument may be in-

4

serted beneath the sides of fitting 44 so as to press the arms 41 inward to inoperative position and permit the fitting 44 to be raised a further distance sufficient to assure that the flanges 43 clear the fingers 42. The fitting 44 preferably is provided at its upper end with a downwardly and inwardly turned flange 45, similar to flange 43, to assure a snug fit of the upper end of the fitting about the stile 6.

In mounting and anchoring the stile 6, the studs 33 may first be threaded to proper extent into the expandable anchors 14, after which the washers 37 and the parts therebelow may be properly positioned upon the studs 33. The stile 6 may then be positioned upon the washers 37 with the studs 33 extending upward between channel elements 27, after which the anchor plates 30, washers 35 and nuts 34 may be positioned upon the studs 33, the footing or finishing fitting 44 remaining in its raised position upon stile 6. Thereafter the proper adjustments are made for accurately positioning the stile 6 both vertically and horizontally. Following such adjustments, the nuts 34, 36 and 38 are tightened up for securing the parts of the assembly together and clamping the anchor plates 30 to the channel elements 27, the fitting 44 being then lowered into its operative position in which it is held by the spring clips. Preferably, the studs 33 are so spaced as to extend into the openings or spaces 28 so as to render readily accessible the parts mounted thereon. The spacing of studs 33 may be varied to suit requirements, as will be understood, and the parts carried by the studs above the channel elements 27 will be accessible for making desired adjustments even when disposed inward beyond the spaces 28. In that connection, the anchor plates 30 when not clamped to the channel elements 27 may be adjusted lengthwise thereof as permitted by the slots 32 in the anchor plates 30. That is desirable and advantageous in facilitating adjustments to compensate for any slight inaccuracies in the anchor bolts or studs 33. The mounting and anchoring means of my invention thus provides for adjustment of the stile 6 both vertically and horizontally effective for assuring accurate truing up thereof while also anchoring the stile to the associated supporting structure and effectively precluding possibility of objectionable looseness or play thereof.

As will be understood from the above, the stile mounting is so designed that the support plates 24 may be secured to the enameling iron panels 16 before the porcelain enamel is applied. Accordingly, the complete assembly can be protected with a porcelain enamel finish, which is desirable for obvious reasons. Further, the support plates 24 are designed to permit spot welding thereof to the panels 16 with corresponding minimum injury to or disturbance of any galvanized coating applied to the panels 16. That is particularly desirable in cases where galvanized steel panels covered with a baked enamel are used and assure maximum protection against rusting in such cases.

It will be understood that changes in detail may be resorted to without departing from the field and scope of my invention, and I intend to include all such variations, as fall within the scope of the appended claims, in this application in which the preferred form only of my invention has been disclosed.

I claim:

1. In stile mounting means, a stile comprising two spaced apart panels, support plates fixed to said panels at one end of said stile and provided with inwardly extending channel elements opening away from said one end of said stile, two anchor plates of channel cross section extending between said support plates and having side flanges seating in said channel elements of said support plates, said anchor plates each having a lengthwise slot therein and being independently adjustable lengthwise of said channel elements, and anchor means comprising anchor bolts passing through said slots of

said anchor plates and means carried by said bolts cooperating therewith for clamping said anchor plates to said channel elements, said stile being provided at the sides of said one end thereof with openings giving ready access to said anchor means.

2. In stile mounting means, a stile comprising two spaced apart panels respectively having at one end thereof an extension of substantially reduced width, support plates fixed to the inner faces of said panels respectively having an outwardly extending portion of substantially less width than the associated panel provided at its outer end with an inwardly extending channel element opening away from said one end of said stile and projecting beyond the sides of said extension of the corresponding panel, two anchor plates having side flanges seating in said channel elements and being independently adjustable lengthwise thereof, said anchor plates having lengthwise slots therein, and anchor means comprising anchor bolts at the outer portions of said channel elements passing through said slots of said anchor plates and means carried by said bolts cooperating therewith for clamping said anchor plates to said channel elements.

3. In stile mounting means, a stile comprising two spaced apart panels respectively having at one end thereof an extension of substantially reduced width, support plates fixed to the inner faces of said extensions of said panels and respectively having an inwardly extending channel element opening away from said one end of said stile and disposed in proximity to the outer end of the corresponding stile extension, two anchor plates of channel cross section extending between said support plates and having side flanges seating in said channel elements

of said supporting plates, said anchor plates having lengthwise slots therein and being independently adjustable lengthwise of said channel elements, and anchor means comprising anchor bolts passing through said slots of said anchor plates and means carried by said bolts comprising spaced abutment members on said bolts seating on said anchor plates and said channel elements effective for clamping said anchor plates to said channel elements.

4. In stile mounting means, a stile comprising two spaced apart panels having at one end thereof an extension of substantially reduced width, support plates fixed to said panels and said extensions thereof and respectively having an outer channel element projecting beyond the sides of said extension and opening toward the other end of said stile, an anchor plate of channel cross section extending between said support plates and having side flanges seating in said channel elements of said support plates, an anchor bolt passing through said anchor plate, abutment members on said bolt seating on said anchor plate and said channel elements respectively, and nuts threaded upon said bolt in pressure contact with said abutment members effective for clamping therebetween said anchor plate and said channel elements.

References Cited in the file of this patent

UNITED STATES PATENTS

1,295,368	Pilkington	Feb. 25, 1919
2,240,484	Anderson	May 6, 1941
2,881,876	Williams	Apr. 14, 1959
2,968,374	Bohnsack	Jan. 17, 1961