May 11, 1965 T. J. KUEHL 3,182,767

SHOWER CABINET CONSTRUCTION

Filed May 4, 1960

Fig. 1

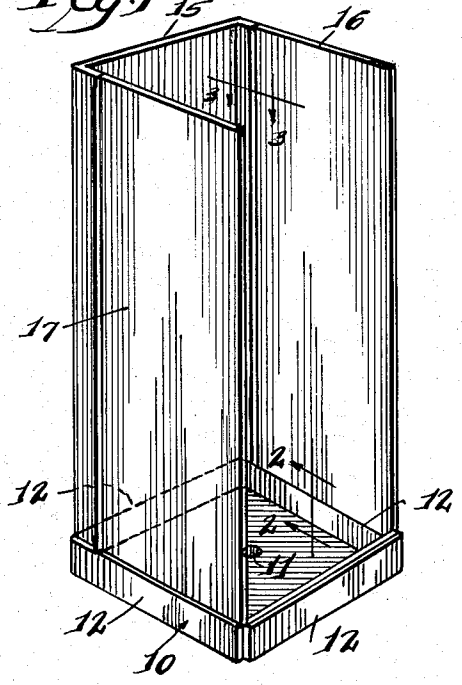


Fig. 2.

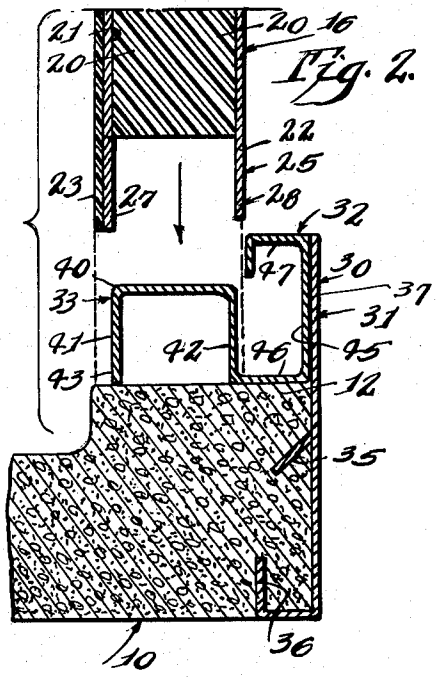


Fig. 4.

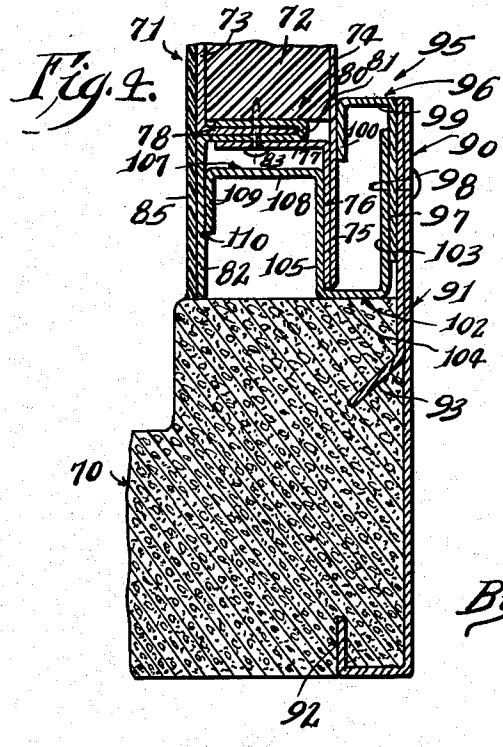
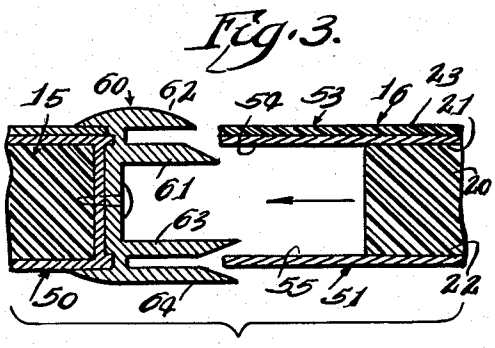


Fig. 3.



Inventor:
Thomas J. Kuehl.
By. Zabel Baker York
Jones and Dithmar
Attorneys.

United States Patent Office 3,182,767
Patented May 11, 1965

3,182,767

SHOWER CABINET CONSTRUCTION

Thomas J. Kuehl, Huntington, N.Y., assignor to Fiat Metal Manufacturing Co. Inc., Plainview, Long Island, N.Y., a corporation of New York

Filed May 4, 1960, Ser. No. 26,823
2 Claims. (Cl. 189—36)

This invention relates to shower cabinet construction, and contemplates a shower cabinet of high quality made with prefabricated members adapted for quick and easy assembly.

Prior shower cabinets of high quality have not been constructed with prefabricated members. Usually only the floor member has been prefabricated, and the walls and ceiling have been constructed on the site by members of at least four different trades, namely, carpenters, plasterers, tile-setters and plumbers. Such shower cabinets, while generally satisfactory, require excessive time and expense to construct, and accordingly are not widely used.

One object of the invention is to provide a shower cabinet of high quality constructed entirely from prefabricated members which can be manufactured under ideal conditions.

Another object is to provide a shower cabinet of this type which can be assembled and installed by a member of only a single trade, namely, a plumber.

Another object is to provide a shower cabinet which can be assembled and installed in an extremely short time and with little or no opportunity for error.

Still another object is to provide such a shower cabinet wherein the major component members (floor, ceiling and walls) are assembled in waterproof manner without the use of caulking materials. The waterproof joints of the cabinet are such that they meet the requirements of all known building codes pertaining to the subject.

Other objects, advantages and details of the invention will be apparent as the description proceeds, reference being had to the accompanying drawing wherein preferred forms of the invention are shown. It is to be understood that the description and drawing are illustrative only, and that the scope of the invention is to be measured by the appended claims.

In the drawing:

FIG. 1 is a perspective view of a shower cabinet, excluding door wall and ceiling members, constructed in accordance with the invention.

FIG. 2 is an exploded enlarged sectional view on line 2—2 of FIG. 1 showing details of the waterproof joint between the floor member and a wall member.

FIG. 3 is an exploded enlarged sectional view on line 3—3 of FIG. 1 showing details of the waterproof joint between two adjacent wall members.

FIG. 4 is a sectional view like that of FIG. 2 showing a modified joint construction between the floor member and a wall member.

Referring now to the drawing, the illustrated shower cabinet includes a prefabricated floor member **10** having a central drain **11**. Although various types of floor members are contemplated, it is preferred to use a floor member comprising cast cementitious material. A terazzo floor with polished marble chips is particularly suitable and in line with the high quality and character of the present shower cabinet.

The upper surface of floor member **10** is recessed, and the recessed portion slopes gently toward central drain **11**. Marginal portions **12** of floor member **10** are provided with molding structure, as will be seen, which cooperates to establish waterproof joints with the associated wall members of the cabinet.

The illustrated shower cabinet also includes a back

wall member **15** and side wall members **16** and **17**. In preferred form these wall members are of laminated or sandwich construction with a comparatively thick central layer of filler material **20** (FIG. 2), such as Styrofoam, secured to and lying between inner plate **21** and outer plate **22** of metallic sheet material.

Inner plate **21** of a wall member desirably is covered throughout with a finishing mateerial **23** (FIG. 2) such as the well known plastic material identified by the trade mark Formica.

Wall members constructed as shown and described are light in weight, yet rigid and solid sounding, and possess a desirable sound deadening characteristic, all of which are requisite to shower cabinets of high quality.

Referring to FIG. 2, the caulk-free, waterproof joint between floor member **10** and one of the wall members, namely member **16**, now will be described.

A downwardly facing channel **25** is associated with the lower edge of wall member **16** in waterproof manner. As shown in FIG. 2, channel **25** may consist simply of the lower margins **27** and **28** of wall member plates **21** and **22**. In other words, filler material **20** terminates somewhat short of the lower edges of the two plates. This downwardly facing channel **25** forms one part of the caulk-free, waterproof joint between the wall and floor members.

The other part of the caulk-free, waterproof joint between the wall and floor members is an elongated molding **30** which is mounted on marginal portion **12** of floor member **10**. Similar moldings **30**, of course, are mounted on the other marginal portions of floor member **10** which receive a wall member.

For convenience of description, molding **30** includes an outer portion **31**, an intermediate portion **32** and an inner portion **33**. The entire molding **30** may consist of a single extruded piece, or it may be formed from a plurality of individual elements suitably secured together. The forms shown in FIGS. 2 and 4 comprise individual elements.

One portion of molding **30**, preferably outer portion **31**, is secured to floor member **10** in waterproof manner. As shown, outer portion **31** has a pair of spaced flanges **35** and **36** which are embedded in marginal portion **12** of floor member **10** when the latter is cast. An upper marginal part **37** of outer portion **31** extends somewhat above the adjacent top of floor member **10**.

Inner portion **33** of molding **30** is a downwardly facing channel **40** which nests snugly within downwardly facing channel **25** of wall member **16** when the latter is assembled on floor member **10**. Channel **40** encloses a space of substantial volume per unit length. This relatively large space cooperates to prevent a buildup of water pressure within the joint and contributes materially to the waterproof character of the joint.

Channel **40** of molding **30** includes inner leg **41** and outer leg **42**. Inner leg **41** has its free, lower edge **43** in generally parallel relation with the top of marginal portion **12** of floor member **10**. It is contemplated that water will be free to enter the interior of channel **40** through spaces between lower edge **43** and the top of floor member marginal portion **12**. However, because the space within channel **40** is of relatively large volume, no pressure buildup occurs, and the water is free to exit the interior of channel **40** the same way it entered. Outer leg **42** of inner portion **33** of the molding constitutes an inner wall of intermediate portion **32** of the molding.

Intermediate portion **32** of molding **30** also includes an outer leg **45**, which is secured to outer portion **31** of the molding, and a bottom leg **46** interconnecting legs **42** and **45**. This bottom leg, as shown, rests on the top of marginal portion **12** of floor member **10**. Intermediate portion **32** of molding **30** also includes a top leg **47**

which extends from the top of leg 45 into engagement with downwardly facing channel 25 of wall member 16 when the two parts of the joint are assembled.

The easily assembled, caulk-free joint described above provides an extremely tortuous path for water tending to move from the interior to the exterior of the joint. This tortuous path, together with the comparatively large space within downwardly facing channel 40, effectively prevents all water leakage. This joint has been subjected to extreme tests and has been found to comply fully with building codes pertaining to waterproof joints in shower cabinets and stalls.

Referring to FIG. 3, the waterproof joint between a pair of adjacent wall members likewise involves interfitting parts, one of which is a molding. This joint now will be described, it being noted that the adjacent wall members have abutting portions 50 and 51 lying in a common plane. As seen in FIG. 1, one of the prefabricated wall members, namely back wall member 15, has integral corners so that its respective abutting portions each may lie in the same plane as an adjacent side wall member.

Abutting portion 51 (FIG. 3) of side wall member 16 comprises a channel 53. As shown, legs 54 and 55 of channel 53 may be formed by the margins of the plates 21 and 22 of wall member 16. As in the case of the bottom edge, filler material 20 terminates short of the free edges of the two plates.

A molding 60 is mounted in waterproof manner on the vertical edge of abutting portion 50 of back wall member 15. Molding 60 includes spaced pairs of spaced legs which extend toward legs 54 and 55 of channel 53. Inner legs 61 and 62 constitute one pair of legs of molding 60, and outer legs 63 and 64 constitute the other pair. The spacing between the legs of each pair is such that legs 54 and 55 of channel 53 are received snugly between the legs of the respective pairs.

To facilitate assembly of abutting wall portions, one or more of the interfitting legs is made shorter in cross sectional length than other of the legs. Thus, as illustrated in FIG. 3, legs 61 and 62 on molding 60 are shorter than legs 63 and 64. This permits leg 55 of channel 53 to enter the space between legs 63 and 64 before engagement of legs 54 with the other pair of legs. Thus, the initial engagement between respective legs of the two abutting portions serves to guide the other legs into proper engagement.

To further facilitate assembly, at least some of the legs are provided with a beveled free edge. As shown in FIG. 3, the edges of legs 61, 63 and 64 are beveled to provide an entrance throat leading to the space between the legs of each pair.

The central space between legs 61 and 63 of molding 60 is comparatively large, and as a result there is no damaging buildup of water pressure in the joint. Any water which may enter the space simply drains from the bottom into the recessed portion of floor member 10 and thence to drain 11.

FIG. 4 is a sectional view showing a modified form of caulk-free, waterproof joint between a floor member 70 and an associated wall member 71.

As in the case of wall member 16, wall member 71 includes filler material 72 sandwiched between inner plate 73 and outer plate 74. Outer plate 74 extends beyond the edge of filler material 72, as shown at 75. The extended edge is turned back on itself, as shown at 76, and the terminal margin thereof is bent at right angles to form horizontal leg 77 which is generally parallel to the edge of filler material 72, and spaced therefrom. The free edge of inner plate 73 is bent at right angles to form horizontal leg 78 which lies between leg 77 and the edge of filler material 72.

An edging member 80 includes a channel 81 which fits over leg 78 and has a right angle flange 82 lying in the plane of plate 73. Leg 77, edging member channel 81 and leg 78 are secured together as shown by suitable fastening means 83. Finishing material 85 secured to plate 73 also overlies and is secured to flange 82, as shown in FIG. 4.

Edging member 80, or equivalent, is of particular importance in cases where plate 73 is of steel or other material subject to water attack. Member 80 desirably is formed of water resistant material such as sheet aluminum. Such material has a further advantage that the free edge thereof easily can be trimmed after lamination thereof with the finishing material 85, and the raw trimmed edge will not be sensitive to water attack.

Molding 90 on floor member 70 is generally the same as that illustrated in FIG. 2 with the exception that more separate elements are used, and there is some variation in the details of the respective elements. Thus, outer portion 91 is a plate having lower flange 92 embedded in floor member 70. The upper margin of outer portion 91 is bent back on itself to provide a flange 93 which also is embedded in the floor member.

Intermediate portion 95 is made up of two elements. One is a downwardly facing channel 96 having a long leg 97 secured by means 98 to outer portion 90. Web 99 of channel 96 is of such length that associated short leg 100 is in engagement with plate 74 of the assembled wall member 71.

The other element of intermediate portion 95 is an upwardly facing channel 102 having an outer leg 103 secured to leg 97 in any suitable manner as by screw means 98. Web 104 of channel 102 rests on floor member 70 and other leg 105 of the channel is disposed on the inside of leg 76 of wall member 71.

Leg 105 also constitutes a part of inner portion 107 of molding 90. This inner portion also includes a horizontal web 108 which terminates with a right angle flange 109 in engagement with flange 82. The free edge 110 of flange 109 is in spaced relation from the top of floor member 70 to minimize the possibility of water flow between flange 109 and flange 82. Again, the space bounded by flange 82, flange 109, web 108, leg 105 and the top of floor member 70 is comparatively large in volume per unit length. Such a space prevents the buildup of water pressure at this critical part of the joint. Overall, a tortuous path is provided through the joint through which the passage of water is impossible.

As previously mentioned the present shower cabinet is quickly and easily assembled and installed with the services of a plumber only. The caulk-free joints between wall members and floor member are fully waterproof, as are the joints between respective wall members. The shower cabinet possesses all of the appearance and functional characteristics of the highest quality shower cabinets which heretofore have been built on the job at considerable time and expense by carpenters, plasterers, tile setters and plumbers.

From the above description it is thought that the construction and advantages of this invention will be readily apparent to those skilled in the art. Various changes in detail may be made without departing from the spirit or losing the advantages of the invention.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent is:

1. A waterproof joint for a shower cabinet having a floor member and a wall member, said joint comprising a molding located on the top of a marginal portion of said floor member and an interfitting, downwardly facing channel on the lower edge of said wall member, said molding having an outer portion connected to said floor member in a waterproof manner, an intermediate portion and an inner portion, said inner portion comprising a downwardly facing channel nesting snugly within said downwardly facing channel of said wall member and enclosing a space of substantial volume per unit length, said last channel having inner and outer legs, said inner leg having a free edge in generally parallel relation with

said marginal portion top of said floor member, said outer leg constituting an inner wall of said intermediate portion, said intermediate portion also including an outer leg connected to said outer portion, a bottom leg interconnecting said outer leg of said inner portion and said outer leg of said intermediate portion and a top leg extending from said outer leg of said intermediate portion into engagement with said downwardly facing channel of said wall member.

2. A waterproof joint for a shower cabinet having a floor member and a wall member, said joint including a first downwardly facing channel mounted in waterproof manner on the lower edge of said wall member, a molding mounted in a waterproof manner on a marginal portion of said floor member, said molding having a second downwardly facing channel, said first and second downwardly facing channels snugly interfitting with each other and enclosing a space of substantial volume per unit length, and an adjacent portion having a bottom leg connected to said second downwardly facing channel and resting on said marginal portion, an outer leg extending upwardly from said bottom leg in spaced relation with said first downwardly facing channel and a top leg extending from said outer leg into engagement with said first downwardly facing channel, the junctures between said interfitting channels and between said top leg and said second channel defining tortuous paths which, in cooperation with said spaces, prevents the flow of water from the inside to the outside of said joint.

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JACOB L. NACKENOFF, *Primary Examiner.*

CORNELIUS D. ANGEL, RICHARD W. COOKE, *Examiners.*