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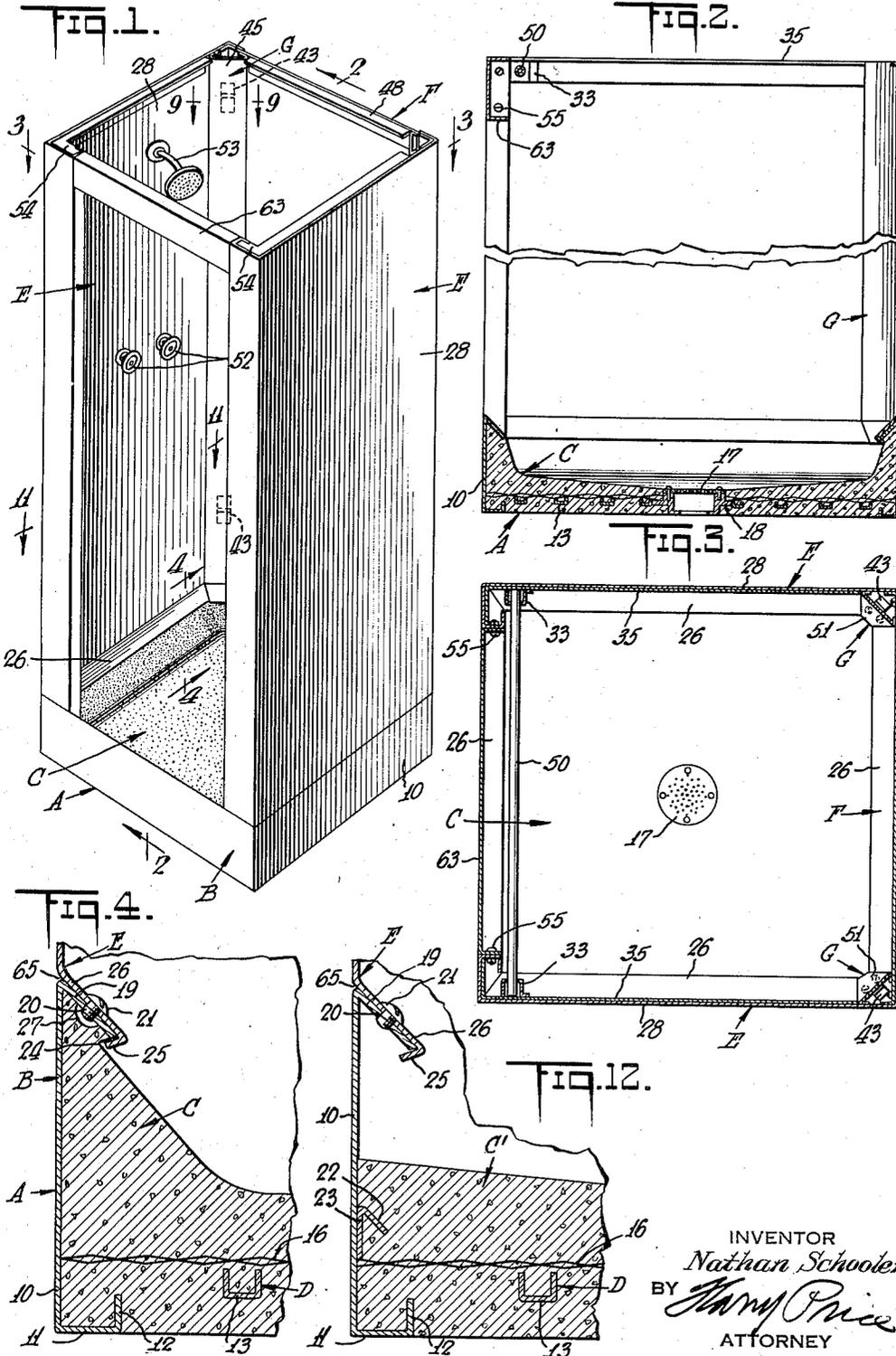
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SHOWER CONSTRUCTION

Filed April 20, 1936

2 Sheets-Sheet 1



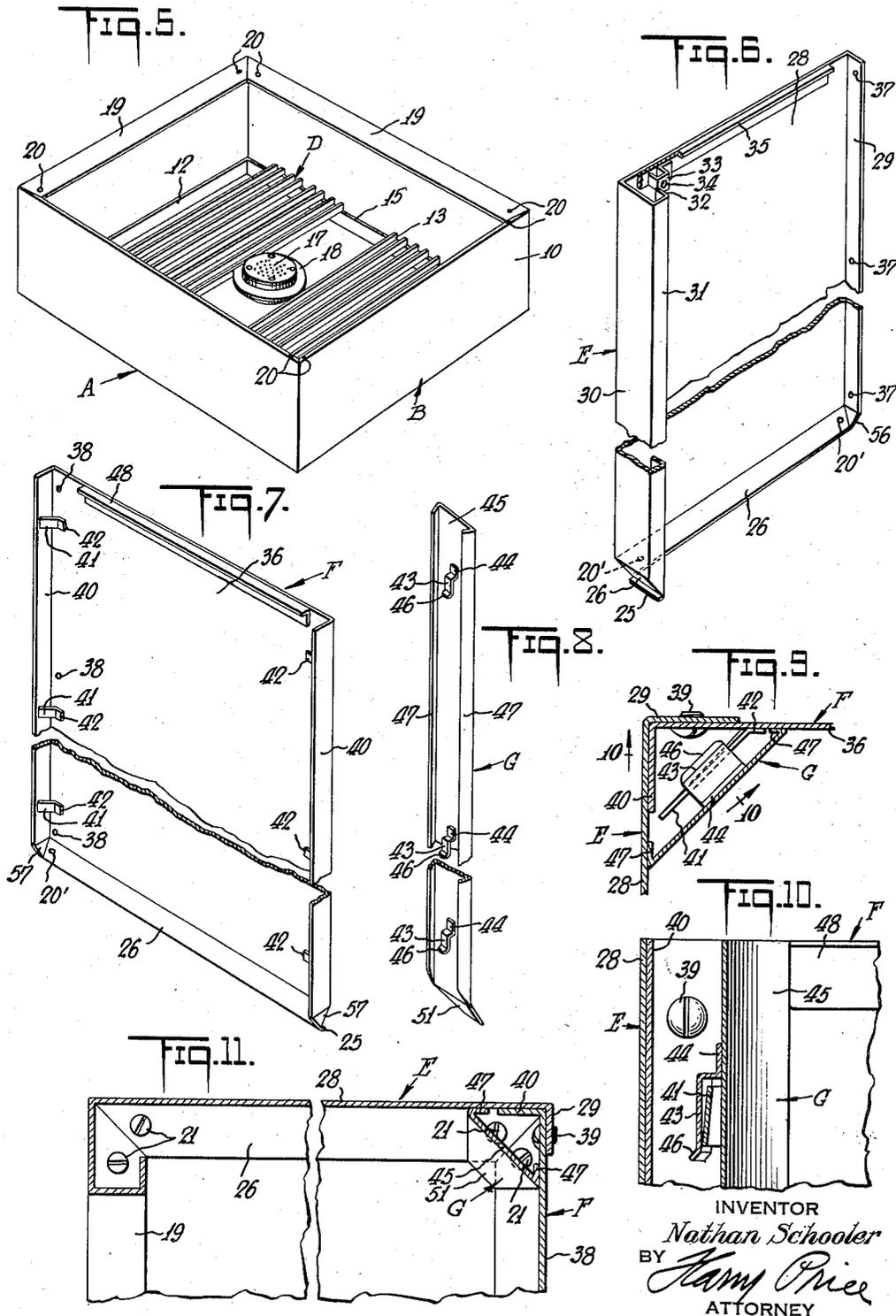
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# UNITED STATES PATENT OFFICE

2,059,614

## SHOWER CONSTRUCTION

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18 Claims. (Cl. 4—146)

The present invention relates to a shower construction and it particularly relates to a shower construction of the type in which the base and wall members are pre-fabricated and may be readily assembled upon location or at the place of use.

Many disadvantages have been found to arise in connection with pre-fabricated shower constructions, particularly where the base of the shower construction is made of cement or concrete and the side walls are made of sheet metal.

In such constructions considerable difficulty is experienced in obtaining a water-tight connection between the base and the side walls. Even when the base was provided with an embedded upstanding sheet metal flange, inside of which the lower ends of the walls fitted, there is substantial leakage necessitating the use of mastic and other plastic filler materials, which tend to crack, disintegrate and permit the leakage of water from within the shower compartment onto the floor of the room in which the structure is installed.

Moreover, where concrete or cement is the material of construction of the base, such concrete or cement tends to crack or break during shipping, storing and usage with the result that it not only becomes unsightly, but permits leakage through the openings formed by the cracks, and permits the collection of dirt and grime giving rise to unsanitary conditions.

Moreover, it is necessary to make the concrete or cement base of sufficient strength to withstand substantial wear, and in so doing the number of cements or concretes, which may be so utilized are limited, and it is not possible to utilize many forms of decorative cements or concretes.

It is, therefore, one of the objects of the present invention to provide an improved pre-fabricated shower construction which may be inexpensively constructed, conveniently and compactly stored and shipped without substantial liability of breakage, chipping, or cracking, and which may be readily assembled on the job to give a water-tight construction which will effectively prevent leakage of water from the inside of the shower compartment upon the floor, all without the necessity of using mastic or plastic materials to make a waterproof connection between the base and side walls of the shower construction, and with further assurance that the base, although it includes a concrete or cement floor for the shower, will stand up under long pe-

riods of time without chipping, cracking or disintegrating.

Another object is to provide an all-metal pre-fabricated shower construction in which, although cement or concrete may be utilized as a floor, it need not be cast or poured in special forms or frames and it does not function as a main structural element of the shower.

Other objects will be obvious or will appear during the course of the following specification.

In accomplishing the above objects it has been found most satisfactory to construct the base with a metal frame carrying transverse members which, in turn, may be embedded in and reinforce a body of concrete or cement in position inside said base.

The sheet metal of the base is preferably of rust proof character and it may be constructed of a rust proof alloy, or chromium plated, and the upper periphery of the base is turned inward and downward to form a flange to which the conforming wall portions may be attached.

Where the sides are made of separate pieces it has been found most convenient to construct them in such a manner that their adjoining edges will lap and permit attachment of corner filler pieces, to close off said corners and prevent leakage.

In the drawings,

Fig. 1 is a top perspective view of one type of shower compartment which may be employed, showing the final installation with the base and side walls in position.

Fig. 2 is a vertical sectional view upon line 2—2 of Fig. 1 upon a slightly enlarged scale which has been shortened by breaking away a portion of the wall structure.

Fig. 3 is a transverse sectional view looking downwardly upon line 3—3 of Fig. 1.

Fig. 4 is a fragmentary transverse sectional view upon the line 4—4 of Fig. 1 upon the enlarged scale showing the connection between the lower end of the side walls and the metallic frame of the base.

Fig. 5 is a perspective view of the base structure before the concrete is placed therein.

Fig. 6 is a perspective view of one of the side wall sections with a portion of the wall broken away.

Fig. 7 is a perspective view of the back wall section before assembling, with a portion of the wall broken away.

Fig. 8 is a perspective view of the filler strip to assure water-tight connection between the rear and side walls.

Fig. 9 is a fragmentary transverse sectional view of one corner of the shower construction upon the line 9—9 of Fig. 1 upon an enlarged scale showing the filler strip in position.

5 Fig. 10 is a fragmentary sectional view upon the line 10—10 of Fig. 9 showing the filler strip in position.

Fig. 11 is a fragmentary transverse sectional view upon an enlarged scale on the line 11—11 of Fig. 1, showing side wall construction when assembled into the shower compartment unit.

Fig. 12 is a fragmentary side sectional view similar to Fig. 4 of an alternative base construction.

15 Referring to Fig. 1, the shower construction includes a pre-fabricated base A having the metal frame structure B which carries the concrete or cement filler C, said structure C being provided with reinforcing means D (see also Fig. 5).

20 The wall structure is composed of two side wall members E of sheet metal, a rear wall member F of sheet metal, and the corner filler members G, the side wall structure being also shown in Fig. 6, the back wall also being shown in Fig. 7 and the filler strip G being also shown in Fig. 8. All of these members are pre-fabricated.

25 The base as best shown in Figs. 4, 5, and 12 is composed of a continuous sheet of stainless steel or other sheet metal 10 which is square as shown in Figs. 1 and 3, but which may also take other polygonal shapes or forms as may be desired.

30 The lower ends of the side walls 10 are flanged inwardly at 11 and upwardly at 12 to be embedded in the concrete body C. The portions 11 serve to rest upon and contact the floor.

35 Across the base, as best shown in Fig. 5, extend the channel members 13 constituting part of the reinforcement D and they may rest upon the upper edge of the flange 12 as indicated at 15 in Fig. 5. The wire reinforcement 16 as indicated in Figs. 4 and 12 may also be positioned to rest upon the top of the channel members 13. Preferably said channel members 13 are welded or otherwise permanently attached to the tops 15 of the flanges 12 before the concrete or cement is poured into position.

40 As shown in Figs. 2 and 5 a drain element 17 is also positioned in the base A and its peripheral flange 18 is permanently connected by welding or otherwise to adjacent channel members 13 (see particularly Fig. 2).

45 The upper edges of the side sheet metal 10 are intumed and downturned as indicated at 19 in Figs. 4 and 12 at about an angle of 45° and the intumed portions 19 are tapped at 20 (see Fig. 5) to receive the screws 21 which enable an attachment to the side wall structures E and F.

50 As shown in Fig. 5 the frame B itself may serve as a form for the concrete and when the frame B is placed upon the floor the concrete may be poured in to form the ceramic flooring as indicated at C in Fig. 4 or C' in Fig. 12, the structure of Fig. 12 being of lighter weight and less expensive than the structure of Fig. 4.

55 Where the concrete only extends part way up the side walls 10 as indicated in Fig. 12 the additional holders 22 are provided which are welded to the walls 10 as indicated at 23 in Fig. 12 to make a firmer junction between the walls 10 and the concrete body C'.

60 In the embodiment of Fig. 4 where the concrete extends up to below the flange 19 the concrete is undercut at 24 to receive the intumed lower end frame 25 at the bottom of the inwardly sloping flange 26 of the wall sections E and F.

In the embodiment of Fig. 5 it will be also noticed that the concrete is cut away at 27 to leave a recess 27 to permit insertion of the screws 21 which attach together the flanges 19 and 26.

65 It is thus seen that the metallic frame B constitutes in itself the form for pouring the concrete and cement as shown in the embodiments of Figs. 4 and 12 and that when so poured and set the concrete is held and is not susceptible to any stress or strain liable to crack or disintegrate it.

70 The corners of the concrete base C or C' are particularly protected by the metal shell 10.

Referring to Figs. 6 and 11 each side member E is provided with a main section 28 which has the inwardly extending flange 29 at the rear thereof to cooperate with the rear section F. At its forward end it is flanged inwardly as indicated at 30 and then turned as indicated at 31 and finally turned again as indicated at 32 to form the sides of the portal of the shower.

The side sections 31—32 at their upper ends carry the cross member 63 by the bolts 55 as shown in Fig. 3. The upper forward end of the main wall sections may also receive the brackets 33 provided with the openings 34 for receiving the shower rod 50 (see Fig. 3), said brackets being preferably attached to the angle members 35 by welding. The angle members 35 in turn may be spot-welded to the top of the side members 28.

30 The angle members are intumed as indicated at 54 in Fig. 1 to cover the top of the intumed side portions 31 and 32.

35 As indicated in Fig. 6 the holes 20' are positioned in side wall flanges 26 to receive the bolts 21 which clamp the flanges 19 and 26 together.

The rear flange 29 fits behind the main section 36 of the rear wall members F and its bolt holes 37 cooperate with the corresponding holes 38 in the rear section F to receive the bolts 39 (see Figs. 9 and 11). The side flanges 40 fit closely against the sides 28 of the side sections E, as shown in Figs. 9 and 11.

40 To the wall 36, adjacent the flanges 40, are attached the fingers 41 which are spot-welded as indicated at 42 to said rear panel 36.

45 These fingers 41 cooperate with the hook members 43 which have offset portions 44 spot-welded to the base 45 of the filler section G. The lower portion of the fingers are outturned as indicated at 46 to fit over the fingers 41 as best shown in Fig. 10.

50 As indicated in Fig. 10 the fingers 41 are preferably inclined so that the fingers 43 will be extended with the result that, when the filler member G is pushed into position, it will be clamped firmly with its side flanges 47 pressed against the wall panels 28 and 36 as shown in Figs. 9 and 11.

55 The rear panel 36 at its upper edge is reinforced by the angle beam 48.

60 In prefabrication, the base of Fig. 4 and the base of Fig. 12 are formed by pouring concrete or cement into the structure of Fig. 5.

65 Then the prefabricated base of Fig. 4 or Fig. 12 is shipped to the place of installation together with the two side members E, one rear member F, the filler members G, the top cross member 63 and the curtain rod 50 together with the screws and other accessory fittings.

70 The base A of Fig. 4 or 12 is placed on the floor over the previously prepared drain opening. Then the side wall elements E are attached to the base. Then the back member F is attached to the base A and the side members E, with the screws 21 and 39, respectively. The

corner filler strips G are slipped into position concealing the screws 21 and 39 making the joints between the side and back wall members E and F more water-tight. Finally, the rod 50 and the crosspiece 63 are placed in position, the crosspiece being attached to the flanges 31 by the bolts 55 (see Fig. 3). All this installation may be done from the inside of the shower compartment permitting installation in close spaces or between adjacent walls. Finally, the hot and cold water connections 52 are inserted and then the shower head 53 is assembled on one of the panels 28.

The construction not only gives a ceramic base C or C', which may be tread upon with comfort and which will be antislip in nature, but which will also be protected against chipping or cracking by the metal frame 10.

The sloping flange construction 19 and 26 best shown in Figs. 4 and 12 together with the inturned end flange 25 will substantially eliminate leakage without the necessity of using mastic, putty or other fillers and will assure that no water will leak from the interior of the shower to the exterior.

The downturned flange 25 will prevent splashing of water into the space between the flanges 19 and 26. This flange 25 will also contact the inner edge of the flange 19, enabling easier assembly and also serving to make the construction more rigid. When assembling the side and back members E and F the flange 25 will be hooked under the inner edge of flange 19, before the screws 21 are applied.

At the rear corners of the shower there will be three closely fitting layers of metal substantially precluding leakage, namely the flange 40 fitting against the panel 28, the flange 29 fitting against the panel 36 and the flange 47 closely pressed against the panels 28 and 36 by the interlocked fingers 41 and 43 (see Figs. 9 and 10).

At the lower corners the sloping extension 51 of the element G will closely overlay and seal the sloping corner portion 57 of the element E, which, in turn overlaps the section 56 on the side member E.

The cross member 63 and the angle members 35 and 48 respectively on the side members E and the rear member F will reinforce the top of the compartment as best shown in Fig. 1.

The flanges 35 and 48 will receive a cover or top plate (not shown) if desired. It will be noted that the flange 35 extends at 54 to cover the recess between the flanges 30 and 31 and 32 (see Figs. 1 and 6).

At the exterior, the junction 65 of the walls E and F and the base A will have a finished flush appearance (see Figs. 4 and 12) and any spacing between the flanges 19 and 26 will be advantageous in conducting any condensate from the exterior of the walls E and F back into the interior of the shower compartment.

Looking inside of the shower from the portal as shown in Fig. 1, no exposed screws or bolts are visible, giving the shower compartment finished appearance.

The walls E and F may be finished in enamel or they must be chromium or nickel plated, rust-proofed or made of a rust-resistant alloy.

Although cement or concrete are specifically mentioned, any other suitable ceramic or plastic material may be employed, such as terrazzo, tile, and so forth.

In some cases, instead of ceramic material C or C', a metal or other flooring may be placed

upon the cross members on the edges 12 or attached to the side walls 10.

The angle of the flanges 19 and 26 may be varied, and if desired, it may be straightened out at the portal to eliminate the sharp corner or at other places to suit the particular installation.

It will be thus seen that there is herein described apparatus in which the several features of this invention are embodied, and which apparatus in its action attains the various objects of the invention and is well suited to meet the requirements of practical use.

As many changes could be made in the above construction, and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

What is claimed is,

1. A pre-fabricated shower construction comprising a base including a ceramic material with a drain opening, toward which the surface of said ceramic material slopes for drainage, and side wall members of sheet metal attached to and extending upwardly from the periphery of said base, the periphery of said base being formed of sheet metal and enclosing said ceramic material, said ceramic material being cast in said sheet metal periphery, which sheet metal periphery serves as a form, and said periphery at its upper end and the wall members at their lower ends being provided with extensions and means to attach said extensions together to form a water-tight joint.

2. A pre-fabricated shower construction comprising a base including a ceramic material with a drain opening, toward which the surface of said ceramic material slopes for drainage, and side wall members of sheet metal attached to and extending upwardly from the periphery of said base, the periphery of said base being formed of sheet metal provided at its upper edge with an inwardly and downwardly directed flange and the lower edges of said wall members having conforming flanges bolted thereto.

3. A pre-fabricated shower construction comprising a base including a ceramic material with a drain opening, toward which the surface of said ceramic material slopes for drainage, and side wall members of sheet metal attached to and extending upwardly from the periphery of said base, said ceramic material being encased by a sheet metal frame forming said periphery, said ceramic material being cast in said sheet metal periphery, which sheet metal periphery serves as a form, and said periphery at its upper end and the wall members at their lower ends being provided with extensions and means to attach said extensions together to form a water-tight joint, said wall member extensions being positioned inside of said periphery extensions.

4. A pre-fabricated shower construction comprising a base including a ceramic material with a drain opening, toward which the surface of said ceramic material slopes for drainage, and side wall members of sheet metal attached to and extending upwardly from the periphery of said base, said periphery being of sheet metal and the adjacent portions of the periphery and wall members being turned so as to contact each other and so as to slope inwardly and downwardly.

5. The construction of claim 4, said adjacent portions of said wall members being bent downwardly at their edges over the inner edges of the adjacent portions of said periphery.
6. The construction of claim 4, said ceramic material being caused to ascend at the sides of the base up to the lower face of the adjacent portion of the periphery.
7. The construction of claim 4, said portions sloping inwardly and downwardly at an angle of about 45°.
8. A pre-fabricated shower construction comprising a base including a ceramic material with a drain opening, toward which the surface of said ceramic material slopes for drainage, and side wall members of sheet metal attached to and extending upwardly from the periphery of said base, said wall members consisting of two side wall members and one rear wall member with overlapping flanges and corner pieces to cover said overlapping flanges, said flanges being integral with said wall members, and cooperating interengaging means respectively connected to the side members and to the backs of said corner pieces.
9. A sheet metal construction for joining the base and sides of showers, comprising sheet metal wall members, having downwardly sloping inturned flanges, bolted to each other.
10. A sheet metal construction for joining the base and sides of showers, comprising sheet metal wall members, having downwardly sloping inturned flanges, bolted to each other, said flanges depending downwardly at an angle of about 45°.
11. A sheet metal construction for joining the base and sides of showers, comprising sheet metal wall members, having downwardly sloping inturned flanges, bolted to each other, said wall members being flush with each other and said flanges being slightly spaced to permit drainage into the interior of water condensate from the exterior.
12. A prefabricated shower construction comprising a square base having a sheet metal frame with inturned and upturned flanges at its lower end and a downturned flange at its upper edge, a series of transverse channel members welded to and resting on said upturned flange and a central drain element having an outstanding fin welded to adjacent transverse members, said base serving to receive and encase a ceramic filler material.
13. A prefabricated shower construction comprising a base member having inturned downwardly sloping flange members and wall members with conforming flange members, the inner edges of said conforming members being inturned to hook under said first mentioned flange members.
14. A prefabricated shower construction comprising a base member with a peripheral metallic flange, side wall members the lower portions of which are bolted to said flange, said wall members being formed as separate sheet metal elements and being provided with overlapping flanges at the corner junctions thereof, and a filler strip to cover said junction.
15. A pre-fabricated shower construction comprising a base including a ceramic material with a drain opening, towards which the surface of said ceramic material slopes for drainage, and side wall members of sheet metal attached to and extending upwardly from the periphery of said base, said ceramic material being encased by a sheet metal frame forming said periphery, such attachment being provided by conforming flanges on said wall members and said periphery and bolts extending therethrough.
16. A pre-fabricated shower construction comprising a base including a ceramic material with a drain opening, toward which the surface of said ceramic material slopes for drainage, and side wall members of sheet metal attached to and extending upwardly from the periphery of said base, such attachment being provided by positioning inwardly directed flanges on the lower ends of said wall members and bolts extending through said flanges and the base to form a water-tight connection.
17. A pre-fabricated shower construction comprising a base including a ceramic material with a drain opening, toward which the surface of said ceramic material slopes for drainage, and side wall members of sheet metal attached to and extending upwardly from the periphery of said base, said wall members consisting of two side wall members and one rear wall member with overlapping flanges and corner pieces to cover said overlapping flanges, said rear wall member adjacent to said overlapping flanges being provided with horizontally directed diagonally positioned resilient fingers and said corner pieces being provided with resilient hooks to engage and tension said resilient fingers.
18. A pre-fabricated base for a shower construction having a sheet metal frame with an inturned flange at its lower end and an attachment extension at its upper edge, reenforcing means connected to said frame and a drain element, said base serving to receive and encase a ceramic filler material cast therein and to receive shower wall members at said attachment extension.

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