

May 1, 1956

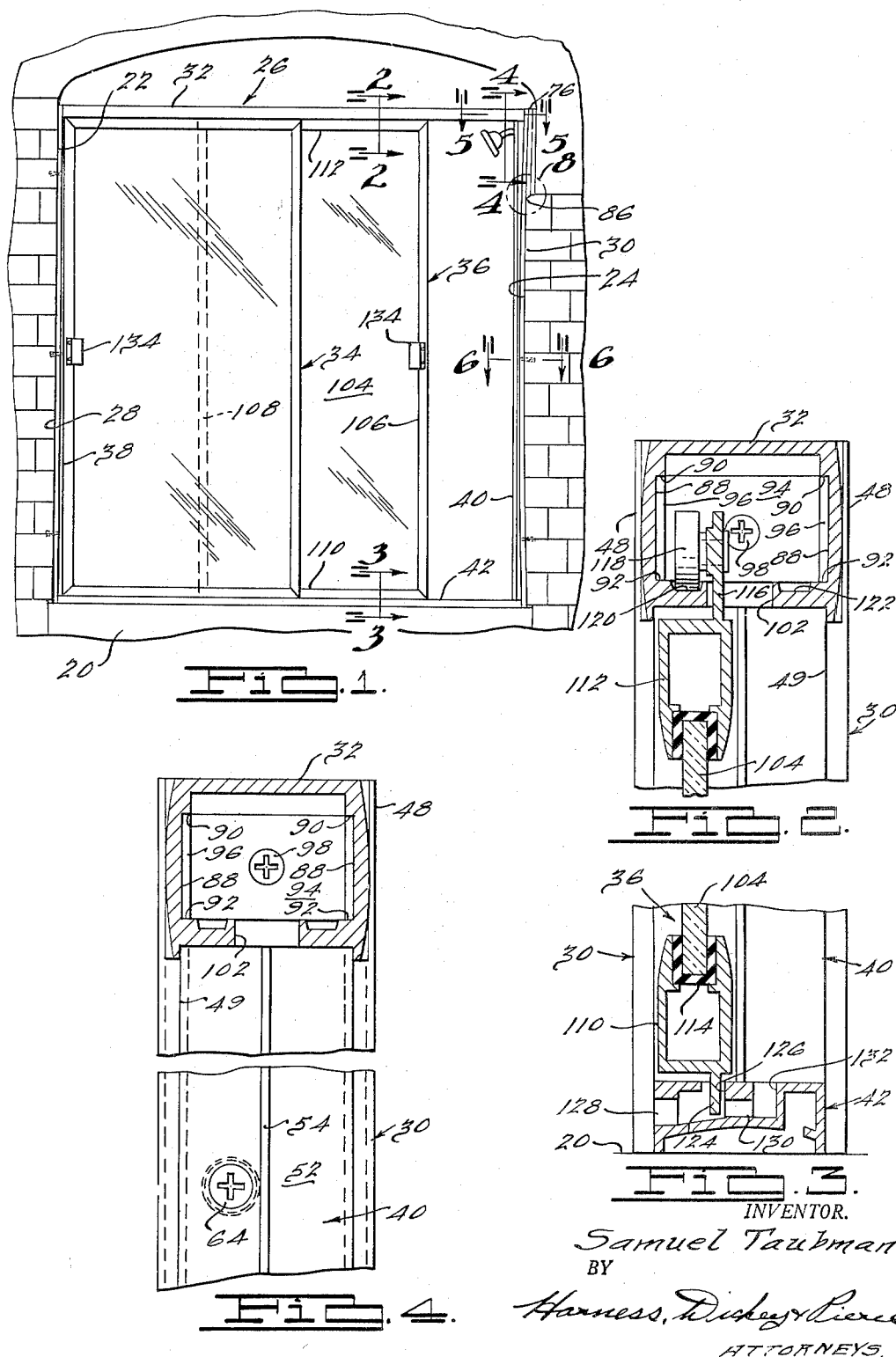
S. TAUBMAN

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BATH ENCLOSURE

Filed July 21, 1950

2 Sheets-Sheet 1



INVENTOR.  
 Samuel Taubman.  
 BY  
 Harness, Dickey & Pierce  
 ATTORNEYS.

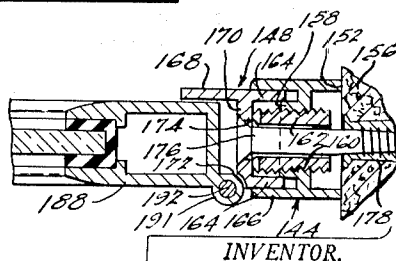
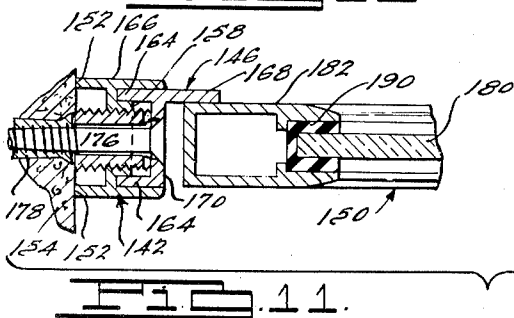
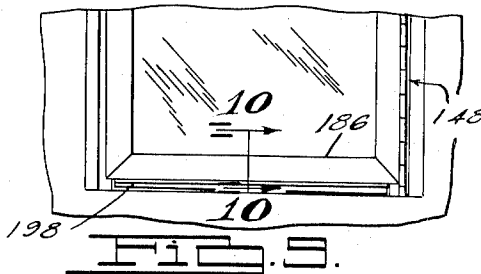
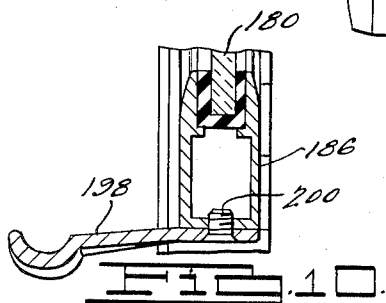
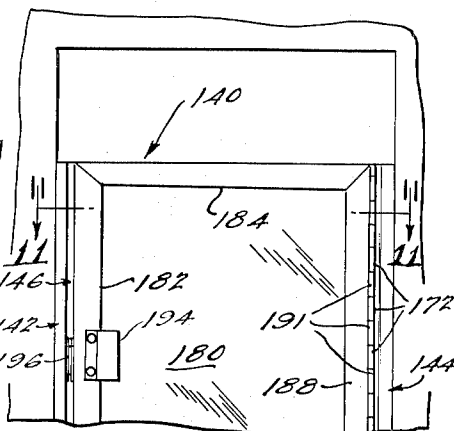
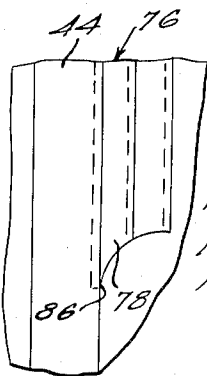
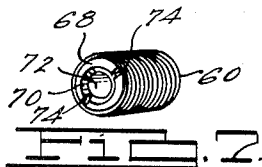
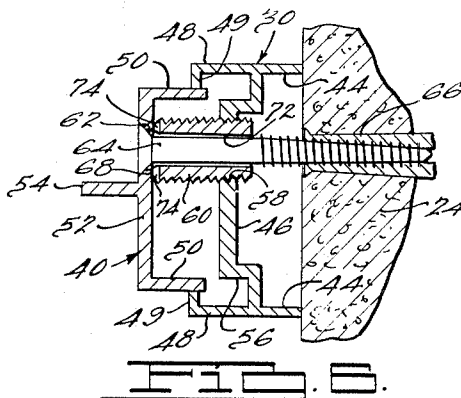
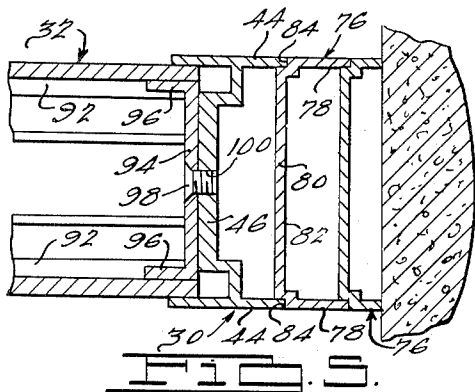
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INVENTOR.

Samuel Taubman.  
BY

Harness, Dickey & Pierce  
ATTORNEYS.

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## BATH ENCLOSURE

Samuel Taubman, Detroit, Mich.

Application July 21, 1950, Serial No. 175,107

2 Claims. (Cl. 189-46)

The present invention relates to an improved closure 15 for a bath tub, shower or the like.

It is an object of the present invention to provide an improved closure which is neat and trim in appearance and which may be readily and accurately fitted to the desired opening.

A further object of the invention is to provide such an improved closure having an improved continuously adjustable jamb construction by means of which a wall channel member may be made to follow the general contour of the wall and a jamb member may be adjustably 25 supported thereon in a straight condition, or any other desired shape adapted to fit a cooperating door channel member.

Another object of the present invention is to provide an improved adjustable jamb construction for an improved closure of the above mentioned type which construction greatly facilitates the installation of the closure and the accurate fitting of the closure in place with a minimum of labor.

Another object of the present invention is to provide an improved adjustable jamb construction of the above mentioned type by means of which a wall channel may be readily adjusted to follow any inclination or curve which the wall may have.

It is also an object of the present invention to provide an improved closure including an improved means for securing the header member to the wall channel members, which means is concealed and provides an efficient connection and a neat and trim appearance.

A further object of this invention is to provide an improved means for connecting the header to the wall channel members which requires only a single screw at each end of the header which may be threaded into place from the lower side of the header by a conventional screw driver and does not require access to the upper side of the header during installation, thereby affording a construction which is particularly desirable where bath tub recess is of the conventional shape illustrated and access to the upper side of the header is limited at the ends.

It is also an object of the invention to provide an improved closure for a bath tub, shower or the like which includes improved filler elements permitting accurate fitting of the closure in place and the complete filling of spaces between the wall channel and the wall, such for example as those above the tile, where the tile does not extend the full length of the wall channel.

Other and more detailed objects of the invention will be apparent from a consideration of the following specification, the appended claims, and the accompanying drawings wherein:

Figure 1 is an elevational view of a bath tub enclosure constructed according to the present invention;

Figures 2, 3, 4, 5 and 6 are enlarged broken sectional views of the construction illustrated in Figure 1, taken substantially along the lines 2-2, 3-3, 4-4, 5-5, and 6-6 thereof, respectively;

Figure 7 is a perspective view of one of the elements

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of the structure illustrated in Figures 1 through 6, inclusive;

Figure 8 is an enlarged elevational view of that portion of the structure illustrated in Figure 1 indicated by the circle 8;

Figure 9 is a broken elevational view of a shower door construction embodying the present invention; and,

Figures 10 and 11 are broken enlarged sectional views of the structure illustrated in Figure 9, taken substantially along the lines 10-10 and 11-11 thereof, respectively.

It will be appreciated from a complete understanding of the present invention that the improvements thereof may be readily embodied in structures of widely differing types and sizes. In an illustrative, but not in a limiting sense, the improvements of the present invention are herein illustrated and described as embodied in a bath tub enclosure and a shower door construction.

Referring to the drawings, and more particularly to Figures 1 through 8, the bath tub generally indicated at 20 is mounted in a bathroom in the conventional manner in a recess proportioned to receive the tub 20 and defined in part by walls 22 and 24 at the ends of the tub. It will be appreciated that in a particular instance the treatment of the walls 22 and 24 may be the same. For illustrative purposes the wall 22 is shown as being of a full tile construction, while the wall 24 is illustrated as being of a three-quarter tile construction. The bath tub enclosure is generally illustrated at 26 and generally comprises a pair of wall channels 28 and 30 extending respectively along the walls 22 and 24, a header 32 extending between and locked to the wall channels 28 and 30, a pair of doors 34 and 36 mounted on the header 32, a pair of jambs 38 and 40 individual to and secured to the wall channels 28 and 30, and a lower rail 42 mounted on the upper surface of the side of the tub 20 at the front thereof and extending between and into the lower ends of the wall channels 28 and 30.

The wall channels 28 and 30 are similar, being of left and right construction respectively. Accordingly, a detailed description of the channel 30 only will suffice. It is of the cross section best illustrated in Figure 6. As is clearly there illustrated, the wall channels are generally H-shaped with straight parallel legs 44 extending outwardly and engaging the wall. At the opposite sides of their transverse or web portions 46 the wall channels have legs or flanges 48 which extend in spaced parallel relation and terminate at their outer ends in narrow inwardly turned flanges 49. The jambs 38 and 40 are also of similar left and right construction, and, as is also best illustrated in Figure 6, are generally channel-shaped, including a pair of spaced parallel legs 50 adapted to be telescopically received between the flanges 49 of the legs 48, a base or web portion 52 interconnecting the legs 50 and an integral rib 54 disposed centrally of the base 52 at the opposite side thereof relative to the flanges 50 and extending in parallel relation to said flanges. The transverse or web portion 46 of the wall channels includes a central portion 56 offset inwardly, or away from the wall and adapted to project telescopically between the spaced flanges 50 of the jamb.

The wall channel 30 has a plurality of tapped openings 58 extending through the offset portion of the web 46 and spaced longitudinally thereof. Sleeve-shaped adjusting elements 60 having their outer surface threaded, are threadably mounted in the openings 58 and adjustable axially thereof by virtue of this threaded engagement. The jamb 40 has a plurality of openings 62 in the web 52 spaced longitudinally thereof and disposed at one side of the rib 54. These openings 62 are spaced to register with the sleeve-shaped adjusting elements 60 and are countersunk to receive the head of a screw 64 which extends through the jamb 40 and through the sleeve-shaped

adjusting element 60 to secure the wall channel 30 and jamb 40 to the wall 24. A conventional securing device, such for example, as the lead shield 66 is mounted in the wall 24 for receiving and co-operating with the screw 64. The sleeve-shaped adjusting element 60 has an annular bearing surface 68 at one end thereof as best seen in the perspective view in Figure 7 which engages the inner side of the web portion 52 of the jamb 40 around the aperture 62. A conical tapering surface 70 is disposed between and connects the bore 72 of the adjusting element 60 with the just mentioned annular bearing surface 68 to provide clearance preventing interference of the adjusting element 60 with the engagement of the screw head with jamb 40 in the countersunk portion of the aperture 62. The diameter of the aperture 62 in the jamb 40 is sufficiently larger than the diameter of the bore 72 of the adjusting element 60 to permit rotation of the adjusting element 60 for threading it inwardly or outwardly through the opening 58 in the web 46 of the wall channel 30 by means of a conventional screw driver tool extending through the opening 62 as hereinafter described. The adjusting element 60 is provided with diametrically opposed radially extending slots 74, see Figures 6 and 7, adapted to receive the screw driver tool. By virtue of the fact that the diameter of the aperture 62 in the jamb 40 is larger than the diameter of the bore 72 in the adjusting element 60, a screw driver tool of the proper size may be inserted through the aperture 62 after removal of the screw 64, and engaged in the radially inner portions of the opposed slots 74 for effecting rotation of the adjusting elements 60 without removal of the jamb 40.

From the foregoing it will be appreciated that to install the wall channels 28 and 30 and the jambs 38 and 40, it is necessary only to locate the lead shields 66 in the walls 22 and 24, position the wall channels 28 and 30 with the adjusting elements 60 mounted therein and aligned with the lead shields 66, position the jamb members 38 and 40 between the flanges 49 and legs 48 of the wall channels and secure the assembled wall channels, jambs and adjusting elements in place by means of the screws 64. Proper fitting of the wall channels 28 and 30 to the walls 22 and 24 and shaping of the jambs 38 and 40 to fit the adjacent portion of the doors 34 and 36 may then be readily effected by making the necessary adjustments of the adjusting elements 60. This proper fitting is facilitated in the applicant's preferred construction by forming the wall channels and jambs of a soft flexible material such as extruded aluminum. As indicated above, a change of the adjustment of a particular adjusting element 60 may be readily effected by removing the screw 64 passing therethrough and turning the adjusting element 60 with a conventional screw driver. Removal of the jamb is not necessary, and after adjustment of the element 60, the screw 64 may be replaced and tightened down to determine whether further adjustment is required. By means of these adjustments the jambs 38 and 40 may be disposed perfectly straight or otherwise shaped so that they will afford a proper fit with the doors 34 and 36, while the wall channels may be deformed as necessary to fit the walls 22 and 24.

Referring to Figure 1, the left hand side thereof illustrates a wall which is slightly out of line and it will be noted that the jamb 38 projects outwardly of the wall channel 28 substantially further at the bottom thereof than at the top. At the right hand side of Figure 1 it is illustrated that the wall channel may be bowed if necessary to fit a correspondingly-shaped wall 24 and in the adjusted position there illustrated, the jamb 40 has a minimum projection outwardly of the wall channel 30 at the center portion thereof and has a greater projection outwardly of the wall channel 30 at the top and bottom of the wall channel. It will be appreciated that any desired contour may be given to the wall channel to make it fit the contour of the wall upon which it is mounted and by proper adjustment of the adjusting elements 60, the jamb may be maintained perfectly straight, or adjusted to any shape or

inclination that will result in a neat, continuous contact with the adjacent part of the door 34 or 36.

It will be noted that in the construction illustrated in the drawings the proportions of the wall channels, the jambs and the adjusting elements are so related that a maximum adjustment is provided. When the jamb is in a fully retracted position with its web portion flush with the flanges 49, the adjusting elements 60 almost abut the wall and when the jamb is in its fully extended position, the outer, or right hand end portion of the adjusting element 60, as viewed in Figure 6, threadedly engages the web portion of the wall channel.

Referring to the right hand side of Figure 1, it will be noted that in mounting the wall channel on a bathroom wall of the three-quarter tile construction there illustrated, it is necessary to provide a suitable filler between the wall 24 and the wall channel 30 above the tiled portion of the wall. For this purpose the applicant has developed a filler 76 which is best illustrated in Figures 1, 5 and 8. This filler is of channel shape, including leg portions 78 adapted to be aligned with and form continuations of the leg portions 44 of the wall channel 30 and a transverse or web portion 80 which is offset so that the inner surface 82 of the web portion 80 is disposed in the plane of the adjacent edges 84 of the legs 78. The width of the offset web portion 80 is adapted to telescopically fit between the legs 44 of the wall channel 30 to position the wall channel and the fill channel 76 against relative transverse movement. By constructing the fill channel with the above described shape or with the surface 82 inwardly or to the left of the edges 84 as viewed in Figure 5, the forming of the fill channel to fit curved surfaces, such as that normally encountered at the top of the tile is greatly simplified. It will be noted from Figures 1 and 8 that to fit the curved upper surface of the tile it is necessary for the fill channel to come to a sharp point indicated at 86 at the point where the tile curves away from the wall channel 30. A fill channel of the construction above described may be readily shaped to provide such a point merely by cutting or filing away a portion of the legs 78. It is not necessary in this construction to file or cut away any part of the offset web 80 since this web portion 80 fits within the wall channel and need not be tapered to a fine point. As illustrated in the drawings, it will be appreciated that more than one filler channel 76 may be used if required, and that because of the just described construction of these fills they readily interfit with one another in the same manner as they interfit with the wall channel.

The header 32 of the improved bath tub enclosure 26 is of the cross section best illustrated in Figures 2 and 4. The overall width of the header 32 is substantially equal to the width between the legs 48 of the wall channel 30. Accordingly, by forming the walls channels 28 and 30 with a portion of the flanges 49 removed from the upper end thereof, the ends of the header 32 may be received between the channel legs 48. The header 32 has a pair of spaced parallel wall surfaces 88 which are vertically disposed when the header 32 is in place and which are bounded at their upper and lower extremities by horizontally extending shoulders 90 and 92. The opposite ends of the header 32 are securely locked in place by means of a key or locking plate 94 adapted to fit between the surfaces 88 and simultaneously engage these surfaces and the shoulders 90 and 92. To provide greater strength for the locking plate 94, it is channel-shaped and has leg portions 96 extending along the surfaces 88 within the header 32 and engaging the shoulders 90 and 92. The locking plates 94 are inserted in the ends of the header 32 prior to the placing of the header in position and the close-fit of the plates 94 between the surfaces 88 and the shoulders 90 and 92 holds them in place during assembly. Once the header is in place, the locking plates 94 are anchored to the wall channels 28 and 30 by screws 98 extending through apertures provided cen-

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trally of the locking plates 94 and threading into tapped openings 100 provided in the web portions 46 of the wall channels 28 and 30. It will thus be seen that in final assembled position, the header is supported on the flanges 49, is held against lateral movement by the legs 48 and locked against upward movement by the keys 94.

The header 32 is generally of hollow rectangular cross section and is provided with a slot 102 centrally disposed and extending longitudinally of its lower wall. The doors 34 and 36 are supported on the header 32 as hereinafter described by means extending upwardly into the header through the slot 102. This slot also permits the screws 98 which anchor the locking plates 94 to the web 46 of the wall channels 28 and 30 to be set in place and tightened by a conventional screw driving tool having a shank of a length sufficiently great so that the screws 98 may be tightened in place while the handle portion of the screw driver is below the header 32. It will be appreciated that in doing this it is necessary that the screw driver be disposed at an angle relative to the screw 98 and, accordingly, it is found preferable to use for the screws 98, screws of the type commonly known as cross-recess head screws, having a cross-shaped recess in their heads.

The doors 34 and 36 are of similar construction and comprise a glass 104 which is supported in a frame comprising four glass channels 106, 108, 110 and 112. Each of these glass channels has a recess in which is received a channel-shaped rubber moulding 114 which fits over the marginal portions of the glass 104. Referring to Figure 2, the glass channel 112 extending along the upper edge of the door 36 has a vertically upwardly extending flange 116 which projects upwardly through the slot 102 in the lower wall of the header 32 and carries a plurality of rollers 118 preferably supported on ball bearings (not shown). These rollers 118 roll along a supporting track 120 provided in the header 32 at one side of the slot 102. The door 34 is similarly supported on rollers moving in a supporting track 122 similar to the track 120 and disposed at the opposite side of the slot 102.

Referring to Figure 3, the glass channel 110 at the lower edge of the door 36 has a short downwardly extending flange 124 which projects into a co-operating recess 126 formed in and extending longitudinally of the lower rail 42 to provide a guide preventing excessive movement of the lower portion of the door transversely of the rail 42, thereby preventing the door from swinging about its support on the header 32. The glass channels 106 and 108 at the opposite sides of the door 36 are similar to the channels 110 and 112 but have no flanges corresponding to the flanges 124 or 116. The outer surface of the channel 106 is adapted to abut the web portion 52 of the jamb 40 at the inner, or upper side of the rib 54, as viewed in Figure 6. It will be appreciated that the corresponding side channel of the door 34 abuts the web portion 52 of the jamb 38 at the outer side of the rib 54. By virtue of the above described construction permitting alignment and shaping of the jambs 38 and 40 so that they are shaped to fit the doors 34 and 36 independently of the irregular contours of the walls 22 and 24, it will be appreciated that the doors 34 and 36 will accurately and closely fit against the jambs 38 and 40.

Referring to Figure 3, a plurality of apertures 128 are provided in the lower rail 42 connecting the recess 126 with the inner side of the rail 42. These apertures 128 permit any water running down the door 36 and collecting in the recess 126 to drain back into the bath tub 20. Other apertures 130 are also provided in the rail 42 connecting the recess 126 and a second recess 132 corresponding to the recess 126 and for co-operation with the door 34. This recess 132 receives a flange corresponding to the flange 124 and collects any water running down the inner side of the outer door 34. The apertures 130 permit water collecting in the recess 132 to

drain into the recess 126 and thence through the apertures 128 into the tub 20.

The doors 34 and 36 may be provided with any suitable handles, such as those represented as 134 in Figure 1.

Figures 9, 10 and 11 illustrate a modification of the present invention and show how certain of the improvements of the present invention may be embodied in a shower door construction. The shower enclosure shown in these figures is generally designated by the reference character 140 and comprises a pair of wall channels 142 and 144 which carry jambs 146 and 148 adjustably mounted thereon, and the door generally indicated at 150 which is pivotally supported on the jamb 148 as hereinafter described. The wall channels 142 and 144 are similar in construction to the above described wall channels 28 and 30, having legs 152 extending along and engaging the walls 154 and 156 but do not have inwardly turned flanges corresponding to the flanges 49 of the above described wall channels 28 and 30. The transverse or web portions have an offset central portion 158 in which are provided a plurality of vertically spaced horizontally extending threaded apertures 160 in which are received sleeve-shaped adjusting elements 162 similar to the elements 60 above described. The jambs 146 and 148 are generally h-shaped and include spaced parallel legs 164 adapted to be telescopically received between the spaced parallel legs 166 of the wall channels 142 and 144, corresponding to the legs 48 of the above described wall channels 28 and 30 to telescopically fit over the thickened portion 158 of the wall channel web. The jambs 146 and 148 have inwardly extending flanges 168 at their rear or upper sides, as viewed in Figure 11, which project in the opposite direction from the legs 164 and are aligned with the rear one of these legs. The flange 168 on the jamb 146 provides a jamb or stop limiting the pivotal movement of the door 150. The jamb 148 differs from the jamb 146 in that at the front or lower edge of the transverse or web portion 170 it has a plurality of forwardly and outwardly extending projections 172 for providing a hinge connection of the door 150 to the jamb 148. These projections have vertically disposed aligned apertures extending longitudinally therethrough and are uniformly spaced to receive co-operating hinge part projections carried by the door 150.

The jambs 146 and 148 have apertures 174 similar to the above described apertures 62 spaced therealong for receiving the heads of the screws 176 similar to the screws 64. The adjusting elements 162 function in the same manner as the adjusting elements 60 to permit disposition of the wall channels 142 and 144 to follow the contour of the walls 154 and 156 while maintaining the jambs 146 and 148 straight and vertically disposed or otherwise shaped as required to closely fit the adjacent portion of the door 150. As in the above described bath tub enclosure, the screws 176 may be anchored in the walls 154 and 156 by means of lead shields 178 or other suitable devices.

The shower door 150 comprises a glass 180 carried by glass channels 182, 184, 186 and 188 which have recesses mounting channel-shaped rubber strips 190 which receive and overlie the marginal portions of the glass 180. The glass channels 184 and 186, at the top and bottom of the door and the glass channel 182 at the side of the door opposite its hinged support, or the left hand side as viewed in Figures 9 and 11, are similar in construction to the glass channels 106 and 108 at the opposite sides of the doors 36 and 34. The channel 188 at the right hand side of the door, as viewed in Figure 9, differs from the channels 182, 184 and 186 in that at the front or lower right hand corner of the channel, as viewed in Figure 11, the channel 188 has a series of equally spaced hinge projections 191 extending outwardly and forwardly therefrom. These projections 191 have vertically disposed aligned apertures extending longitudinally therethrough and are proportioned to interfit with the projections 172 on the

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jamb 148 to provide a hinge connection between the jamb 148 and the door 150. An elongated pivot pin 192 extends through the aligned apertures in the projections 191 on the door channel 188 and the projections 172 on the jamb 148. A suitable handle, such as that illustrated at 194 in Figure 8 may be provided on the door 150. The shower enclosure also includes a suitable yieldable latch carried by the door 150 and co-operating keeper means on the jamb 146 which may be of any suitable design and are generally represented at 196. To prevent water running down the inner surface of the door 150 from being drained outside of the shower enclosure when the door is opened, the door is provided with a drain plate 198 which is fastened to the bottom of the lower glass channel 186 by screws 200 and extends generally horizontally and slightly downwardly and inwardly therefrom. The drain plate 198 is formed so that the portion inwardly of the channel 186 slopes slightly downwardly toward the right so that even when the door is open water draining out of the plate 198 from the door 150 will flow along the plate and into the shower enclosure.

Figure 9, at the left illustrates the special case of a wall 154 which is plumb and the jamb 146 is shown fully retracted into the wall channel 142. The right hand side of Figure 9 shows the wall 156 inclined to the vertical and the jamb 148 partially extended from the wall channel as best illustrated in Figure 11.

While only two specific embodiments of the invention have been illustrated and described herein, it will be readily appreciated by those skilled in the art that numerous modifications and changes may be made without departing from the spirit of the invention.

What is claimed is:

1. In a closure for a bath tub, shower or the like, having

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a wall channel member adapted to extend along a wall and having a portion disposed in spaced relation to the wall, a fill channel for filling the space between the wall and the wall channel member and adapted to nest with said wall channel, said fill channel having spaced parallel leg portions adapted to form continuations of the legs of the wall channel member, and a web portion integrally connecting said leg portions of said fill channel and offset therefrom so that said leg portions may be formed to a sharp point at the edge thereof adjacent the web portion to fit over a curved wall portion without interference from the offset part of the web portion.

2. In a closure for a bath tub, shower or the like, having a wall channel member adapted to extend along a wall and having a portion disposed in spaced relation to the wall, a fill channel for filling the space between the wall and the wall channel member and adapted to nest with said wall channel, said fill channel having spaced parallel leg portions and a web portion integrally connecting said leg portions and offset relative thereto so that each leg portion is disposed wholly to one side of a plane including the inner face of the offset part of the web portion.

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