

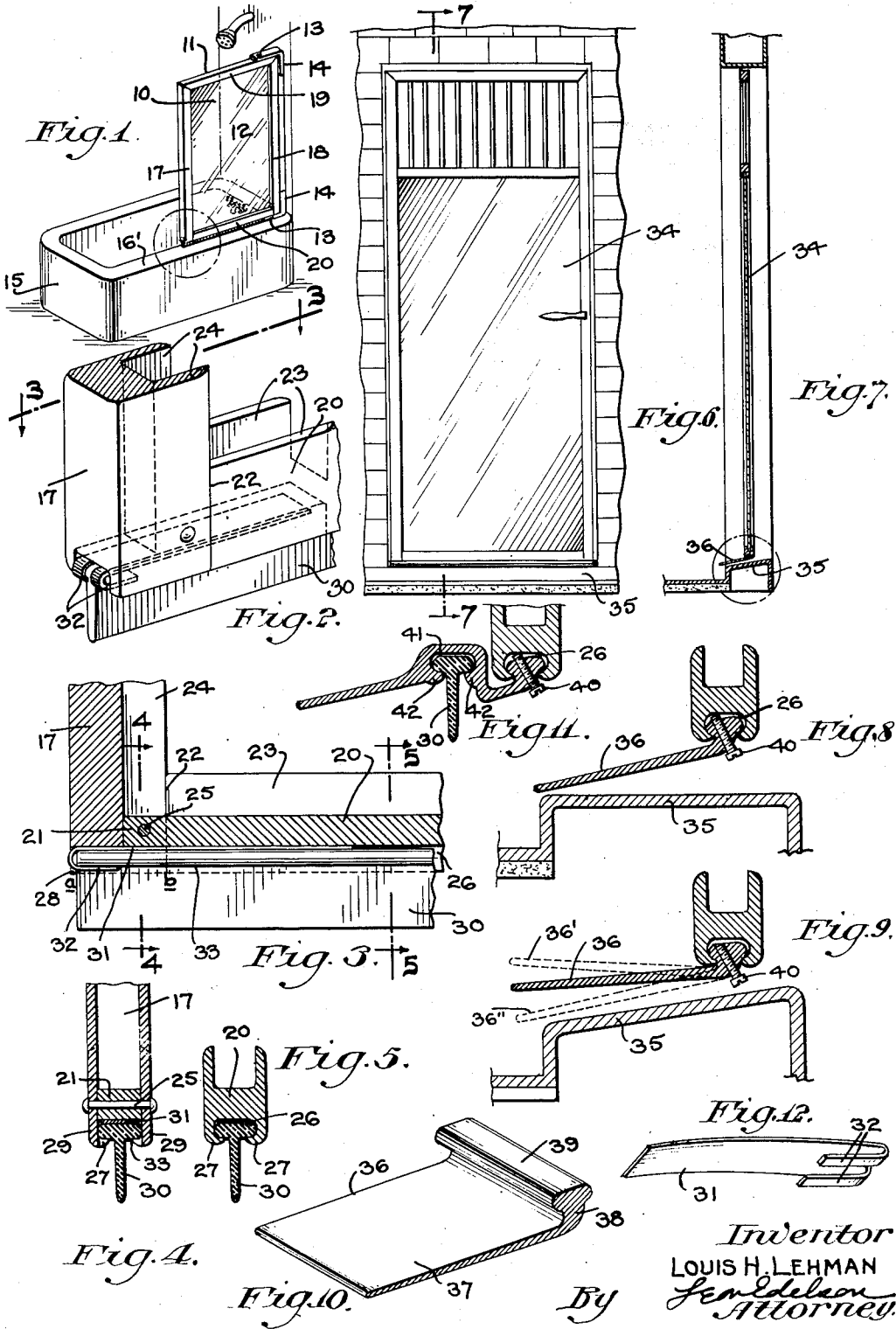
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SHOWER BATH STALL DOOR, SHOWER BATH SHIELD, AND THE LIKE

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SHOWER BATH STALL DOOR, SHOWER BATH SHIELD, AND THE LIKE

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This invention relates to shower bath shield and shower bath stall door constructions and more particularly to improved means for preventing the passage of water between the bottom of the door and the threshold in the case of the shower stall door and between the bottom of the shield and the edge of the bath tub in the case of the shower shield.

One of the principal objects of the present invention is the provision of a shower shield or shower stall door the bottom edge of which is so constructed as to readily receive therewithin a rubber seal or a metallic water shed or apron or a combination of apron and seal.

A further object of the invention is the provision in a shower stall door or shower shield of a channeled bottom edge within which is adapted to be slidably received a rubber seal, together with means adapted to lock the seal in position against longitudinal displacement.

A still further object of the invention is the provision in a shower stall door, shower shield or the like the bottom or side edge of which is equipped with a flexible water seal, of means for precluding all possibility of play or loosening between the outer end of said seal and the door, shield or the like.

A still further object of the invention is the provision in a shower stall door or the like having a downwardly presenting channel in the bottom edge thereof of a water shed or apron adapted to be slidably received within said channel, the water shed or apron being so constructed as to permit the same to project laterally to either side of the door to suit varying conditions, all without necessitating any structural changes or modifications in the door itself or in the apron or water shed. In this connection the invention also contemplates the provision of means for securing the water shed or apron in position such that the upper surface thereof lies in an inclined plane forming a predeterminedly fixed angle with respect to the vertical plane of the door.

Still another object of the invention is the provision in a shower stall door or the like of a combined metallic water shed or apron and a rubber seal, the shed or apron being operative to discharge the water falling upon the upper surface thereof into a receptor and the seal being operative to effect a water-tight closure between the bottom edge of the door and the adjacent edge of the receptor.

Still further objects of the invention relating to details of construction and economies of manufacture, as well as the advantages of the inven-

tion, will appear more fully hereinafter. The invention consists substantially in the combination, construction, location and relative arrangement of parts, all as will appear more fully hereinafter, as shown in the accompanying drawing, and as finally pointed out in the appended claims. In the accompanying drawing, which is merely for the purpose of illustrating certain preferred forms of the invention:—

Figure 1 is a perspective view showing one form of the invention as applied to a shower shield for use in connection with bath tubs;

Figure 2 is a perspective view, partially sectionalized, of the corner of the shower shield shown in Figure 1, said corner being enclosed within the broken-line circle;

Figure 3 is a vertical sectional view taken on the line 3—3 of Figure 2;

Figure 4 is a vertical sectional view taken on the line 4—4 of Figure 3;

Figure 5 is a vertical sectional view taken on the line 5—5 of Figure 3;

Figure 6 is a front elevational view of a shower stall door the bottom edge of which is equipped with a water shed or apron arranged in accordance with the present invention;

Figure 7 is a vertical sectional view taken on the line 7—7 of Figure 6;

Figure 8 is an enlarged sectional view of the portion enclosed within the broken-line circle of Figure 7;

Figure 9 is a view similar to Figure 8 showing the adjusting screw in inoperative position;

Figure 10 is a perspective view of a portion of the water shed or apron shown in Figures 7 to 9;

Figure 11 is a vertical sectional view corresponding to Figures 8 and 9 showing the seals of Figures 1 to 5 incorporated within to form part of the metallic water shed; and

Figure 12 is a perspective view of the element employed for retaining the outer edge of the rubber seal in position against displacement with respect to the door.

Referring now to the drawing and more particularly to Figures 1 to 5 thereof it will be observed that one form of the invention has been incorporated in the bottom edge of a shower shield 10. This shower shield generally comprises a metallic frame 11 within which is received a pane of glass 12, the frame being swingably supported, as at 13, by a pair of vertically spaced brackets 14. In the particular instance shown in Figure 1 the shower shield is shown in association with a bath tub 15 although it will be understood that the present invention is not in-

tended to be limited in use or application merely to shower shields but that it may also be incorporated in shower stall doors and the like. In the particular instance shown in Figure 1 the shield 10 is so mounted that when in the operative position shown the vertical plane thereof substantially coincides with the inner surface of the outer wall 16 of the tub, while the bottom edge of the shield is vertically spaced above to clear the upper edge 16' of the tub.

The shield frame 11 preferably comprises the vertical members 17 and 18 the upper and lower ends of which are respectively interconnected by the horizontally extending members 19 and 20.

Referring more particularly to Figures 2 and 3 it will be seen that the bottom member 20 of the shield is provided at either end thereof with a projection 21 extending beyond the ends 22 of the side walls 23 of the channel within which the glass pane is received. Said projections 21 are respectively received between the side walls 24 of the vertically extending glass-receiving channels formed in the vertical members 17 and 18. A pin or rivet 25 is employed to secure the parts together in the relation shown in Figure 3, it being observed that the ends 22 of the side walls 23 of the bottom channel are respectively disposed in the vertical plane of and abut the inner edges of the side walls 24 of the vertically extending glass-receiving channels.

Provided in the bottom edge of the bottom member 20 of the shield or door is a downwardly presenting channel 26, (see Figure 5) the free edges of the side walls of which are inturned, as at 27. The lower ends of the vertical members 17 and 18 are cut out to provide channels 28 the side walls 29 of which are continuous with the side walls of the downwardly presenting channel 26 provided in the bottom member 20. For manufacturing economy and simplicity in construction I have found it expedient and desirable to provide the side walls 29 of the channeled portion 28 of the vertical members without any inturned portions at the bottom ends thereof, as in the case of the downwardly presenting channel of the member 20. It will thus be apparent that I have provided a shield or door construction the bottom edge of which is provided with a continuously extending downwardly presenting channel the side walls of which are inturned throughout the major length or portion thereof.

Adapted to be slidably received within the downwardly presenting channel formed in the bottom member 20 of the shield or door is a rubber seal 30 of substantially T-shaped cross-section. Inasmuch as the channel within which this seal is received, between the points *a* and *b*, (Figure 3) is not provided with the inturned portions 27, some means must be provided for preventing displacement of the outer end of the rubber seal 30 with respect to the base of that portion of the channel extending between the points *a* and *b*. For this purpose I provide a retaining element 31 of the character best shown in Figure 12 and which is preferably constructed of spring metal. As appears quite clearly in Figure 12 this element 31 is in the form of a longitudinally curved or bowed strip one end of which is slotted and reversely bent to provide a pair of laterally spaced fingers 32.

As appears most clearly in Figures 2 to 5 inclusive the retaining element 31 is inserted in the position shown with the flattened body thereof interposed between the upper surface of the T-shaped rubber seal and the base of the down-

wardly presenting channel provided in the bottom edge of the shower shield or door. In this position, the reversely bent laterally spaced fingers 32 of the retaining element embrace the web of the rubber seal and engage the under surfaces 33 thereof. Due to the rigidity of the retaining element 31 the fingers 32 thereof serve to effectually preclude any tendency for the free end of the rubber seal to drop downwardly from between the side wall portions 29—29 of the seal-receiving channel. It will be understood, of course, that the web of the rubber seal is of a depth sufficient to span the space between the bottom edge of the shower shield and the upper edge 16' of the tub. It will also be understood that the invention as described is equally applicable to a shower stall door similar to that shown in Figure 6 wherein the rubber seal would be operative to seal the space between the bottom edge of the door 34 and the threshold 35 of the receptor, as well as between the free edge of the door and its adjacent jamb. To this end the bottom edge of the door 34 is also provided with a continuously extending downwardly presenting channel therein. In those cases where it is desired to seal the space between the vertical edge of the door and the door jamb, the vertical edge would also be provided with a channel for receiving the flexible sealing strip.

It will be understood of course that in some cases the channel 26 would be provided with the inturned flanges 27 throughout the entire length thereof whereby to form a T-shaped slot extending continuously across the entire width or length of the door. The retaining element 31 would be employed in such case in the same manner as described above and would operate to prevent longitudinal displacement of the flexible seal from its receiving channel.

As appears most clearly in Figures 7, 8 and 9, this downwardly presenting channel which is provided in the bottom edge of the door is adapted to slidably receive, in lieu of the rubber seal hereinbefore described, a metallic water shed or apron 36. This water shed or apron, a portion of which is shown in perspective in Figure 10, consists of a substantially flat body 37 of a length substantially equal to the width of the door. One edge of this body 37 is upturned, as at 38, to provide a longitudinally extending bead 39 of a shape adapted to be loosely received within the channel provided in the bottom edge of the door. Due to the inturned portions 27 of the water shed or apron-receiving channel, which inturned portions embrace opposite sides of the bead 39, the water shed or apron 36 is applied to or detached from the bottom edge of the door only by an end-wise movement. When the water shed or apron 36 is loosely received within its channel as just described the upper surface thereof forms an obtuse angle with the plane of the door to thereby discharge any water falling on the upper surface thereof into the receptor. As clearly appears in Figures 8 and 9 it will be observed that the inner edge of the water shed or apron normally extends beyond the corresponding edge of the threshold 35. The several parts are so arranged that when the door is swung from its closed to its open position the water shed or apron 36 rides freely on the inclined upper surface of the threshold 35. In other words, during the opening and closing movement of the shower stall door 34, the water shed or apron 36 is permitted an oscillatory movement about an axis substantially coincident with the longitudinal axis of the

channel formed in the bottom edge of the door.

In some instances I have found it desirable and preferable to secure the water shed or apron 36 in such position that the upper surface thereof makes a fixed angle with the plane of the door. In order to effect this fixed relation between the door and its associated water shed, I provide a set screw 40 in the head portion of the watershed. The axis of this set screw 40 preferably forms an acute angle with the plane of the body 37 of the water shed such that when the screw is tightened the inner end thereof abuts the base wall of the channel within which the head portion of the apron is received and in consequence of which the body 37 of said apron is forced to assume and maintain the position shown in Figure 8 relatively to the vertical plane of the door. By backing the set screw 40 out, as in Figure 9, the effect is the same as though there were no screw and the water shed or apron 36 is free to move between the limits of the dotted line positions 36' and 36". It will be obvious that without necessitating any structural changes either in the door or in the water shed, the latter may be reversed end for end to present the body portion thereof in the opposite direction from that shown in Figures 7 to 9.

Figure 11 illustrates a combination of the rubber seal 30 and the metallic water shed or apron 36. In this combined unit the water shed or apron is also provided with a longitudinally extending bead similar in all respects to the bead 39 shown in Figure 10. The set screw 40 may also be employed to effect a predeterminedly fixed angle between the water discharging surface of the apron and the vertical plane of the door. Provided intermediate the water discharging surface of the apron and the bead thereof is a downwardly presenting channel 41 within which is adapted to be slidably received the substantially T-shaped rubber seal 30. As in the former instances, this channel 41 is provided with the inturned portions 42 to prevent vertical displacement of the rubber seal with respect to the water shed or apron with which said seal is associated. It will be understood that this combined unit is as well applicable for use with the shower shield arrangement shown in Figure 1 as with the shower stall door arrangement shown in Figure 6. The rubber seal 30 serves effectively to seal the space between the bottom edge of the shield or door and the proximate edge of the receptor while the inclined portion of the water shed serves effectively to discharge the water falling thereon into the receptor. I have found it preferable to employ a rubber seal of such depth that the bottom edge thereof terminates in a horizontal plane somewhat lower than that in which the outer extremity of the water shed terminates.

It will be understood that the invention is susceptible of various changes and modifications all without departing from the spirit or principles of the invention and it is accordingly intended to claim the same broadly, as well as specifically, as indicated in the appended claims.

What is claimed as new and useful is:—

1. In a shower enclosure, in combination, a

hingedly mounted door having a downwardly presenting channel in the bottom edge thereof, the lower edges of the side walls of said channel being inturned throughout the greater length thereof, a T-shaped rubber seal adapted to be received within said channel by an end-wise movement, and a retainer element inserted through one end of said channel for interposition between the base thereof and the upper surface of said seal and adapted to retain the latter securely in position against displacement from said channel.

2. In a shower enclosure, in combination, a hingedly mounted door having a downwardly presenting channel in the bottom edge thereof, said door being so mounted that said bottom edge thereof is spaced vertically above the threshold surface of a receptor, a T-shaped rubber seal receivable within said channel by an endwise movement and adapted to span the space between the proximate edges of said door and receptor, and a retaining element also inserted by end-wise movement into said channel for preventing longitudinal and vertical displacement of the outer end of said seal relatively to said door.

3. In a shower enclosure, in combination, a door having a longitudinally extending groove formed in the bottom edge thereof, the side walls of said groove being provided with inturned portions, a straight walled channel formed in the end of the door in continuation of said groove, a flexible seal having an enlarged head adapted to be longitudinally inserted within said groove, said inturned portions of the groove being adapted to embrace said enlarged head so as to preclude vertical displacement of the latter relatively to the door, and a rigid retaining element also inserted longitudinally of the groove and provided with means for preventing the outer end of the seal from dropping downwardly and away from the base of said straight walled channel.

4. In a shower enclosure, in combination, a door provided in the bottom edge thereof with a slot, said slot being characterized in that the outer extremity thereof is of uniform width while the remaining portion thereof is provided with inturned flanges to form a restricted opening in the bottom of the door, a seal of flexible material and of substantially T-shaped cross-section adapted to be longitudinally inserted within said slot, said inturned flanges being adapted to embrace and so maintain the head of said seal against vertical displacement, and a rigid retaining element interposed between the base of said slot and the head of said seal, said retaining element being provided with a pair of reversely bent fingers adapted to support the free outer end of said rubber seal against vertical movement within that portion of the slot which is of uniform width.

5. In a shower enclosure, in combination, a door having a longitudinally extending groove in one edge thereof, a flexible seal adapted to be longitudinally inserted within said groove, and wedging means adapted to be inserted within said groove for precluding longitudinal displacement of said seal from said groove.

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