July 28, 1936. J. A. WOODWORTH 2,048,909

SHOWER DOOR CONSTRUCTION

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Fig. 1.

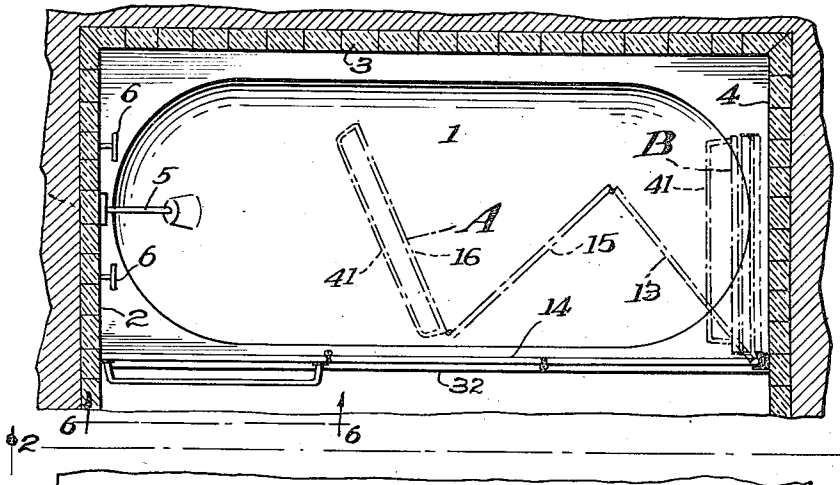
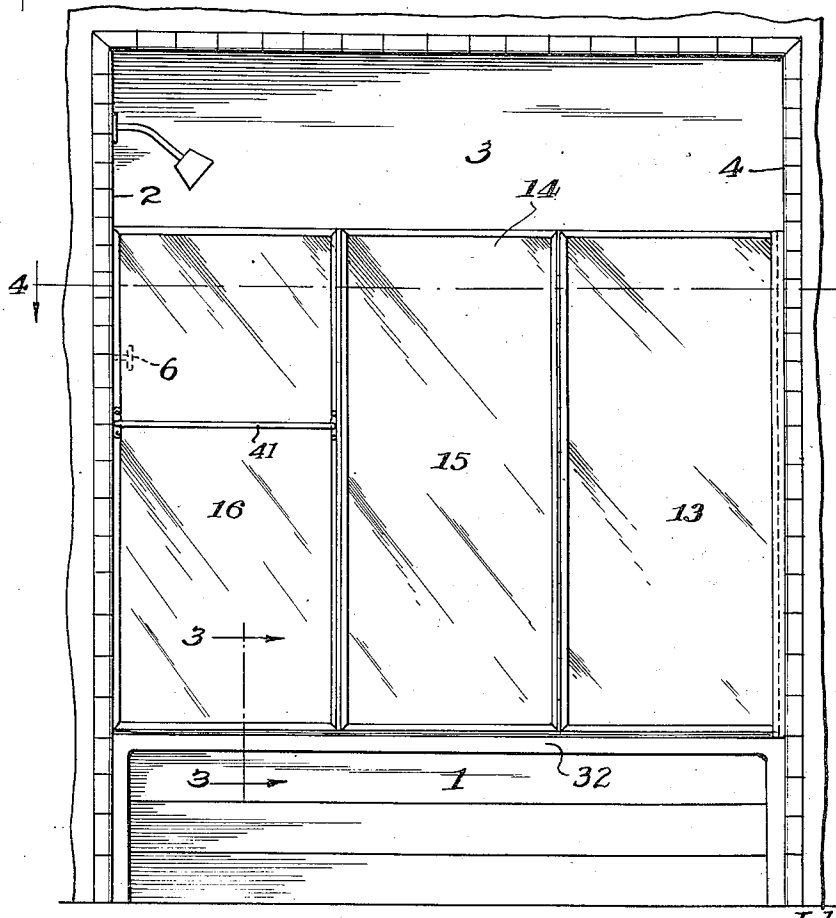


Fig. 2.



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Fig. 7.

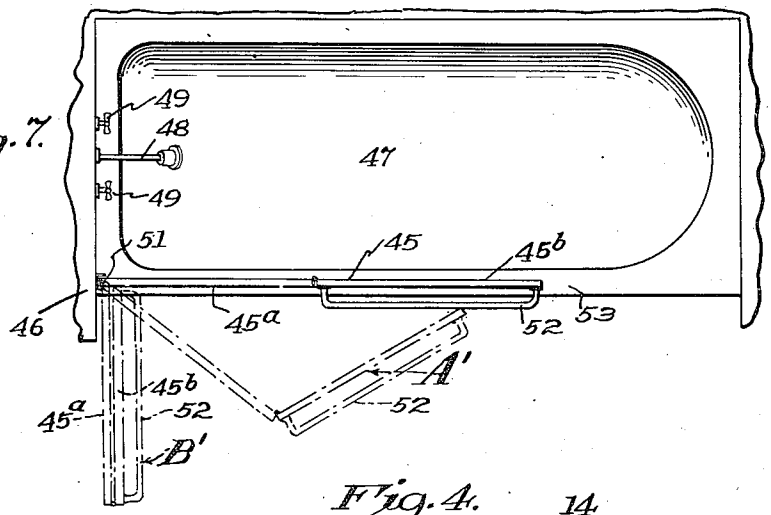


Fig. 4.

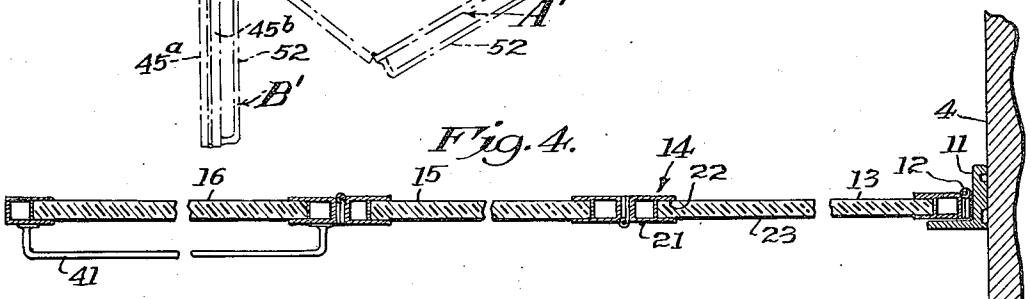


Fig. 5.

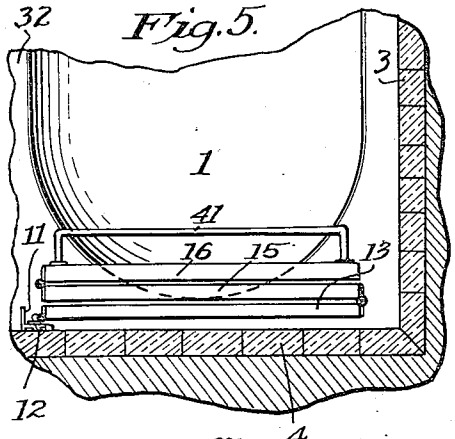


Fig. 3.

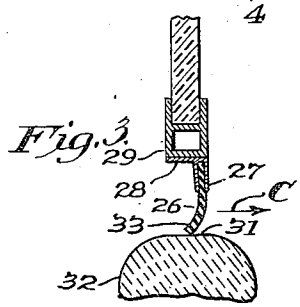
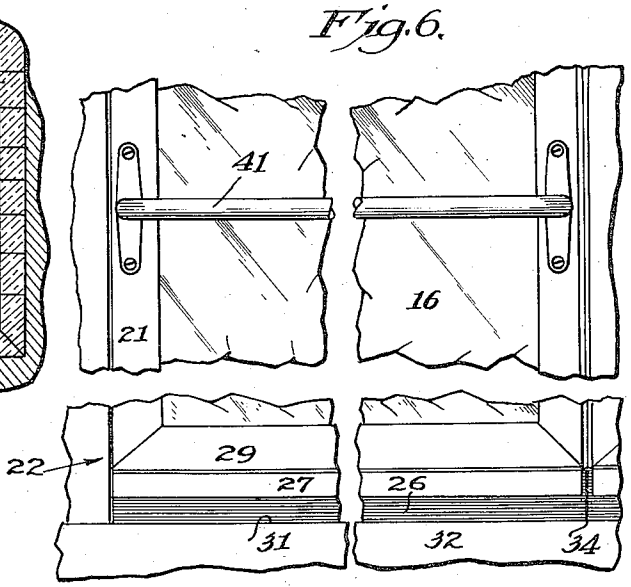


Fig. 6.



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SHOWER DOOR CONSTRUCTION

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Application September 3, 1935, Serial No. 38,941

4 Claims. (Cl. 4—148)

This invention relates to shower door constructions and pertains particularly to a sectional construction embodying a folding mechanism adapted to cooperate in extended position with an exposed edge of a bath-tub or the like with which the door is associated and adapted to be folded away from such edge and out of the way of the user when not in use.

One of the particular objects of the invention is to provide a folding shower door which may be disposed in water-deflecting relation to one edge or wall of a bath-tub with which the shower is associated to prevent water from escaping from the shower when in use and which will fold away from said edge or wall into a position in which it is conveniently accessible to the user.

A further object of the invention is to provide a sectional folding door device for a shower associated with a bath-tub or the like which will cooperate with a wall portion along an exposed side of the bath-tub to effectively seal the shower against escape of water during use and which will fold inwardly of said bath-tub after use, whereby any water present on the inner surface of said door will be caused to drain into the tub itself.

A further object of the invention is to provide a folding shower door construction which will cooperate with a bath-tub wall portion along an exposed side of the tub with which the shower is associated, to produce a substantially continuous water seal at the juncture of said door with said wall portion when in use.

A further object of the invention is to provide a combination shower door and towel rack, said shower door being of a sectional folding construction and movable into position along one edge or wall of the bath-tub in water-sealing relation thereto with the towel rack disposed exteriorly of the shower when the shower is in use, and movable into folded position away from said edge or wall with said towel rack disposed in a position conveniently accessible to the user.

A further object of the invention is to provide a sectional folding door for a shower associated with a bath-tub or the like which will provide a substantially continuous enclosure for the shower in cooperation with the wall portions of the room within which the tub is located, and which may be folded out of enclosing position when not in use so as to provide free access to said tub for cleaning purposes or the like.

The device of the present invention is adapted primarily for use in connection with showers which are established over a bath-tub or the like, in place of the conventional shower curtain, the bath-tub having one end abutting against a wall of the bath-room and being customarily enclosed on three sides, for example, the two ends and one side, by the walls of the bath-room, and the folding door construction of this invention being secured to one of the bath-room walls and adapted to be positioned along the open edge or exposed side of said bath-tub to establish a substantially completely enclosed shower zone or room. The device of the present invention preferably comprises a plurality of inter-hinged panels hingedly mounted to one bath-room wall adjacent the end of the bath-tub away from the shower and shower control mechanism, and in line with the open edge or wall of an exposed side of the bath-tub itself, although in one embodiment the device is shown mounted on the wall at the same end as the shower mechanism. The height of the folding door mechanism is preferably such that the upper edge of said door, when in extended or sealing position, will be sufficiently elevated with respect to the shower device that there is small likelihood of water splashing over said door when the shower is in use, and, in the preferred embodiment, the number and width of the individual panels forming said door are preferably such that a substantially complete partition is formed between the bath-room walls at the opposite ends of the tub, along the open edge of said tub. The individual panels of the folding door, according to the preferred embodiment, are preferably hingedly connected to one another so that the door may be folded inwardly of the tub and then longitudinally of the tub away from the shower and shower control mechanism so as to permit unobstructed movement on the part of the user within the tub itself, to permit free use of a towel or the like or to provide free access to the tub for cleaning purposes. A portion of the sectional door construction, for example, one of the folding panels, is preferably provided with a suitable form of towel holding means which is so disposed with respect to such panel that a towel may be held by such means at a position exteriorly of the shower when the device is in extended position and in a position accessible to the shower user when the device is in folded position.

Other objects of the invention will be more specifically set forth in the following description, or will be apparent therefrom.

The accompanying drawings show a preferred embodiment and one modification of the invention, and referring thereto:

Fig. 1 is a plan view of a bath-tub provided

with a shower and showing the device of the present invention in extended position, a folding and the folded positions of the shower door being indicated in dot-dash lines;

Fig. 2 is an elevation thereof taken on line 2—2 in Fig. 1;

Fig. 3 is a detail thereof taken on line 3—3 in Fig. 2;

Fig. 4 is a partly broken-away horizontal section of the door member taken on line 4—4 in Fig. 2;

Fig. 5 is a broken-away plan view of one end of the tub showing the device of the present invention in folded position;

Fig. 6 is a broken-away elevation taken along line 6—6 in Fig. 1, showing details of the panel construction on somewhat larger scale; and

Fig. 7 is a view corresponding to Fig. 1, showing a modified folding shower door structure.

Referring to Figs. 1 through 6 of the drawings, a conventional form of bath-tub is shown at 1 enclosed on three sides by walls 2, 3, and 4 which may constitute portions of the bathroom walls or may constitute a recess in one wall of such bathroom. A shower device is provided adjacent one end wall such as the wall 2, as at 5, suitable control means being shown at 6 associated with said shower device. The folding sectional door structure of the present invention is conveniently secured to one of the shower walls such as the wall 4 which is opposite the shower device 5 through a suitable hinge mounting which may comprise attachment member 11 secured to the wall 4 in any suitable manner as by means of screws or the like, to which one side of a suitable hinge 12, preferably of the "piano-hinge" type, is secured, the other side of said hinge being secured to the first panel 13 of the door 14. In the particular embodiment herein shown, the door 14 is shown as formed of three panels 13, 15, and 16, but it will be understood that any desired number of panels will be provided, dependent upon the size and character of the door desired. The individual panels may comprise a rectangular frame member 21 having an inwardly disposed groove portion 22 adapted to receive and support a sheet of glass or the like 23. It will be appreciated that any suitable material may be employed at 23, glass being given merely as an example. According to the preferred embodiment of the invention, the panel 13 is preferably so hinged to the wall 4 as to swing inwardly of the bath-tub, the next panel 15 being oppositely hinged and the last panel 16 being hinged to fold in the same direction as the panel 13, whereby the door may be folded in accordion fashion through a position as shown at A in Fig. 1 into completely folded position such as shown at B adjacent the wall 4.

In order to effect an adequate seal between the lower edge of the door 14 and the edge of the bath-tub 1 I preferably provide a deformable sealing member extending along the lower edge of said door at each of the panels 13, 15, and 16, and referring particularly to Figs. 3 and 6, this sealing member is shown as a rubber strip 26 held within a groove 27 secured as at 28 to the lower edge 29 of the panel. The vertical dimension of the strip 26 with respect to the separation between the lower edge of the panels and the upper surface 31 of the tub side wall 32 is preferably such that the lower edge of said strip is brought into forceful engagement with said surface 31 when the door is in extended position over the wall 32, and assuming the particular panel in question to have approached the wall 32 in the direction indicated by the arrow C in Fig. 3 in the closing movement thereof, the strip 26 will assume a deformed condition as shown at 33 by being forced into tight engagement with the surface 31 causing the panel to persist in extended position along said tub side wall. The strips 26 are slightly longer than the distance between the center lines of adjacent hinges so that they will be brought into forcible end-to-end engagement at positions substantially in line with the hinge between adjacent panels when said panels are in the extended position, as shown at 34 in Fig. 6, so as to abut and form an effective and substantially continuous water seal along the wall 32 and thus prevent egress of water from the shower zone while in use.

The outer panel 16 is preferably provided with a towel rack or the like 41 disposed at the side thereof which is exterior of the tub 1 when the door 14 is in extended position, it being apparent that with this particular arrangement of door panels, said towel rack will be disposed interiorly of the shower zone when the door is in folding or folded position. This construction provides for protecting the towel from the splash of water within the shower when the shower is in use, but as soon as the door 14 is moved toward folded position, the towel rack 41 is swung interiorly of the shower into free access by the shower user.

In the embodiment of the invention shown in Fig. 7, the folding door 45 is hingedly mounted to the bath-room wall 46 at the end of the tub 47 at which the shower device 48 is disposed, and extends only part way along the open edge of the tub, for example, a matter of two-thirds of the length of such tub, so as to provide a partial enclosure of the shower. In view of the fact that it is necessary to enclose the end of the tub at which the shower device is located, it is not convenient to fold the door inwardly of the tub as in the previously described form, due to the presence of the shower device 48 and the associated controls 49. For this reason I dispose the first panel 45a on a hinge 51, mounted on the wall 46, in such manner as to permit the door to swing outwardly of the tub through a folding position A' into folded position as shown at B' adjacent the wall 46. In this form of device the outer panel 45b is provided with a towel rack or holding means 52 disposed on the exterior face thereof, which holding means will be brought into position for access by the shower user when the door is folded into the position B'. It will be understood that the door 45 may be provided with a sealing means on the lower edge thereof after the manner shown in Figs. 3 and 6, if desired, which will cooperate with the outer edge or wall 53 of the tub 47 after the manner above described.

Numerous modifications of the above specific forms of device are obviously possible, and any desired number of panels may be employed to obtain enclosure of the desired proportion of the open wall of the tub, as will be apparent to one skilled in the art. In like manner, the door structure will be disposed at the most desirable end of the tub for the particular installation involved and may be made to swing interiorly or exteriorly to the tub according to the choice of the user. One of the essential requirements of the bath-tub construction is that one end of such tub abuts against a wall of the bath-room, and as shown respectively in Figs. 1 and 7, such abutment may be at either end of such tub. It will

be appreciated that the abutting wall may not actually form a part of the bath-room itself, as the tub may be isolated if desired in a large bath-room, in which case some form of wall member will be provided at the end of the tub to provide support for the door construction and to also provide an at least partial enclosure for the tub adjacent the shower end thereof.

I claim:

1. A shower door construction for use with a bath-tub having its two ends abutting against opposing walls and having an exposed edge, which comprises a plurality of vertical panels hingedly interconnected at their adjacent vertical edges to form a folding structure disposed above the tub, hinge means secured to one of said walls adjacent said exposed edge and to a vertical edge of one of said panels to support the complete folding structure, said panels being hingedly interconnected in such manner as to provide for folding movement of said structure between a folded position such that said panels are disposed adjacent said wall and an extended position such that said panels are alined edge to edge along said exposed edge of said tub to form a substantially complete enclosure for said tub along said exposed edge.

2. The construction set forth in claim 1, and comprising in addition, deformable sealing means secured to and extending along the lower edge of each of said panels, each of said sealing means being positioned to engage the upper surface of the exposed edge of said tub in sealing relation thereto in said extended position of said structure, and the respective sealing means of the adjacent panels being positioned to abut one another at their adjacent ends in compressive engagement to form a substantially continuous seal along said exposed edge when said structure is in said extended position.

3. A shower door construction for use with a bath-tub having one end abutting against a wall and having an exposed edge, which comprises: a plurality of vertical panels hingedly interconnected at their adjacent vertical edges to form a folding structure disposed above the tub; hinge means secured to said wall adjacent said exposed edge of said tub and to a vertical edge of one of said panels to support the complete folding structure, said panels being hingedly interconnected in such manner as to provide for folding movement of said structure between a folded position entirely inwardly of said exposed tub edge and adjacent said wall and an extended position with said panels in edge-to-edge alinement along said exposed side of said tub; and deformable sealing means secured to and extending along the lower edge of each of said panels, said sealing means being of such dimensions and being so positioned as to be brought into forcible engagement with the upper surface of said exposed edge when said panels are in extended position, to cause said panels to persist in said extended position.

4. The construction set forth in claim 3, the respective sealing means of the adjacent panels being positioned to abut one another at their adjacent ends in compressive engagement to form a substantially continuous seal along said exposed edge when said structure is in said extended position.

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