

April 24, 1945.

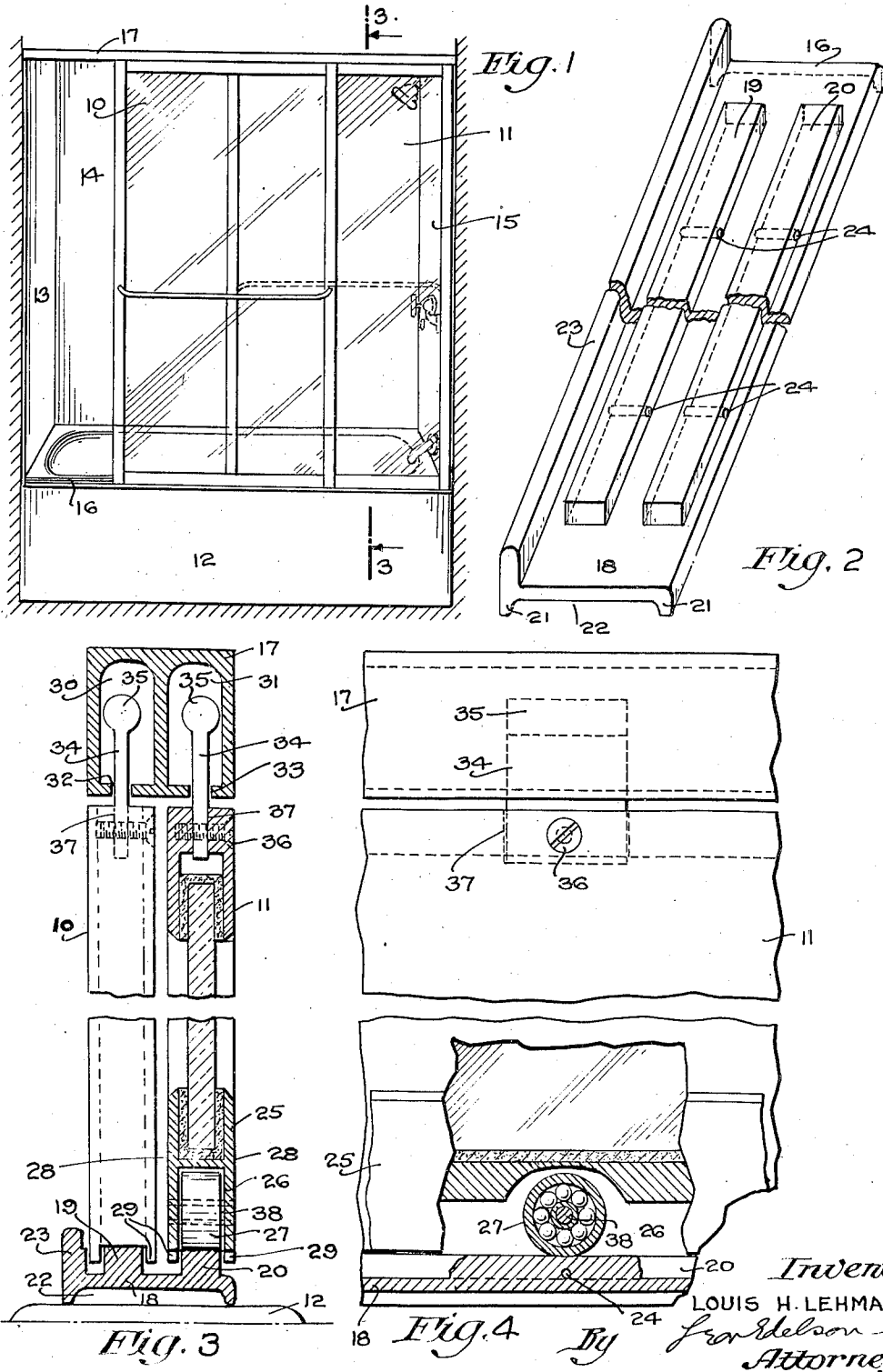
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2,374,490

SHOWER ENCLOSURE

Filed March 12, 1942

2 Sheets-Sheet 1



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Fig. 5

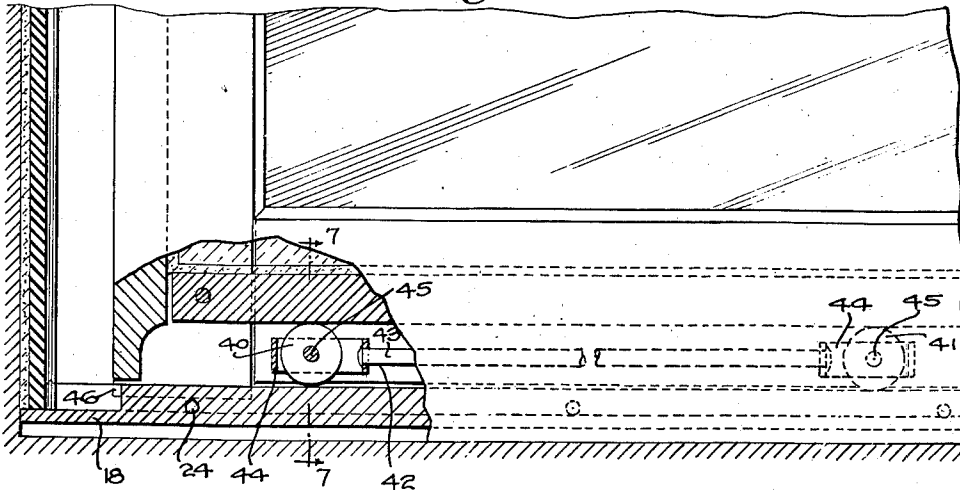


Fig. 6

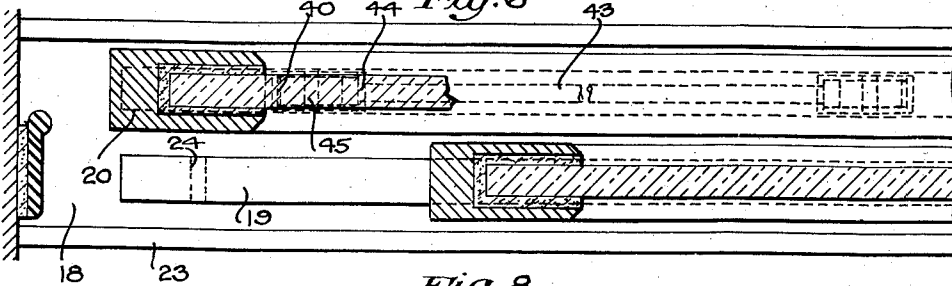
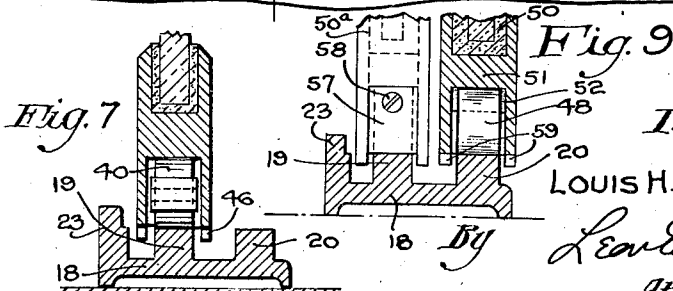
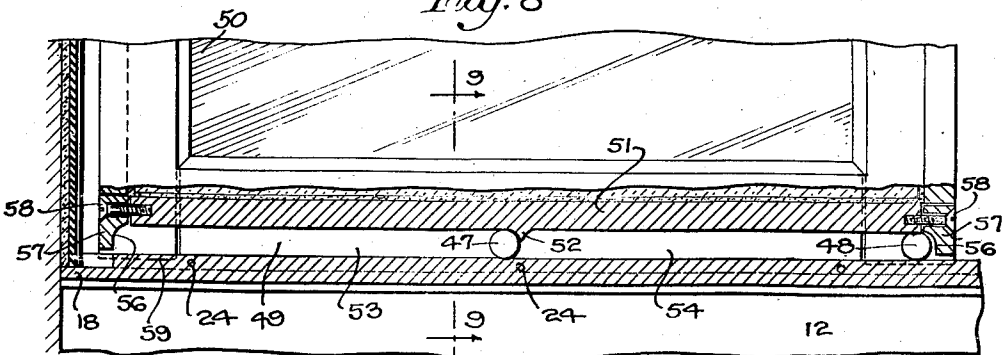


Fig. 8



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2,374,490

SHOWER ENCLOSURE

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Application March 12, 1942; Serial No. 434,341

4 Claims. (Cl. 4-146)

This invention relates generally to shower enclosures and more particularly to an improved construction of sliding door which is adapted for use in conjunction with compartment and bathtub showers.

Among the principal objects of the present invention is to provide an arrangement wherein a pair of slidably mounted glass paneled doors are employed to complete the shower enclosure, the arrangement being such as to insure not only smooth, easy and quiet operation of the doors in the opening and closing of the same, but also to insure against leakage of water across the bottom edges of the doors. In this latter regard, the present invention has as its further object the provision of a specially designed guide track for the doors which is adapted to be readily installed along the outer longitudinal edge of a bath-tub or as the threshold piece of a shower compartment without the use of any special tools and without requiring the drilling of holes in the edge of the bath-tub or in the floor of the shower compartment.

A further and important object of the present invention is to provide a sliding door arrangement wherein the doors are equipped with concealed rollers and wherein a specially designed track is provided for said rollers to insure not only smooth and quiet operation of the latter, but also to facilitate draining the track of any water that may tend to accumulate therein.

Still another object is to provide a guide track for the roller-equipped sliding doors having up-standing rails along which the rollers travel, the construction of the track being such as to eliminate the open guide channels which have been employed heretofore more or less conventionally and in which dirt and sediment tends to accumulate to render them quite unsanitary.

Still other objects and advantages of the present invention, such as the provision of a sliding door arrangement which is simple in construction, relatively inexpensive to manufacture and install, durable and efficient in use and slightly in appearance, will appear more fully hereinafter, it being understood that the present invention consists substantially in the combination, construction, location and relative arrangement of parts, all as described in detail hereinafter, as shown in the accompanying drawings and as finally pointed out in the appended claims.

In the accompanying drawings, which are illustrative of certain preferred embodiments of the present invention:

Figure 1 is a front elevational view showing

an application of the present invention to a bathtub shower;

Figure 2 is a perspective view of the lower guide track for the shower-enclosing doors;

Figure 3 is a vertical sectional view taken along the line 3-3 of Figure 1;

Figure 4 is a partial elevational view, with certain parts shown in section, of the construction shown in Figure 3;

Figure 5 is a partial elevational view, with certain parts shown in section, of a modified embodiment of the present invention;

Figure 6 is a horizontal sectional view of the construction shown in Figure 5;

Figure 7 is a vertical sectional view taken on the line 7-7 of Figure 5;

Figure 8 is a partial elevational view, with certain parts shown in section, of a still further modified embodiment of the present invention;

Figure 9 is a vertical sectional view taken on the line 9-9 of Figure 8.

Referring now to the drawings and more particularly to Figures 1 to 4 thereof, it will be observed that the sliding door arrangement as constructed in accordance with and embodying the principles of the present invention includes a pair of glass panel doors 10 and 11 which are adapted to serve as the openable enclosure for the bath-tub type of shower shown in Figure 1. In this type of shower, the bath-tub 12 is permanently enclosed along three of its sides by the vertically extending walls 13, 14 and 15 to provide a shower compartment wherein the tub 12 serves as the receptacle for the waste shower water. The open side of this compartment is that which is adapted to be enclosed by the sliding doors 10 and 11, it being noted in this connection that these doors are guided along their lower edges by a lower guide track 16 and along their upper edges by an upper track or guide 17. The lower track 16, which is shown in perspective in Figure 2, is mounted and extends along the outer longitudinal edge or rim of the bath-tub 12, the opposite ends of the track being secured in any suitable manner to the opposite walls 13 and 15 of the shower enclosure. The upper guide 17 also extends between the walls 13 and 15 with its opposite ends secured thereto in any suitable manner, it being understood, of course, that the said lower track 16 and the upper guide 17 are disposed in vertically spaced parallel relation.

The sliding doors 10 and 11 are of substantially similar construction, each being provided

with a frame within which is fitted a panel of glass or other such material. The doors 10 and 11 are each of a width slightly exceeding half the overall width of the opening between the walls 13 and 15 of the shower enclosure, the door dimensions being such that they may be moved in opposite directions to conjointly close completely the front opening of the shower enclosure.

As appears most clearly in Figure 2, the lower track 16 for the sliding doors 10 and 11 is provided with a relatively broad main base member 18 upon which are integrally formed a pair of laterally spaced, parallel track elements 19 and 20, the opposite ends of each of these track elements terminating short of the corresponding ends of the base 18. The base 18 of the track is provided along each of its longitudinally extending edges with depending flanges 21—21 so as to provide the track base with a downwardly presenting shallow channel 22 for reception of any suitable material for affecting a water tight joint between the base of the track and the rim of the tub upon which the track is mounted. Preferably, this recess 22 thus formed between the track base 18 and the rim of the bath-tub is filled with a caulking material. The outer longitudinal edge of the track is provided with an upstanding flange 23 which rises somewhat above the top surfaces of the track elements 19 and 20 and serves as a splash plate for preventing water that may accumulate upon the track from passing outwardly thereof. The track elements 19 and 20 are each provided with a plurality of longitudinally spaced weep holes 24 to permit free drainage of water from the outer sides of each track element toward and into the tub, it being observed in this connection that by terminating the track elements short of the opposite ends of the main base 18 of the track, water that may be accumulated on the track member between the track elements 19 and 20 may flow freely into the tub not only by way of the weep holes 24, but also through the clear space provided at opposite ends of the track elements. The arrangement thus provides for ready and adequate cleaning of any water and other matter that may accumulate between the track elements 19 and 20 and between the track element 19 and the outer splash flange 23.

The doors 10 and 11 are respectively mounted for slidable movement along the tracks 19 and 20, it being observed, as most clearly appears in Figures 3 and 4, that each of these doors is provided with a lower horizontally extending rail member 25 of substantially H cross-section. These lower rails of the doors are thus provided with downwardly presenting channel portions 26 within which are suitably journaled a plurality of roller bearings 27. Preferably, one of these roller bearings is journaled within the channeled portion 26 of the door adjacent each opposite extremity thereof, the arrangement being such that the roller bearings 27 rest on the track elements 19 and 20 and so support the doors for sliding movement there along. In order to prevent lateral displacement of the doors 10 and 11 from their respective tracks 19 and 20, the opposite walls of the vertical rails 28—28 of each door are extended downwardly slightly below the top surfaces of the track elements 19 and 20, these downwardly extending parts of the side rails being most clearly shown in Figure 3 wherein they are designated by the reference numeral 29.

The upper guide header 17 for the doors is of the cross-section most clearly shown in Figure 3

wherein it will be observed that it is of generally double channel section, the bottoms of the channels 30 and 31 being each formed with longitudinally extending, relatively narrow openings 32 and 33.

Secured to the top rails of each of the doors 10 and 11 are a pair of longitudinally spaced guide members 34, each of the latter being preferably in the form of a flat plate having an enlarged head 35 formed along its free extremity. The guide elements 34 are suitably secured to the upper rails of the doors 10 and 11, preferably in the manner shown in Figure 3 by the transversely extending screws 36, the arrangement being such that the flat portions 34 of the guide members are adapted to ride freely along the slots 32 and 33 of the upper guide header 17 with the enlarged heads 35 disposed within the channels 30 and 31 of the header. The members 34 thus permit free movement of the doors 10 and 11 longitudinally of the header 17 while preventing lateral displacement therefrom. The enlarged heads 35 of the upper guide shoes 34 serve to support the door from the header 17 should the bottom edge of the door be accidentally dislodged from its supporting track element.

It will be understood that to assemble the upper safety shoes 34 in operative relation with respect to the header 17 and the doors 10 and 11 as shown in Figure 3, the said shoes are first slipped lengthwise into the header before the latter is mounted in place. Thereafter the depending lower portions of these shoes are fitted into the slots 37 suitably provided therefor in the upper rails of the doors wherein they are secured by the transversely extending screws 36.

Instead of fitting the doors with roller bearings as shown in Figures 3 and 4, and which bearings are journaled upon shafts 38 extending transversely between the opposite side walls of the bottom channel 26 of the doors, a modified arrangement of supporting roller for the door may be employed, such as is shown in Figures 5, 6 and 7. In this modified arrangement, each door is slidably supported above its track element by a pair of intervening rollers 40—41 which are secured together in longitudinally spaced relation by a suitable carriage 42. This carriage preferably consists of a longitudinally extending rod 43, the opposite ends of which are fitted with yokes 44—44 having transverse shafts 45—45 upon which the rollers 40 and 41 are respectively journaled. The distance between the centers of the rollers 40 and 41 equals approximately half the width of the door and inasmuch as the door is free to move relatively to the rollers while the rollers in turn are free to move relatively to the track element above which the door is mounted, the door moves twice the distance traversed by the rollers. Consequently, when one of the doors is in its extreme position, either fully closed or fully opened, it may be readily shifted to its opposite extreme position upon the rollers 40 and 41 with the latter moving only half the distance actually traversed by the door. As in the modification shown in Figures 3 and 4, the side walls of the opposite vertical rails of the door extend slightly downward as at 46, below the top edge of the track element above which the door is mounted to prevent lateral displacement of the door with respect to said track element.

Figures 8 and 9 show still another modification of the present invention wherein instead of the roller bearings of Figures 3 and 4 fixedly mounted within the lower channels of the door, a pair of

loose rollers 47 and 48 are employed. These rollers 47 and 48 are suitably disposed within the lower channel 49 of each of the doors 50—50^a, the upper wall 51 of this channel being provided midway of its length with a downwardly projecting septum 52 which serves to partition the channel into two longitudinally spaced parts respectively designated 53 and 54. Inasmuch as the rollers 47 and 48 are freely disposed respectively within the channeled portions 53 and 54, it will be apparent that as the door 50 is moved in one direction or another along its supporting track 20, it moves relatively to the rollers 47 and 48 while the latter rotate relatively to the said track 20. The action thus is on the order of that of the arrangement shown in Figures 5 and 6, the difference being that the rollers 47 and 48 are not tied together by a carriage as in the latter arrangement. Thus, when the door 50 is at its extreme left hand limit as shown in Figure 8, the rollers 47 and 48 assume the position shown in that figure. However, when the door is shifted to the right into its extreme right hand position, the rollers 47—48 move for a distance equal to approximately half the width of the door, the roller 48 being then engaged by the septum 52 while the roller 47 is engaged by the left hand rail of the door.

In order to provide for maximum distance between the rollers 47 and 48 and to approximate as closely as possible a distance between them equal to half the width of the door, the opposite rails of the door are each recessed as at 56—56. Also, to facilitate insertion of the rollers 47 and 48 between the door and its supporting track element and to make possible ready replacement of the rollers without necessitating removal of the doors from their supporting track elements, it is preferable to provide the opposite vertical rails of the doors with removable inserts 57—57 which are normally held in position by the screws 58—58. As in the previously described modifications, lateral displacement of the doors with respect to their supporting track elements is prevented by extending the opposite side walls of the channeled vertical rails of the doors downwardly, as at 59, slightly below the top surfaces of the track elements.

It will be understood, of course, that the invention is susceptible of various changes and modifications other than those hereinbefore described, all of which may be made from time to time, and it is accordingly intended to claim the present invention broadly, as well as specifically, as indicated by the appended claims.

What is claimed as new and useful is:

1. In a shower enclosure, in combination, a pair of sliding doors therefor, each having a longitudinally extending channel along its bottom edge, a track member extending longitudinally across the base of the opening to be closed by said doors, said track member having an upstanding flange extending along the outer edge thereof for the full length of the base of said door opening and a pair of laterally spaced parallel track elements projecting above the base of said track member, roller means disposed within the depending channel of each door and adapted to rest upon the upper surfaces of the said track elements to thereby maintain the said rollers out of direct contact with any water accumulating on said track member below the upper surfaces of said track elements, said channel of each door being of a depth such that its

free edges terminate substantially in the horizontal plane of the roller contacting surface of the track element associated with the door whereby to effectually conceal the roller means from lateral view, and means in said track member operative to permit free drainage therefrom of any water that may accumulate between and to either side of said track elements.

2. In a shower enclosure, in combination, a pair of sliding doors therefor each having a downwardly presenting channel extending longitudinally along its bottom edge, a track member extending across the base of the opening to be closed by said doors, said track member having an upstanding flange extending along the outer edge thereof for the full length of the base of said door opening and a pair of laterally spaced parallel track elements projecting above the base of the track member upon which said doors are respectively supported and guided, roller means disposed within the channeled bottom edges of each door for rolling engagement with the upper surfaces of said track elements, the lower free edges of the roller receiving channels being substantially flush with the roller contacting surfaces of the track elements throughout the major portion of the length of each channel, the opposite ends of said track elements terminating short of the corresponding ends of the base of the door opening whereby to permit the free drainage of water from said track member about said terminal ends of the track elements toward the interior of said enclosure, and means at the opposite extremities of the bottom edge of each door for preventing lateral displacement thereof with respect to its associated track element.

3. In a shower enclosure of the character defined in claim 2 wherein said last-mentioned means is in the form of extensions of the channel walls arranged upon opposite sides of each track element and terminating below the roller contacting surfaces thereof.

4. In a shower enclosure, in combination, a pair of sliding doors therefor, each having a longitudinally extending channel along its bottom edge, a track member extending longitudinally across the base of the opening to be closed by said doors, said track member having an upstanding flange extending along the outer edge thereof for the full length of the base of said door opening and a pair of laterally spaced parallel track elements projecting above the base of said track member, roller means disposed within the depending channel of each door and adapted to rest upon the upper surfaces of the said track elements to thereby maintain the said rollers out of direct contact with any water accumulating on said track member below the upper surfaces of said track elements, said channel of each door being of a depth such that its free edges terminate substantially in the horizontal plane of the roller contacting surface of the track element associated with the door whereby to effectually conceal the roller means from lateral view, and means in said track member operative to permit free drainage therefrom of any water that may accumulate between and to either side of said track elements, said last-mentioned means including drainage passages for the water extending transversely through said track elements at points substantially below the upper surfaces thereof.

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