June 12, 1923.

1,458,748

J. H. CRIST ET AL

DOOR CONSTRUCTION

Filed Nov. 9, 1921

2 Sheets-Sheet 1

Fig. 1

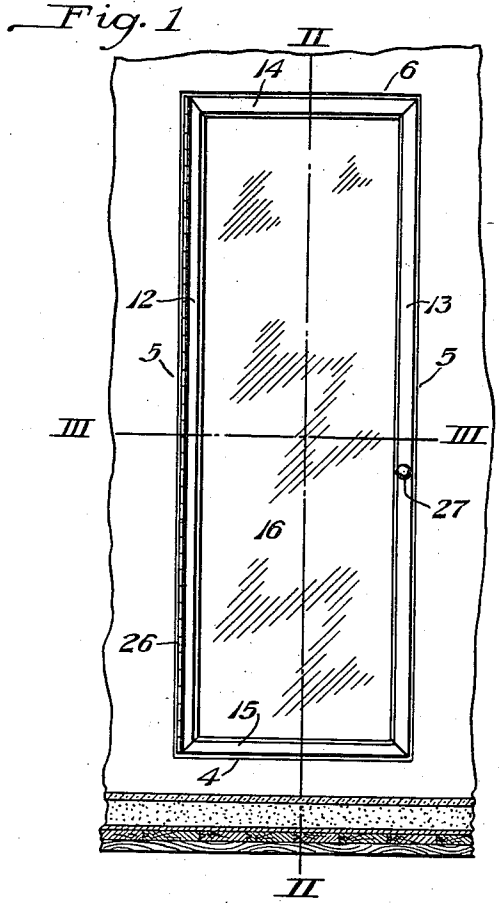
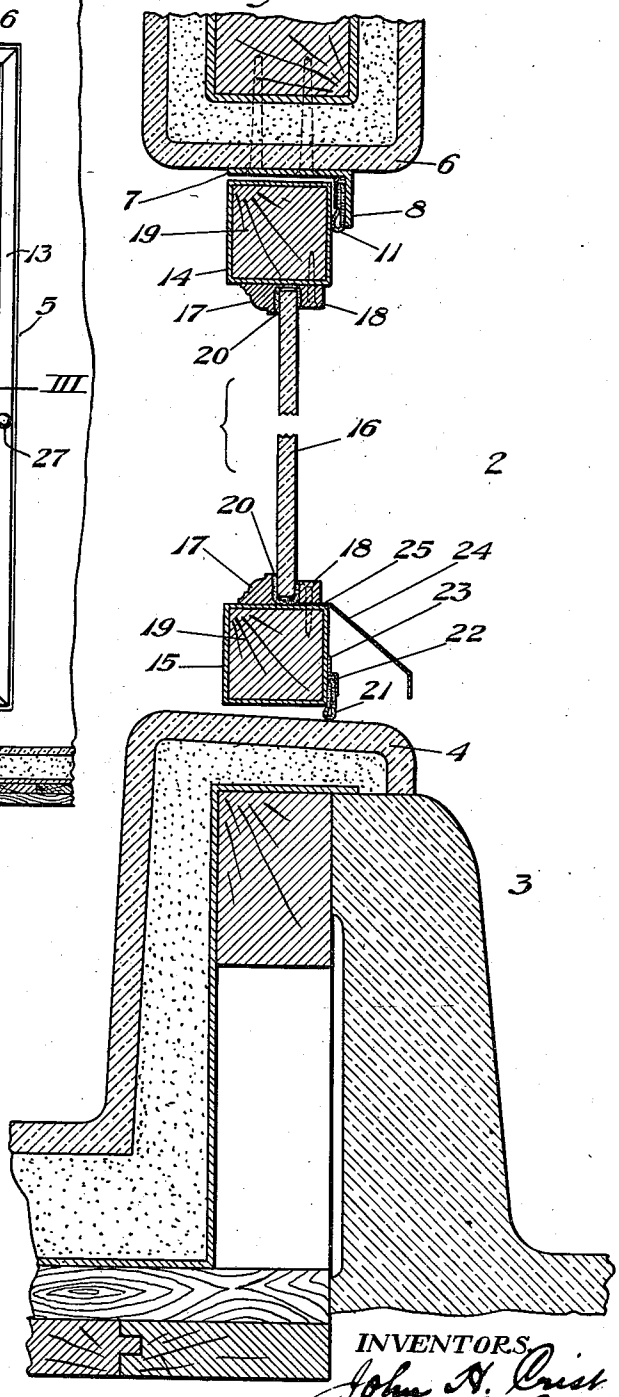


Fig. 2



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Fig. 3

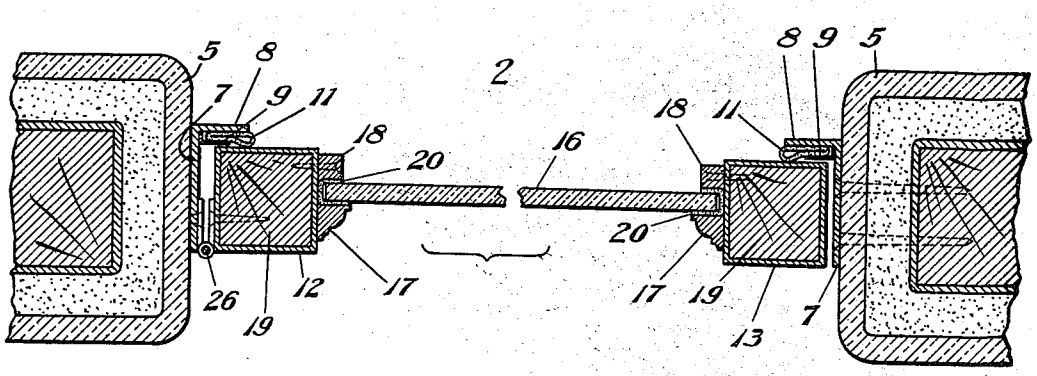


Fig. 5

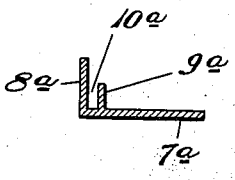
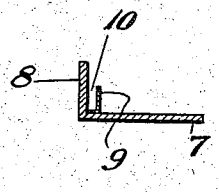


Fig. 4



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Patented June 12, 1923. 1,458,748

UNITED STATES PATENT OFFICE.

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DOOR CONSTRUCTION.

Application filed November 9, 1921. Serial No. 513,895.

To all whom it may concern:

Be it known that we, JOHN H. CRIST and LOUIS G. CRIST, citizens of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Door Constructions, of which the following is a specification.

Our invention consists of an improvement in door construction, and is particularly adapted to the manufacture of doors for making water tight closure, as in the case of shower bath doors, or in any similar utilization, for the purpose of preventing not only splashing of water, but passage between the door and the frame at any points.

In the application of the invention as herein illustrated and described, it is used in connection with the type of shower bath known in the trade as stalls. In such construction, the shower bath stall is of comparatively small dimensions, usually rectangular in form, with a depressed floor or receptor, having an entrance and exit opening through one of the surrounding walls, and usually provided with a door sill, either elevated above or on the common level with the outer floor surface.

In the drawings, illustrating one preferred embodiment of the invention as thus used,

Fig. 1 is a view in outer elevation of the complete door;

Fig. 2 is a vertical sectional view, partly broken away, on the line II—II of Fig. 1;

Fig. 3 is a similar cross sectional view on the line III—III of Fig. 1;

Figs. 4 and 5 are detail sectional views of the metal bar used for the side and top of the door framing.

Referring to the drawings, the shower bath stall 2 is positioned within the outer surrounding wall portions, and provided with the depressed floor or receptor 3, usually of porcelain, or other suitable material, and having the usual drain outlet, the stall having any standard or suitable water supply and shower bath equipment, as will be readily understood.

At the entrance and exit portion of the stall, and suitably elevated above the receptor or bottom thereof, is the sill 4 which may be slightly inclined, as shown, or level, if preferred. The sill 4 is located between the side portions 5—5 of the door cavity, the sill and side portions with the upper cross portion 6 completing the door receiving rectangle surrounding the door opening. The several portions 4, 5 and 6 may be faced with tile, marble, or any suitable material within the selection of the designing architect or builder, and the door structure is to be understood as being applicable to any such standard form of framing, with any suitable finish of various design within the section of the user.

For the purpose of providing a mounting for the door itself, we use L-shaped strips of rolled brass or other suitable metal having attaching base portions 7, and inwardly extending right angled flanges 8. In the construction illustrated in the principal figures of the drawings, a supplemental angle shaped member 9 is secured in the corner of the angle between base 7 and flange 8, with a narrow intervening space 10, member 9 being brazed or otherwise secured, so as to hold it rigidly in relation to the flange 8.

Inserted between member 9 and flange 8, in cavity 10, is a strip of rubber tubing 11, the inner portion of which is tightly pressed together for tight insertion between members 8 and 9 in space 10 for secure holding therein, leaving the outer portion of the rubber tubing of somewhat bulbous or protruding formation. Such strip extends entirely around the two vertical sides and the upper framing portion of the door cavity, in a series of sections meeting at the corners and provides a sealing member for engagement against the adjacent face portion of the door framing.

In the modified construction of Fig. 5, I show the member 9^a as formed integral with the base member 7^a and in fixed relation to the flange 8^a, leaving the intervening space 10^a in all respects similar to the construction above described, and adapted to the reception of the strip of rubber tubing.

The door shown in elevation in Fig. 1, is of suitable dimensions to fit neatly within the framing cavity, but with a slight clearance between its lower bottom portion and sill 4. The door framing is preferably constructed of side members 12 and 13, a top member 14, and a lower member 15, framed together in rectangular form and provided with a glass pane 16, preferably of plate

glass. Said pane is mounted between the framing members by means of permanent strips 17 brazed to the inner portion of the framing members, and separately attached strips 18 secured by screws to the framing members as shown. Framing members 12, 13, 14 and 15 are preferably of box form, as shown, of suitable plate metal construction, with a wooden or other filler 19, acting as a self-sustaining door frame between the strips 17 and 18, and embracing the inserted edges of the pane 16 are strips of rubber tubing 20, slitted along one side and tightly inserted, as shown, providing for a water sealing mounting of the pane itself between the strips, and also providing ample cushioning resiliency for protection against shocks, etc. The use of tubing in this way ensures proper placing and continuous sealing at each side of the edges of the pane.

The door as thus constructed may be continuously tight, as shown, or, if preferred, may have any suitable open grill work at the top for ventilation, as will be readily understood. The lower inner portion of the base framing member 15 is provided with a downwardly extending resilient sealing strip 21 of rubber tubing, tightly clasped between the metal box member 15 and an outer attached retaining strip 22, of Z-shape, secured by base 23 against the inner face of the base member 15, similar to the mounting of sealing strips 11.

A splash coping 24 secured at the upper inner edge of the base strip 15, as at 25, extends inwardly and downwardly towards the receptor bottom, terminating a short distance above the level of the sill 4, so as to deflect water inwardly to the base portion of the receptor.

The door is mounted along one of its vertical edge portions to the adjacent side framing member 7 by a continuous series of hinges 26 of the piano type, so as to not only ensure ample support and good mounting of the door, but also providing for a continuous supplemental closure at the hinge side. The other edge portion of the door is provided both outside and inside with suitable knobs or handles 27, for opening or closing from either side, together with any suitable spring or friction devices for holding the door in closed position.

As thus constructed and mounted, the door fits snugly within the framing members 7, and when closed, bears by the inner faces of its frame portions 12, 13 and 14 against the bulbous portion of the several straight sections of rubber tubing 11, pressing them against the resisting flanges 8 and effecting a tight closure when the door is closed. The strip 21 also bears by its bulbous protruding portion against the upper face of sill 4, thereby also effecting a similar sealing closure, the several strip members of rubber tubing meeting each other at the corners in a miter joint, and providing a practically continuous flexible sealing member around all four sides.

The several metallic portions of the structure, both stationary framing and the movable door framing, and all of its metallic parts are preferably made of non-corrosive material, or are suitably plated, as by nickel plating, so as to render the structure impervious to the effects of moisture, and easily polished. The door as a whole is not only extremely efficient in performing its intended functions, in the particular manner of its mounting and location, but is also highly ornamental and provides a very efficient portion of the equipment of the particular type of shower bath installation to which it is adapted.

It will be understood that the door and its frame and the parts thereof may be made in various dimensions and designs as to particular formation of the framing members themselves, or other parts but all such changes are to be understood as within the province of the skilled mechanic or builder.

What we claim is:

1. In a water tight door construction, the combination with a rectangular framing providing a door opening, of a metallic frame member L-shaped in cross-section having a base secured against the opposite sides and top of the door opening framing and a flange projecting at right angles from said base, a resilient sealing member secured against said flange, an inner supplemental holding flange engaging said sealing member, and a swinging door connected by hinges secured to the opposite edge portion of the base at one side of the opening adapted when closed to bear against the sealing members of the side and top frame members.

2. In combination with a swinging door, a receiving frame formed of an L-shaped strip of metal having an attaching base and a main projecting flange, an inner supplemental flange parallel with said flange and spaced therefrom and extending partway of the width of said flange, and a sealing strip of rubber tubing inserted tightly between said flanges and extending by its free bulbous portion outwardly along and against the main flange and providing a sealing and cushioning contact member for the door.

In testimony whereof we hereunto affix our signatures.

JOHN H. CRIST.
LOUIS G. CRIST.