L. H. PLEINS.

PLUMBING FIXTURE.

APPLICATION FILED JAN. 15, 1910.

995,368. Patented June 13, 1911.

Fig. 1.

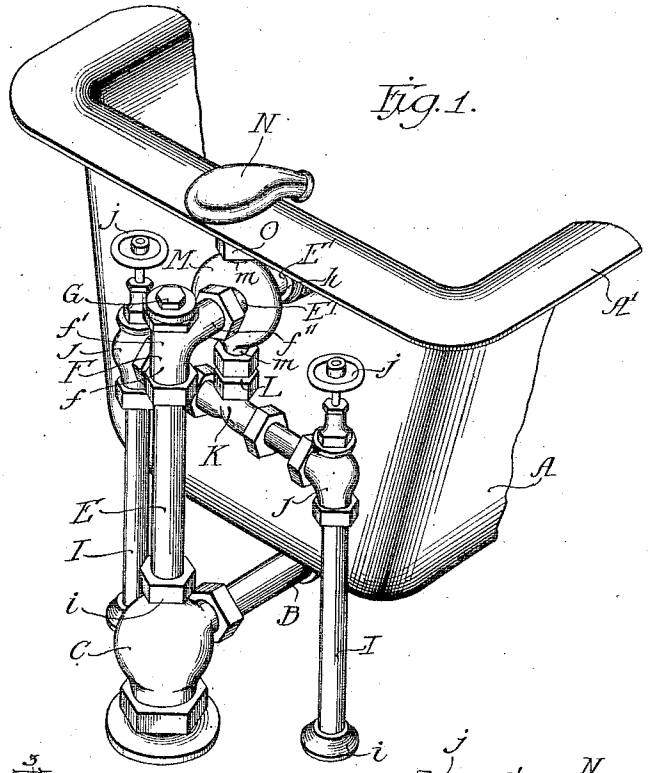


Fig. 2.

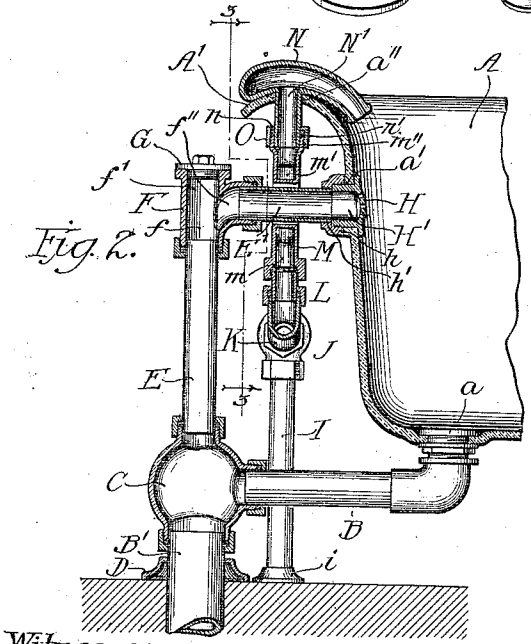
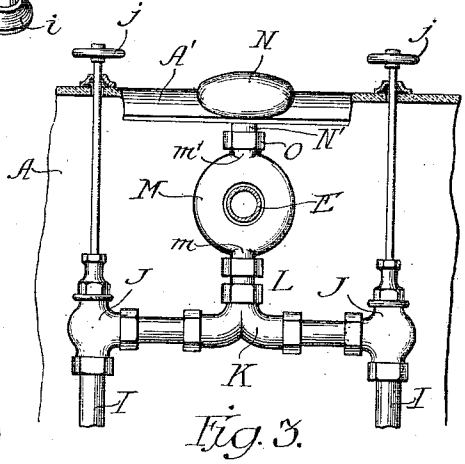


Fig. 3.



Witnesses:-

Frank M. Brown

L. J. Rinkenberger

Inventor:-

Leo H. Pleins

By:- L. H. Pleins

Atty.

UNITED STATES PATENT OFFICE.

LEO H. PLEINS, OF CHICAGO, ILLINOIS, ASSIGNOR TO JAMES B. CLOW & SONS, OF CHICAGO, ILLINOIS, A CORPORATION.

PLUMBING-FIXTURE.

995,368. Specification of Letters Patent. Patented June 13, 1911.

Application filed January 15, 1910. Serial No. 538,178.

To all whom it may concern:

Be it known that I, LEO H. PLEINS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Plumbing-Fixtures, of which the following is a specification.

The present invention relates more particularly to plumbing fixtures such as bath tubs, seat baths, lavatories, sinks, etc., which have supply pipes for hot and cold water and also pipes for carrying off the over-flow and waste water.

For the purposes of this application I have illustrated the invention as applied to a bath tub but I desire to have it understood that I reserve to myself the exclusive right to use any or all of its several novel features in connection with plumbing fixtures of any kind or description for which they may be found to be adapted.

More specifically stated, the invention relates to the construction and arrangement of the various pipes, parts or fittings by which the water is thus conducted to and from the tub, "tub" being a term which is hereinafter used for the sake of brevity and with the understanding that wherever it occurs any other specific term denoting a receptacle of any construction may be read for it.

The object of the invention is to improve the construction and arrangement of said parts with a view to providing a fixture in which simplicity, strength, durability and compactness in construction are combined with efficiency in operation and ornateness in appearance.

To these ends the invention consists in the features of novelty that are hereinafter described with reference to the accompanying drawing which is made a part of this specification and in which:

Figure 1 is a perspective view of one end of a bath tub equipped with fittings constructed and arranged in accordance with the invention. Fig. 2 is a vertical longitudinal section thereof on a larger scale. Fig. 3 is a vertical section showing some of the parts, on a smaller scale, on the line 3—3, Fig. 2, and showing also a slight modification.

A represents one end of a bath tub having suitably located waste and over-flow openings, *a* and *a'*, respectively. A branch waste pipe, B, extending from the waste opening, *a*, communicates with the main waste pipe, B', through the medium of a fitting, C, the main waste pipe being surrounded by a floor ring, D, so as to permit of its expansion and contraction, due to variations in temperature. The lower end of the vertical branch, E, of the over-flow pipe communicates with the top of the fitting, C, while its upper end communicates with a fitting, F. Preferably the fitting, F, has three branches or openings, one of which, *f*, is presented downward for communication with the vertical branch, E, of the over-flow pipe, a second of which, *f'*, is presented upward for cleaning-out purposes and is normally closed by a clean-out cap or plug, G, while the third, *f''*, is connected with the outer end of the horizontal branch, E', of the over-flow pipe, the inner end of which is suitably secured to the end of the tub, and communicates with the interior thereof through the over-flow opening, *a'*.

The invention, in its broadest aspect, is not limited to the details in the means for connecting the inner end of the horizontal branch of the over-flow pipe to the end of the tub but at the same time it contemplates such a firm and rigid connection that the horizontal branch of the over-flow pipe will serve the purpose of firmly bracing certain other of the parts.

In the drawing I have shown a strainer, H, formed integrally with a tubular sleeve or nipple, H', which extends through the over-flow opening of the tub and is externally threaded at its outer end to receive a clamping nut, *h*, by which it is secured to the tub. The projecting end of the nipple, H', is connected to the horizontal branch, E', of the over-flow pipe by a union, *h'*.

The pipes for supplying hot and cold water are shown at I. They are located in a vertical plane which is in proximity to the tub and between the tub and the vertical portion of the overflow pipe—preferably below the rim A' of the tub. Each of them passes freely through an opening in the floor and

each is surrounded loosely by a floor ring, *i*, so as to be free to expand and contract vertically under the influence of changes in temperature. Each of them communicates at its upper end with the casing of a valve, J, and the two valve casings communicate, respectively, with two of the branches of a three-way elbow, K, the third branch of which elbow communicates through fittings or parts, L, of any desired construction with the inlet opening, *m*, of an annular fitting, M, which lies in the vertical plane of the water pipes and has an annular internal chamber, the outlet opening, *m'*, of said fitting being in communication, through fittings of any desired construction, with the internal chamber of a spout, N. As shown in the drawing, the outlet opening, of the fitting, M, is surrounded by a tubular portion, *m''*, externally threaded for engagement with a correspondingly internally threaded union, O, through which passes a tubular nipple, N', formed integrally with and projecting downward from the under side of the spout, N. This tubular nipple, N', is externally threaded and has turned onto it a threaded ring, *n*, which forms an adjustable external shoulder adapted to be engaged by a corresponding internal shoulder on the union, O, a suitable packing ring, *n'*, being interposed between the parts for the purpose of forming a water-tight joint. The rim, A', of the tub is provided with an opening, *a''*, through which the nipple, N', passes and the under side of the spout is shaped to conform to the rim of the tub whereby the spout is prevented from turning.

It will be seen that when thus constructed and arranged all of the parts of the water supply system are supported by the tub through the medium of the spout and depend therefrom. The adjustability of the connection between the spout and the fitting, M, enables the said fitting to be adjusted to such a position that it may be practically free from the horizontal branch of the overflow pipe and at the same time it enables the fitting to be adjusted vertically so that it will bear upon said horizontal branch either at the top side or the bottom side thereof, as may be desired. If the connection between the fitting and the spout be shortened the reacting strains will be downward upon the spout and upward upon the horizontal branch of the over-flow pipe, thus firmly holding the spout to its seat upon the rim of the tub and at the same time producing an upward pressure upon said horizontal branch tending to aid in supporting it. On the other hand if the connection be lengthened the entire weight of the water supply system as well as the over-flow system will fall upon the tub through the medium of the horizontal branch pipe and thus relieve the spout of any downward strain or pressure. These are matters of adjustment which will be governed and controlled with a view to properly meeting the requirements of individual cases and are useful in that they provide means for meeting varying conditions in such individual cases.

The parts thus constructed and arranged are compact, the parts forming the water supply or passages all being susceptible of location close to the end of the tub and beneath the rim thereof, this being desirable not only because of the economy in the space required for the fittings but also because the parts are shielded and protected by the tub itself as against injury from being struck. To this end the stems of the valves, J, are so short that the handles, *j*, for turning them are beneath the rim of the tub, but, where conditions will not admit of ready access to these handles when thus located the stems of the valves may be carried upward through perforations through the rim of the tub as shown in Fig. 3. The described construction and arrangement also has the advantage of strength and durability in that the several parts are or may be braced, one against another, to such an extent that they form a rigid structure.

In addition to the above described function of the fitting, M, it constitutes a mixing chamber in which the hot and cold water, entering it at one side, are thoroughly mixed so that when the water is discharged from the spout it will be of uniform temperature. Furthermore a spout of the construction shown and described has, in and of itself, advantages over and above spouts of any other construction with which I am familiar. It is simple and inexpensive, it serves as a mixing chamber, and by reason of its conformation to an otherwise than flat supporting surface it is prevented from turning and held in its proper relation to the tub. This feature may be expressed by stating that its supporting surface is out of a plane which is perpendicular to the axis of its inlet nipple.

What I claim as new and desire to secure by Letters Patent is:

1. A plumbing fixture having, in combination, a tub having an overflow opening, an overflow pipe having a horizontal portion communicating with the overflow opening of the tub and a vertical portion extending downward therefrom, a discharge spout and fittings through which the discharge spout is supplied with water, said fittings including an annular fitting located in a vertical plane between the vertical portion of the overflow pipe and the tub, the horizontal portion of the overflow pipe being surrounded by said annular fitting.

2. A plumbing fixture having, in combination, a tub having an overflow opening, an overflow pipe having a horizontal portion communicating with said opening and a vertical portion extending downward therefrom, a plurality of water supply pipes located in proximity to the tub and in a vertical plane between the tub and the vertical portion of the overflow pipe, a discharge spout and fittings connecting the water supply pipes and spout, said fittings including an annular fitting surrounding the horizontal portion of the overflow pipe and located in the vertical plane of the water supply pipes.

3. A plumbing fixture, having, in combination, a tub having an overflow opening and having at top a rim extending outward, an overflow pipe having a horizontal portion communicating with the overflow opening and a vertical portion extending downward therefrom, a discharge spout, a plurality of water supply pipes located in proximity to the tub and in a vertical plane between the tub and the vertical portion of the overflow pipe, fittings connecting said water supply pipes with the spout, said fittings including an annular fitting surrounding the horizontal portion of the overflow pipe and having an internally annular chamber, and valves having stems located in the vertical plane of the water supply pipes for controlling them.

4. A plumbing fixture having, in combination, a tub provided with an overflow opening and having a rim presented outward and provided with a perforation, an overflow pipe having a horizontal portion communicating with the overflow opening and a vertical portion extending downward therefrom, a plurality of water supply pipes located in proximity to the tub and in a vertical plane between the tub and the vertical portion of the overflow pipe, which plane cuts the rim of the tub, a discharge spout resting upon the rim of the tub and having a nipple extending downward through the perforation of the rim, fittings connecting the water supply pipes and the nipple of the spout, said fittings including an annular fitting which surrounds the horizontal portion of the overflow pipe and has an internally annular chamber which communicates with the water supply pipes and the nipple of the spout, respectively.

5. A plumbing fixture having, in combination, a tub provided with an overflow opening and having a rim presented outward and provided with perforations, an overflow pipe having a horizontal portion communicating with the overflow opening of the tub and a vertical portion extending downward therefrom, a plurality of water supply pipes located in proximity to the tub and in a vertical plane between the tub and the vertical portion of the overflow pipe which plane cuts the rim of the tub, a discharge spout resting upon the rim of the tub and having a nipple projecting downward through one of the perforations of the rim, fittings connecting the water supply pipes and the nipple of the spout, said fittings including an annular fitting located in the vertical plane of the water supply pipes and surrounding the horizontal branch of the overflow pipe, said fitting having an internally annular chamber communicating with the water supply pipes and with the nipple of the spout respectively, and valves in the water supply pipes, said valves having stems extending upward through perforations of the rim and provided with handles.

6. A plumbing fixture having, in combination, a tub, a discharge spout, pipes for the inlet of water, and fittings connecting said pipes and spout, said fittings including a three-way elbow two branches of which communicate with the water-supply pipes, respectively, and including also a fitting having an internally annular mixing chamber and having also inlet and outlet openings communicating with the third branch of the elbow aforesaid and with the spout, respectively.

7. A plumbing fixture having, in combination, a tub having an over-flow opening, an over-flow pipe having a branch communicating with said opening, water-supply pipes, a spout, and suitable fittings connecting the water-supply pipes and spout, said fittings including an annular fitting surrounding the horizontal branch of the over-flow pipe and having an internally annular mixing chamber.

8. A plumbing fixture having, in combination, a tub having an over-flow opening, an over-flow pipe having a horizontal branch communicating with said opening, a plurality of water-supply pipes, and suitable fittings connecting the water-supply pipes and spout, said fittings including a three-way elbow two branches of which communicate with the water-supply pipes, respectively, and an annular fitting surrounding the horizontal branch of the over-flow pipe and having an internally annular mixing chamber, an inlet opening communicating with the third branch of the elbow and an outlet opening communicating with the spout.

9. A plumbing fixture having, in combination, a tub having a perforated rim and an over-flow opening, an over-flow pipe having a horizontal branch communicating with said opening, a plurality of water-supply pipes, a three-way elbow two branches of which communicate with said water-supply pipes, respectively, an annular fitting surrounding the horizontal branch of the over-flow pipe and having an internally annular

mixing chamber, the said mixing chamber having an inlet opening communicating with the third branch of the elbow aforesaid and an outlet opening, a discharge spout seated upon the rim of the tub and means extending through the perforations of the rim and connecting the outlet opening of the annular chamber aforesaid with the interior of the discharge spout.

LEO H. PLEINS.

Witnesses:
L. M. HOPKINS,
A. ARENSON.