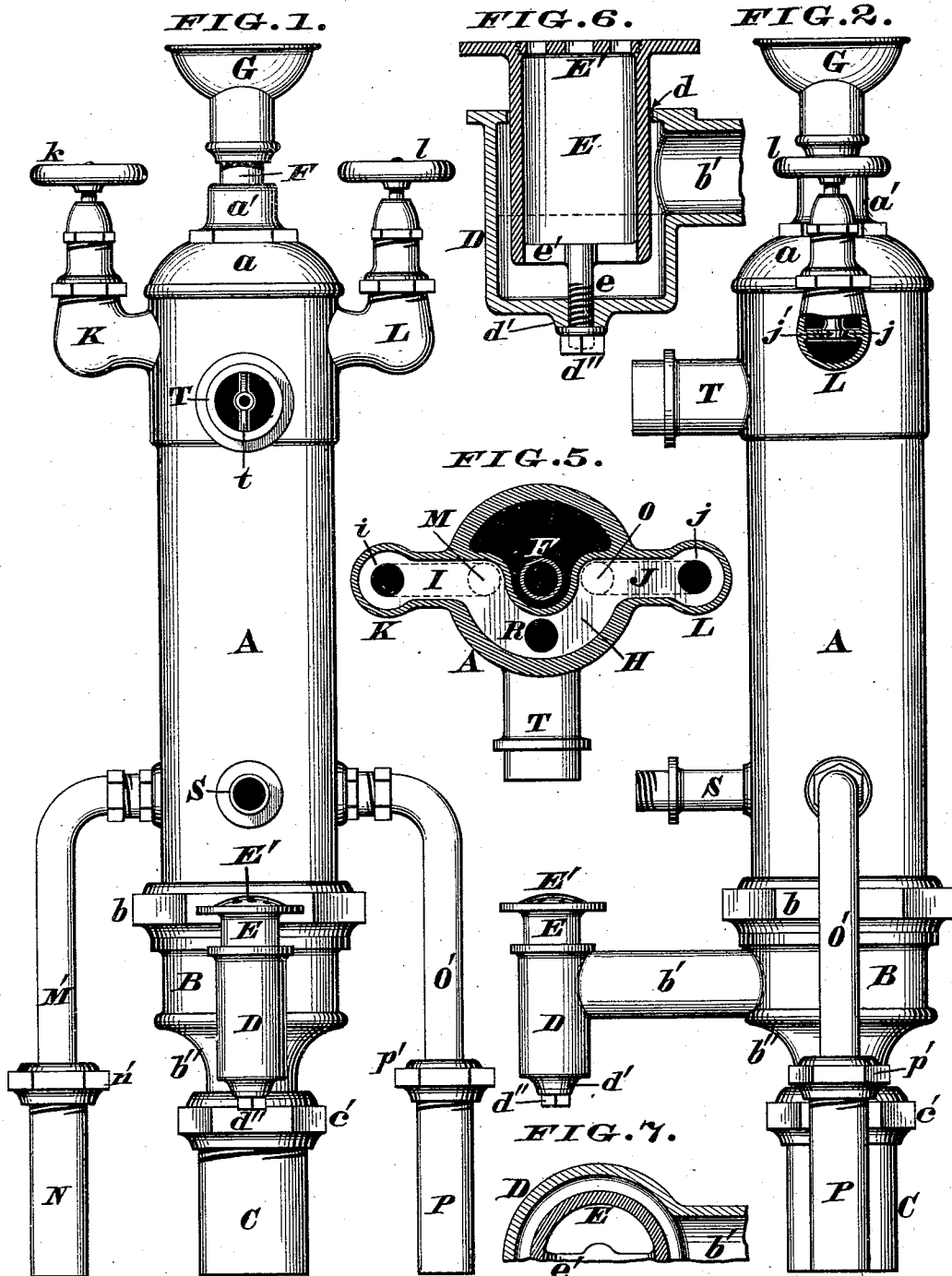


J. POWELL.
BATH TUB FITTING.

No. 494,160.

Patented Mar. 28, 1893.



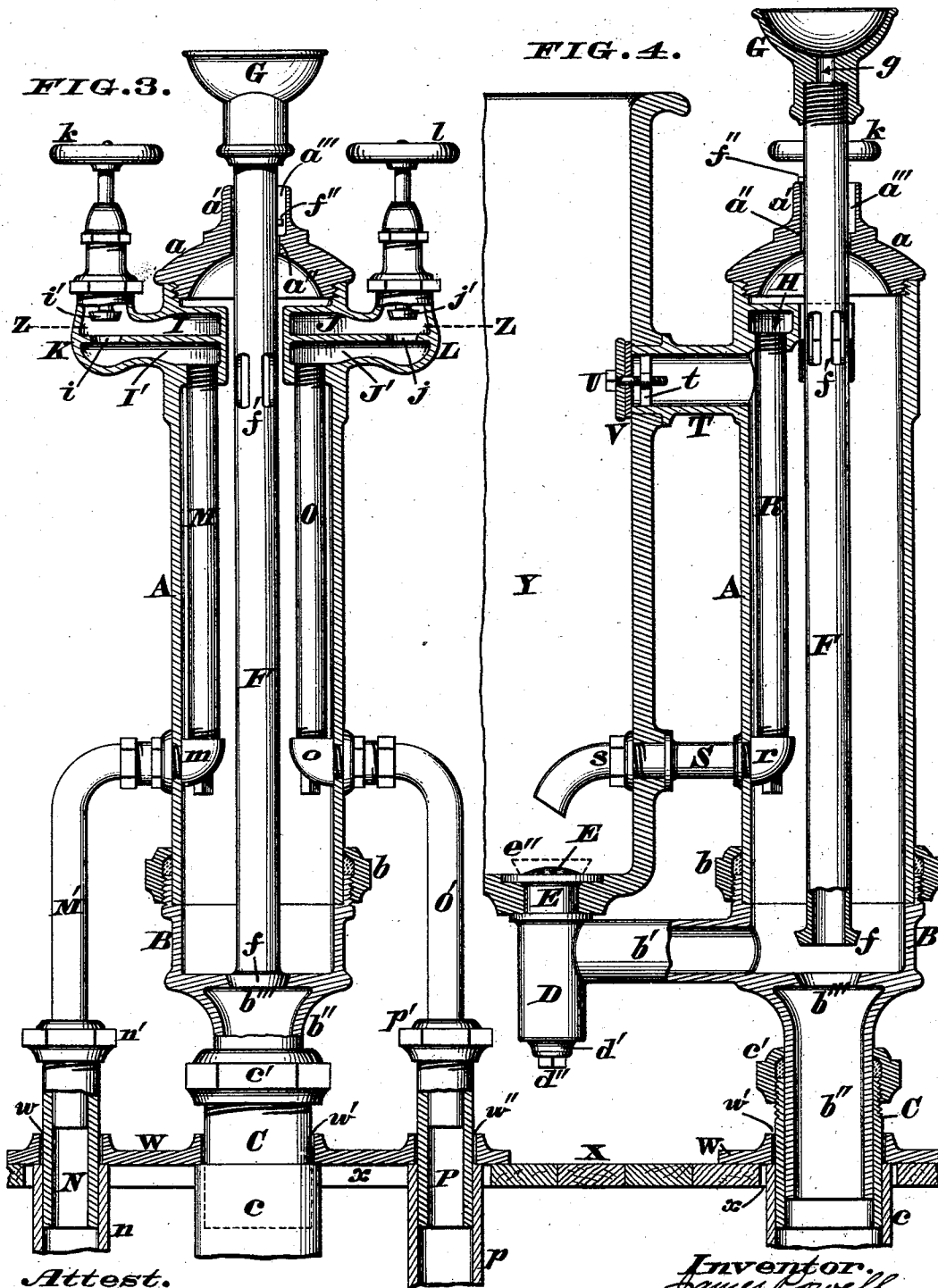
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UNITED STATES PATENT OFFICE.

JAMES POWELL, OF AVONDALE, OHIO.

BATH-TUB FITTING.

SPECIFICATION forming part of Letters Patent No. 494,160, dated March 28, 1893.

Application filed December 14, 1891. Serial No. 415,066. (No model.)

To all whom it may concern:

Be it known that I, JAMES POWELL, a citizen of the United States, residing at Avondale, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Bath-Tub Fittings; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the annexed drawings, which form part of this specification.

This invention relates to those bath-tub fittings which include a pair of pipes for supplying either hot or cold water, a common mixing-pipe that discharges into the tub, a waste-pipe for emptying the vessel, and a secret or invisible over-flow pipe that prevents the water rising above a certain fixed level, and the first part of my improvements comprises a novel arrangement of these parts, whereby a symmetrical and very compact construction of such fittings is afforded. The leading feature of this construction consists in locating the hot and cold water pipes, the mixing-pipe, the waste-pipe, and the secret overflow-pipe within the main barrel of the fitting, the only portions of said devices visible being the pull or handle of the waste-pipe, the valves or cocks for hot and cold water, and the necessary couplings wherewith the fitting is attached to the tub and to the plumbing connections, as hereinafter more fully described.

In the annexed drawings, Figure 1 is a front elevation of my improved bath-tub fitting. Fig. 2 is a side elevation of the same, one of the valve-chambers being sectioned to show the valve in its closed position. Fig. 3 is an axial section of the device taken in the plane of the hot and cold water-pipes, the valves of the same being open, and the plumbing connections being attached to the "solder tails" of the fitting. Fig. 4 is a similar section, but taken in the plane of the common mixing-pipe, the fitting being seen coupled to a bath tub. Fig. 5 is a horizontal section of the fitting taken at the line Z—Z of Fig. 3. Fig. 6 is an enlarged axial section of the "water trap" of the waste-pipe. Fig. 7 is a horizontal section of a portion of said trap.

The principal member of my fitting is a barrel A, which is preferably cylindrical, although not confined to this exact shape, and

has coupled to its upper end a detachable cap *a*, having a neck *a'*, which latter has a smooth bore *a''*, and a longitudinal groove *a'''*, for a purpose that will presently appear. The lower end of this barrel is adjustable within a base B, a stuffing box *b*, serving to prevent an escape of water at the junction of these two members A, B, as more clearly seen in Fig. 4. Furthermore, this base B, has a horizontal branch *b'*, a discharge tube *b''*, and an outlet *b'''*, said tube *b''*, being adjustable within a "solder-tail" C, to which latter a leaden waste-pipe *c* is soldered in the usual manner.

c' is a stuffing box screwed to the upper end of said "solder-tail" to prevent water escaping between it and the inclosed tube *b''*. The branch *b'*, opens into a chamber D, as seen in Fig. 6, which chamber has a circular opening *d* at top and a screw threaded boss *d'*, at bottom, said boss being traversed by a short screw-threaded stem *e*, projecting downwardly from a cross-bar *e'*, of a socket E. This socket fits snugly within the opening *d*, of chamber D, is provided with a perforated strainer *E'*, at top, is entirely open at bottom, except where the cross-bar *e'* is arranged, and is somewhat less in diameter than said chamber. The lower end of this socket projects a sufficient distance below the branch *b'*, to afford a "water trap," as indicated by the dotted line, and is locked in place by the jam nut *d''*, screwed to the stem *e*, but said stem must not pass completely through said nut. The upper ends of chamber D and socket E terminate with annular flanges that fit snugly against the bottom of the bath tub Y, as represented in Fig. 4.

The outlet opening *b''*, of base B is closed by a drain-valve *f* applied to the lower end of a pipe F, that occupies an axial position within the barrel A, the upper portion of said pipe being passed through the smooth bore *a''*, of the cap *a*, and secured to a soap dish or bowl G. This soap receptacle has a central passage *g* that allows all drainings to run directly down the pipe F. *f'* are ports made in this pipe to cause a secret overflow whenever the water in the bath tub reaches a certain level.

f'' is a short rest-pin projecting outwardly from pipe F, and adapted to bear upon the neck *a'*, so as to retain the drain valve *f* in its open position, as seen in Fig. 4, but when said

valve is closed this pin occupies the groove a''' , of said neck, as shown in Fig. 3.

The front upper portion of barrel A is provided with a practically semi-annular channel H having lateral branches I, J, as seen in Fig. 5, which branches communicate, by ports i, j , with lower branches I', J', represented in Fig. 3. i' , and j' are valves that control these ports, said valves being housed within chambers K, L, and operated by hand wheels or other convenient turning-devices k, l . These wheels may be marked "hot" and "cold," but for the purpose of illustration it will be assumed that the valve i' , controls the supply of hot water, while the other valve j' , regulates the flow of cold water. The lower branch channel I', has the upper end of a pipe M screwed into it, which pipe is fitted as closely within barrel A, as circumstances will permit, and has an elbow-coupling m , screwed to its lower end. Connected to this coupling m , is an external pipe M', bent as shown, and having its lower end adjustably fitted within a solder tail N, to which a leaden pipe n is soldered in the usual manner. n' is a stuffing box screwed upon this solder tail. The other lower branch-channel J', has the upper end of a pipe O screwed into it, which pipe is also fitted snugly within the barrel A, and has an elbow-coupling o , screwed to its lower end, an external pipe O', being connected to said coupling. This pipe O', is also bent and has its lower end adjustably fitted within a solder tail P, to which a leaden pipe p is soldered. p' is a stuffing box screwed upon this solder-tail.

R is a common water-mixing pipe, having its upper end screwed into the semi-annular channel H, at its center, and having its lower end engaged with an elbow coupling r , to which a short horizontal discharge pipe S is attached. Pipe S passes through the end of the bath tub Y, and is secured in place by a nut s , that usually takes the shape of a down turned nozzle.

Projecting from the barrel A, and near its upper end, is another short horizontal pipe T, that also passes through the end of the bath tub and is provided with a cross bar t , wherewith is engaged a bolt U, that clamps a stopper V, firmly against the end of said pipe.

W is a base-plate adapted to rest upon the floor X, and having three circular openings w, w', w'' , to admit the solder tails of the fitting. This plate covers the customary hole x , left in the floor, or made therein, to admit the leaden pipes usually attached to bath tubs.

Y is a portion of a tub.

In securing the various parts of this fitting together, the pipes M, O, and R are first screwed into their respective elbow couplings m, o, r , and then said pipes are inserted within the barrel A, and their upper ends screwed into the channels I, J, H, the small squares projecting from said couplings affording a convenient means for obtaining the necessary

purchase with a socket wrench. The pipes M', O', S, are then connected to said couplings, and the fitting is at once ready for attachment to any ordinary bath tub, which attachment is effected in the following manner. The plumber first cuts off the leaden pipes c, n, p , so as to cause their upper ends to be flush with the surface of the floor X, and then solder the tails C, N, P, into these pipes, after which act, the base plate W, is passed down over said tails. The stuffing boxes c', n', p' , are now screwed to these tails, and the pipes b'', M', O' , are inserted within said boxes and shifted either up or down to adjust the fitting to the tub, which vertical adjustment brings the pipes S, T, in line with the proper holes in the end of said vessel. The nuts s , and stopper V, being finally screwed to said pipes, as seen in Fig. 4, the attachment to the tub Y is complete, and the device is ready for use.

In the normal condition of the device, the rest-pin f'' , of pipe F occupies the groove a''' , as seen in Fig. 3, and as said pipe is released, or free to move, its valve f closes the outlet b''' , as seen in Fig. 3, thereby preventing any escape of water at said outlet. If now, it should be desired to supply the tub Y with cold water, the valve or cock j' is opened, the result being to permit a flow of cold water from the lower channel J' to pass through the port j into the upper channel J, and thence along the latter into the semi-annular channel H. The cold water then runs down the pipe R and escapes through its branch S into the tub, which flow will continue as long as the valve j' is left open. But if it is desired to supply the tub with hot water, the other cock i' is opened, and then the hot water flows through port i , channels I, H, and pipes R, S, while said cock is thus raised. Or, hot and cold water can both be turned on at the same time, in which event, the two streams will mingle together in the common water-mixing pipe R, and be discharged through its external continuation S. As the strainer E', is always open, the water naturally backs up within the barrel A, and stands therein on the same level it does in the tub, and if either or both of the cocks should be left open longer than necessary, the tub could not run over, because the ports f' , would at once serve as a concealed waste to carry off the surplus water.

To empty the tub, the soap bowl G is grasped and the pipe F pulled up until its rest-pin f'' escapes from the groove a''' , which act lifts the valve f , from the outlet b''' , and allows the water to escape down the waste pipe b'' .

Instead of holding the pull G while the tub is being emptied, the pipe F can be turned around and the pin f'' caused to rest upon the upper end of neck a' , as seen in Fig. 4, but said pipe must be again turned around and allowed to descend before the tub can be re-filled.

In case it should be desired to dispense with

the concealed waste, the pipe *F f* is omitted, and the bolt *U* unscrewed, so as to enable the removal of stopper *V*, and allow water to escape from the tub as soon as it reaches the level of overflow pipe *T*. Furthermore, in this case the strainer *E'*, would be omitted and an ordinary plug would be inserted in the socket *E*, as indicated by the dotted lines *e''*, in Fig. 4, which plug could be removed by a chain, in the usual manner. It is apparent that whichever of these constructions may be adopted enables the three pipes *M*, *O*, *R*, to be housed within the barrel or other inclosing shell *A*, and on this account, the fitting has a very neat and symmetrical appearance, and said pipes are protected from injury. Not only is this true, but the concealment of said pipes obviates considerable expensive finishing, and effects a corresponding reduction in the cost of manufacturing the fitting. Finally, the great range of adjustment afforded by the various stuffing boxes *b*, *c'*, *n'*, and *p'*, and the slip joints adjacent thereto, enables my fitting to be readily adapted to ordinary bath tubs without requiring any filing or cutting off of the different pipes and other attachments, but in an inferior modification of my invention the barrel *A* and its base *B* may be a single casting, thereby dispensing with the box *b*.

I claim as my invention—

1. The combination, in a bath-tub fitting, of a barrel having external hot and cold water pipes connected to it, near its lower end, continuations of said pipes carried up within said barrel, valve-guarded channels connecting said continuations with an internal mixing-pipe, and an external branch leading from the latter and adapted to discharge into the tub, substantially as herein described.

2. The combination, in a bath-tub fitting, of a barrel having external hot and cold water-pipes connected to it, near its lower end, continuations of said pipes carried up within said barrel, valve-guarded channels connecting said continuations with an internal mixing-pipe, an external branch leading from the latter and adapted to discharge into the tub,

an outlet at the base of said barrel, and a side pipe above said outlet adapted to communicate with the bottom of said tub, substantially as herein described.

3. The combination, in a bath-tub fitting, of a barrel having external hot and cold water pipes connected to it near its lower end, continuations of said pipes carried up within said barrel, valve-guarded channels connecting said continuations with an internal mixing-pipe, an external branch leading from the latter and adapted to discharge into the tub, an outlet at the base of said barrel, a side pipe above said outlet adapted to communicate with the bottom of said tub, and a vertically shiftable pipe having an overflow port and a valve that controls said outlet, substantially as herein described.

4. The combination, in a bath-tub fitting, of a barrel *A*, having external pipes *M'*, *O'*, coupled to it near its lower end, continuations *M*, *O*, of said pipes carried up within said barrel, lower channels *I'*, *J'*, to which said continuations are attached, ports *i*, *j*, connecting these channels with an upper channel *H I J*, valves *i'*, *j'*, for controlling said ports, an internal mixing-pipe *R*, depending from this upper channel *H I J*, and an external branch *S*, leading from said mixing pipe, and adapted to discharge into the tub, as herein described.

5. The combination, in a bath-tub fitting, of a barrel having hot and cold-water pipes applied to it, a mixing-pipe within said barrel, a lateral branch projecting from the lower end of this pipe and having means for attachment to the tub, and valve-guarded channels that connect the hot and cold-water pipes with the upper end of said mixing-pipe, substantially as herein described and for the purpose stated.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES POWELL.

Witnesses:

JAMES H. LAYMAN,
SAMUEL M. QUINN.