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E. J. SHOEMAKER

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FAUCET

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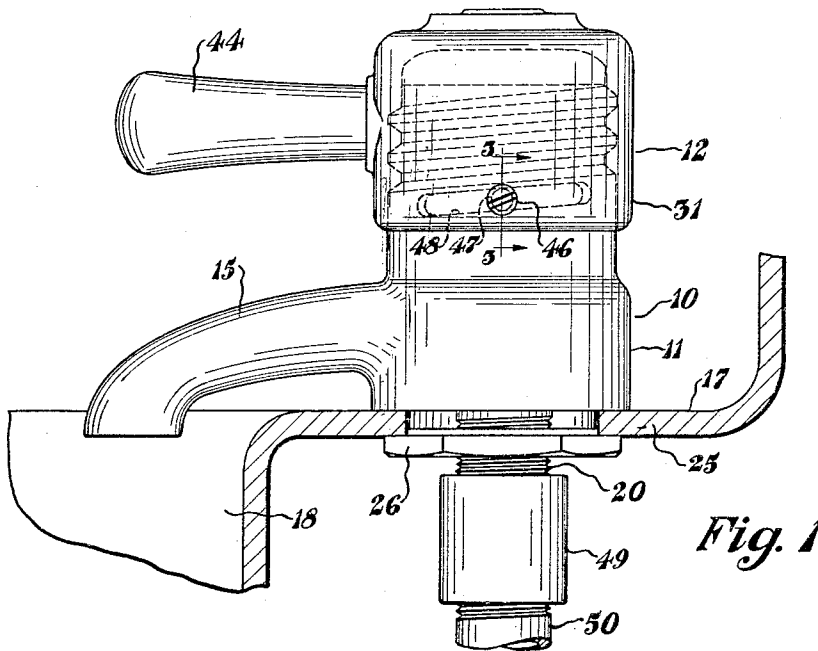


Fig. 1

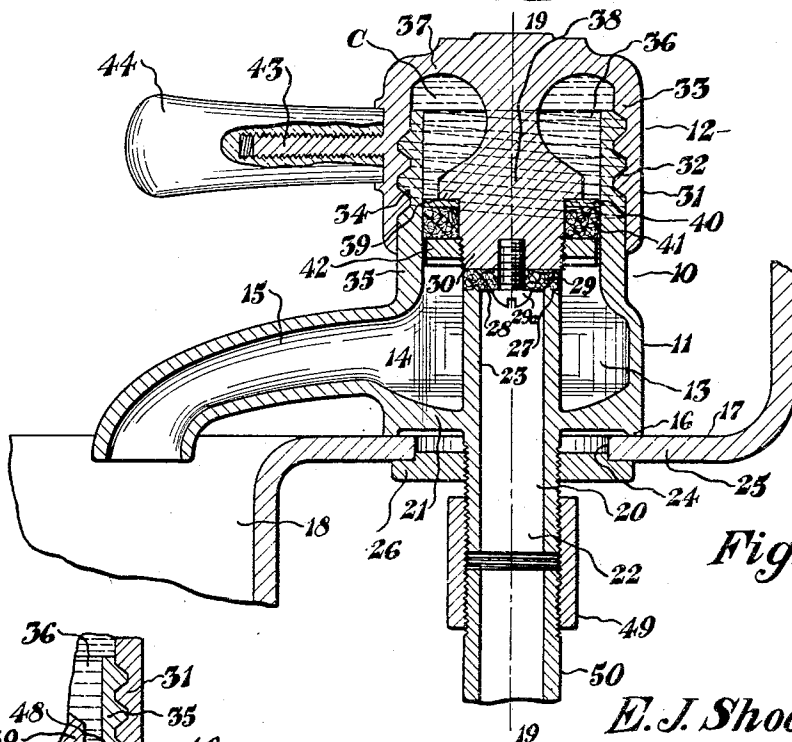


Fig. 2

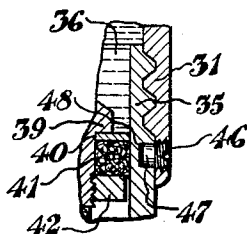


Fig. 3

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## FAUCET

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My invention relates to faucets for use on hot or cold water pipe lines and the like, and more particularly adapted for use at ends of such lines on sinks, stationary washstands, or the like.

The objects of the present improvements include the provision of a faucet having a relatively small number of separate parts of simplified construction and arrangement the improved faucet thus being more economical to manufacture than a faucet including a larger number of separate parts.

A further object of the improvements include the provision of a faucet having novel lubricating means for enabling easy operation.

These and ancillary objects are attained the present invention, as will hereinafter be set forth in detail, and claimed.

A preferred embodiment of the invention is illustrated in the accompanying drawing forming part hereof, in which

Figure 1 is an elevational view with portions broken away and in section, illustrating the improved faucet hereof applied to a sink or stationary washstand;

Fig. 2, a vertical axial sectional view thereof; and

Fig. 3, a fragmentary sectional view as on line 3—3, Fig. 1.

Similar numerals refer to similar parts throughout the several views.

The improved faucet indicated generally at 10, includes a base 11, and a rotatable closure head 12 operatively mounted at one end of the base.

The base 11 is preferably in the form of an integral metallic casting, and includes a well 13 formed therein, and having one end open and one end closed, and which communicates at its closed end at 14 with an outlet duct 15, which is preferably an integral extension of the base, and extends laterally from one side thereof.

The closed end of the base is preferably cylindrical, and is preferably provided with an outwardly extending peripheral flange 16, for seating the base against a surface, which may be an upper surface 17 of a sink or stationary washstand 18.

The inner surface of the well 13 preferably conforms to that of a surface of revolution about an axis 19—19, which may be vertical as illustrated, and an inlet duct 20, whose longitudinal axis preferably coincides with the axis 19—19, extends as illustrated, outwardly from one side of the bottom wall 21 of the well, and from the other side of the wall 21 into the well; and one end 22 of the inlet duct 20 is thus outside of the bottom wall 21 and the other end 23 of the inlet duct is located within the well.

The outer end 22 of the duct is preferably threaded, and extends through a suitable aperture 24 formed in a wall 25 of the sink 18, and a nut 26 screwed on the threaded outer end, secures the faucet in place, by clamping the sink wall 25 between the flange 16 and the nut.

A valve seat 27 is formed at the extremity of the end 23 of the inlet duct within the well 13, and the valve seat extends around the orifice 28 at the well end 23 of the duct.

A valve closure disk 29, preferably of yielding material such as fiber or rubber, is preferably replaceably secured as by means of a screw 29a at one end 30 of the plunger 38 integrally connected with the closure head 12, and is arranged to open and close the orifice 28 by movements of the closure head 12 along the axis 19—19.

The closure head 12 preferably includes an outer cup 31 having internal threads 32 formed on the inner surface of the tubular side wall 33 of the cup, and the threads 32 screw on external threads 34 formed on the outer surface of the tubular side wall 35 of the base 11 adjacent the open end 36 of the well.

The cup 31 has one end open for screwing over the open threaded end of the base, and the other end of the cup 31 is closed by a head wall 37.

From the inner surface of the cup a plunger 38 extends, and the valve closure disk 29 is secured as aforesaid on the end 30 of the plunger 38.

The plunger 38 includes a reduced shank portion which is of a diameter less than the

diameter of the well. Intermediate the ends of the plunger is a collar 39.

The lower side of the collar forms a shoulder seat for a metallic washer 40 and a packing ring 41, which are seated thereon over the end 30 of the plunger, and the plunger is externally threaded from the end 30, so that a clamping nut 42 may be screwed thereon for clamping the washer and packing ring against the collar, and maintaining the proper pressure between the packing ring and the inner cylindrical side surface of the well 13.

An annular chamber C is thus formed between the collar and the head wall 37, and this annular chamber is preferably filled with a suitable lubricant such as grease.

A preferably threaded handle shank 43 extends laterally from the outside of the cup 31, and a handle 44 of any suitable material, such as porcelain is screwed on the shank 43.

Accordingly the plunger 38 is raised and lowered for opening and closing the valve orifice 28 by rotating the closure head in opposite directions by means of the handle 44.

Stop means are provided for limiting the rotary movement of the closure head, and the stop means may include a set screw 46 removably secured in a suitably threaded aperture in the tubular wall 31 of the cup, the inner end 47 of the set screw being of reduced diameter, and fitting in a helical slot 48 formed in the outer surface of the tubular side wall 35 of the base 11.

The lead of the mating threads 32 and 34 is preferably relatively large, so that relatively large axial movements of the closure head are effected by fractional rotations of the same.

The outer end 22 of the inlet duct 20 is connected by any suitable fitting 49 with a water or other liquid supply pipe 50.

The improved faucet thus set forth in detail, includes only two major parts or organizations, the base and the closure head, and is accordingly very economical to manufacture.

It will be observed that the closure head carries all of the removable minor parts, such as the valve closure disk, the packing ring, and the handle.

The particular structure and arrangement of the faucet, together with the annular lubricating chamber 40, insures easy operation and a long life for the faucet in use.

Locating the inlet duct orifice 28 on the well end of the inlet duct, with the inlet duct extending within the well across the inner end of the outlet duct, and as illustrated, making the inlet duct of less diameter than the well, permits the desired elimination of parts, by preventing interference of the packing ring with the outlet duct.

The structure and arrangement of the faucet is very compact and requires a relatively

small volume of room space in storage or in use.

I claim:

1. A faucet including a base having a well formed therein, and an opening at one end of the well, an outlet duct for the well, an inlet duct extending within the well across the well end of the outlet duct, and the inlet duct having an orifice end terminating within the well, a movable closure head for the well opening of the base, and the closure head including a plunger adapted for opening and closing the orifice end of the inlet duct by movements of the head.

2. A faucet including a base having a well formed therein, and an opening at one end of the well, an outlet duct for the well, an inlet duct extending within the well across the well end of the outlet duct, and the inlet duct having an orifice end terminating within the well, a movable closure head for the well opening of the base, the closure head being in screw thread engagement with the base, and the closure head including a plunger adapted for opening and closing the orifice end of the inlet duct by movements of the head.

3. A faucet including a base having a well formed therein, and an opening at one end of the well, an outlet duct for the well, an inlet duct extending within the well across the well end of the outlet duct, and the inlet duct having an orifice end terminating within the well, a movable closure head for the well opening of the base, the closure head including a plunger adapted for opening and closing the orifice end of the inlet duct by movements of the head, and stop means for limiting the movements of the closure head with respect to the base.

4. A faucet including a base having a well formed therein, and an opening at one end of the well, an outlet duct for the well, an inlet duct extending within the well across the well end of the outlet duct, and the inlet duct having an orifice end terminating within the well, a movable closure head for the well opening of the base, the closure head being in screw thread engagement with the base, the closure head including a plunger adapted for opening and closing the orifice end of the inlet duct by movements of the head, and stop means for limiting the movements of the closure head with respect to the base.

5. A faucet including a base having a well formed therein and an opening at one end of the well, an inlet duct having an orifice end terminating within the well, an outlet duct for the well, a movable closure head in screw thread engagement with the base, the closure head including an integral plunger coaxial therewith and adapted for opening and closing the orifice end of the inlet duct

by movements of the head, and the plunger having a reduced shank portion forming with other walls of the head an enlarged annular chamber within the head.

5 6. A faucet including a base having a well formed therein, and an opening at one end of the well, an inlet duct having an orifice end terminating within the well, an outlet duct for the well, a movable closure head in  
10 screw thread engagement with the outside walls of the well, the closure head including an integral plunger coaxial therewith and adapted for opening and closing the orifice end of the inlet duct by movements of the  
15 head, the plunger having a reduced shank portion forming with the walls of the head an enlarged annular chamber within the head, a shoulder formed on the plunger, and washer means on the plunger abutting the shoulder  
20 and slidably abutting an inside wall of the well.

In testimony that I claim the above, I have hereunto subscribed my name.

EDWARD J. SHOEMAKER.

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