Sept. 6, 1932. A. U. WALTER 1,876,157

LIQUID DISPENSING DEVICE

Filed Dec. 15, 1931

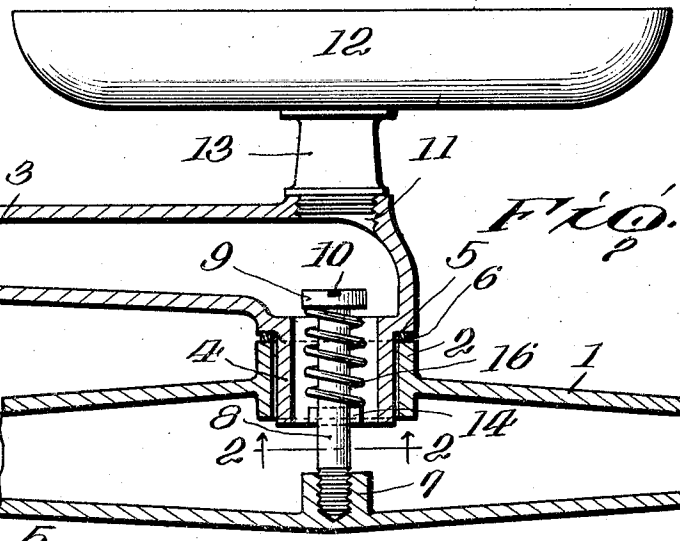


FIG. 1.

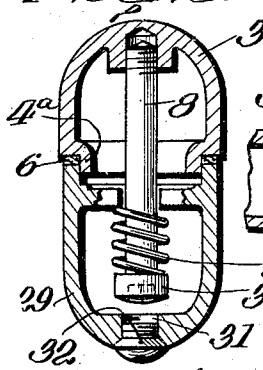


FIG. 5.

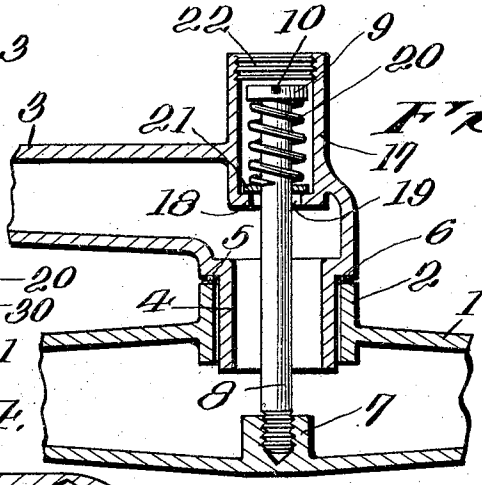


FIG. 3.

FIG. 4.

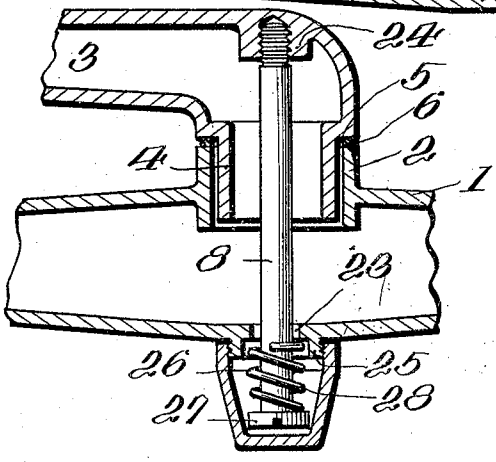
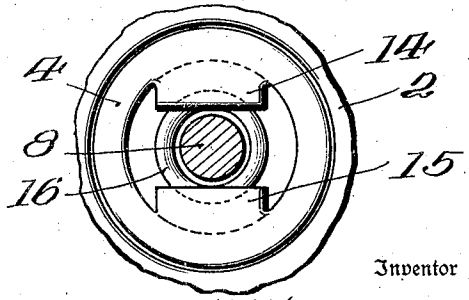


FIG. 2.



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UNITED STATES PATENT OFFICE

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LIQUID DISPENSING DEVICE

Application filed December 15, 1931. Serial No. 581,205.

The invention relates to new and useful improvements in a liquid dispensing device and more particularly to a swinging spout used in conjunction with hot and cold water supply pipes at a sink.

An object of the invention is to provide a swinging spout attachment for a supply pipe wherein the connecting means which joins the spout to the pipe is housed within the pipe and spout and passes through the connecting parts thereof.

In the drawing—

Figure 1 is a vertical sectional view through a supply pipe and a swinging nozzle embodying the improved connecting means for joining the swinging spout to the pipe;

Fig. 2 is a sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a view similar to Fig. 1, showing a modified form of arrangement for the connecting means;

Fig. 4 is a view similar to Fig. 3, showing a further modified arrangement of the connecting means, and

Fig. 5 is a vertical sectional view through the supply pipe and the supporting nozzle showing a modified form of construction.

The invention is directed to a swinging spout for dispensing hot and cold water and in particular to the means which connects the spout to the supply pipe. The supply pipe is provided with a bearing sleeve which receives a trunnion sleeve formed on the spout. Between the spout and the end of the bearing sleeve is a packing washer. The spout is secured to the pipe by a rod which is threaded into one of the parts and extends centrally through the trunnion sleeve of the spout. The other end of the rod is headed. A spring encircles the rod and bears at one end against the head and at its other end against the other part. The purpose of the spring is to yieldingly hold the pipe and the spout in assembled positions and maintain a tight joint between the same. The rod is substantially housed within the spout and pipe so that projecting parts are reduced to a minimum.

Referring more in detail to the drawing, in Fig. 1 there is shown the pipe 1 which is connected to the cold water and hot water supplies (not shown) at its opposite ends which supplies are controlled by the usual hand manipulated valves. This pipe 1 is provided with a bearing sleeve 2 which projects outwardly from the upper wall of the pipe and also downwardly into the pipe. Attached to the pipe 1 is a swinging spout 3. The spout 3 is formed with a trunnion sleeve 4 which extends into the sleeve 2. The base of the trunnion sleeve where it joins the spout has a shoulder 5 which is directly over the end wall of the bearing sleeve 2 on the pipe. A packing washer 6 of suitable material is placed between the shoulder 5 and the end wall of the bearing sleeve 2. As shown in Fig. 1 of the drawing, the lower wall of the pipe 1 is provided with a lug 7 which is formed with an opening, the wall of which is threaded. A rod 8 is adapted to be threaded into this lug. This rod extends centrally through the trunnion sleeve 4. The rod is provided with a head 9 at its upper end which is formed with a slot 10 adapted to receive a screw driver. The spout is formed with an opening 11 which is threaded and, as shown in Fig. 1, a soap dish 12 mounted on a standard 13 is attached to the spout by threading the standard into the opening 11 for closing the opening. This opening is directly above the head of the rod so that the rod may be inserted through the opening and through the trunnion sleeve and the threaded end thereof turned into the lug 7.

The trunnion sleeve 4 is provided with laterally extending lugs 14 and 15. These lugs are formed integral with the trunnion sleeve and extend inwardly so as to form an abutment seat for a coil spring 16 on the rod 8.

The lugs are spaced a sufficient distance so that the rod passes between the same. The coil spring bears at its upper end against the head 9. The rod 8 when threaded into the lug 7 will draw the spout into tight sealing contact with the packing washer 6, pressing the same against the end of the bearing sleeve 2 on the pipe 1. The spring bearing against the head of the rod 8 and against the lugs 14 and 15 is what forces the spout into this tight sealing contact with the packing washer. The spout will be yieldingly held on its seat, and therefore, any wear incident to the swing of the spout will be taken up. The spout is free to swing in any direction and at the same time it maintains a tight sealing contact with the washer. The parts connecting the spout and the pipe are all housed within the spout and pipe and at the same time there is a free passage for the flow of the water. There are no projecting parts whatever in the connection shown in Fig. 1. Everything is housed within the spout and pipe. The soap dish, of course, may be disconnected where it is not desired and the opening 11 closed by the usual threaded cap screw.

In Fig. 3 of the drawing the pipe 1 is shown as provided with a bearing sleeve 2 and the spout 3 is shown as provided with the trunnion sleeve 4. There is a packing washer 6 between the spout and the pipe. The pipe 1 is also provided with a lug 7 into which a rod 8 is threaded. The rod on its upper end carries the head 9 which is slotted at 10. In this form of the invention, the spout is provided with a sleeve 17 which projects into the spout for a short distance and which projects above the spout. The sleeve is partially closed at its lower end by partition 18. There is an opening 19 in this partition through which the rod 8 extends. A coil spring 20 similar to the spring 16 is located in this sleeve 17 and bears at its lower end against a washer 21. The spring at its upper end bears against the head 9 on the rod 8. The rod 8 is inserted through the sleeve 17 and is threaded into the lug 7. The pressure of the coil spring on the washer 21 will force the swinging spout downward into tight sealing contact with the packing washer 6. The upper end of the sleeve 17 is threaded at 22 and is adapted to receive a soap cup for closing the same or a threaded cap screw.

In Fig. 4 of the drawing, the pipe 1 is shown as provided with a bearing sleeve 2 and the swinging spout 3 is provided with a trunnion sleeve 4. There is a packing washer 6 between the spout and the sleeve 2. The lower wall of the pipe 1 is provided with an opening 23. The rod 8 is inserted through this opening and is threaded into a lug 24 formed in the upper wall of the swinging spout 3. On the exterior of the lower wall of the pipe 1 is an annular projecting portion 25, which is threaded to receive a cap 26 which houses the lower end of the rod 8 which projects downward through the opening 23 and seals said opening. The rod is provided with a head 27 and the coil spring 28 which is similar to the coil spring 16, bears at one end against this head 27 and at its other end against the lower wall of the pipe 1. The spring drawing down on the rod 8 will force the swinging spout tightly against the packing washer 6 thus forming a sealing joint.

In the modified form of construction shown in Fig. 5, the spout 3 is provided with a very short trunnion sleeve 4ª. The supply pipe 1 is bored to receive the trunnion sleeve, and the gasket 6 may be placed between the spout and the supply pipe, or this may be made merely a ground joint. Within the supply pipe are two projecting lugs 29 forming an abutment for the spring 20 which bears against the head 30 of the bolt 8 which secures the spout to the supply pipe. This bolt 8 is threaded into a socket in the spout and is formed with an "Allen" socket into which a wrench is inserted through the opening 31. Said opening is closed by a cap screw 32. If the packing is sufficiently elastic, the spring 20 may be omitted. This is true of the other forms shown in the drawing.

From the above it will be apparent that a swinging spout attachment has been provided for dispensing liquid from a distributing pipe, which spout is connected to the pipe by means which yieldingly holds the parts in seated engagement and takes up all wear incident to the movement of the parts, and wherein the connecting means is housed wholly or almost wholly within the pipe and the spout so that the attachment is free from objectionable projecting parts.

It is obvious that the details of construction may be changed without departing from the spirt of the invention as set forth in the appended claims.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent, is—

1. A liquid dispensing device including a supply pipe, a swinging spout mounted thereon, one of said parts having a bearing sleeve and the other having a trunnion sleeve extending into the bearing sleeve, means for sealing the connection between the supply pipe and the swinging spout, and means located within the pipe and spout and extending through the trunnion sleeve for holding said parts in assembled position.

2. A liquid dispensing device including a supply pipe, a swinging spout mounted thereon, one of said parts having a bearing sleeve and the other having a trunnion sleeve extending into the bearing sleeve, said pipe and spout having cooperating sealing sur-

faces, and means located within the pipe and spout and extending centrally through the trunnion sleeve for holding said parts in assembled position.

3. A liquid dispensing device including a supply pipe, a swinging spout mounted thereon, said supply pipe having a bearing sleeve and said spout having a trunnion sleeve extending into said bearing sleeve, a packing washer between the spout and the supply pipe, means located within the pipe and spout and extending centrally through the trunnion sleeve of the spout for yieldingly pressing said spout into sealing contact with the packing washer.

4. A liquid dispensing device including a supply pipe, a swinging spout mounted thereon, said supply pipe having a bearing sleeve and said spout having a trunnion sleeve extending into said bearing sleeve, a packing washer between the spout and the supply pipe, a rod extending centrally through the trunnion sleeve of said spout and the bearing sleeve of said pipe and threaded into one of the members, said rod having a head on the other end thereof, and resilient means surrounding the rod and bearing at one end against said head and at its other end against the other member whereby said spout and pipe are firmly clamped against said packing.

5. A liquid dispensing device including a supply pipe, a swinging spout mounted thereon, said supply pipe having a bearing sleeve and said spout having a trunnion sleeve extending into said bearing sleeve, a packing washer between the spout and the bearing sleeve, a rod extending centrally through the trunnion sleeve of said spout and threaded into said pipe, said rod having a head on the other end thereof, said trunnion sleeve having inwardly projecting lugs, a resilient means bearing on said lugs and against the head of said rod for yieldingly forcing said spout into sealing contact with the packing washer, said spout having an opening in the upper wall thereof above said rod to permit the insertion of the rod and the turning of the same for assembling the parts, and means for closing said opening.

6. A liquid dispensing device including a supply pipe, a swinging spout mounted thereon, said supply pipe having a bearing sleeve and said spout having a trunnion sleeve extending into said bearing sleeve, a packing washer between the spout and the supply pipe, a rod extending centrally through the trunnion sleeve of said spout and threaded into said pipe, said rod having a head on the other end thereof, said trunnion sleeve having inwardly projecting lugs located at opposite sides of said rod, a coil spring bearing on said lugs and against the head of said rod for yieldingly forcing said spout into sealing contact with the packing washer, said spout having an opening in the upper wall thereof above said rod to permit the insertion of the rod and the turning of the same for assembling the parts, and a soap dish having a standard provided with a thread at the lower end adapted to engage a thread at said opening for closing the opening leading to the spout.

In testimony whereof, I affix my signature.

ALBERT U. WALTER.