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E. F. NIEDECKEN

1,943,140

MIXING VALVE

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Fig. 1.

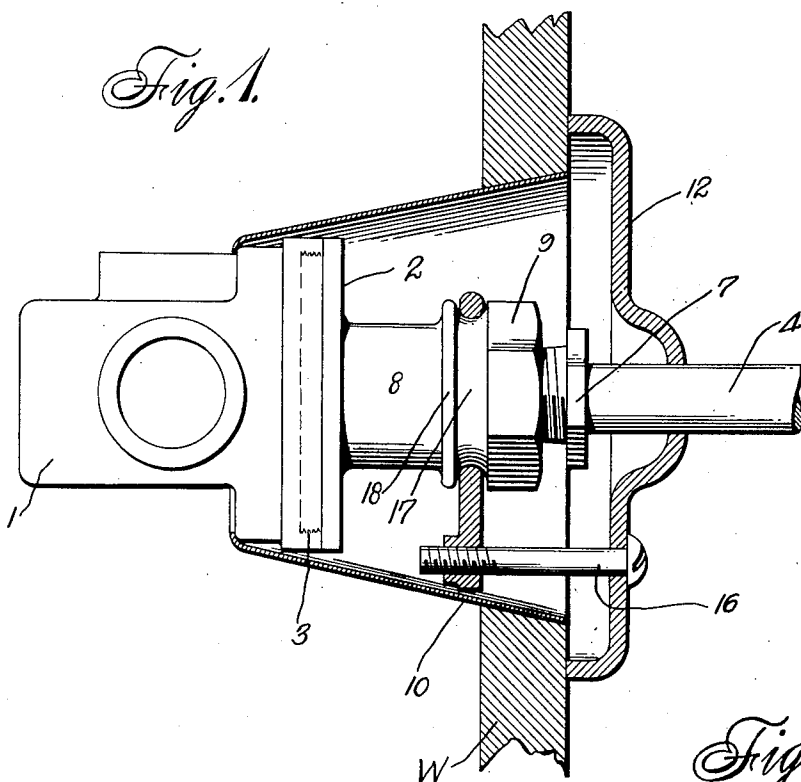


Fig. 2.

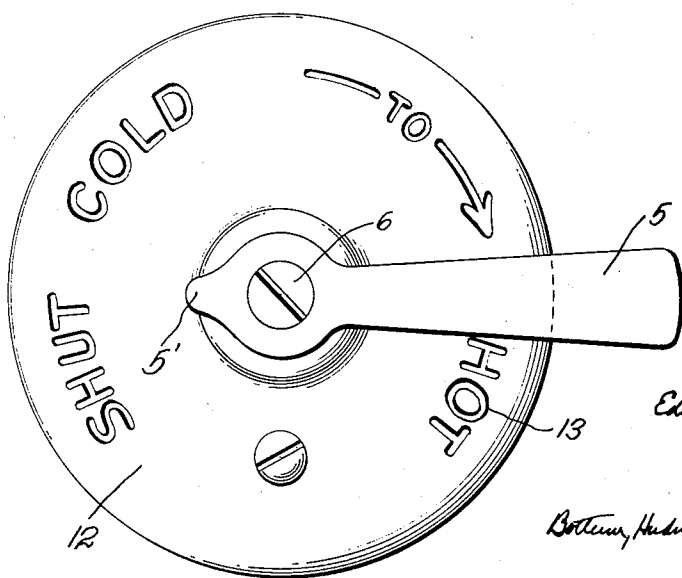
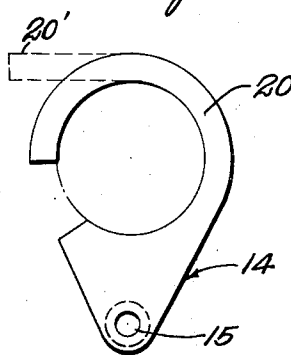


Fig. 3.



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MIXING VALVE

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Serial No. 483,277

3 Claims. (Cl. 137-111)

This invention relates to an improvement in mixing valves of the type designed for use in supplying a stream of hot or cold water or a stream consisting of a mixture of hot and cold water.

In certain types of mixing valves of this character it is desirable to have the housing of the valve provided with a removable cap which is threaded into a part of the housing of the casing. Mixing valves of this type are built into the wall of the bathroom or into the structure of the building or into the other structure with which they are associated, and, in all prior constructions, the provision of a screw threaded cap on the valve casing, while desirable for manufacturing and other reasons tends to render the removal of the cap difficult and also complicates the problem of securing the dial plate associated with the valve in proper position.

One of the principal objects of the present invention is to provide a mixing valve of this character and of the type having a removable screw cap or closure and which is so constructed and organized that the cap may be readily and easily removed and applied and the dial plate securely fastened in proper position. Another object is to provide a mixing valve of this character and having these advantages and which is of simple and durable construction, reliable and effective in use and easy and comparatively inexpensive to manufacture.

Other objects and advantages reside in certain novel features of the construction, arrangement and combination of parts which will be hereinafter more fully described and particularly pointed out in the appended claims, reference being had to the accompanying drawing, forming a part of this specification, and in which:

Figure 1 is a view partly in side elevation and partly in longitudinal, vertical section showing a mixing valve embodying the present invention;

Figure 2 is a view in front elevation showing the dial plate and the operating handle for the mixing valve; and

Figure 3 is a detail view in elevation illustrating the structure of the anchoring clamp and nut for the dial holding screw.

Referring to the drawing, the numeral 1 designates generally the casing of a mixing valve provided at one end with a removable cap 2 which is threaded into the casing 1 as indicated at 3. The valve structure inside of the casing is not shown as per se it forms no part of the present invention. This valve structure may correspond to that shown in Patent 1,054,023, granted Febru-

ary 25, 1913, to Edward F. Niedecken, for mixing valve, or to that shown in Patent 1,669,772, granted May 15, 1928, to Edward F. Niedecken. The valves are operated by means of a spindle 4, to the outer end of which a handle 5 is secured by means of a screw 6. The spindle 4 passes through a stuffing box or packing 7 formed at the outer end of a tubular extension 8 of the cap 2. The tubular extension 8 terminates in a hexagonal portion 9 adapted for coaction with a wrench whereby the cap 2 may be applied or removed. By forming this extension 8 on the cap and having it terminate in a wrench engaging portion, the mixing valve may be positioned in its usual relation to the wall structure indicated at W and yet application or removal of the cap 2 is greatly facilitated. As illustrated in Figure 1, the wall structure W is built up to and around a substantially cone-shaped shield or housing 10, the function of which is to prevent the accidental enclosing of the mixing valve and associated parts by the structure of the wall.

A dial plate 12 is provided and covers the opening of the housing 10 and also the portion of the wall W contiguous with or immediately surrounding the outer end of the housing 10. Centrally the dial plate is apertured to permit of the projection of the spindle 4 therethrough. The face of the dial plate 12 contains the usual indicia 13 coacting with the pointed end 5' of the handle 5 to indicate how the handle 5 must be adjusted to provide hot or cold water, a mixture of hot and cold water or to be shut off. It is important that the dial plate be located and secured in a definite angular position in order that it may effectively perform its function. To so secure the dial plate the present invention proposes an anchor clamp 14 having a nut 15 integrally formed therewith, the nut coacting with a holding screw 16 which is extended through an opening in the dial plate and threaded into the nut. The anchor clamp 14 is mounted on the tubular extension 8 and received in an annular groove 17 formed between the rear end of the hexagonal portion 9 and an annular or circumferential rib 18. The rib 18 is formed integral with the tubular extension 8. The anchor clamp 14 is constructed of metal which is rather stiffly resilient, that is to say, it is sufficiently bendable to enable it to be shaped as shown in full lines in Figure 3 and yet is sufficiently stiff and strong to enable it to retain this form in the assembly. As illustrated in the drawing, the anchor clamp is provided with a strip-like attaching portion 20, which portion, prior to the assembly of the anchor clamp with

the tubular extension 8 has its end extended as shown at 20' (see dotted line showing in Figure 3). This formation permits the anchor clamp to be readily slipped into position in the groove 5 17 of the tubular extension and when so positioned the extended end 20' is bent down to the full line position shown in Figure 3 whereby the anchor clamp is securely interconnected with the tubular extension. The nut 15 depends vertically from the tubular extension and when the 10 screw 16 is threaded through the nut 15 and tightened up, the anchor clamp is canted or inclined and it firmly grips the walls of the groove 17 whereby to prevent angular displacement of 15 the clamp 14 and dial 12. This advantage is had without complicating the construction and while providing for ready removal and replacement of the parts. In this connection, it will be understood that it is frequently necessary to 20 remove the dial and the screw cap 2 so as to render the interior of the valve casing accessible for purposes of adjustment, replacement or repair.

The invention claimed is:

25 1. A mixing valve comprising a valve casing, a removable screw cap threadedly connected to the valve casing and provided with a tubular extension, an operating spindle for the valve, a dial

plate associated with the operating spindle and means for securing the dial plate in proper position and comprising an anchor clamp encircling and interengaged with said tubular extension of the screw cap and provided with a nut and a 80 screw engaged with the dial and threaded to said nut.

2. A mixing valve comprising a casing, a removable screw cap threadedly connected to the casing and provided with a tubular extension 85 formed with an annular groove, an operating spindle for the valve, a dial cooperable with the spindle, and means for securing the dial in proper position and comprising an anchor clamp having a strip-like portion bent into engagement 90 with the annular groove of the tubular extension, a nut formed integral with the anchor clamp and a screw engaged with the dial and threaded into the nut.

3. In a device of the character described, 95 means for securing a dial plate of a mixing valve in position and including an anchor clamp having a bendable attaching portion adapted to be secured to a stationary part of the mixing valve, said anchor clamp having a nut integrally formed 100 therewith, and a screw engaged with the dial plate and threaded into the nut.

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