

Aug. 17, 1937.

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2,090,299

COMBINED DRAIN AND STRAINER

Filed Feb. 13, 1936

2 Sheets-Sheet 1

Fig. 1

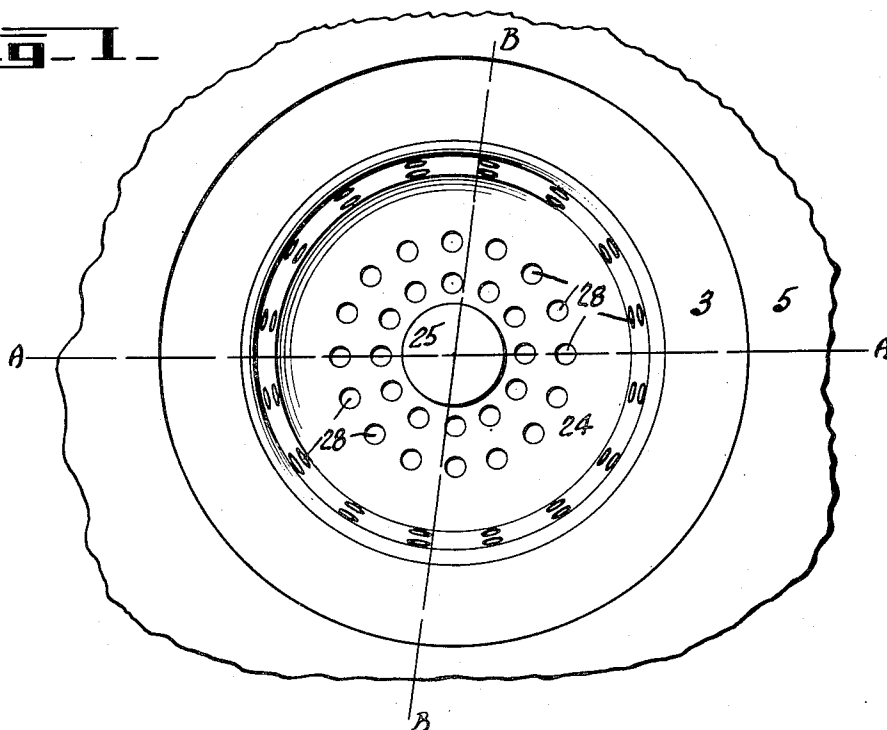
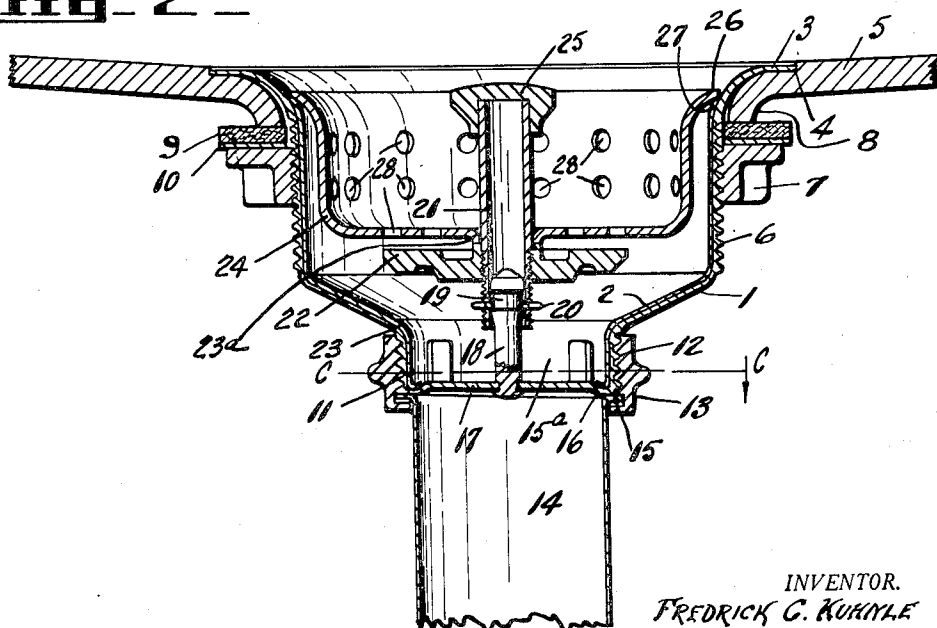


Fig. 2



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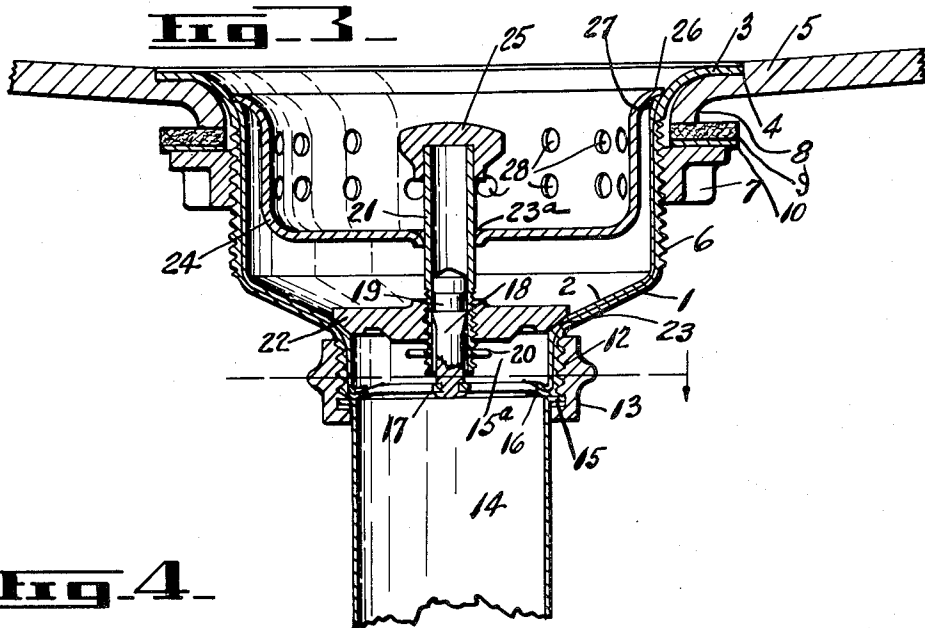


Fig. 4

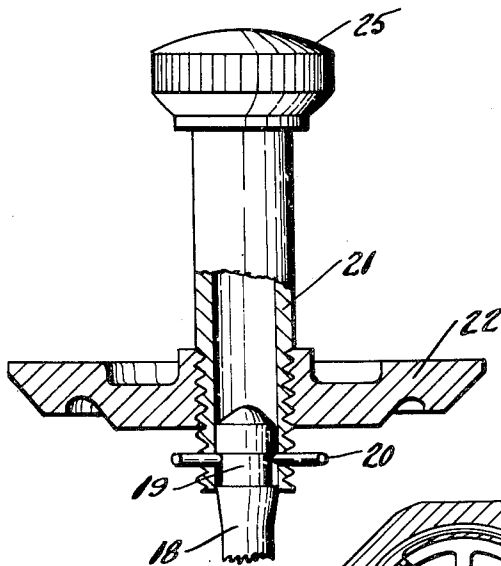


Fig. 5

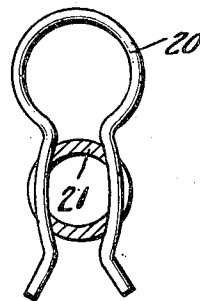
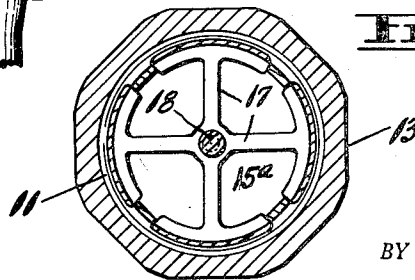


Fig. 6



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COMBINED DRAIN AND STRAINER

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Application February 13, 1936, Serial No. 63,710

4 Claims. (Cl. 4—287)

My present invention relates to improvements in drain and strainer fittings for sinks, wash bowls, wash tubs, tanks and the like, and particularly to a combination drain valve and strainer therefor; and the objects of improvements are, first, to provide such a combined strainer and drain valve that will be positive in its operation; second, to provide such a strainer and valve that can be readily cleaned; third, to provide a combined strainer and drain valve that will be cheap to make; and, fourth, to provide a combined strainer and valve easy to dismantle.

I attain these objects and others that will be apparent from a perusal of the description of the structure disclosed in the accompanying drawings, in which:

Figure 1 is a top plan view of the combined strainer and valve as when applied to a kitchen sink with a fragmentary portion of the sink bottom surrounding the drain body.

Figure 2 is a sectional view of the combined strainer and drain taken on line A—A of Figure 1.

Figure 3 is a sectional view taken on line B—B of Figure 1.

Figure 4 is an enlarged sectional view of the drain valve and of the upper end of the valve locking post.

Figure 5 is an enlarged view of the valve locking spring, and

Figure 6 is a sectional view on line C—C of Figure 3 looking downward.

Throughout the several views of the drawings, similar numerals refer to similar parts.

The drain housing, preferably made in two sections consisting of an outer shell 1 and an inner shell 2, is provided at its top with a curved annular flange 3 resting into recess 4 of the bottom 5 of the sink, tub, bowl, or tank. In spaced relation to the flange 3 on the outer shell 1 of the housing are screw threads 6 engaged by annular ring nut 7. Between the lock nut 7 and the turned flange 8 of the bottom 5, is interposed annular packing member 9 and metal washer 10 of compressible packing material. At the lower portion of the housing is downwardly extending neck 11, having screw threads 12 engaging threads in gland nut 13 by which drain pipe 14 having external flange 15 is attached to the housing. Extending across the opening 15a of the neck of the inner shell 2 and resting against inwardly extending flange 16 of the outer shell 1 is a perforated locking post supporting member 17.

The upper end of the locking post 18 is of

conical form and adjacent thereto is annular locking groove 19 engaging the hairpin locking spring 20 carried in grooves machined into opposite sides of the tubular valve stem 21, screw threaded into the valve 22 resting in its closed position, as shown in Figure 3, against valve seat 23. The valve stem 21 extends upward through an orifice 23a in the solids catch basket 24 and is provided at its upper or free end with a knob handle 25. Through the sides and bottom of the basket 24 are drain holes 28 whereby fluids are permitted to escape from the basket to be conveyed by the drain pipe 14. At the upper rim of the basket 24 is outwardly extending curved flange 26 by which the basket 24 is supported in the housing shell 1 and in spaced relation to the bottom thereof by the annular shoulder 27 at the top of the inner shell 2. Figure 2 illustrates the valve 22 raised as by the knob handle 25 from the annular seat 23 as when in the draining position. Figure 3 illustrates the valve 22 in its closed position resting against the annular seat 23.

In the manufacture of my present invention it is preferred to produce the housing having an outer shell 1 and inner shell 2 and the basket 24 from sheet metal such as sheet brass by punching, drawing or spinning, machining on the outer shell threads 6 engaging lock nut 7 and trimming the annular edge of the flange 3; the valve stem 21 from tubing, and the balance of the parts from solid metal; polishing the exposed parts and electro-plating the same with chromium or other desired metal.

In the assembling of my improved drain and strainer fitting, the housing is placed in the hole of the sink, tub, tank or the like, with its annular flange 3 resting on the shoulder of the hole, the packing 9 placed around the housing and against the flange 8 with the washer 10 interposed between the packing and the ring nut 7, the ring nut 7 being screwed tightly to compress the packing and prevent leakage of fluid between the housing and the sink. The drain pipe 14 is then connected to the housing by the gland nut 13. The basket 24, together with the valve stem 21 and valve 22, is placed within the housing with the flange 26 of the basket 24 supported on the annular shoulder 27 formed by the top edge of the inner shell 2 and the valve stem enclosing the locking post 18 having locking groove 19 engaged by locking spring 20 when the valve 22 is raised to open position, as shown in Figure 2, in which position the valve is held by the hairpin locking spring 20 until forced to closed position, as shown

in Figure 3, by force exerted on the top of the knob handle 25. Such force exerted causes the hairpin locking spring 20 to spread and ride over the shoulders of the groove 19 and allows the valve 22 to be moved to close position against the seat 23, closing the space between the valve and seat, thus preventing escape of fluids from the sink.

Having described the present invention, the rights I wish to claim and desire to secure by Letters Patent are:

1. A combined drain and strainer for sinks and the like consisting of a housing comprising outer and inner shell members, the outer shell member having an outwardly extending flange at its top, a downwardly extending neck having at its bottom, a shoulder formed by the top of the inner shell member adjacent said flange, a perforated metal strainer basket extending into the housing and supported on said shoulder, a valve seat in said inner shell above said neck, a valve resting on said valve seat when in its closed position and having a tubular valve stem screw threaded through said valve and having a hairpin locking spring at its lower end carried in slots in the said valve stem and a locking post rigidly supported in the said neck extending into said valve stem, the said locking post having an annular groove engaging said locking spring when said valve is withdrawn from the valve seat to its open position.

2. A combined drain and strainer comprising a housing comprising outer and inner shell members having an annular outwardly extending flange at the top of the outer shell member, a neck portion at its bottom, a valve locking post rigidly supported in said neck and having at its top an annular locking groove, a valve for closing said neck when in its lower position and hav-

ing a tubular stem with a hairpin locking spring carried by the said valve stem for locking said valve in its open position by engaging said annular groove of said locking post.

3. A combined drain and strainer comprising a housing having a supporting flange, a hollow drain pipe connecting neck, a removable strainer basket supported within the housing and having at its axis an opening, a valve above said connecting neck for closing the same and having a tubular stem extending through the axial hole in the basket to form a handle whereby the valve may be raised from the neck closing position, a valve locking post rigidly supported in said connecting neck and having a groove in spaced relation to its support and a spring carried by said tubular stem for directly engaging said groove when the said valve is in open position.

4. A combined drain and strainer comprising in combination, a hollow shell-like body having at its top an outwardly extending annular flange, a downward extending hollow neck in spaced relation to said annular flange and having at its upper end within the body a valve seat, an annular shoulder within the body intermediate the said annular flange and the valve seat, a strainer basket having a hole through its bottom and an annular flange at its top resting on the annular shoulder within the said body, a valve for closing the hollow neck by engaging the said valve seat, and having a tubular stem extending upward through the said hole in the bottom of the said basket and a spring carried by the tubular stem and a post extending axially of the said body and said neck and having an annular groove for engaging with said spring whereby the said valve is held out of engagement with the said valve seat when raised therefrom.

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