April 23, 1946. J. E. COOK 2,398,921

LIQUID LEVEL CONTROL

Filed Oct. 30, 1944

Fig. 1

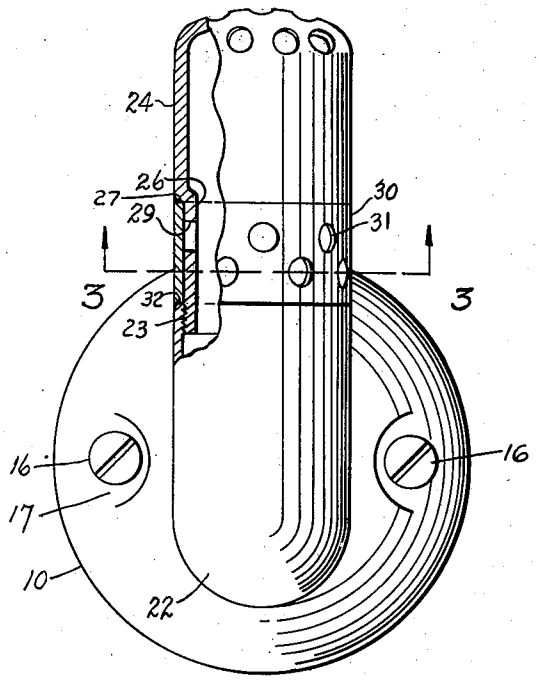


Fig. 2

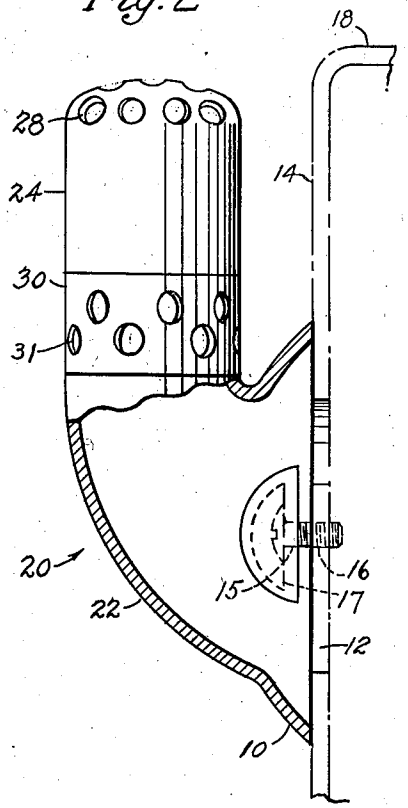
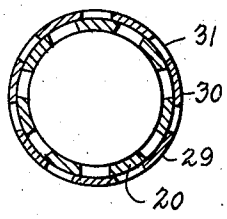


Fig. 3



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LIQUID LEVEL CONTROL

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5 Claims. (Cl. 4—206)

My invention relates to an overflow attachment for bath-tubs. By the use of this attachment, which is easily installed in place of the existing overflow strainer, the water in the tub can be safely filled to a level from three to five inches above the level permitted by the usual overflow outlet.

The proper use of my invention will also enable the householder to economize on the water used for deep tub baths. It is common experience to fill the tub so close to the overflow level, that several gallons of the water displaced by the body, when the person bathing enters the tub, runs out of the overflow. Since a substantial portion of the water so lost is hot water, my invention will either save both the water lost and the cost of heating the hot water lost, or it will enable the person bathing to obtain the benefit of both.

The principal objects of my invention are to provide an improved overflow attachment which is easy to install, inexpensive to manufacture, economical in use, and adjustable to permit different water levels to be maintained in the tub.

Other objects of my invention are to provide a simplified tubular form of overflow attachment which is attractive in appearance, and is made up of only three parts or less.

An additional object of my invention is to provide an overflow device having overlapping wall portions each provided with drainage openings which can either be moved into register to permit drainage at their particular levels of registration, or can be moved out of register when it is desired to raise the level of the tub water.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description. However, the drawing merely shows and the following description merely describes one embodiment of the present invention, which is given by way of illustration or example only.

In the drawing, like reference characters designate similar parts in the several views.

Fig. 1 is a front elevation, partly in section, of the preferred form of my invention;

Fig. 2 is a side elevation, partly in section, and

Fig. 3 is a horizontal sectional view taken on the line 3—3 of Fig. 1.

In its preferred form, my overflow attachment comprises a hollow base portion 10, an outwardly and upwardly extending tubular portion 20, and an overlapping closure strip or ring 30, carried by said tubular portion 20. Said base portion 10 is designed to be secured over the conventional overflow outlet 12 of a bathtub 14.

The holes 15 in the base portion 10 accommodate fastening screws 16, which are employed to fasten my present device in place.

A reasonably watertight joint must be provided where said base portion 10 contacts the surface of tub 14, and between each screw 16 and hole 15. A gasket (not shown), or other suitable sealing material will usually be required to insure a water-tight joint between the base portion 10 and tub 14. Said base portion 10 is indented in the region surrounding holes 15, to provide a flat seat 17 for the head of each screw 16. Washers (not shown), or other suitable sealing material may be used beneath the head of screws 16 or in holes 15.

In Figs. 1 to 3, the outwardly and upwardly extending tubular portion 20 is integrally connected with base portion 10, and extends upwardly several inches above the bottom of said overflow outlet 12, for raising the water level in tub 14 above the level usually permitted by the conventional outlet 12. The increase in depth of the tub water obtained will vary with the size of the attachment used, the location of the drainage openings in the attachment, and the distance of the bottom of outlet 10 beneath the rim 18 of tub 14; but will generally average from three to five inches or more. The tubular portion 24 is straight and vertical, while the outwardly or horizontally extending portion 22 is curved upwardly to where it joins the vertical portion 24, and is flared outwardly where it joins base portion 10.

Drainage openings 28 are provided in the top of tubular portion 24, while drainage openings 29 are located in an annular channel 26 intermediate the top and bottom of said attachment. Channel 26 receives the movable closure strip or ring 30 which is provided with drainage openings 31 spaced to correspond with openings 29. Said openings 31 furnish a good finger hold for shifting strip 30 manually, to bring openings 29 and 31 either into or out of register.

The bottom of channel 26, and closure member 30, may be regarded as relatively movable overlapping wall portions provided with drainage openings 29 and 31, respectively, which may be kept out of register, as shown in Fig. 3, when it is desired to raise the water level above said openings, or which may be brought into registry when it is desired to keep the water level at their distance below rim 18. The highest water level is obtainable when openings 29 and 31 are shifted out of register, which allows the tub to fill up to

the level of top openings 28. Although I have shown two rows of openings 29 and 31 and one strip 30, it is obvious their number and size may be varied to suit the unit volume of water they are required to drain away if the water is inadvertently left turned on. Moreover, the openings of each row may be arranged to close in sequence from bottom to top, to obtain further adjustability. This may be accomplished by using separate strips for different rows of openings or by properly staggering the openings under one strip.

My overflow attachment may be formed of any desired material such as metal, plastic or glass. Said closure strip or ring 30 may be made continuous, as shown in Fig. 3, or split for ease in assembly and manipulation. Means, in addition to openings 31, may be formed on said strip 30 to assist in said manipulation. Moreover, tubular portion 24 may be made integral with outwardly extending portion 22, or fabricated separately, depending upon the material from which it is made, and the equipment available for fabrication.

As shown in Fig. 1, the vertical tubular portion 24 may be fabricated separately from the outwardly extending portion 22, and the parts are threaded, together at 23. The ring 30 is clamped in adjusted position between the shoulder 27 forming the upper edge of the recess 26, and the top edge 32 of tubular portion 22.

While I have illustrated and described what I now regard as the preferred embodiment of my invention, the construction is, of course, subject to modifications without departing from the spirit and scope of my invention. I, therefore, do not wish to restrict myself to the particular form of construction illustrated and described, but desire to avail myself of all modifications that may fall within the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. An overflow attachment for bathtubs comprising a hollow base portion; means for attaching said base portion to a bathtub over its overflow outlet; a vertical tubular portion extending upwardly from said base portion a substantial distance above said outlet; drainage openings in the top of and intermediate said tubular portion, said openings being located a substantial distance above the bottom of said outlet; and rotatable means for closing said intermediate openings to obtain a still higher water level in said bathtub.

2. An overflow attachment for bathtubs comprising a hollow base portion; means for attaching said base portion to a bathtub over its overflow outlet; a tubular body extending upwardly from said base portion a substantial distance above said outlet; said body having a diametrally smaller portion threading into said base portion and defining a circumferential recess; drainage openings in the top of said tubular portion and in the diametrally smaller portion thereof, a valve seated in the recess of said body and provided with openings located a substantial distance above the bottom of said outlet; said valve being relatively movable for shifting openings thereon either into or out of register with the openings in the smaller portion of said body.

3. An overflow attachment for bathtubs comprising a hollow base portion; means for attaching said base portion to a bathtub over its overflow outlet; a tubular portion extending upwardly from base portion a substantial distance above said outlet and provided with a diametrally reduced part; drainage openings in the top of said tubular portion; additional drainage openings in the reduced part of said tubular portion located a substantial distance below said top openings and above the bottom of said outlet; a perforated closure strip within said reduced part of said tubular portion overlapping said additional openings and conforming to the cross sectional shape of said tubular portion in the overlapping area; said strip being movable relatively to said tubular portion for shifting the openings either into or out of register with the openings in said reduced part.

4. An overflow attachment for bathtubs comprising a hollow base portion; means for attaching said base portion to a bathtub over its overflow outlet; a tubular portion extending outwardly and upwardly from said base portion; a vertical tubular portion threadedly connected at its lower end to the upper end of said first named tubular portion; a peripheral recess in one of the adjacent ends of one of said tubular portions, said recess cooperating with the other adjacent end of the other tubular portion to form a peripheral channel; a closure strip in said channel arranged to be clamped in adjusted position by a shoulder of said recess against said other adjacent end; and drainage openings in said strip and in the bottom of said channel, said strip being relatively movable with respect to said channel for adjustably shifting said openings either into or out of registering position.

5. An overflow attachment for bathtubs comprising a hollow base; means for attaching said base to a bathtub over its overflow outlet; said base having an upstanding tubular portion entirely removed from and free of the wall of the bathtub and provided with internal threads in the end thereof; a vertical tubular section having openings in the upper end thereof and having a diametrally smaller part provided at the end thereof with external threads to engage the internal threads of said tubular portion; said diametrally smaller part having openings and providing a circumferential recess and defining a shoulder, an annular valve disposed in said recess and between said shoulder and the top of said tubular portion, said valve having openings and being relatively movable with respect to said smaller part of said tubular section for shifting said openings into and out of register with the openings in said smaller part of said tubular section.

JAY E. COOK.