L. A. CORNELIUS.

STOPPER.

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1,388,327.

Patented Aug. 23, 1921.

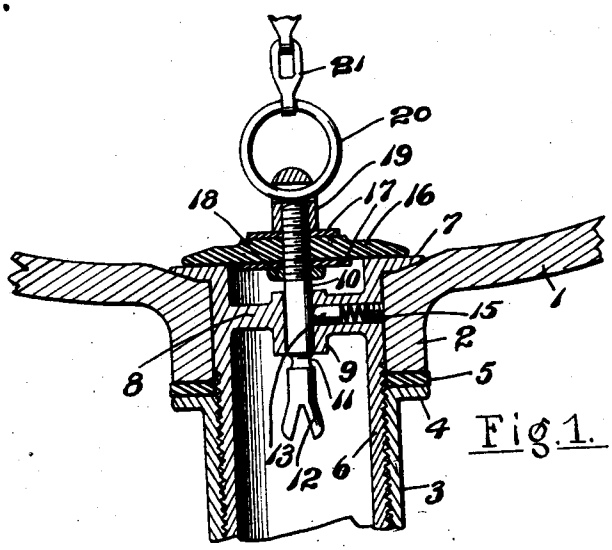


Fig. 1.

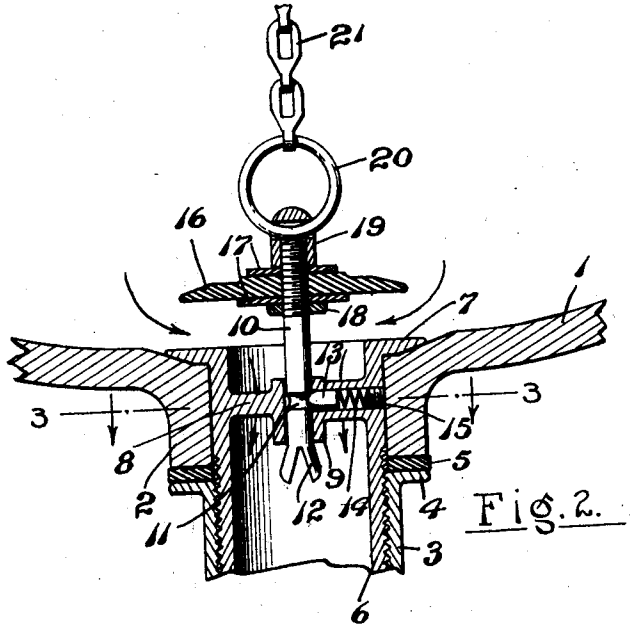


Fig. 2.

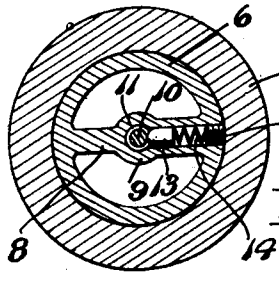


Fig. 3.

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STOPPER.

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To all whom it may concern:

Be it known that I, LOUIS A. CORNELIUS, a citizen of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Stoppers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a stopper for wash bowls, bath tubs and the like. It is a primary object and purpose of the present invention to construct a stopper of the character indicated which shall be of very simple and economical construction and which will remain in either of its two positions, open or closed, being automatically held in upper open position when moved thereto so that water may drain from the wash bowl or the bath tub, or held in lower closed position by its weight and the pressure of water above it when moved thereto, the operation of the stopper from one position to the other being a simple straight up or down movement of the stopper, very quickly and easily accomplished. A further object of the invention is to provide a stopper construction of the character outlined which is durable and efficient, not liable to get out of order, and which can be manufactured and installed at relatively low cost. These and various other objects and purposes, not at this time particularly enumerated, will appear fully and in detail as understanding of the invention is had from the following description, taken in connection with the accompanying drawing, in which,

Fig. 1 is a fragmentary vertical section through a wash bowl equipped with my invention of stopper, the stopper being in closed position.

Fig. 2 is a similar view showing the stopper in upper open position, and

Fig. 3 is a transverse horizontal section taken on the plane of line 3—3, of Fig. 2.

Like reference characters refer to like parts in the different figures of the drawing.

The application of the stopper is to wash bowls, bath tubs, or the like and in the illustration the bowl is indicated at 1, being formed with an outlet opening at the bottom around which an annular downwardly projecting neck 2, integrally formed with the bowl is located. A waste pipe 3 is in alinement with the outlet opening and extends downwardly from the neck. This waste pipe at its upper end is formed with an outwardly extending flange 4 between which and the lower end of the neck 2 a suitable gasket 5 is placed. The waste pipe is interiorly threaded and a metal sleeve 6, exteriorly threaded and formed at its upper end with an outwardly extending flange 7 is inserted downwardly through the bowl outlet opening and the neck 2 and into the waste pipe, threading thereinto and drawing the flange 4 tightly against the gasket 5 with the flange 7 bearing against the upper side of the bowl around the outlet opening. So far the construction is that commonly used in many constructions for attaching the waste pipe to wash bowls or bath tubs or the like.

A cross bar 8 is formed integral with the sleeve 6 near its upper end, it having a central vertical guide sleeve 9 through which a rod 10 passes and to which the stopper member for closing the upper end of the sleeve is attached. At its lower end rod 10 is divided for a short distance and the two parts bent outwardly away from each other, as indicated at 12 whereby a stop is made against the upward passage of the rod through the sleeve 9. A short distance above the lower end of the rod a groove 11 is cut around the same.

An opening is bored lengthwise through the sleeve 6 and one end of the cross bar 8 to the central opening through the sleeve 9. A catch 13 with a rounded inner end is inserted loosely in said opening, a spring 14 placed behind it and a threaded plug 15 is threaded into the outer end of the opening, compressing the spring and forcing the inner end of the catch against rod 10, as shown.

The immediate stopper member comprises a disk 16 of rubber which is placed around the upper portion of the rod 10 between two metal washers 17 of smaller diameter, the lower one of which bears against a nut 18 previously threaded onto the upper end of the rod. A cap nut 19 threads onto the rod at its upper end, bearing against the upper washer 17, thereby clamping the parts securely together. This is conventional construction. A ring 20 is passed through the cap nut 19 and a chain 21 attached thereto for pulling the stopper into upper open position.

When the stopper is pulled to its upper position, the groove 11 in rod 10 comes into

direct conjunction with the spring catch 13, the stop made by the forks at 12 engaging with the lower end of sleeve 9 stopping the rod in position for the catch to enter the groove. The stopper is thus yieldingly held in open upper position and the water in the bowl may drain therefrom through the waste pipe. This engagement of the catch with the rod is wholly automatic, following the drawing of the stopper and rod upwardly on a pull being exerted on chain 21. When the bowl is to be used to retain water it is merely necessary to push the stopper to lower position, the catch 13 yielding readily and permitting the downward movement of the rod 10. The weight of the water above the stopper, aided by the weight of the stopper and friction of the catch against the side of rod 10 serves to make a tight connection against the escape of water from the bowl when the stopper is in lower position.

This construction of stopper is very practical, being readily and economically made and assembled, positive in its action and particularly simple in operation. In practice it has proved especially meritorious. The appended claims define the invention, and I consider myself entitled to all forms of structure coming within their scope.

I claim:

1. In combination a sleeve adapted to be located at the outlet of a wash bowl or the like, said sleeve having a cross bar adjacent its upper end formed between its ends with a vertical sleeve and said cross bar being provided with a longitudinal opening therethrough reaching from the vertical opening through the sleeve in the cross bar to the outer side of the first sleeve, a vertical rod passing loosely through said vertical sleeve formed at its lower end with outwardly bent forks and a short distance above the lower end with an annular groove a spring actuated catch located in the opening in said cross bar adapted to press against the rod, and a disk-like stopper member connected to the rod above the upper end of the first sleeve and adapted to close the upper end of said sleeve when in lower position, the catch entering the groove in the rod when the same is moved to an upper position, thereby holding the stopper member against downward movement.

2. A stopper for wash bowls or the like, comprising a sleeve outlet member adapted to be secured to and depend from the bowl, said sleeve member having a bar extending across the same adjacent its upper end, a vertical rod mounted loosely through said bar, stop means at the lower end of the rod to engage with the bar and limit its upward movement, a stopper member attached to the rod above the upper end of the sleeve and adapted to close said upper end of the sleeve when in lower position, and a spring actuated catch mounted on the bar and pressing against the rod, said rod having a groove therearound with which said catch engages when the rod and attached stopper member are in upper position, substantially as described.

3. A construction of the character described, comprising a sleeve having an opening therethrough for the passage of water, a cross bar located between opposite sides of the sleeve adjacent the upper end thereof, a vertical rod passing loosely through the cross bar, said rod at its lower end being divided vertically for a short distance and the parts each side of the division bent outwardly away from each other, and said rod a short distance above the lower end thereof having a groove cut around it, a stopper member attached to the rod above the upper end of the sleeve and closing said end of the sleeve when in lower position, and a spring actuated catch mounted within the cross bar adapted to engage with said groove in the rod when the rod and attached stopper member are moved to upper position, thereby retaining the same in open draining position, substantially as described.

In testimony whereof I affix my signature.

LOUIS A. CORNELIUS.