No. 675,279. Patented May 28, 1901.

F. S. HIGGINSON.

BASIN PLUG.

(Application filed July 25, 1900.)

(No Model.)

Fig. 1

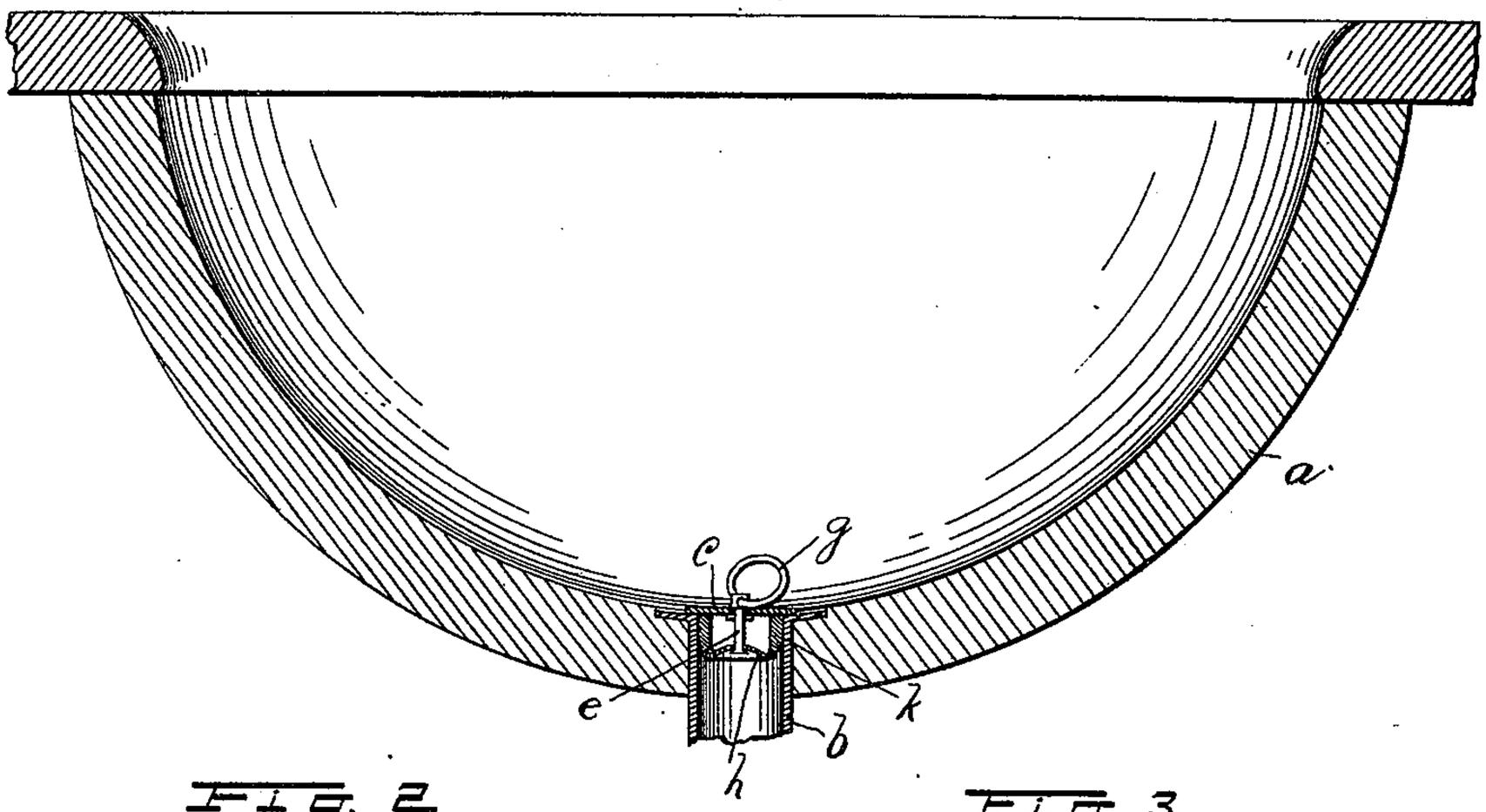


Fig. 2

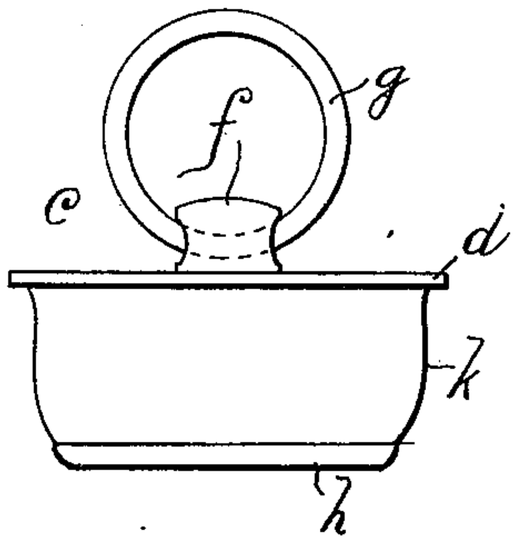
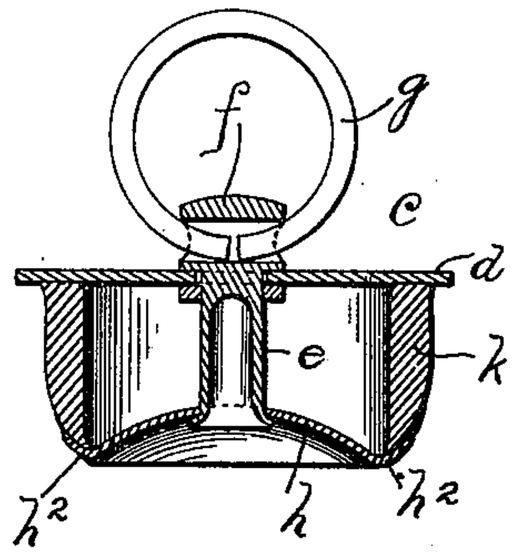


Fig. 3



WITNESSES

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BASIN-PLUG.

SPECIFICATION forming part of Letters Patent No. 675,279, dated May 28, 1901.

Application filed July 25, 1900. Serial No. 24,768. (No model.)

To all whom it may concern:

Be it known that I, FRANK S. HIGGINSON, a citizen of the United States, residing at Eatontown, in the county of Monmouth and State of New Jersey, have invented certain new and useful Improvements in Basin-Plugs, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to plugs for closing the escape-pipe in the bottom of a water-basin; and it has for its object to provide a stopper whereof the main body or cylindrical portion will be capable of inward yielding in order to fit tightly in the socket of the basin of the escape-pipe thereof. The necessity for using undue pressure in forcing the same in or withdrawing it and which will particularly adjust itself to any socket of however irregular contour or will as the stopper wears away and becomes irregular in form adjust itself so as to fit a regularly-contoured or true socket.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by the same reference characters in each of the views, and in which—

Figure 1 is a central vertical section of an ordinary water-closet basin, showing my improved plug, the latter being also in section; Fig. 2, a side view of the plug on an enlarged scale, and Fig. 3 a central vertical section thereof.

In the drawings forming part of this specification I have shown at *a* an ordinary water-closet basin, in the bottom of which is placed the usual pipe *b*, and in the practice of my invention I provide a plug *c* for closing said pipe, said plug being of the form and construction shown in detail in Figs. 2 and 3.

My improved plug consists of a top plate *d*, through which is passed a center-pin *e*, which is secured to the said plate in any desired manner and which is provided at its upper end with a head *f*, with which the usual ring *g* is connected. The lower end of the center-pin *e* is preferably tubular in form, and connected therewith at the bottom is a concave-convex disk *h*, the convex surface of which is uppermost. This disk *h* is provided with an annular flange or rim h^2, which projects outwardly and upwardly therefrom. The under face of the top plate *d* is entirely smooth and plane, and the upper face of the disk *h* is also smooth. These two plates are held at considerable distance apart by the center-pin *e*. Between them I insert a cylindrical section of rubber *k*, which is of such length and relative thinness that it forms a vertical wall or shell for the stopper. The inner edge of this cylindrical section abuts against the smooth under face of the top plate *d*, and the lower edge of the same is cut away upon the outside or beveled, as shown in Figs. 2 and 3. This lower edge fits within the annular flange h^2 of the disk *h*. When the device is thus constructed, the rubber section *k* will be held closely against the under surface of the top plate *d* and will be prevented from outward movement at the bottom by the flange h^2 and will be restricted in any inward movement at the bottom by the convexity of the upper surface of the disk *h*. It will be observed that there is nothing inwardly of the cylindrical rubber section or within the body of the stopper or plug which will prevent inward movement of the cylindrical rubber section. The object of retarding or opposing any such movement at the bottom is that the bottom portion does not need to yield inwardly in actual practice, as the diameter of the plug at that point is less than the diameter of the effective or body portion of the plug. This body portion or rubber section in my invention, however, is and must be free to move inwardly, the interior of the stopper being absolutely hollow, and this inward yielding being permitted an air-cushion is formed and constantly maintained. This enables the stopper to fit tightly in the aperture or socket of the basin without great pressure in inserting or removing, which is manifestly the important point in devices of this character, as is well known to those who are skilled in the art to which they appertain.

Not only does the stopper yield at the main or central portion of the cylindrical rubber section, but it also yields positively at the top.

It is possible to fit this stopper into a socket which is almost square in its irregularity in-

stead of round and true, and this is not the case with any stopper hitherto produced of which I am aware.

The object of my invention is not to provide a stopper in which the upper and lower plates are clamped together to press outwardly the rubber body, which I am aware is not new and which is based upon the principle of making the soft portion of the stopper harder or more rigid or larger with respect to the diameter of the socket. On the contrary, it is the object of my invention to make a stopper which will positively yield or move inwardly against the interior air-cushion and adjust itself to any irregularity of form of the socket or, on the other hand, when the plug itself wears to an irregular form will adjust the same to the regular contour of a true socket.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

A plug of the class described, comprising a top plate and a disk or plate connected centrally therewith; the under surface of the top plate being smooth and plane; a cylindrical section of elastic compressible and expansible material forming a thin and hollow shell inserted between the upper plate and the lower plate and free to yield inwardly to adjust the plug to any irregularities of its socket, or of itself, to enable the same to fit tightly in the socket without undue pressure; the interior of the plug being hollow and unprovided with means for preventing the inward yielding of the cylindrical body portion, and forming an air-cushion within the same.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 21st day of July, 1900.

FRANK S. HIGGINSON.

Witnesses:
IRA JACKSON,
CHARLES BRUSE.