

J. H. McELROY.
SHOWER BATH APPARATUS.

APPLICATION FILED JUNE 3, 1909. RENEWED AUG. 22, 1912.

1,056,811.

Patented Mar. 25, 1913.

Fig. 1.

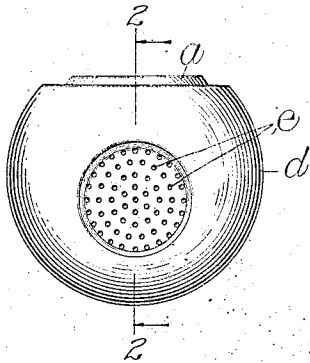


Fig. 2.

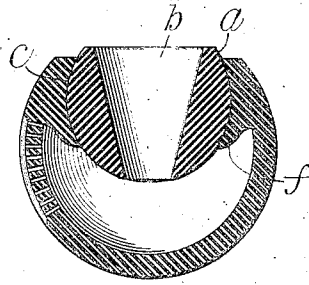


Fig. 3.

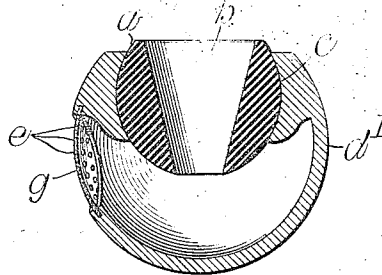


Fig. 4.

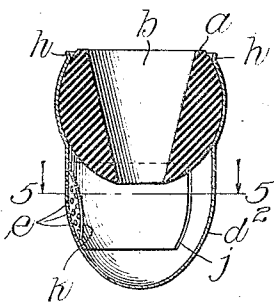


Fig. 5.

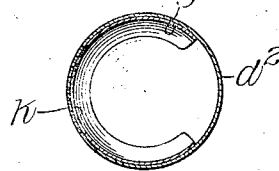
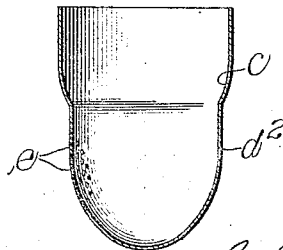


Fig. 6.



Witnesses:

Robert A. McKie
H. Barrett

Inventor:

John Howard (McElroy)

UNITED STATES PATENT OFFICE.

JOHN HOWARD McELROY, OF CHICAGO, ILLINOIS.

SHOWER-BATH APPARATUS.

1,056,811.

Specification of Letters Patent.

Patented Mar. 25, 1913.

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To all whom it may concern:

Be it known that I, JOHN HOWARD McELROY, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Shower-Bath Apparatus, of which the following is a full, clear, and exact specification.

My invention is concerned with detachable shower nozzles, which are adapted to be instantly applied to and detached from the fixture of any ordinary bathtub, so that when it is in place a shower of water can be thrown throughout the tub, and it is designed to produce a device of the class described which shall be extremely simple and cheap in its construction.

It is further designed to produce devices of the class described which can be readily adjusted to elevate or depress the shower, as is desirable where they are used with different pressures.

It is further designed to produce a device of the class described which shall automatically regulate the size of the discharge apertures, so that when the pressure is light the apertures will be small, and when it is increased, the apertures will automatically increase in size, so that under all conditions the shower will fill the tub.

To illustrate my invention, I annex hereto a sheet of drawings, in which the same reference characters are used to designate identical parts in all the figures, of which,—

Figure 1 is a front elevation of the device, and Fig. 2 is a section on the line 2—2 of Fig. 1; Fig. 3 is a section like Fig. 2, but showing a different construction, in which the cup is made of metal by casting it; Fig. 4 is a view similar to Fig. 3, but illustrating a modified form in which the metal cup is made out of very thin metal, by drawing it or otherwise; Fig. 5 is a view in section on the line 5—5 of Fig. 4; and Fig. 6 is a sectional view through the cup shown in Fig. 4 after it has been drawn, but before the nipple is inserted.

In carrying out my invention in all its forms, I preferably employ a nipple *a* made of soft rubber, which is provided with a passage *b* therein which is of the shape of the frustum of a cone and of a size so that it will allow it to be forced over the end of the discharge nozzle of an ordinary bathtub fixture, and will when thus forced over prevent the passage of any material quantity

of water, even under pressure, between the nozzle and the nipple. The outer surface of the nipple *a*, where it is made separate, as is preferable, is preferably spherical, except where the body thereof is removed in forming the passage *b*, and this spherical surface fits very snugly in the concaved, annular bearing-surface *c* formed in the cup proper *d*. I preferably make the nipple separate so that it can be readily adjusted to vary the angle at which it will discharge the water into the tub. Where the cup *d* is made of rubber, as I prefer, it may be conveniently formed of the generally spherical shape except where the upper portion is cut off to admit the nipple *a* and where it is extended inward adjacent the cut-off portion to form the concaved annular bearing-surface *c*. Apertures *e* for the exit of the water are quite numerous and small in diameter, and are formed on a surface curved in two planes, so that it spreads the water both vertically and horizontally, as is necessary to satisfactorily fill the tub. I preferably make the body of the rubber cup *d* where the perforations *e* are formed thinner than the rest of the cup so that the pressure of the water will tend to expand the cup more at that point than any other, and by this means, when the pressure is high and a large quantity of water can be discharged and still reach the end of the tub, the expansion of the thinner rubber at this point will allow the apertures to expand so a greater quantity of water can escape, and where the pressure is low there is practically no expansion of the apertures, and consequently a smaller quantity of water can get through the apertures, and the smaller quantity being discharged will fill the tub more satisfactorily than if a large quantity is being discharged, as it will be readily understood that the lower the pressure the smaller must be the area of the exit apertures if the water is to be projected through them with sufficient force to reach the end of the tub. I may further increase this effect, and likewise the durability of the cup, by embedding canvas or some other suitable fibrous material in the body of the cup except where the perforations *e* are located.

It will be understood that the nipple *b* fits snugly enough in the concaved annular bearing-surface so as to prevent any material leakage of water, while it does not fit

so tightly but what the nipple can be turned in the cup in order to make the desired vertical adjustment. It will also be understood that the downwardly-projecting portion *f*, which helps to form the bearing surface, is pressed against the nipple by the pressure of the water, and that the internal pressure of the nozzle of the fixture stretching the nipple *a* will assist in holding the two parts firmly together so as to prevent leakage between them.

In Fig. 3 I have illustrated a modified construction, in which the same nipple *a* is employed, but in which I make the cup *d'* of metal, and preferably cast it. In this form the apertures *e* are preferably placed in a thin sheet-metal disk *g*, which is concaved to the proper degree to spread the water throughout the tub, and has the cast-metal body-portion *d'* cast about it by suitably supporting it in the mold.

In Fig. 4 I have illustrated still another modification, in which the cup portion *d''* is made of sheet-metal which is first drawn into the shape shown in Fig. 6 and then has the perforations *e* cut therein, after which the outer edge *h* is turned over to complete the concaved annular bearing-surface *c*, either with or without the nipple *b* being in place. I may employ in connection with this form of cup, or even with the form shown in Figs. 1 and 2, a thin piece *j* of sheet-metal, or some other suitable elastic material, with an aperture *k* formed therein of sufficient size to include all the perforations *e*, and this piece *j* is formed into the partial annulus shown, which springs into place and fits snugly against the inner face of the cup. If it is desired to reduce the quantity of water that can be discharged, as may be necessary when an unusually low pressure is met with, by turning the piece *j* so as to cut off some of the apertures, the amount of water can thus be reduced.

While I have shown and described my invention as embodied in the form which I at present consider best adapted to carry out its purposes, it will be understood that it is capable of modifications, and that I do not desire to be limited in the interpretation of the following claims except as may be necessitated by the state of the prior art.

What I claim as new, and desire to se-

cure by Letters Patent of the United States, is:

1. In a device of the class described, the combination with a cup having perforations therein, of a nipple adjustably mounted therein by which it may be attached to the nozzle of a bathtub fixture to direct the streams at different altitudes.

2. In a device of the class described, the combination with a cup having perforations therein, of an elastic nipple adjustably mounted therein by which it may be attached to the nozzle of a bathtub fixture to direct the streams at different altitudes.

3. In a device of the class described, the combination with a cup having perforations therein, and a spherically concaved annular bearing-surface, of a nipple having the spherical exterior adapted to fit therein and be attached to the nozzle of a bathtub fixture.

4. In a device of the class described, the combination with a cup having perforations therein, and a spherically concaved annular bearing surface, of a soft rubber nipple having the spherical exterior adapted to fit therein and be attached to the nozzle of a bathtub fixture.

5. In a device of the class described, the combination with a cup having perforations therein, and a spherically concaved annular bearing surface, of a rubber nipple having the spherical exterior adapted to fit therein and be attached to the nozzle of a bathtub fixture.

6. As a new and useful article of manufacture, a cup having perforations in a side thereof, together with an elastic nipple directly mounted in the top thereof and adapted to coöperate with the nozzle of a bathtub fixture so that the cup will be directly supported by the nipple upon the nozzle in position to direct rays of sprays of water through the perforations throughout the bath tub.

In witness whereof, I have hereunto set my hand and affixed my seal, this 8th day of May, A. D. 1909.

JOHN HOWARD McELROY. [L. s.]

Witnesses: .

F. E. BROM,

JNO. G. ELLIOTT.