M. SCHNAIER.

SPRAY HEAD FOR SHOWER BATHS.

APPLICATION FILED JULY 9, 1913.

1,229,327. Patented June 12, 1917.

Fig. 1.

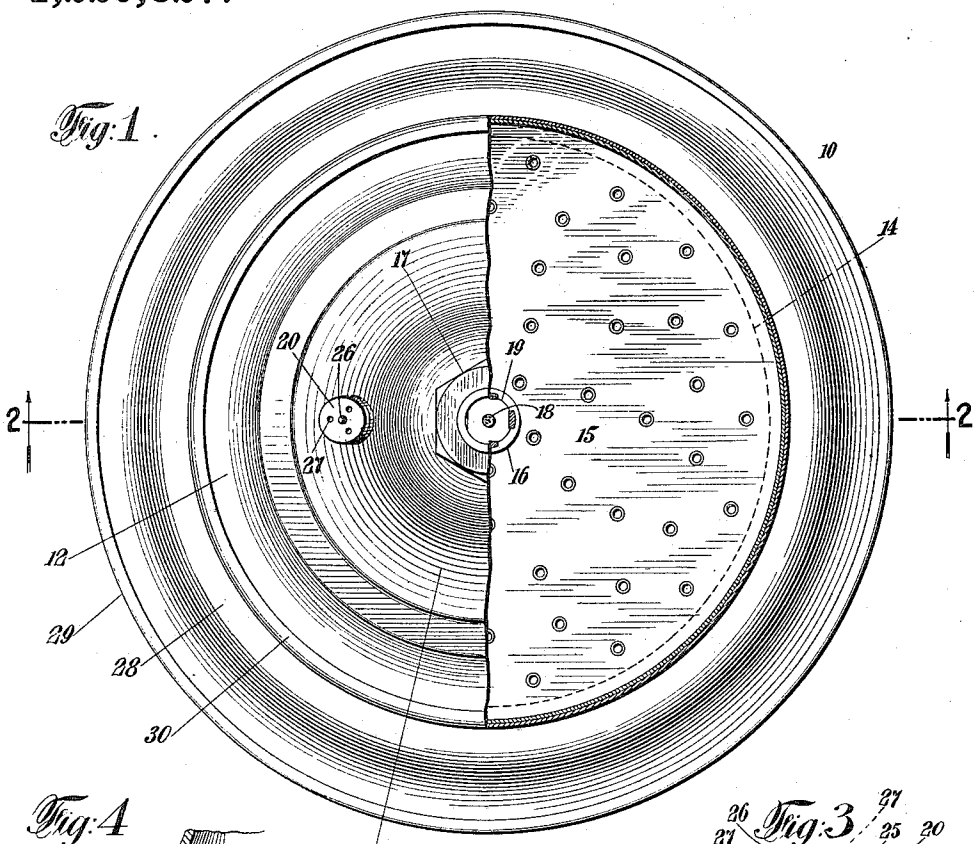



Fig. 4

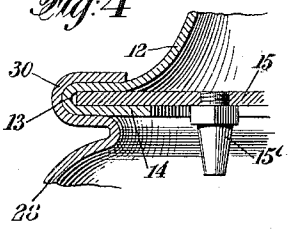



Fig. 3

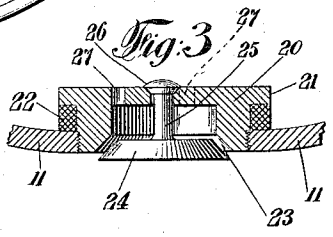



Fig. 2




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# UNITED STATES PATENT OFFICE.

MILTON SCHNAIER, OF NEW YORK, N. Y., ASSIGNOR TO MILTON SCHNAIER CONTRACTING CORP., A CORPORATION OF NEW YORK.

## SPRAY-HEAD FOR SHOWER-BATHS.

1,229,327. Specification of Letters Patent. **Patented June 12, 1917.**

Application filed July 9, 1913. Serial No. 778,011.

*To all whom it may concern:*

Be it known that I, MILTON SCHNAIER, a citizen of the United States, residing at the city of New York, borough of Manhattan, in the county and State of New York, have invented certain new and useful Improvements in Spray-Heads for Shower-Baths, of which the following is a full, clear, and exact specification.

My invention relates to improvements in shower baths and the same has for its object more particularly to provide a simple, efficient and reliable apparatus which is so constructed and arranged that it will withstand the pressure of the fluid when the same is permitted to enter said head.

Further said invention has for its object to provide a spray head comprising a body portion and a separate rim portion intermediate of which is secured a perforated plate in such a manner that said plate cannot become dished and in consequence thereof be forced out of position from the head.

Further said invention has for its object to provide a spray head with valve means which will automatically close under the increase of fluid pressure within said head when the water is turned on, and which thereafter will automatically open when the source of fluid supply is turned off and admit air to said head in order to permit of any surplus water remaining in said head being rapidly drained therefrom.

Further said invention has for its object to provide a spray head with a nozzle having its discharge openings so arranged therein that the force of the water discharged therefrom will be received by the sides of the head, and not directly by the perforated plate therein.

To the attainment of the aforesaid objects and ends my invention consists in the novel details of construction, and in the combination, connection and arrangement of parts hereinafter more fully described and then pointed out in the claim.

In the accompanying drawings forming part of this specification wherein like numerals of reference indicate like parts—

Figure 1 is a top view, partly in section, showing one form of spray head constructed according to, and embodying my said invention;

Fig. 2 is a central vertical section taken on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged detail central section of the air valve arranged in said head; and

Fig. 4 is an enlarged detail sectional view showing the manner of securing the perforated plate to the body portion of said head, and the rim to said body portion and inclosing said perforated plate.

In the said drawings 10 designates the spray head as a whole which may be of any desired outline but preferably of the general form herein shown comprising a tapering top 11 and a flaring base portion 12, which jointly constitute the body portion of the head.

The lower edge of said base portion 12 is turned inwardly to form a bead 13 and an inwardly projecting lateral flange 14.

15 denotes a circular plate which constitutes the base of the body portion of the spray head, and has its edge firmly secured within the bead 13, and supported upon the inwardly projecting flange 14 extending from said rim. $15^a$, $15^a$ denote numerous depending nozzles which are suitably secured at their upper ends within said plate 15.

16 denotes a distributing nozzle which is screw-threaded at its upper end and adapted for attachment to the water supply pipe, and directly below the screw-threaded portion of said nozzle is provided a shoulder 17 adapted to rest upon the upper edge of the tapering top of the spray head body. The lower end of said nozzle 16 is flush and extends down to the inner surface of the plate 15 which is secured centrally to the bottom of said nozzle by a screw 18 extending through said plate. The nozzle 16 is provided adjacent to its lower end with a plurality of vertical discharge openings or slots 19, 19.

The tapering top portion 11 is provided adjacent to its lower end with a screw threaded opening into which is fitted a bushing 20 having a rim 21 between the underside of which and the outer side of the tapering top 11 is disposed an annular packing 22. The bushing 20 is provided upon its inner end with a valve seat 23 against which a valve 24 is adapted to seat. The valve 24 is provided with a stem

25 which extends through the top of the bushing 20 and has its projecting end provided with a head 26 which serves to limit the inward movement of said valve, and 27, 27 denote a plurality of air inlets provided in the top of said bushing.

28 denotes the flange of the spray head which has a flaring lower portion provided with a rim 29 formed by doubling the edge of said flange upon itself. The upper edge of said flange 28 is first bent outwardly and upwardly and then inwardly to form a bead 30 which embraces the bead 13 of the base portion 12, within which is secured the edge of the plate 15.

The operation of the apparatus is as follows:

When the valve controlling passage of water from the source of supply to said spray head is turned on the water enters the upper end of the nozzle 16, and is then discharged in a horizontal direction from the vertical outlet openings 19, 19 therein and strikes the inner curved walls of the top portion 11, and base portion 12. With the turning on of the controlling valve the water will cause the air within the spray head to be compressed, and in so doing cause the valve 24 to seat against its seat 23 provided in the bushing 20. The fluid entering the head 10 is thus prevented from being discharged through said valve 24, while being allowed to issue freely through the numerous nozzles $15^a$ secured to the plate 15.

When the valve controlling the supply of fluid to the spray head is turned off a difference in pressure between that existing without the head 10 as compared to that existing within said head is immediately produced which causes said valve 24 to open automatically and allow air to enter said head through the openings 27 in said valve bushing 20. As the valve 24 opens, whatever water remains in the head 10, after the valve controlling the flow of water is turned off, will be caused to drain quickly from said head through the nozzles $15^a$, $15^a$ arranged therein, and thus prevent the dripping of water from said nozzles for a considerable period of time after the controlling valve is closed, as now occurs in spray heads which are not provided with means for permitting air to enter the spray head.

In connection with my improved form of spray head it is to be noted that by making the body portion of the head separate from the flaring flange 28, I am enabled to secure the edge of the plate 15 firmly within the bead at the lower edge of said body portion, and at the same time I am enabled to provide a large bearing or supporting flange upon which the edge of said plate may rest. Further, that by making the flaring flange 28 as a separate part, and then securing the same to the bead provided at the lower edge of the body portion of the head the said bead is materially strengthened and reinforced. By this means all tendency of the plate 15 to buckle or become dished due to the pressure of fluid within and entering said head is overcome.

Further any possible tendency of the plate 15 to buckle or dish under increase of fluid pressure is effectually prevented by securing said plate 15 centrally to the lower end of the distributing nozzle 16 by means of the screw 18.

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

A spray head comprising a hollow body having a tapering upper portion and a flaring lower portion, a perforated plate secured to said lower portion, a distributing nozzle arranged within said hollow body and having a shoulder engaging the upper edge of said upper portion, said nozzle having openings formed in its wall, said nozzle having a closed inner end engaging the inner surface of said plate, and means securing said plate to the inner end of said nozzle, substantially as specified.

Signed at the city of New York in the county and State of New York, this twenty-fourth day of April, one thousand nine hundred and thirteen.

MILTON SCHNAIER.

Witnesses:
C. H. GARDNER,
ADAM RAINEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."