Aug. 26, 1941. S. E. ARNESON 2,253,600

SANITARY DRINKING FOUNTAIN

Filed July 15, 1939

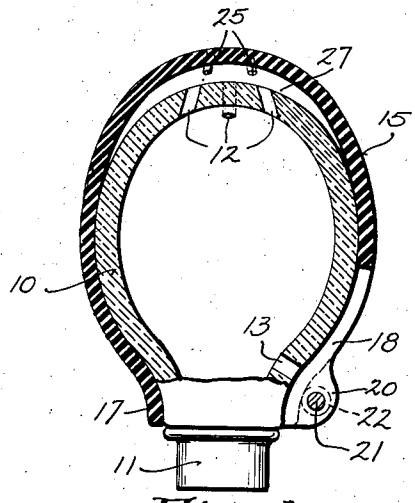


Fig. 1.

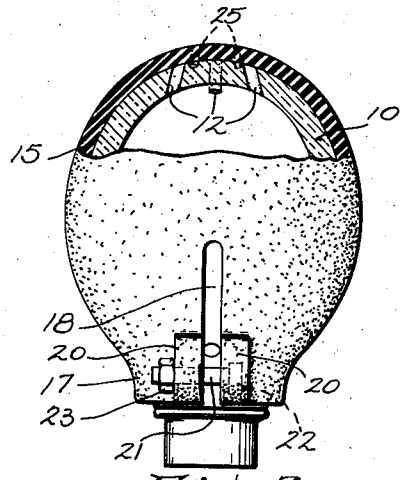


Fig. 2.

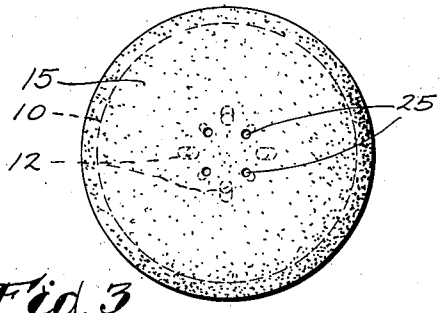


Fig. 3.

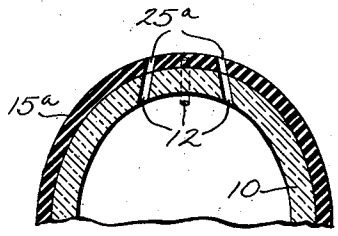


Fig. 4.

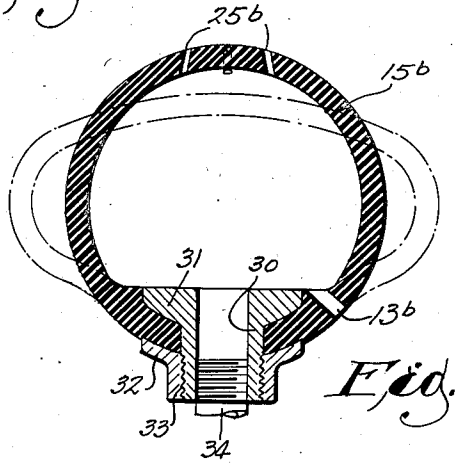


Fig. 5.

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SANITARY DRINKING FOUNTAIN

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Application July 15, 1939, Serial No. 284,726

2 Claims. (Cl. 299—15)

My invention relates to improvements in sanitary drinking fountains.

The object of my invention is to provide a fountain peculiarly adapted for use on playgrounds and in public schools and other places where there is danger of injury to the teeth of those who use the fountain if bubbler heads are employed which are composed of metal, porcelain or other hard material exposed for contact with the teeth of persons drinking at the fountain.

It is my object to provide a sanitary bubbler head either composed of rubber or equivalent non-metallic, compressible material or comprising the combination with an ordinary porcelain or metal head of a distensible covering of rubber or equivalent material.

My primary object is to prevent injury to the teeth if the person drinking at the bubbler is jostled or jolted or if an attempt is made to grasp the bubbler head between the teeth.

A further object is to provide means whereby any ordinary bubbler head in commercial use may be equipped with a non-metallic, yielding and self-cleaning covering adapted to protect teeth from injury and also adapted to be frequently replaced when damaged.

As a dentist, I have had frequent occasion to repair children's teeth which have been broken or damaged by forcible contact with a rigid bubbler head, such damage frequently occurring when the person drinking at the bubbler is jostled by other children or has his head suddenly pressed downwardly by a mischievous person.

In the drawing:

Fig. 1 is a vertical sectional view of an ordinary bubbler head for a drinking fountain to which my invention has been applied, the elastic covering being shown in a partially distended position similar to that occupied when under sufficient water pressure to project a drinking fountain jet.

Fig. 2 is a view of the same as it appears when the water is shut off, said view being taken at right angles to that of Fig. 1 and the upper portion of the bubbler head being shown in vertical section.

Fig. 3 is a plan view of the bubbler head shown in Fig. 1.

Fig. 4 is a detail view in vertical section showing a slightly modified bubbler head.

Fig. 5 is a vertical, sectional view of a bubbler head having all portions above its inlet fully composed of rubber and adapted to be projected by water pressure from a position of non-use to a jet delivering position.

Like parts are identified by the same reference characters throughout the several views.

In Figs. 1 and 2, I have illustrated an ordinary bubbler head 10 of porcelain or equivalent rigid material having its bottom portion connected with a tubular coupling 11 to which water may be delivered to the head in the usual manner. The head 10 has convergent nozzle apertures 12 in its top portion and a drainage aperture 13 in its bottom portion near the point of connection with the coupling 11. These parts may be assumed to be of ordinary construction and require no further description.

A bulbous outer covering 15 of rubber or equivalent material is adapted to be adjusted over the head 10 to the position illustrated in Figs. 1 and 2. This covering 15 has a neck portion 17 slotted at one side, preferably opposite the drain opening 13, as indicated at 18, and means are preferably provided for contracting a neck portion about the neck portion of the head 10. I preferably provide the cover 15 with outwardly projecting bosses 20 preferably formed of rubber having a bolt 21 embedded therein. As shown in Fig. 2, I prefer to embed the head of the bolt in one of the bosses as indicated at 22. The bolt extends through the end of the boss and is provided with a clamping nut 23 whereby the neck portion of the covering may be securely clamped to the head 10 which it covers.

The covering 15 is provided with one or more apertures 25 in its top portion through which a jet may be projected when a water supply is being delivered to the bubbler head. The openings 25 may have a somewhat less capacity than the openings 12 in the bubbler head 10, whereby the water pressure may be utilized to distend the covering and separate it from the head while water is being projected. In Fig. 1, I have illustrated an initial extension of the covering 15 as only the top portion of the covering has separated from the head 15. The degree of distention is not material. Since a pressure continues to accumulate between the covering 15 and the head 10, the water will eventually find its escape through the slot 18. Elasticity of the covering will, of course, determine the degree of pressure maintainable in the space 27.

In Figs. 1 and 2, I have illustrated a form of construction in which the apertures 25 in the covering 15 are out of line with the apertures 12 under a rigid, or relatively rigid, interior head 10. Therefore, eddy currents are set up in the

space 27 as soon as the covering is distended and the force of the jet or jets to be delivered through any one of the openings 25 will be modified. Also, where a plurality of jet openings 25 are provided, the jets may be delivered with a churning effect which facilitates mingling the jets in a common projected stream.

However, if desired, the head 10 may be provided with jet apertures 12 which register directly with jet apertures 25a in the covering 15a in which event the projected stream will be substantially identical in character with that delivered from the bubbler head 10 with the cap 15a removed.

Also, in this construction the jet apertures 12 may be of the same diameter as the jet apertures 25a and the rubber covering 15a may conform to the contour of the head 10 under all conditions of use.

In Fig. 5, I have illustrated a modification in which a bubbler head 15b composed wholly of rubber or equivalent material may be used as a replacement for the rigid head 10. In this construction, the jet nozzles 25b may be substantially identical with the nozzle apertures 25 illustrated in Figs. 1 and 2, but the bottom portion of the head 15b may be provided with an aperture 13b corresponding functionally with the aperture 13 shown in Fig. 1. The bottom portion of the head is provided with an aperture to receive the ported fitting 30 having a head portion 31 between which and a clamping nut 32, the margin of the head 15b may be clamped. The nut 32 has a shank portion provided with an internal thread 33 which may be screwed to an external thread on the fitting 30. The fitting 30 may be connected with a supply pipe 34 in any suitable manner, said supply pipe being illustrated as threaded into the fitting.

In the form of construction illustrated in Fig. 5, the head 15b may be collapsed in part by dominant pressure upon its top surface, the sides being correspondingly expanded as indicated by dotted lines in said figure.

Also, if desired, the normal position and contour of this bubbler head may be that indicated by dotted lines, the head being projecting and caused to assume a circular form when water under pressure is delivered thereto.

It will, of course, be understood that the form of bubbler here illustrated in Fig. 5 may be completely replaceable by unscrewing the fitting 30 from the supply pipe, whereas in the other views, the coverings 15 or 15a may be removed by unscrewing the nut 23 and withdrawing the covering 15 from the rigid bubbler head which it encloses. Where rigid bubbler heads are employed, they may be used in an ordinary manner when the coverings are removed.

It is not material to the invention herein claimed whether the jet nozzle apertures extend upwardly or laterally or whether a single jet aperture is employed or a plurality of apertures adapted to provide multiple outlets commingling or otherwise. Such structural modifications are common in the art and the use of my invention need not change the practice in these particulars.

I claim:

1. The combination with a rigid perforated bubbler head of a yielding distensible covering therefor normally contiguous thereto and provided with jet apertures in its top portion, said rigid bubbler head being also provided with jet apertures out of line with those in the covering portion whereby on application of water pressure to the hollow bubbler head to press the covering away from said head and permit escape of water through the covering.

2. In a drinking fountain bubbler head, the combination with a rigid nozzle adapted to be connected to a source of water under pressure, of a bulb-like non-form-sustaining member enclosing said nozzle, said member having a portion in sealing engagement with the base of the nozzle and a portion adapted to extend substantially above the nozzle when distended, said last mentioned portion being provided with apertures of such size as to allow a water pressure build-up within the member during use, whereby the water therein provides cushioning means to protect a user from contact with said rigid nozzle.

STANLEY E. ARNESON.