

P. MUELLER & A. C. SCHUERMANN.
 SANITARY DRINKING FOUNTAIN.
 APPLICATION FILED DEC. 19, 1911.

1,053,058.

Patented Feb. 11, 1913.

2 SHEETS—SHEET 1.

Fig 1

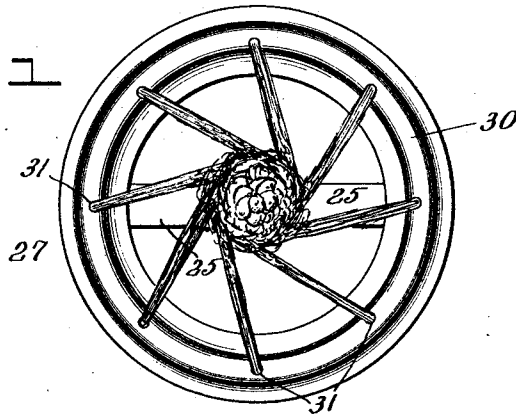


Fig 3

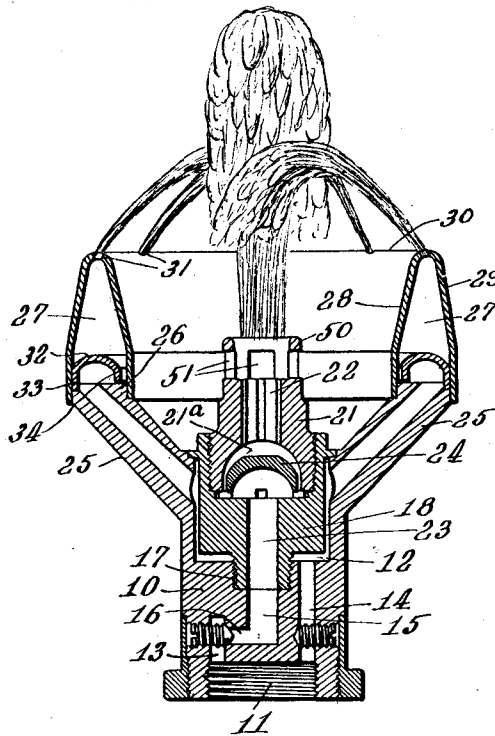


Fig 2

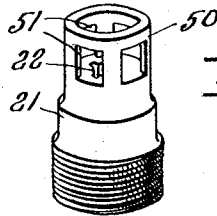
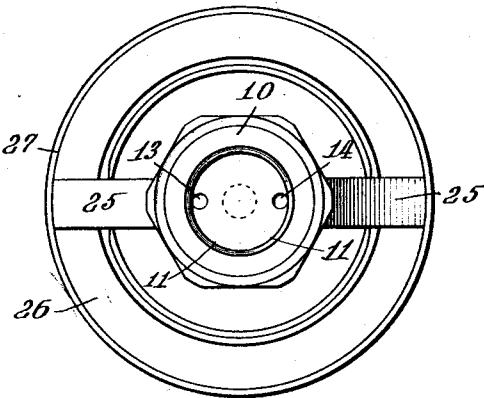


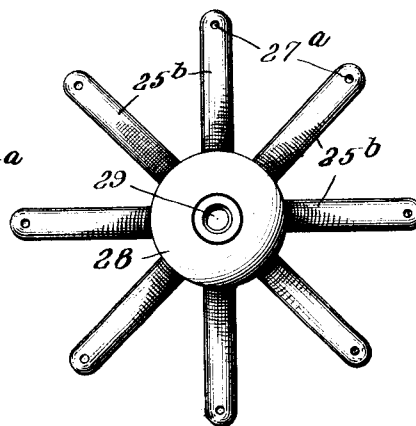
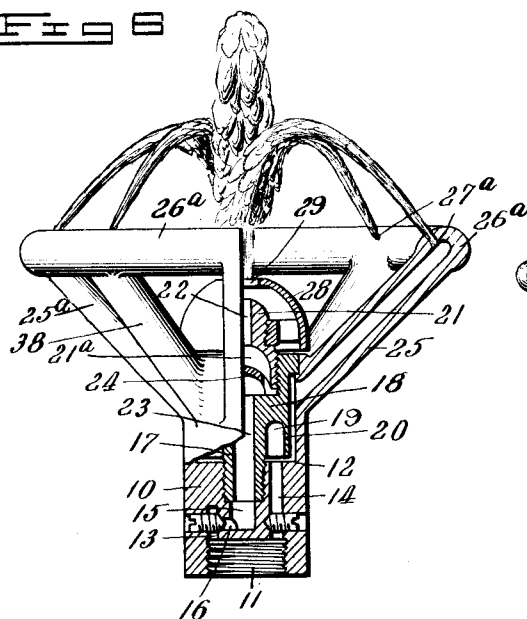
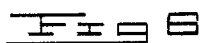
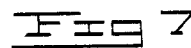
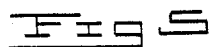
Fig 4

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2 SHEETS--SHEET 2.



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UNITED STATES PATENT OFFICE.

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TO H. MUELLER MFG. CO., OF DECATUR, ILLINOIS, A CORPORATION OF ILLINOIS.

SANITARY DRINKING-FOUNTAIN.

1,053,058.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed December 19, 1911. Serial No. 666,818.

To all whom it may concern:

Be it known that we, PHILIP MUELLER and ANTON C. SCHUERMANN, citizens of the United States, residing at Decatur, in the county of Macon and State of Illinois, have invented new and useful Improvements in Sanitary Drinking-Fountains, of which the following is a specification.

This invention relates to drinking fountains, and has for its object to provide a sanitary nozzle for the drinking stream designed to be installed in schools, public buildings, hospitals, and like places, where it can be attached to a pipe in a drinking fountain basin or bowl, to a separate faucet, or to any other service fitting having suitable means provided for catching the overflow of water.

This invention is designed, primarily, to protect that portion of the nozzle from which the drinking stream flows from contamination by the user's lips when drinking, this object being accomplished by surrounding the drinking stream with a protecting wall or curtain of water formed by a plurality of fine streams, discharging upwardly from suitable outlets above the plane of the drinking stream outlet and concentric therewith, and directed toward said drinking stream at such angles that they do not converge or meet at any one point, but pass one another close to or in contact with the central drinking stream below its head, so that any person may obtain a drink from the drinking stream without interference from the protecting streams, unless he attempts to touch the outlet nozzle with his lips, in which case the protecting streams will flow into his face, nose and eyes, and cause him to quickly withdraw from the fountain. The protecting streams, which are small as compared with the drinking stream, are purposely directed so as not to converge and form a unitary stream which could be used as a drinking stream in case the water to the drinking stream is intentionally cut off or its flow stopped by mischievous or malicious persons.

We are aware that it has heretofore been proposed to provide a drinking fountain wherein a number of oppositely disposed streams of water are caused to converge toward a central point in order to produce a geyser-like column of water where the streams meet and from which drafts may

be taken at will; but our present invention is distinguished from such prior constructions in that the separate or protecting streams of our fountain do not impinge one upon the other at a central point, and do not form a geyser-like column of water, but are purposely arranged so that if sufficient pressure were put upon the streams they would cross or pass one another without meeting to produce a central drinking column, the prime function of said streams being to steady the drinking stream and to provide a water curtain around the said stream which will discharge in the face, eyes and nose of the person drinking in case he should attempt to place his lips over and in contact with the outlet nozzle of the drinking stream and thus cause him to quickly withdraw, with the result that the fountain will remain clean and sanitary at all times.

This invention is an improvement on our copending application, filed on the 28th day of March, 1911, and serially numbered 617,474, but it may be used with equal advantage on other fountains having a central drinking stream.

In the accompanying drawings, Figure 1 is a top plan view of the improved fountain. Fig. 2 is a bottom plan view of the same. Fig. 3 is a vertical central sectional view showing the interior construction of the nozzle. Fig. 4 is a perspective view of the outlet nipple removed from the nozzle. Fig. 5 is a top plan view of a modified form of fountain. Fig. 6 is an elevation of the same, partly in section showing the interior construction of the nozzle. Figs. 7 and 8 are plan views showing modified forms of invention.

In the accompanying drawings, which are merely illustrative of one embodiment of our invention, the numeral 10 designates the body of the drinking fountain having an opening 11 in its service fitting or other inlet connection, said opening entering but a short distance into the nozzle. Into the upper end of the body there extends for a sufficient distance a recess 12. Passageways 13 and 14 are bored into the body 10 from the opening 11, the passage 13 extending but a short distance into said body, while the passage 14 passes through the same and communicates with the bottom of the recess 12. A passage 15 is made in the center of the

body 10 downwardly from the recess 12 nearly to the threaded opening 11, and connects at its lower end by a port 16 with the passage 13. The upper end of the opening 15 is threaded to receive the threaded stem 17, of a plug 18, which plug nearly fills the recess 12. The underside of said plug 18 may be flat, as in Fig. 3, or recessed around the stem 17, as at 19, Fig. 6, leaving a skirt 20 at the periphery of the plug reaching nearly to the bottom of the recess 12. The upper end of the plug 18 is flanged, as shown, to enter a counter-bore at the upper end of the recess 12 when said plug is in place. In the upper end of the plug 18 is a screw threaded socket to receive a similarly screw-threaded end of a nipple 21, having a hemispherical cavity 21^a formed in its underside and a central vertical opening 22 extending from said cavity to the upper end of the nipple to provide an outlet for the drinking stream. Through the center of the plug 18 and its stem 17 is a passageway 23 to convey water for the drinking stream into the hemispherical cavity formed in the nipple, from whence it passes to the outlet or vertical opening. Within the hemispherical cavity 21^a and held therein by the nipple 21 is a baffling member 24 to retard the flow of water to the outlet 22 in the nipple.

Water entering through the opening 11 passes up the passageways 13 and 14. That which enters the passage 13 flows by way of port 16 into the central opening 15 in the body 10, and thence up through the passageway 23 into the cavity 21^a, being retarded on its way to said cavity by the baffling member 24 which somewhat retards its flow. From the cavity 21^a the water flows through the vertical opening 22 to a suitable height to form the drinking stream.

Projecting outwardly and upwardly on opposite sides of the body 10 of the nozzle are two hollow arms 25 which are connected at their upper ends to a flat horizontal ring 26 and open therethrough, said ring being concentric to the drinking stream outlet 22.

Supported on the flat ring 26 in any suitable and convenient manner is a hollow annular member 27^a open at the bottom to receive said ring and projecting upwardly therefrom, as shown, to form a chamber 27. The member 27^a is made preferably with thin inner and outer walls 28 and 29 inclined toward each other and joined at the top of said member which is narrower than the bottom, and has formed through said top a number of small outlet holes 31 leading from the chamber 27 for the escape of water to provide protecting streams around the drinking stream. The chamber 27 is made larger at its bottom than at its top to permit the water which enters freely and somewhat turbulently therein to become steady as it

rises to the top of the chamber, so that the outflowing protecting stream will, in turn, also be steady.

The holes 31 incline toward the drinking stream and are disposed at such angles that water passing through said holes will not converge at any point, but will pass the sides of the drinking stream at a tangent thereto, and at different heights if so desired, but always below the top or head of the drinking stream. By this arrangement of the holes 31 a protecting wall of small streams surround the drinking stream above the nozzle and are directed toward, but not into, the drinking stream. They thus protect the nozzle from being touched by a drinker's lips without deliberate intention on his part, and a disregard of the protecting wall.

That portion of the water which travels up the passageway 14 into the recess 12, first strikes against the bottom of the plug 18, or enters the recess 19 in the plug, should there be one, and is retarded and deflected around the plug or the bottom of the skirt 20 and up the narrow space between the plug 18 and the body 10, into the hollow arms 25, thence out through said arms and the ring 26 into the annular chamber 27, from whence it passes out through the openings 31 to form the protecting curtain or wall.

Water entering the chamber 27 from the hollow arms 25 is impeded and has its force reduced by an annular baffle plate 32 within the chamber and close to the flat ring 26. The baffling plate 32 is preferably in the form of an inverted substantially semi-circular trough, the outer side 33 of which lies against the outer wall of the member 27^a in position to distribute the water entering through the arms 25 around the baffle plate, and below its inner edge 34, which latter is spaced a short distance from the inner wall of the member 27^a and slightly above the ring 26, through which space water flows into the chamber, and rising quickly therein makes its exit, through the holes 31 which are angularly disposed, so that the protecting streams issuing therefrom will be tangent to the drinking stream. As a further protection for the nozzle, the nipple thereof through which the drinking stream issues, terminates below the plane of the surrounding protecting stream openings, thus placing said nipple in a position where it is impossible to be touched by the drinker's lips, which can be done when on a plane with, or above, the ring and its small openings 31.

The nipple is provided with means for preventing boys and other mischievously inclined persons from placing a thumb or finger partly over the drinking stream outlet for the purpose of deflecting said stream out of its course onto their companions and over the floor at a distance from the fountain. The means herewith designed for pre-

venting the deflection of the drinking stream comprises a cylindrical extension 50 of suitable height on the upper end of the nipple 21 and surrounding the outlet 22. The extension is open at its top and preferably is of greater internal diameter than the outlet 22 to permit the drinking stream passing freely therethrough. Through the circular wall of the extension 50 is formed a number of relatively large openings 51 of such size that should the top of the extension be closed by the finger, hand or other means, the water from the nozzle will flow with little force laterally through the openings 51 and into a waste receptacle below.

In place of a flat ring 26 a hollow ring 26^a (see Figs. 5 and 6) circular in cross section, may be employed through which a number of holes 27^a are bored tangential to the drinking stream. The ring 26^a may be supported on the ends of a plurality of outwardly inclined arms 38, two of which arms 25^a on opposite sides of the ring are hollow and conduct water thereto from the recess 12 in the body 10.

If desired the ring may be semicircular or other portion of a circle, as in 26^b of Fig. 7, to fit the fountain near a wall or in a corner.

The fountain may be further modified by omitting the ring and making a perforation 27^a in the closed extremity of a number of radial arms 25^b, see Fig. 8.

In every case the angular position of the holes or perforations is such that the stream issuing from each hole will be tangent to the drinking stream and rise to its highest point in close proximity thereto.

We do not, of course, wish to be understood as limiting ourselves to the precise construction of body and its associated internal parts as herein shown and described, as those illustrated are merely by way of example.

The gist of this invention resides in placing the drinking stream outlet below the outlets for the small protecting streams and directing said protecting streams tangentially toward said drinking stream at such angles that the protecting streams cannot converge, and they cannot, therefore, of themselves, form a solid drinking stream, such stream issuing solely from the central nozzle opening 22, although this stream may be augmented somewhat at the points where the protecting streams meet the drinking stream should they be projected into contact therewith by reason of their tangential arrangement and projection. When the protecting streams actually cut the outer edge or surface of the central drinking stream, it has been found that they form a sort of vortex around the same which aids materially in steadying the drinking stream, and this is considered to be of great advantage, as it is

well known that one of the objections found to exist in the present bubbling drinking fountains is the unsteadiness of the drinking stream, and anything that will render the stream steady is of great advantage.

Having fully described our invention what we claim is:—

1. A drinking fountain having an outlet for a vertical drinking stream and a series of outlets concentric with the drinking stream outlet for the emission of a number of small protecting streams directed toward the drinking stream at a tangent thereto.

2. A drinking fountain having an outlet for a vertical drinking stream and a series of inwardly inclined outlets concentric with the drinking outlet and in a higher plane than said outlet for the emission of a number of small streams which are projected at a tangent to the drinking stream and below the top of the same.

3. A drinking fountain comprising a nozzle having a vertical outlet for a drinking stream, and a chambered member concentric with said outlet having a series of inwardly inclined holes therethrough above and concentric with said outlet for the emission of a number of small protecting streams directed tangentially toward the drinking stream and below the top of the same.

4. A drinking fountain comprising a nozzle having a vertical outlet for a drinking stream, an annular chambered member surrounding said outlet and concentric therewith, a pair of hollow arms projecting outwardly and upwardly from said nozzle and opening into said annular member through the top of which latter are formed a number of small angularly disposed holes for the flow of the protecting streams tangentially toward the drinking stream and below the top of the same, and an inlet for said nozzle divided into two passageways, one supplying the drinking stream and the other the protecting streams.

5. A drinking fountain comprising a nozzle having a vertical outlet for a drinking stream and a recess therein separate from the drinking stream outlet, an annular chambered member surrounding said outlet and having a series of angularly disposed holes through the top thereof on a higher plane than the drinking stream outlet, a pair of hollow arms connecting said recess within the nozzle to the annular chambered member through the small openings in which the protecting streams are projected tangentially toward the drinking stream, and an inlet for the water divided into two passageways, one leading to the drinking stream and the other to the interior recess.

6. A drinking fountain comprising a nozzle having a vertical outlet for a drinking stream and a recess within the nozzle, an inlet to the nozzle divided into two passage-

ways, one leading to the drinking stream outlet and the other to said recess, oppositely arranged hollow arms projecting upwardly and outwardly from said nozzle and opening into the recess within the same, and an annular chambered member concentric with the drinking stream outlet supported by said arms, and in communication therewith, said member having a series of inwardly inclined holes therein concentric with said outlet for the emission of a number of small protecting streams projecting tangentially toward said drinking stream and below its top, and a baffling member within the chamber of said annular member.

7. A drinking fountain comprising a nozzle having a vertical outlet for a drinking stream and an interior recess separate from said outlet, an inlet connected by separate passage ways to the drinking stream outlet and to said recess, upwardly and outwardly spreading hollow arms on said nozzle opening into said recess, an annular chambered member carried by and communicating with said hollow arms and having a series of small holes through its top concentric to said drinking stream outlet for the emission of small protecting streams projecting tangentially toward the drinking stream and below its top, and a baffle member within said annular chambered member in close contact with one wall thereof and spaced from the opposite wall for the passage of water therethrough.

8. A drinking fountain comprising a nozzle having a vertical outlet for a drinking stream and a recess within the nozzle separate from said outlet, an inlet through which water enters the drinking stream outlet and the interior recess, two oppositely disposed hollow arms extending upwardly and outwardly from the nozzle and opening into the recess within the nozzle, a flat ring supported on the upper ends of said arms, and having openings, there-through coincident with the hollow arms,

an annular chambered member mounted on said flat ring, the walls of which member converge upwardly and inclose a chamber therein, said member having a plurality of inwardly inclined holes, and a baffling member within said annular chambered member.

9. A drinking fountain having an outlet for a vertical drinking stream and a series of outlets concentric with the drinking stream outlet for the emission of a number of small protecting streams directed toward the drinking stream at a tangent thereto and coalescing therewith, said protecting streams being so positioned as to wet a person should he attempt to touch the drinking stream outlet with his lips.

10. A drinking fountain having an outlet for a vertical drinking stream and a series of outlets concentric with the drinking stream outlet for the emission of a number of small protecting streams directed toward and discharging into the said drinking stream so as to coalesce therewith and be picked up thereby, said protecting streams being so positioned as to wet a person should he attempt to touch the drinking stream outlet with his lips.

11. A drinking fountain having an outlet for a vertical drinking stream and a series of outlets concentric with the drinking stream outlet for the emission of a number of small protecting streams directed toward and discharging into the said drinking stream at a point below the top thereof, said protecting streams being so positioned as to flow into the face of a person should he attempt to touch the drinking stream outlet with his lips.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

PHILIP MUELLER.
ANTON C. SCHUERMAN.

Witnesses:

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CATHERINE E. McKEOWN.