

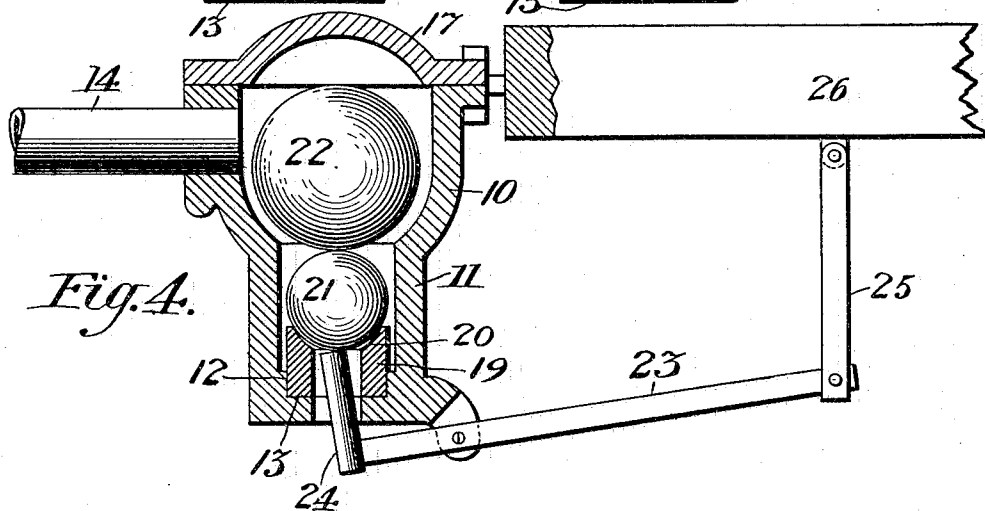
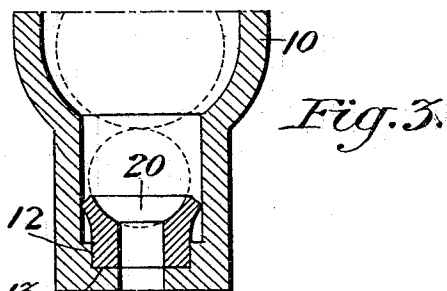
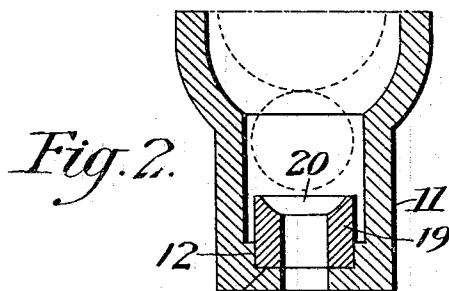
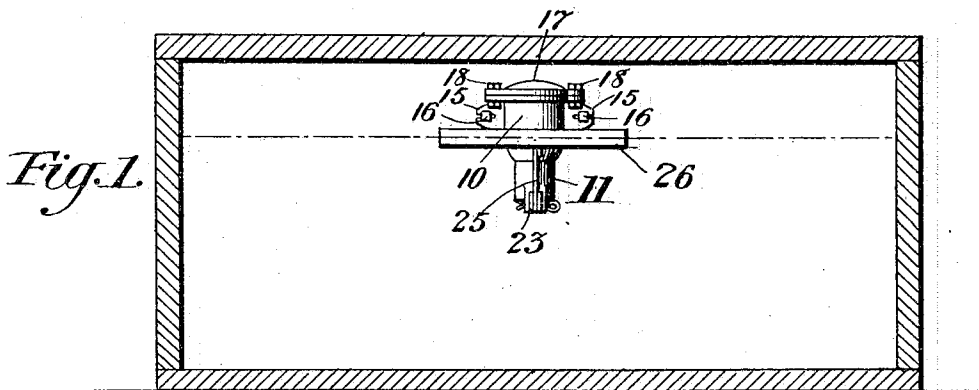
No. 766,416.

PATENTED AUG. 2, 1904.

B. F. BOOTH.
HOG WATERER.

APPLICATION FILED FEB. 25, 1904.

NO MODEL.



Witnesses:
W. E. Wells,
J. W. Winters

Inventor:
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UNITED STATES PATENT OFFICE.

BENJAMIN F. BOOTH, OF INDIANOLA, IOWA.

HOG-WATERER.

SPECIFICATION forming part of Letters Patent No. 766,416, dated August 2, 1904.

Application filed February 25, 1904. Serial No. 195,308. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. BOOTH, a citizen of the United States of America, and a resident of Indianola, Warren county, Iowa, have invented a new and useful Hog-Waterer, of which the following is a specification.

The primary object of this invention is to provide a flexible yielding expansible valve-seat for ball-valves.

A further object is to provide an improved valve construction for float-controlled valves specially adapted to stock-fountains or hog-waterers.

My invention consists in the construction, arrangement, and combination of elements hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawings, in which—

Figure 1 is a cross-section of a trough or receptacle, showing my complete fountain mechanism mounted therein. Fig. 2 is a vertical section of part of the device, showing the form of the valve-seat without compression. Fig. 3 is vertical section of part of the device, showing the form of the valve-seat with or under compression. Fig. 4 is an elevation of the device, partly in section.

In the construction and mounting of the device as shown the numeral 10 designates a valve-chamber, which is formed with a reduced lower end portion or neck 11. The neck 11 is formed with annular shoulders 12 13 on its inner face and one above the other. The valve-chamber 10 has an inlet-aperture at one side, and a supply-pipe 14 is mounted therein and leads from a tank or other source of water-supply. The valve-chamber may be mounted in any suitable manner, such as by ears 15 15, secured by bolts 16 16 to the wall of the trough 10^a, and the supply-pipe 14 may enter the trough and valve-chamber from the rear. A cap-plate 17 may be mounted on and close the valve-chamber and be secured by bolts 18 18. A valve-seat 19, preferably of yielding, compressible, elastic, and resilient material, such as india-rubber, and of cylindrical form, is mounted within the neck portion 11 of the valve-chamber and rests on the shoulder 13. The valve-seat 19 is formed

with a central bore and a concaved annular seat or contact-surface 20 at the upper end of and surrounding said bore, and the member 19 is of slightly less external diameter than the interior diameter of the neck above the shoulder 12, thus providing an annular space surrounding the upper portion of the valve-seat. The arc of curvature of the cross-section of the seat or surface 20 is less than that of a ball 21, resting thereon. The ball 21 ordinarily would rest on the upper edge of the seat-surface 20; but I have provided a weight 22, resting on the ball 21, which weight forces the ball within the seat 20 and in so doing expands the upper end of the member 19 toward the inner surface of the neck 11, as shown in Fig. 3, whereby the ball contacts throughout the entire surface 20 and forms a tight joint to prevent leaking through the bore of the valve-seat.

A lever 23 is fulcrumed on the neck 11, and an arm 24 on one end of said lever enters the bore of the valve-seat 19 and contacts with the ball 21. A rod 25 on the opposite end of the lever 23 is attached to a board float 26, and the weight of the float and its connections are such as to raise the ball 21 and weight 22 into the positions shown by dotted lines in Fig. 2, when the water-level falls materially in the trough and permits water to enter said trough. When the water-level rises and lifts the float, the ball 21 is forced down by the weight 22 and cuts off the flow of water through the valve-seat 19.

I claim as my invention—

1. A valve-seat of yielding, elastic, resilient material, and formed with an annular seat upon its upper end, which annular seat is concaved in cross-section, in combination with a ball having an arc of curvature greater than the arc of curvature of the concaved cross-section of the valve-seat and arranged to enter and expand said seat.

2. The combination of a ball, and a valve-seat of resilient material, which valve-seat is formed with an annular contact-surface concaved in cross-section on its upper end, the cross-section arc of curvature of the contact-surface being less than that of the ball, a

space existing around the upper end of said seat whereby it may be expanded under pressure of the ball.

3. The combination of a ball, and a valve-seat of resilient material, which valve-seat is formed with an annular contact-surface, concaved in cross-section, on its upper end, the cross-section arc of curvature of the contact-surface being less than that of the ball.

4. A valve-chamber, a neck thereon and formed with two interior shoulders, a flexible valve-seat resting on one of said shoulders and projecting above the other shoulder, said

valve-seat formed with an annular contact-surface, concaved in cross-section, on its upper end portion, a ball adapted to enter said concaved annular contact-surface and expand the upper end portion of the flexible valve-seat, and float-actuated means for lifting said ball.

Signed by me at Indianola, Iowa, this 9th day of February, 1904.

BENJAMIN F. BOOTH.

Witnesses:

JAMES F. SAMSON,
FRED. O. DERROUGH.