

(No Model.)

G. B. MOORE.
BALL FLOAT.

No. 588,461.

Patented Aug. 17, 1897.

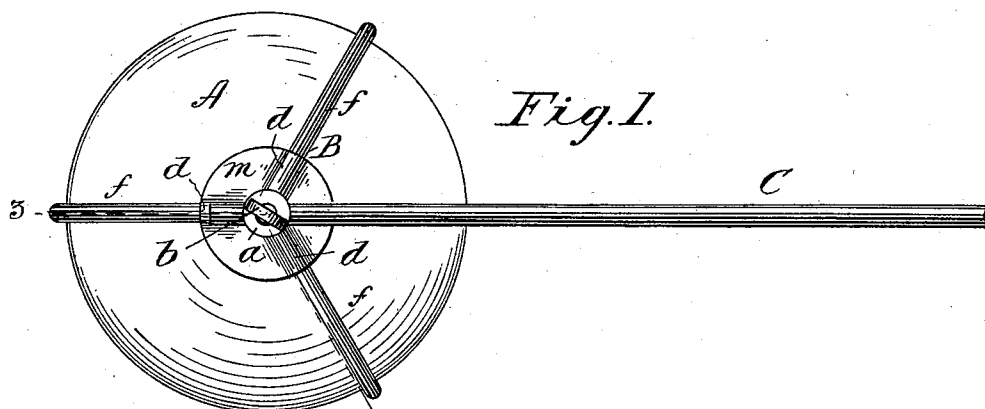


Fig. 1.

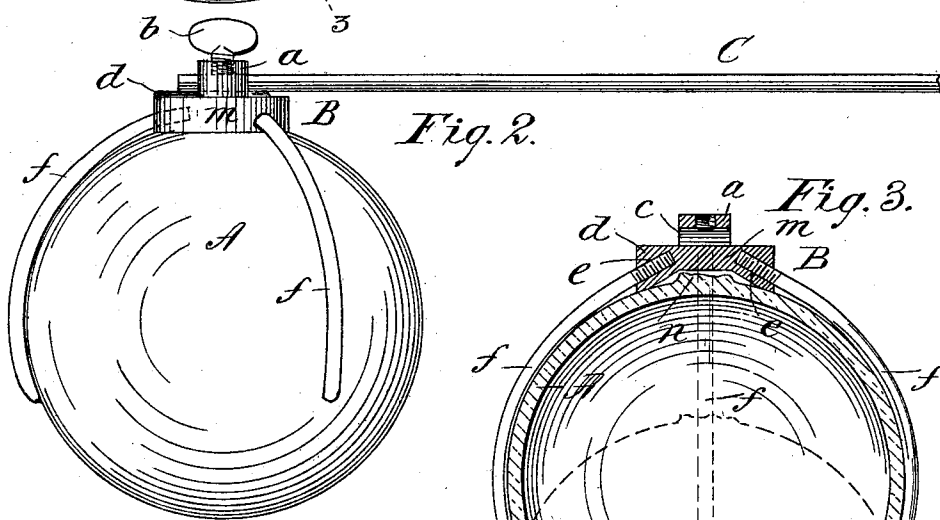


Fig. 2.

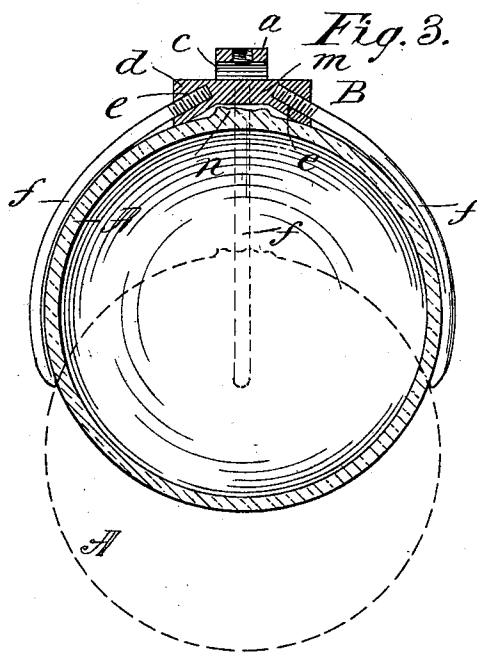
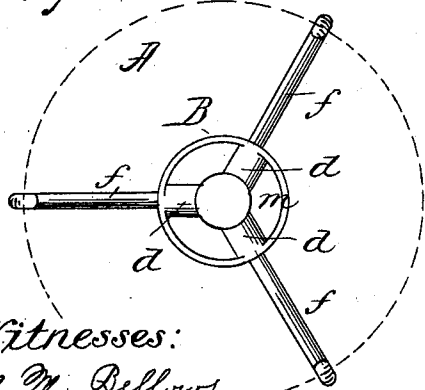


Fig. 3.

Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE B. MOORE, OF SPRINGFIELD, MASSACHUSETTS.

BALL-FLOAT.

SPECIFICATION forming part of Letters Patent No. 588,461, dated August 17, 1897.

Application filed September 29, 1896. Serial No. 607,353. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. MOORE, a citizen of the United States of America, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Ball-Floats, of which the following is a specification.

It has become generally understood among sanitary engineers and plumbers that the employment of glass ball-floats is preferable to metallic ball-floats because of the avoidance of corrosion and leakage; but to devise a practical and satisfactory mode of attachment of the glass ball to the lever arm or holder, through means of which lever the ball operates the ball cock or valve, has been a problem which heretofore has not been altogether satisfactorily solved.

The object of this invention is to provide, in combination with the glass ball-float and the lever-arm by which it is carried, an improved means of attachment which is most simple, cheap, efficient, and satisfactory, and one by which the ball may be readily and instantaneously engaged and disengaged at pleasure; and the invention consists in the combination, with the hollow glass ball-float, of the carrier arm or lever therefor, which is provided with a series of radially-arranged and partially-encircling arms, the outer ends of which are unsecured and disconnected and which have a deflection outwardly against a spring reaction to admit the ball being forced or sprung within the grasp thereof and which securely holds the ball, nevertheless permitting on an intelligently-applied force the withdrawal of the ball therefrom, no screws or other special fastening devices being required, and all substantially as will herein-after fully appear and be set forth in the claims.

Reference is to be had to the accompanying drawings, in which the invention is fully and clearly illustrated, and in which—

Figure 1 is a plan view of the ball, its lever-arm, and the improved ball-holder. Fig. 2 is a side elevation of the same. Fig. 3 is a sectional view through the ball and holder as taken on the dotted section-line 3 3, Fig. 1, indicating also by dotted lines an assumed position of the ball as in readiness to be forced

into its spring-confined engagement within the members of the holder. Fig. 4 is a plan view of the holder inverted.

In the drawings, A represents the hollow ball-float, which is of glass; B, the holder therefor, and C is the lever-arm, through means of which, as well known, the ball operates the ball cock or valve. (Not shown.)

The holder B comprises a casting *m*, of brass or other metal not disadvantageously affected by water, which is in the form of an inverted cup, having an upwardly-projecting central hub *a*, transversely drilled, as seen at *c*, for the reception of the extremity of the lever there-through, which lever is confined by the thumb-screw *b*, and having also at intervals of thirds, near its edges, the bosses or thickened portions *d d d*, which are drilled and tapped radially and with a downward and outward inclination, forming the sockets *e*. The said holder, in addition, comprises the three outwardly and downwardly extending and curved arms *f f f*, the upper extremities thereof being straight and screw-threaded, whereby they are screwed into the tapped sockets *e* therefor in the holder. These arms are advantageously made of heavy brass wire, and are all made on a former uniformly as to their curvature, and when they are secured by their upper ends in the casting *m* they are of such extent and arrangement as to normally comprise within their grasp somewhat more than the hemisphere corresponding to half the ball-float to be held, and the inner surfaces of their lower extremities normally, in the absence of the ball, are disposed in an imaginary circle of somewhat less diameter than that of the ball, all so that in order to place the ball within the grasp of the holder it is necessary to crowd the ball upwardly relative to the arms, spreading the latter until the middle of the ball is somewhat above the ends of the arms *f*. The concavity of the cup-shaped casting *m* allows for the convexity of the ball at its portion which is adjacent the casting, and the more or less irregular place *n*, Fig. 3, where the glass "spud" at the top of the ball is broken off, lies within, is engaged, and is also concealed by the cupped casting, increased steadiness in the support of the ball being thus assured, as well as a neat and finished appearance to the appliance.

While brass as the metal and three in number of the arms are referred to and shown in the make-up of the ball-float holder as preferable, such material and number of arms need not necessarily be adhered to.

In addition to the economy in construction and utility of the improved ball float and holder great convenience arises in the packing for transportation, as the balls and the metallic parts may be packed separately, and the liability of the balls becoming broken away from the metallic connections with the lever-arm, as heretofore experienced where the balls have been united by the employment of cement or putty to metallic connection pieces between them and the lever, is avoided.

I claim—

1. The combination with a ball-float, of the lever provided with a series of rods or arms of spring metal projecting from the lever in different radial directions, and downwardly curved, and extended to embrace and confine, with a constrictive pressure, somewhat more than half of the ball, the outer depending ends of said spring-rods being free and disconnected, substantially as described.

2. The combination with the ball, of the holder therefor comprising a casting with the radially-arranged screw-tapped sockets, and the spring-arms having threaded end portions

screwing into said socket, and having outwardly and downwardly curved extensions from their places of screw connection whereby they encircle somewhat more than half the bulk of the ball, the outer extremities of the arms being free and disconnected and arranged in a circle of less diameter than the ball, substantially as described.

3. The combination with the ball of the holder therefor consisting of an inverted cup-shaped casting having the upwardly-extended transversely-apertured hub and having the edgewise-arranged bosses which are provided with the screw-sockets opening downwardly and outwardly and the spring-arms having their upper extremities threaded and screwing into said sockets, said arms being downwardly and outwardly curved to engage and embrace more than half the bulk of the ball, and the lever-arm passed through said apertured end of the holder and a screw for confining it, substantially as described and shown.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 7th day of May, 1896.

GEORGE B. MOORE.

Witnesses:

WM. S. BELLOWES,
F. O. CHAPMAN.