

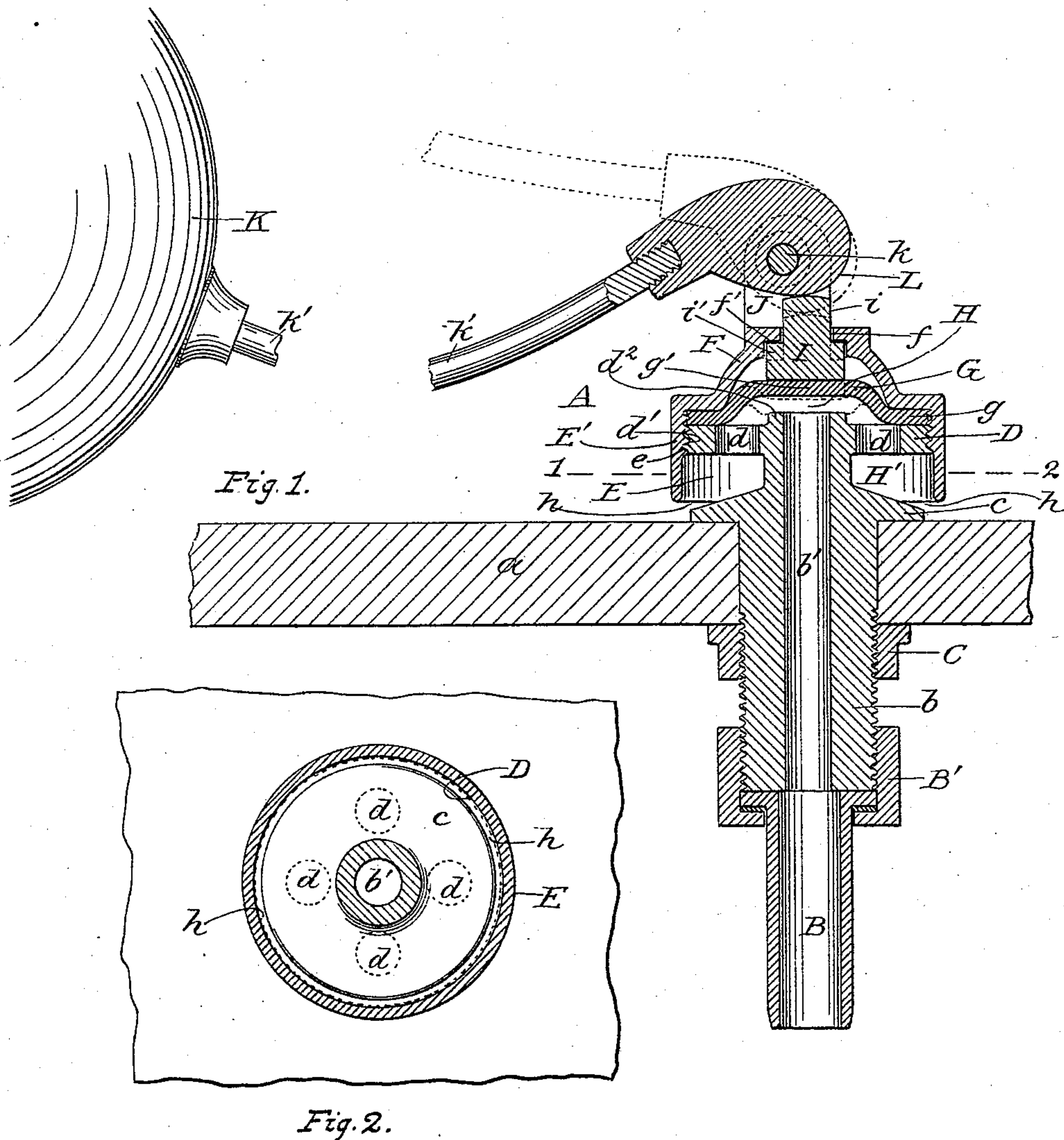
(No Model.)

T. J. SULLIVAN.

BALL COCK FOR SUPPLY PIPES OF FLUSHING TANKS.

No. 538,802.

Patented May 7, 1895.



Timothy J. Sullivan

Inventor

Witnesses.

es. Charles Secrest
T. Secrest Jr

W

Alex. Selkirk.
Attorney.

UNITED STATES PATENT OFFICE.

TIMOTHY J. SULLIVAN, OF ALBANY, NEW YORK.

BALL-COCK FOR SUPPLY-PIPES OF FLUSHING-TANKS.

SPECIFICATION forming part of Letters Patent No. 538,802, dated May 7, 1895.

Application filed August 1, 1894. Serial No. 519,167. (No model.)

To all whom it may concern:

Be it known that I, TIMOTHY J. SULLIVAN, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Ball-Cocks of Supply-Pipes of Flushing-Tanks, of which the following is a specification.

My invention relates to ball-cocks of supply-pipes, and consists of the combination of parts and elements hereinafter described and specifically set forth in the claims.

The objects of my invention are to produce a cock, operated by a ball, which will be stronger in its union of parts, than heretofore, and be calculated to delivered water into the flushing tanks without making any noise. I attain these objects by the means illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a sectional elevation of the ball-cock of a tank supply-pipe and tank bottom and illustrates the improvement in my invention, and Fig. 2 is a horizontal section taken at line 1 2 and illustrating the same.

The same letters of reference refer to similar parts in both the views.

In the drawings A is a the chamber of a flushing tank and α is the bottom of said tank.

B is the supply pipe which is shown to be connected with the screw threaded stem b of the cock by means of the screw threaded connecting nut B' . The upper end of the said screw threaded stem b is provided with a laterally extended flange c operating as a clamping flange to the upper side of the bottom α of the tank, and C is a screw threaded clamping nut screwing on said stem b and tightly clamping against the lower side of said bottom α , all substantially as generally practiced by the trade.

Made integral with the stem b and the clamping flange c is the perforated discharge disk D, shown by full lines in Fig. 1, and indicated by dotted lines in Fig. 2. This disk D is arranged at a short distance above the upper side of the said clamping flange c and is of diameter, preferably, a little greater than that of the said clamping flange c below, and is provided with one or more perforations d serving as discharge openings from a cham-

ber above to an outlet below. In Fig. 2, four of these discharge openings d are indicated by dotted lines at $d d d d$. This discharge disk is provided with screw-threads d' made with its circumferential edge.

E is a hood having its inside diameter a little greater, say about one eighth of an inch, more or less, than that of the outside diameter of the clamping flange c and having its lower end extended downwardly to within a short distance of the top surface of the bottom α of the tank, as say, to a distance of an eighth of an inch or more or less, according to the volume of the discharge.

E' is a screw threaded nut made integral with the hood E, and a little above the same, and its screw threads e are made to correspond with the screw threads d' of the discharge disk D, so as to nicely fit and screw on the latter for holding the said hood securely in place.

F is a closing cap, provided with the central perforation f , and integral with said hood E, and the screw threaded nut E' by which latter the said cap is held in place.

G is a flexible or elastic diaphragm arranged between the said cap F and the discharge disk D, with its circumferential margin portion g securely clamped between the same. This flexible diaphragm is preferably made of rubber and its middle portion g' is substantially of concavo-convex form and has its concave side below and relatively over the discharge end of the bore b' of the screw threaded stem b and middle portion d^2 of the discharge disk D, which is shown to be integral with said stem on the clamping flange c integral with the latter. This flexible diaphragm is capable of being depressed in its middle portion from the position shown by full lines in Fig. 1 to that indicated by dotted lines in the same figure, so as to close tightly on the middle portion d^2 of the disk D, and thereby close the discharge end of the bore b' , through which water has passage from the supply pipe B to the chamber H, between the concave side of diaphragm G, and the discharge disk D.

I is a vertically moving piece for depressing the middle portion of the diaphragm G for closing the upper end of the bore b' . This piece I is provided with the upwardly projected central stem i which nicely fits the cen-

tral perforation *f* of cap *F*. The lower end of said piece *I* seats on the upper side of the diaphragm *G* and may be secured to the same if preferred, and said piece may be held from
 5 turning by means of one or more feathers *i'* holding with corresponding recesses *f'* provided in the lower side of the end wall of the cap *F* as indicated by full and dotted lines in Fig. 1.

10 One or more ears *J*, are projected upwardly from the top portion of cap *F* for holding the pivot *k* of the arm of the ball float *K*. The said ears are relatively a little at one side of the center of the cap *F*, so that the pivot *k*
 15 may be out past the axis of the vertically moving piece *I*, to a short distance, that the cam *L*, connected with the arm *k'* of the said ball float, may have bearing on the upper end of the stem *i* of the piece *I*, when it is operated.

20 All the above described parts, excepting the downwardly extended hood *E* and the screw nut *E'* integral with both said hood and cap *F*, are old devices and therefore are not claimed by me as my inventions. By means
 25 of the said hood *E*, the water, entering the chamber *H* from the supply pipe, is discharged through the perforations *d* into a lower chamber *H'*, and from thence has passage in a noiseless manner through the annular passage way
 30 *h* formed between the lower end of said hood and the upper surface of the bottom *a* of the tank, while the screw threaded nut *E'*, integral with said cap and hood, holds the said hood securely attached to the perforated dis-
 35 charge disk *D* and at the same given distance from the bottom *a* of the tank, while at the same time the said nut serves as a means for forcing the said discharge disk *D*, and the outer margin portion of the cap *F*, to tightly

clasp the circumferential margin of the flexi- 40 ble diaphragm, and thereby prevent the latter from moving.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the central stem, of a ball cock, provided with bore *b*, a discharge disk provided with one or more discharge perforations, a closing cap, and the mechanism described for depressing the said
 50 diaphragm, a flexible diaphragm clamped between said diaphragm and said cap, and capable of being depressed for closing the discharge end of the said bore *b*, of the hood *E* projected downwardly all around, to near the
 55 top surface of the bottom of the tank as described, and the screw threaded nut *E'* integral with both the said hood and the said closing cap, substantially as and for the purposes set forth. 60

2. The combination with the discharge disk *D*, provided with one or more perforations *d* and with the screw threads *d'*, and made integral with stem *b* provided with a central bore, the closing cap *F*, and the flexible dia- 65 phragm between said cap and said discharge disk and capable of being depressed for closing the said bore of said stem, of the nut *E'* integral with cap *F*, and provided with screw threads *e* and the downwardly projecting hood 70 *E*, and the mechanism described for depressing the said diaphragm, substantially as and for the purposes set forth.

TIMOTHY J. SULLIVAN.

Witnesses:

ALEX. SELKIRK,
 A. LAWYER.