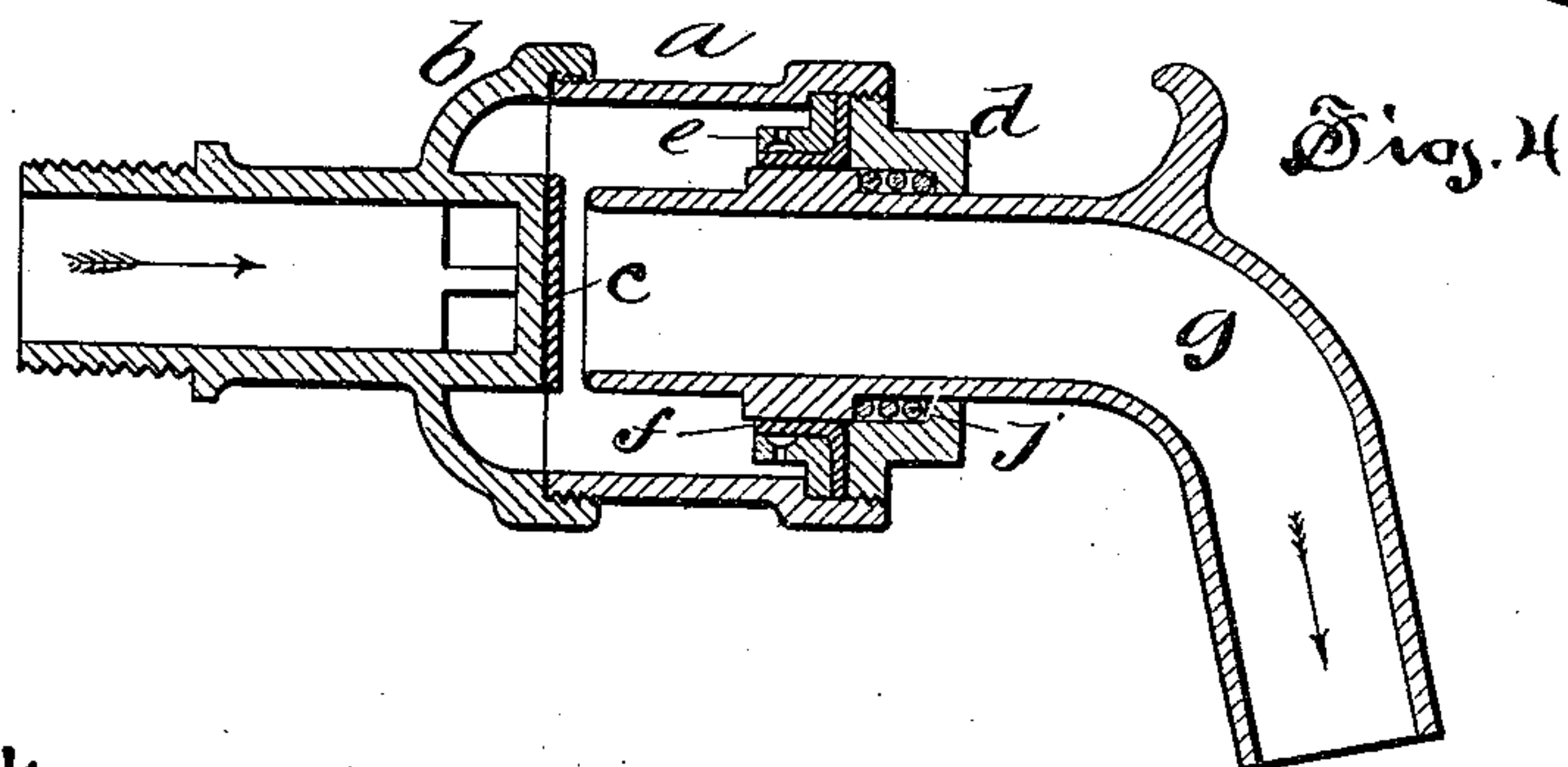
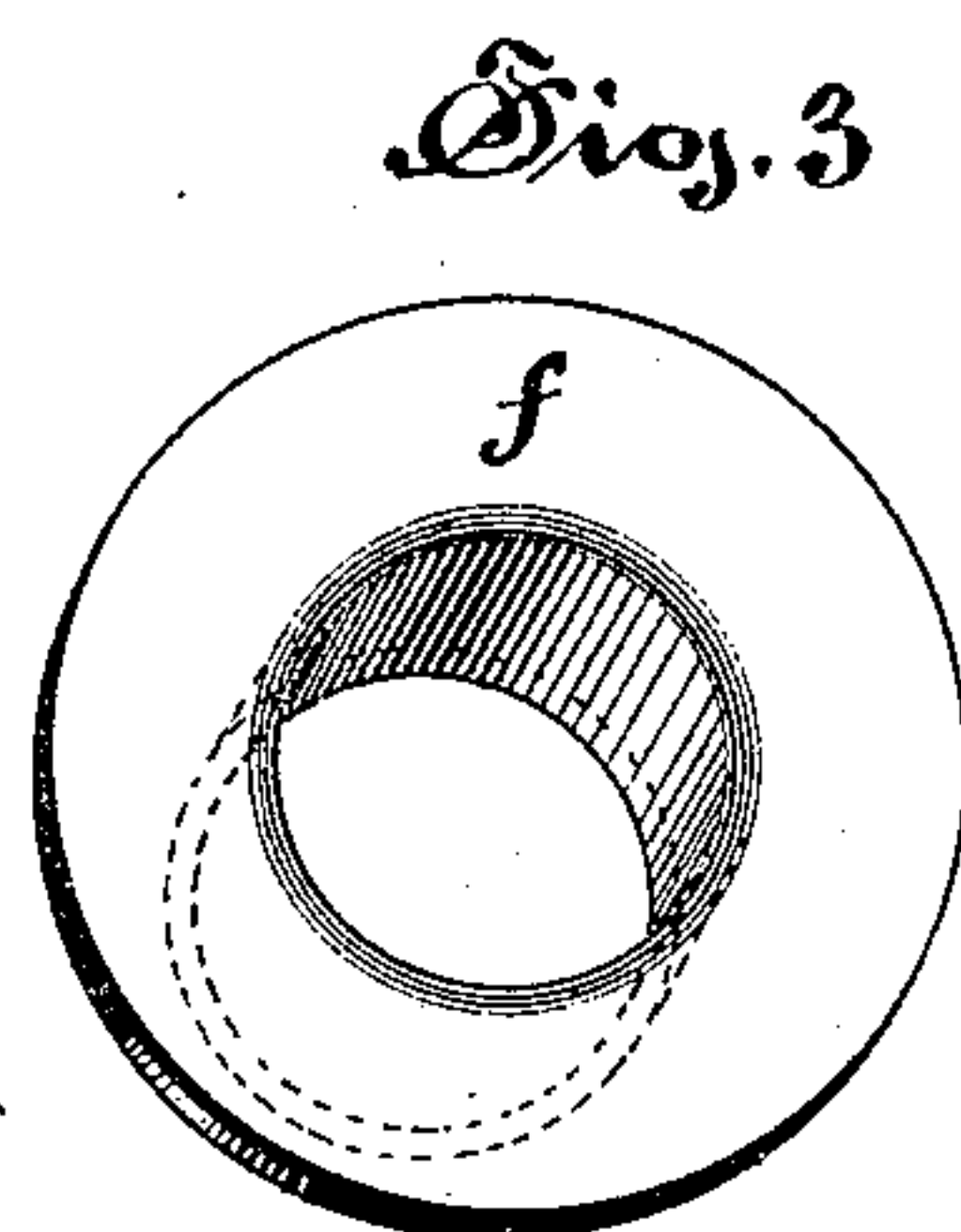
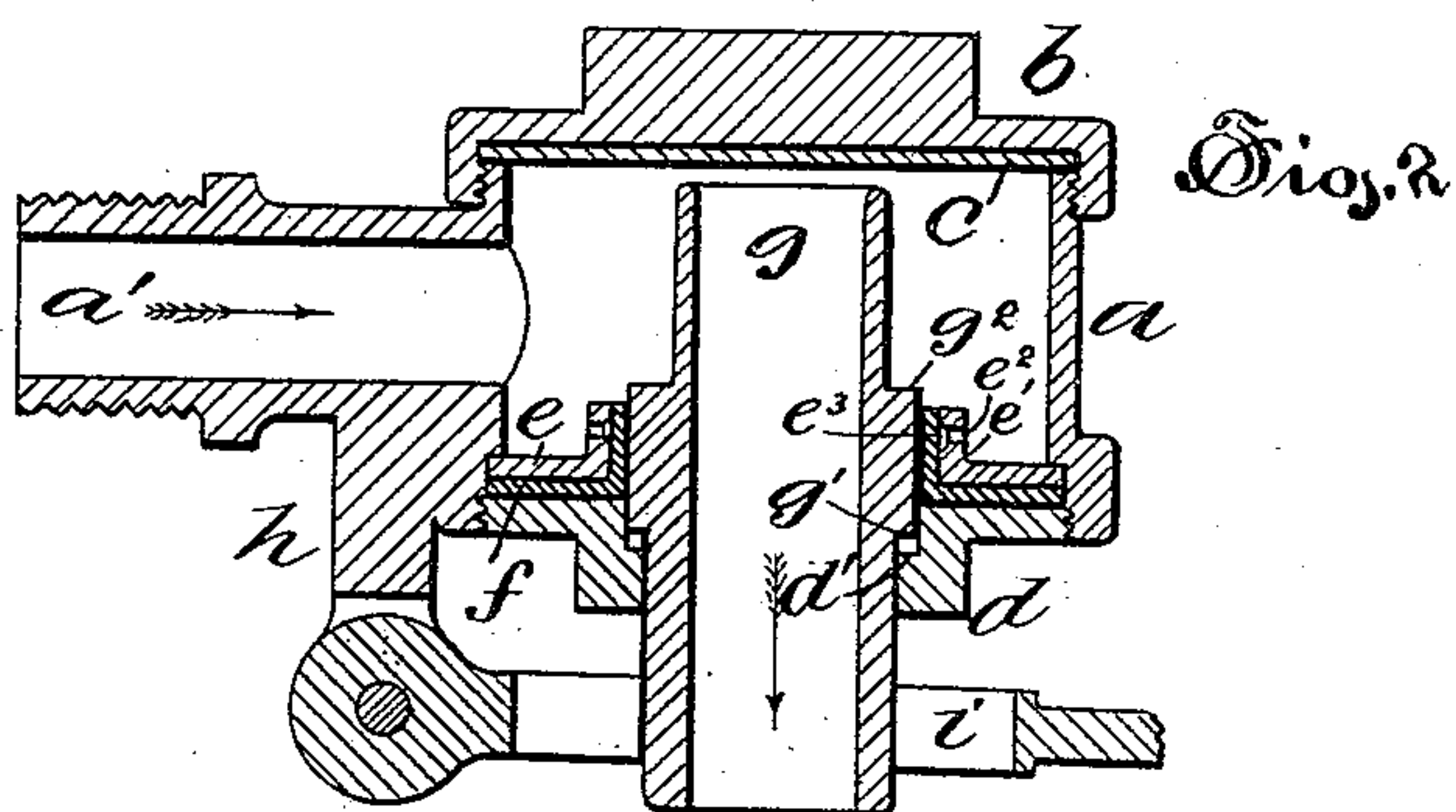
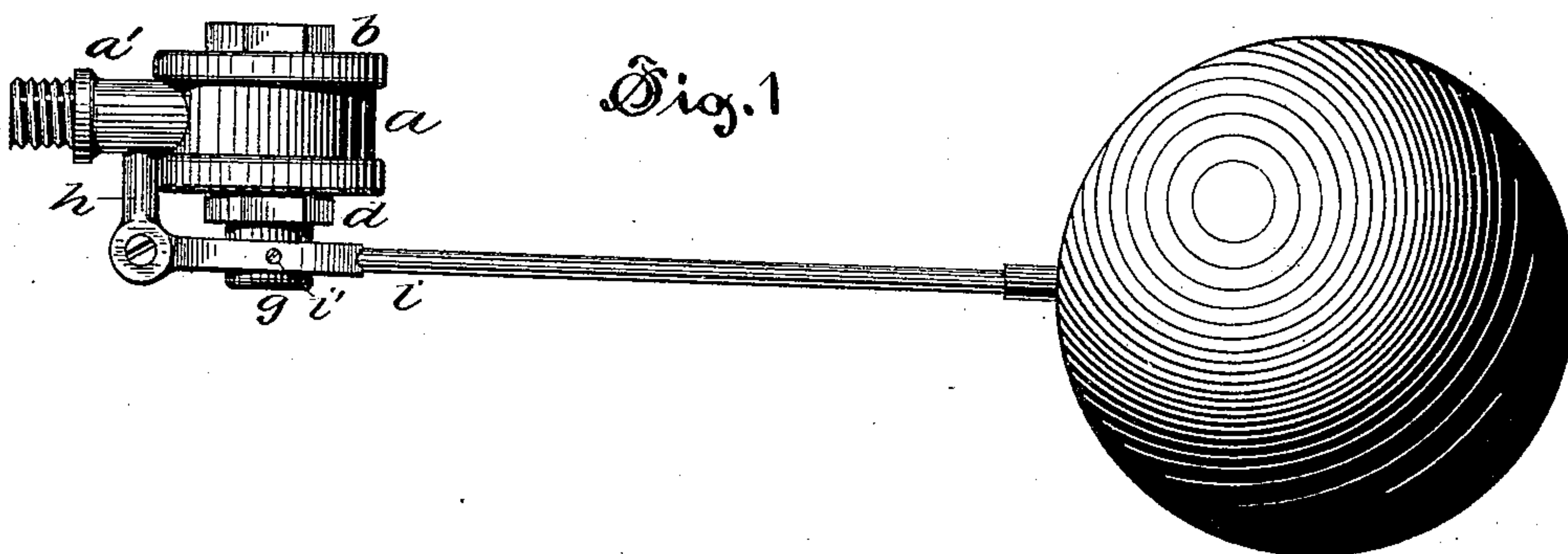


(No Model.)

C. BIRKERY.
VALVE.

No. 428,199.

Patented May 20, 1890.



Witnesses:

J. S. Gels

H. E. Bacharach.

Inventor,

Cornelius Birkery, by
Henry R. Williams
Atty.

UNITED STATES PATENT OFFICE.

CORNELIUS BIRKERY, OF HARTFORD, CONNECTICUT.

VALVE.

SPECIFICATION forming part of Letters Patent No. 428,199, dated May 20, 1890.

Application filed June 20, 1889. Serial No. 315,002. (No model.)

To all whom it may concern:

Be it known that I, CORNELIUS BIRKERY, of Hartford, Connecticut, have invented certain new and useful Improvements in Valves, of which the following is a specification.

My invention relates more particularly to the class of valves used in connection with a float which automatically opens or closes the valve according to the level of the liquid in a tank or reservoir; but it is also applicable to other classes of valves and cocks.

The object of the improvement is to provide a simple, cheap, and effective valve, which is so constructed that when opened and in use it makes no noise and that will close without water-hammering; and to this end the invention consists in a shell supporting a valve-seat and a peculiarly-constructed tube or bib, which forms the discharge-outlet, adapted to move to and from the seat to close and open the valve, and peculiar packings for keeping the same tight, as more particularly hereinafter described, and pointed out in the claim.

Referring to the accompanying drawings, Figure 1 is a side view of a valve embodying my invention. Fig. 2 is a view on enlarged scale in central vertical section of the valve. Fig. 3 is a detail perspective view of the thimble-packing used to pack the movable bib. Fig. 4 is a view in central section illustrating the invention as embodied in a cock.

In the drawings, the letter *a* denotes the shell, which is preferably cylindrical, with an integral stem *a'* projecting from one side adapted to be connected to a pipe cast of the usual material of which valves are made. One end of the shell is closed by a cap *b*, which is threaded and screwed upon the threaded end of the shell. The valve-seat *c*, which preferably extends over the end of the shell and is held in place between the cap *b* and the end of the shell, forms a packing for the cap, as well as acting as the valve-seat. In the opposite end of the shell is placed a metallic thimble *e*. In this thimble is inserted a thimble-packing *f*, of suitable material, and both are held in place by a cap *d*, which screws into the shell. The cap *d* is perforated

and supports and guides a sliding tube or bib *g*, the opening through which is preferably larger in diameter than the inlet through the stem *a'*. The bib extends through the cap *d* and thimble-packing *f* and opens into the shell, so that when pushed inward the edge of the end of the tube will seat itself against the valve-seat *c* and close the outlet from the shell; but when drawn outward there is a passage through it from the chamber in the shell. A shoulder *g'* is formed on the exterior of the bib, which, by contact with the flange *d'* on the cap *d*, determines the extent of outward movement of the bib, and a shoulder *g''*, facing into the chamber in the shell, is formed of the proper size to act as a balance by cushioning against the water and air in the chamber in closing and making the bib move more slowly and evenly, and thus avoid any hammering under the suction which is incident to valves of this class. Between the forked ends of the arm *h*, that projects from one side of the shell, is the end of a lever *i*, which passes each side of and is swiveled to the outer end of the bib *g* by pins or screws *i'*, and which bears upon its end any desirable float, so that when the float is raised or lowered the bib is moved inward or outward with relation to the shell and closes or opens the valve. Through the inturned flange *e'* of the thimble *e* perforations *e''* are made to allow the liquid in the chamber to enter the recess *e'''* and force the packing more closely to the bib and prevent leakage.

In the modification shown in Fig. 4 the inlet is made through the cap *b*, and the valve-seat *c* does not extend entirely across the end of the shell *a*. The cap *d*, thimble *e*, thimble-packing *f*, and the inner end of the tube or bib *g* are the same as already described, the outer end of the bib being curved for convenience and provided with a pull, whereby the bib may be drawn forward to open the valve. Within the recess between the shoulder *g'* on the bib and the flange *d'* on the cap a spring *j* is placed, which spring tends to keep the bib pressed closely against the seat and keep the valve shut.

I claim as my invention—

In a valve, in combination, a shell closed at one end by a cap *b*, which supports a valve-seat, and closed at the opposite end by a perforated cap *d*, a thimble *e*, and a thimble-
5 packing *f*, held in place by the cap *d*, and a sliding bib larger in diameter where it is supported by the thimble and packing than at

its seat end, whereby a balancing-shoulder *g''* is formed, all substantially as described, and for the purpose set forth.

CORNELIUS BIRKERY.

Witnesses:

HARRY R. WILLIAMS,
OWEN H. JONES.