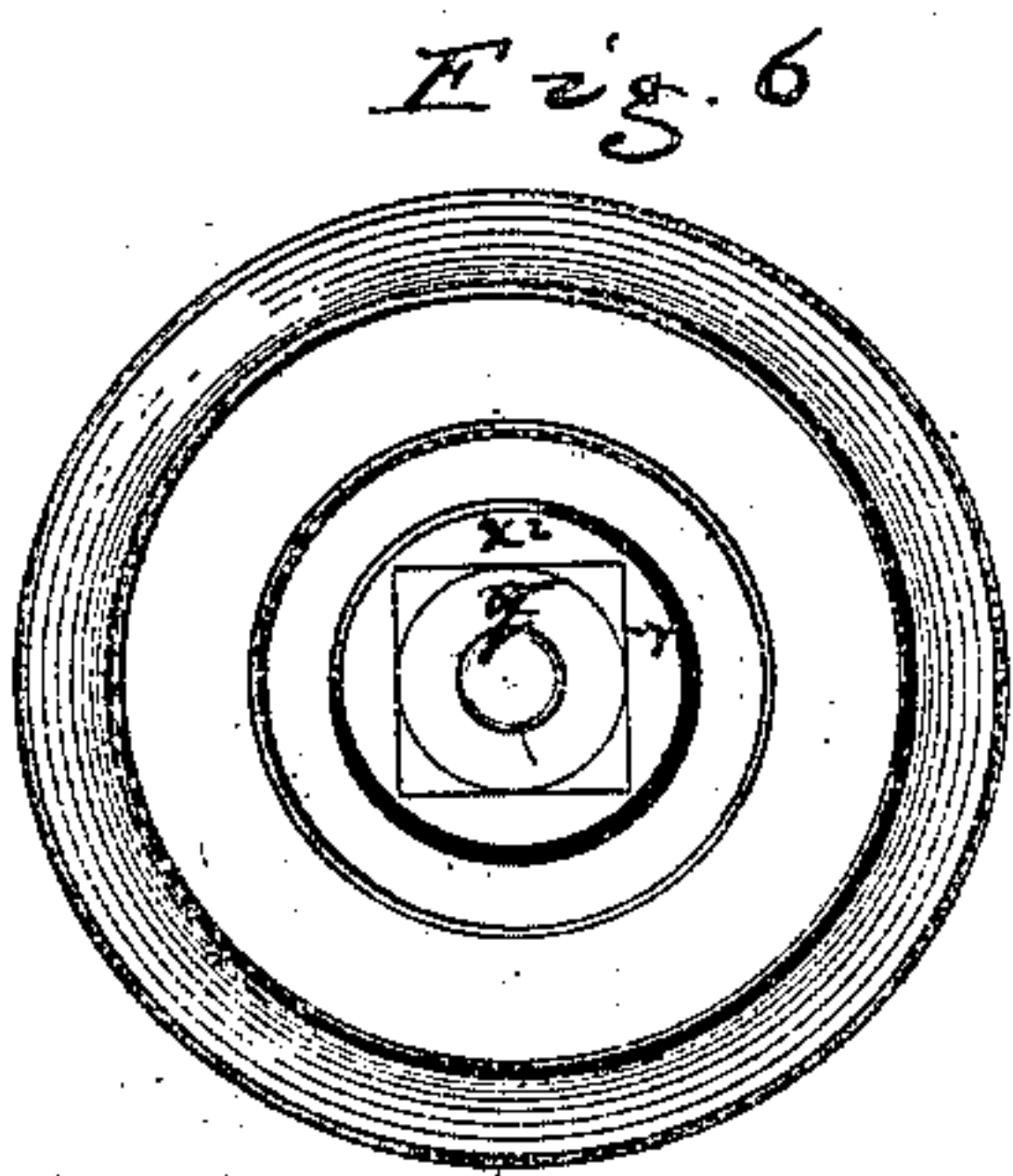
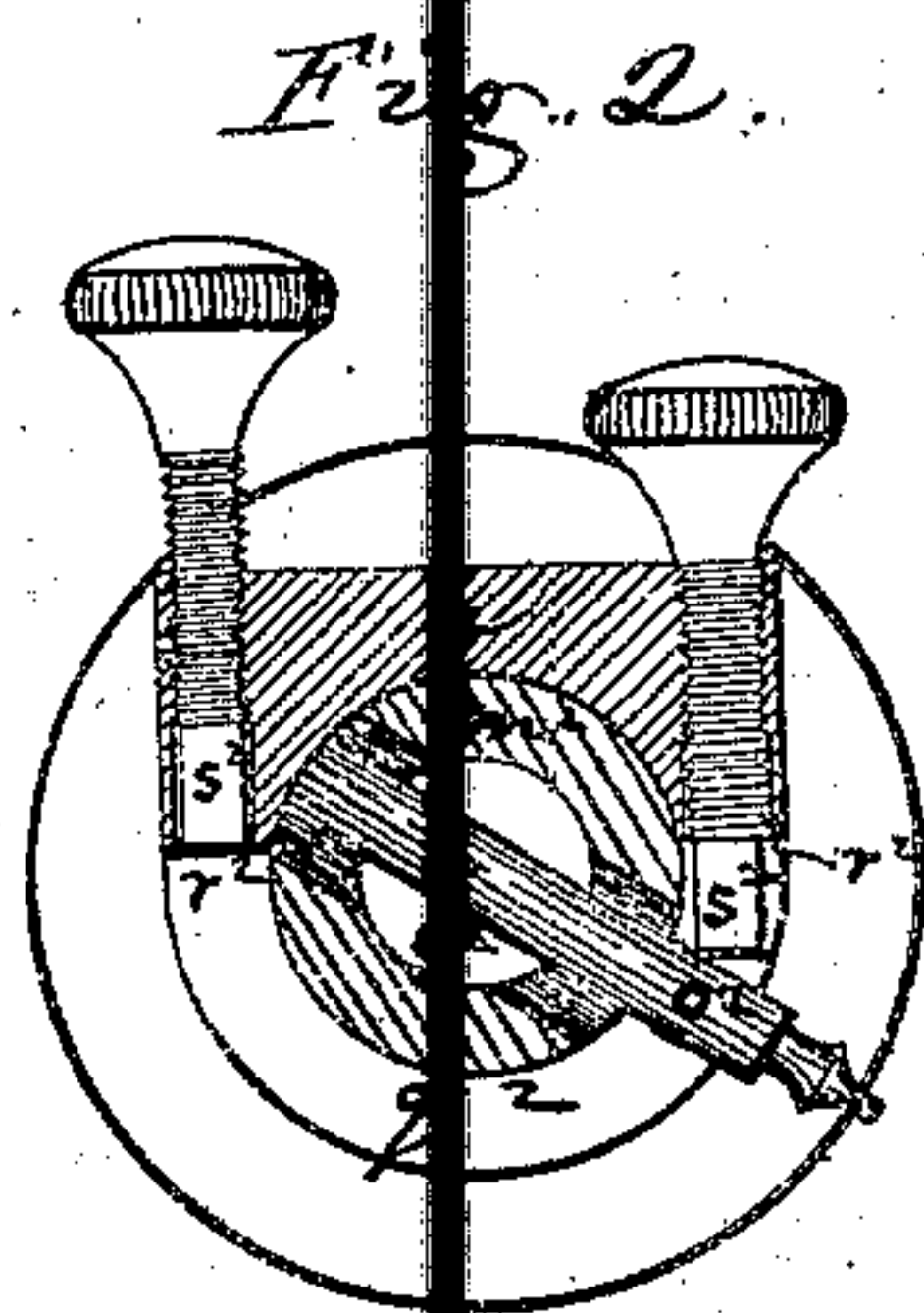
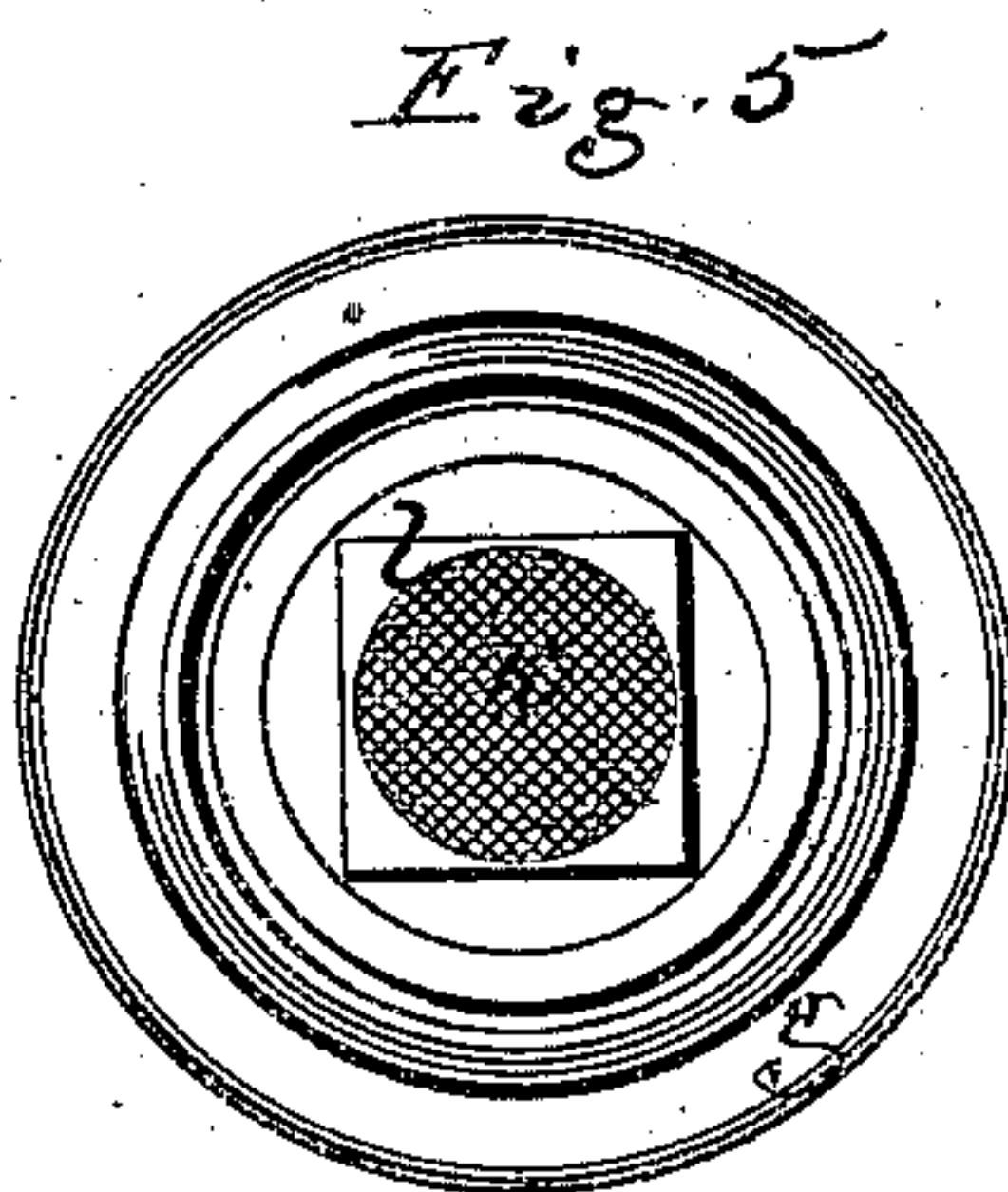
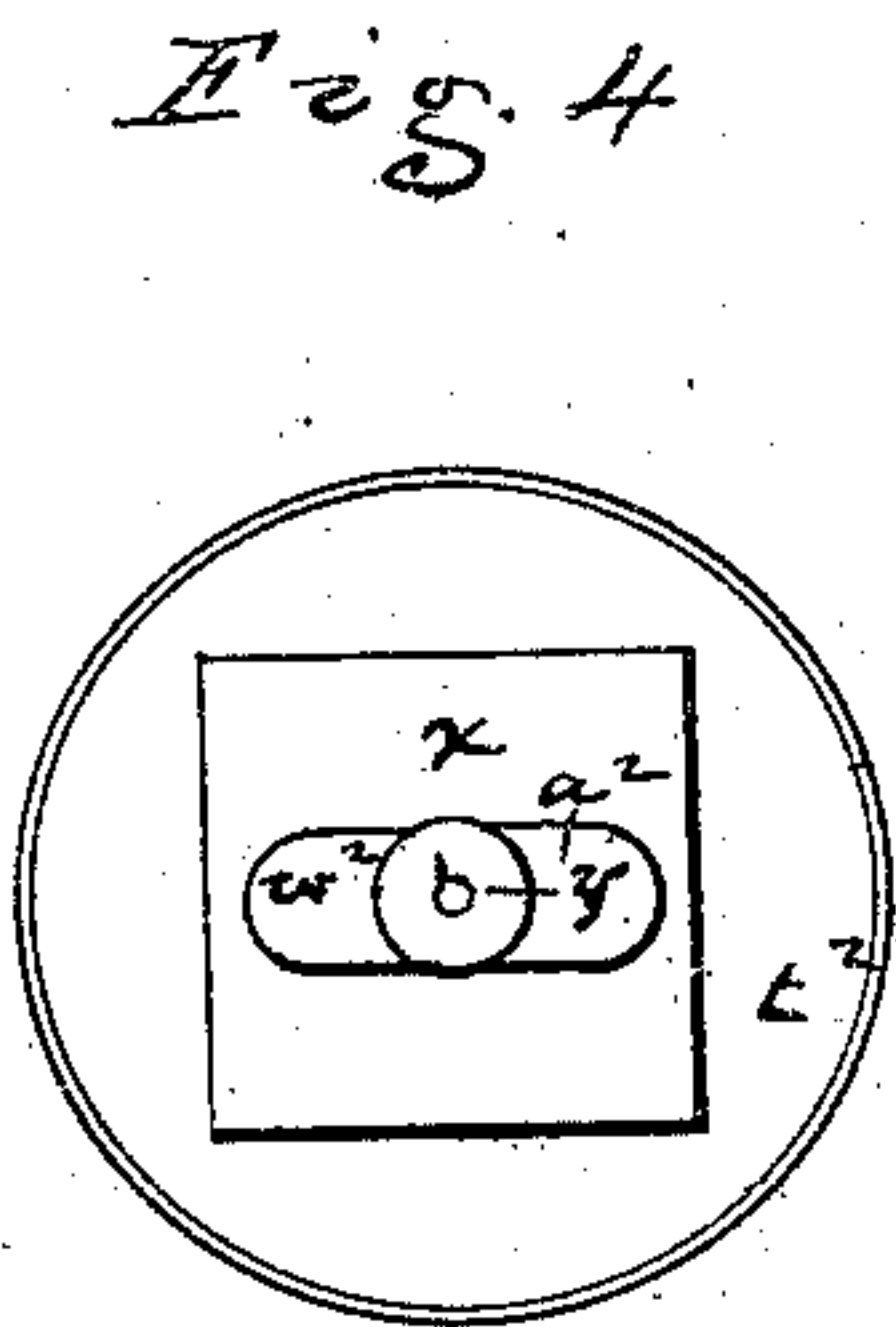
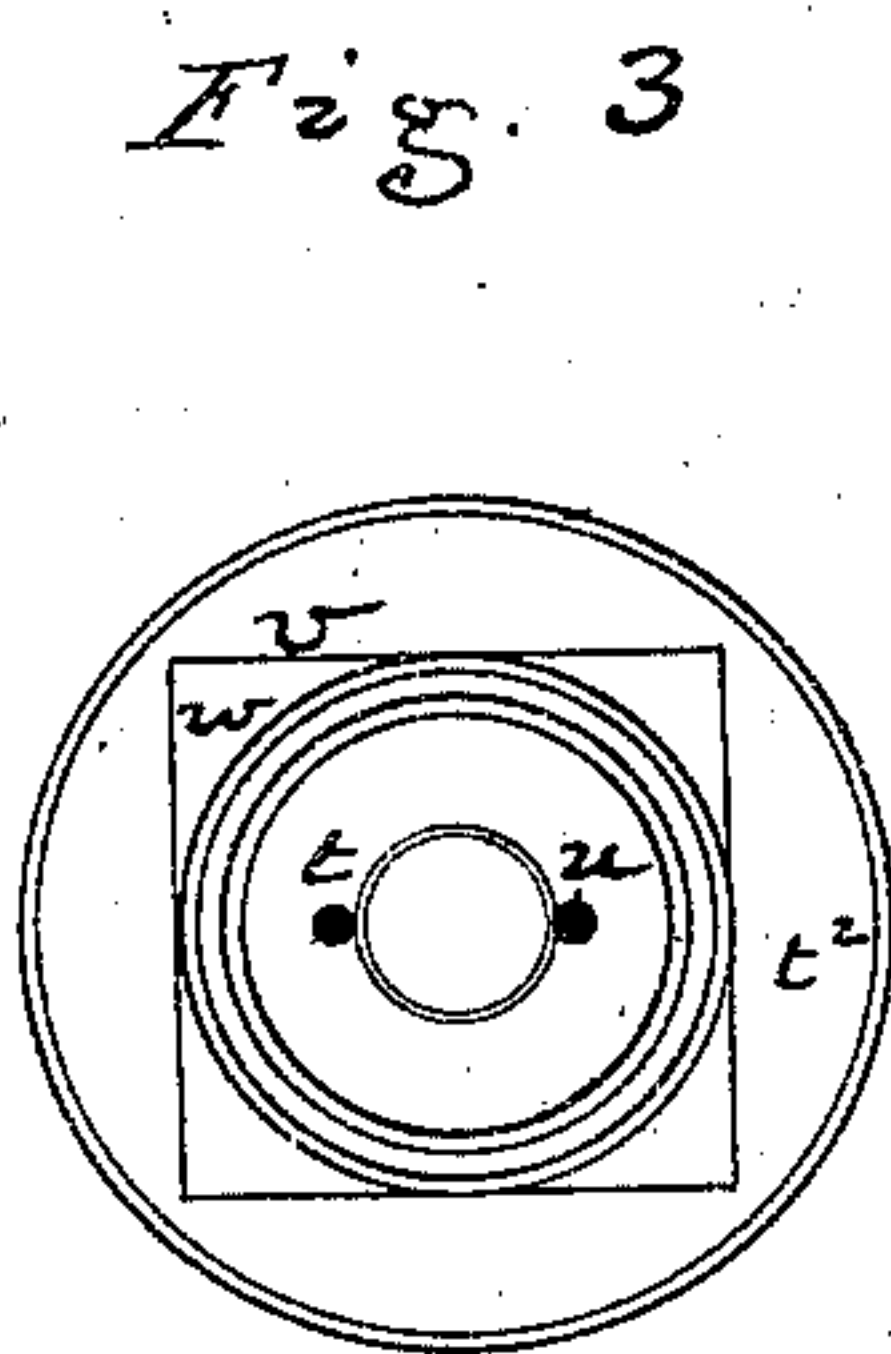
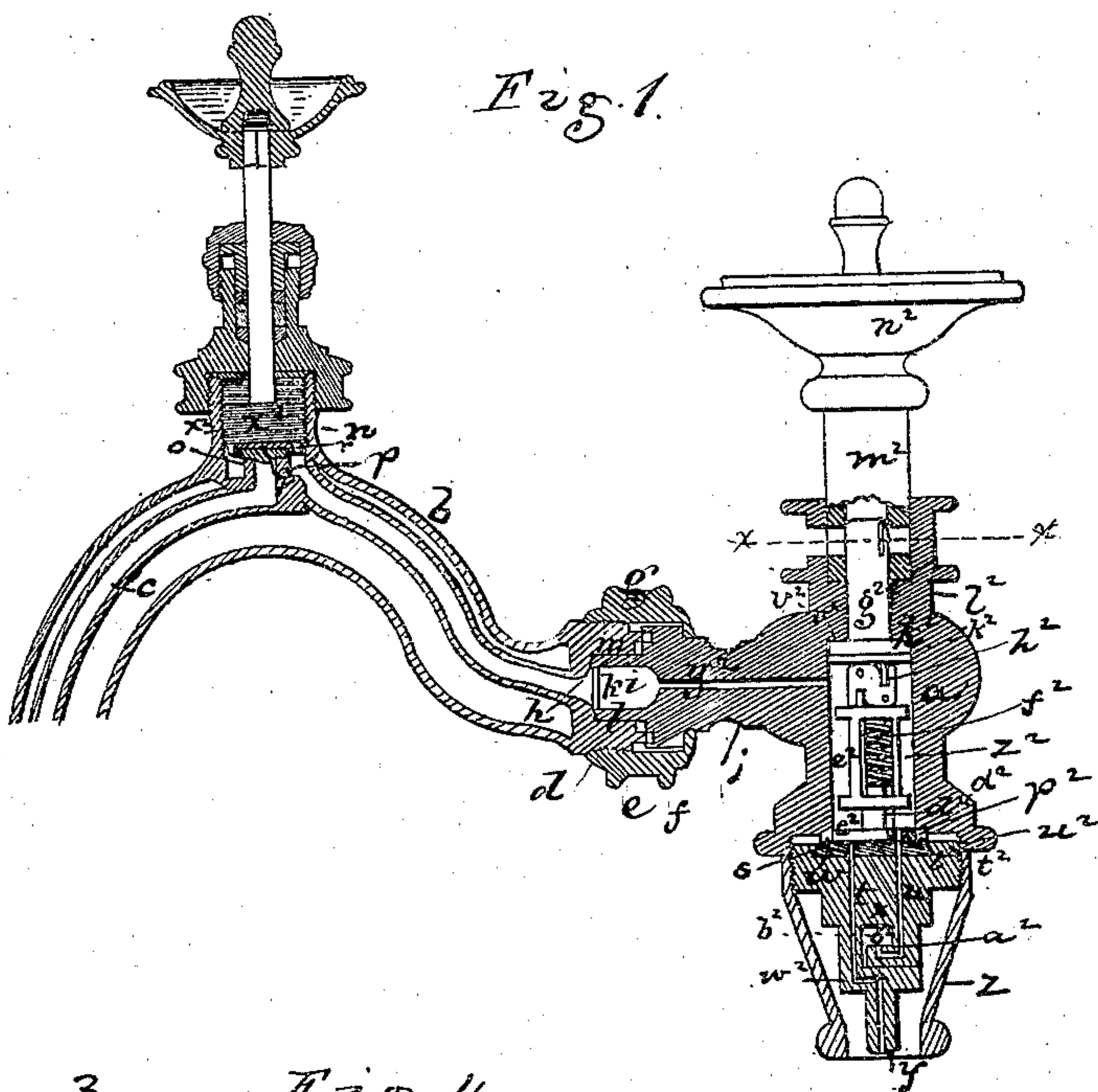


W. P. CLARK.

Draft-Cock for Soda-Fountains.

No. 138,615.

Patented May 6, 1873.



Witnesses.
 M. W. Frothingham.
 L. H. Latimer.

Inventor
 William P. Clark.
 By his Atty.
 Crosby & Gould.

UNITED STATES PATENT OFFICE.

WILLIAM P. CLARK, OF MEDFORD, MASSACHUSETTS.

IMPROVEMENT IN DRAFT-COCKS FOR SODA-FOUNTAINS.

Specification forming part of Letters Patent No. **138,615**, dated May 6, 1873; application filed February 27, 1873.

To all whom it may concern:

Be it known that I, WILLIAM P. CLARK, of Medford, in the county of Middlesex and State of Massachusetts, have invented an Improved Draft-Cock for Soda-Water Apparatus; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification is a description of my invention sufficient to enable those skilled in the art to practice it.

The invention relates particularly to the construction of that class of draft-cocks for soda-water apparatus in which the gas-charged water is drawn in two streams from the nozzle, one stream having the full force of the pressure from the fountain and the force of the other stream being broken before it flows from the nozzle. The invention consists in details of construction and arrangement of the parts, which details will be clearly understood by the description, without generalization of the invention.

The drawing represents a draft-cock mechanism embodying my invention.

Figure 1 shows a sectional elevation of the mechanism. Fig. 2 is a cross-section on the line $x x$. Fig. 3 is a top view, and Fig. 4 a bottom view, of the piece through which the eduction-passages lead. Fig. 5 is an end view of the mechanism upon which the coupling-nut is hung. Fig. 6 is a bottom view of the valve-plug x^2 .

a denotes the main body of the cock; b , the arm to the end of which it is fixed, this arm being tubular, or containing the continuation c of the tube that extends from the fountain. Connection of the arm b and body a and of the tubes or passages within them is effected as follows: The arm b has at its end a screw-thread, d , and beyond said thread a ring or flange, e , the end face of which abuts against the end face of a coupling-neck, j , extending from the body a , a packing-ring or washer, f , being interposed to form an impervious joint, and the parts being connected and held together by a screw-coupling ring, g . To prevent any sediment or foreign matters from being carried into the cock from the fountain the arm b is made with a chamber, h , and the neck j with a chamber, i , and across the front of the chamber i is a strainer, k , the charged water

passing into the chamber i , and, by means of the strainer k , being cleared from all solid matters before passing into the chamber h , the chambers being necessary in order to obtain a surface sufficiently large for the strainer.

To prevent rotative movement of the body a upon the arm and to set the cock in correct vertical position without necessity of adjustment or of especial skill, the neck j is made with a square or angular projection, l , which sets directly into a correspondingly-shaped socket, m , in the end of the arm b .

It is often desirable to remove the cock from connection with the arm for repairs or inspection, and for this purpose the disconnection has always been effected at the fountain or back of the arm, or the arm itself has been removed. To obviate this I extend a hollow vertical neck, n , from the arm and form a nut-thread in this neck for reception of a screw-threaded valve-plug, x^2 , the bottom face of which, when the plug is screwed down, covers a valve-seat, o , and a passage leading through said seat into the fountain-tube, the connection of the cock with the fountain-tube being made through this valve-seat, by raising the valve, and an outlet-passage, p , leading from the valve-chamber. By closing the valve this communication is shut off, and the draft-cock may then be detached from the arm without disturbance of any connection between the arm and the fountain, or at the fountain. The valve is faced with a leather or similar packing, q , to make the valve-joint impervious; and to prevent rotation of this packing it is made square or of angular shape, and is pressed into a socket, r , of corresponding shape, the angles holding the packing firmly in position. The socket may also be made smallest at its mouth or with under-cut recesses, so that by using a packing larger than the mouth of the socket and bending it to force it into the socket it will be fastened so that it not only cannot turn, but cannot be dislodged except by removing the valve and prying it out.

In the body a is a central chamber, z^2 , into which the neck-passage y^2 leads. This chamber z^2 extends down to a disk or valve-seat, s , from and through which lead two outlet-passages, $t u$, this valve-seat being upon the face of a screw, t^2 , which screws up into a nut-

threaded flange, u^2 , at the lower end of the body a , the screw having a square or angular recess, v , formed like the recess r , and containing a leather or similar seat or packing, w , which is kept from turning by its form, and the form of the recess, and from dislodgment by the enlargement of the recess from the mouth or under-cuts extending therefrom and the expansion of the packing to fill the same. Through this screw and packing pass the outlet-passages $t u$, the passage t passing directly through the screw and a square or rectangular head, x , projecting therefrom, and a delivery-tube, y , the tube y being bent to bring its point of delivery to the center of the cock, and the passage t being direct, except as to such bends. A nozzle, z , forms a chamber for the delivery-orifices, and especially for the delivery from the other passage u , this nozzle being connected to the screw t^2 by a nut-thread at the top of the nozzle and the thread of the screw. The passage u leads straight down through the screw t^2 and head x and into an inwardly-turned arm, a^2 , and thence out through an orifice, b^2 , at the top of said arm, the charged water striking with the full force of the pressure against the bottom surface of the head x , but being deflected into and through the nozzle-chamber, so that it falls from the nozzle deprived of its force, the water passing through the passage t escaping with the full force of the pressure. The arrangement of these passages is particularly seen in Figs. 1, 3, and 4. Entrance to the respective passages is controlled by a valve, c^2 . This valve has a square stem, d^2 , extending through a square hole in a coupling, e^2 , and it is forced against the valve-seat by a spring, f^2 . The coupling is jointed to a spindle, g^2 , by a compound joint, h^2 , and over a flange, i^2 , at the foot of this spindle, is a washer, k^2 . The valve-coupling, spring, flange, and washer are located in the chamber, and the spindle g^2 extends from the same chamber through a neck, l^2 , the washer being forced against a seat, v^2 , to pack the chamber with reference to the neck. The top of the spindle is forked, and into the top of the neck extends a hollow spindle, m^2 , forming part of the hand-wheel n^2 , by which the cock is operated. The tubular spindle encompasses the top of the spindle g^2 , and through the tube and the spindle-fork extends a pin, o^2 , that connects the two spindles, so that, by turning the hand-wheel, the valve-spindle g^2 and its valve c^2 will be turned. Through the valve c^2 is a single passage, p^2 , and when the valve is so turned as to bring this passage p^2 into connection with the passage t the aerated water will flow through the passage t and escape into the goblet held beneath the nozzle-tube y with the full force of the fountain-pressure, while, by turning the valve to bring its passage p^2 into connection the other outlet-passage u , the force of the

charged water will be broken, as before described.

It will thus be seen that the passages $t u$ are never opened together, separate manipulations of the hand-wheel being necessary to connect the respective passages $t u$ with the valve-passage p^2 . By turning the wheel slightly from a position connecting either passage $t u$ with the passage p^2 the valve will cover both passages $t u$, and the cock will be closed.

For the movement of the spindle to connect the respective passages, the connecting-pin o^2 may extend through a slot, q^2 , at the opposite ends of which are stops r^2 , that arrest the movement of the spindle. But, as it is desirable to have the delivery of the streams made adjustable, I apply to each stop r^2 a set-screw, s , the end of which may be so adjusted in position as to vary the extent of the valve-passage p^2 brought into connection with either passage $t u$.

The delivery-nozzles of soda-water draft-cocks rapidly oxidize, and by such oxidation, and the frequent cleaning of such nozzles, any metallic coating is soon worn from them. To obviate this deterioration, I form the nozzle of hard rubber or similar material, screw-threading the upper end to connect it with the screw upon the metal cock above it, such formation effecting a perfect safeguard against oxidation, and furnishing a nozzle that is readily kept clean.

I claim—

1. In combination with the valve c^2 having the single passage p^2 , the valve-seat having the two passages $t u$, the passage t leading into the arm w^2 and thence into and through the tube y , and the passage u leading into the arm a^2 and from the top of said arm, substantially as shown and described.

2. The combination of the valve-coupling e^2 , spring f^2 , and joint h^2 , and the spindle g^2 and valve c^2 , combined and relatively arranged, substantially as shown and described.

3. In combination with the valve c^2 , the forked spindle g^2 , tubular spindle m^2 , and connecting-pin o^2 , substantially as shown and described.

4. In combination with the spindles $m^2 g^2$, the slot q^2 , stop-pin o^2 , and stops r^2 , substantially as shown and described.

5. In combination with the stop-pin o^2 , the adjustable stops or screws s^2 , arranged substantially as shown and described.

6. In combination with the arm b , the chambers $h i$ and strainer k , substantially as shown and described.

7. In combination with the arm b and draft-cock, the shut-off or disconnecting valve x^2 , arranged substantially as shown and described.

WILLIAM P. CLARK.

Witnesses:

FRANCIS GOULD,
M. W. FROTHINGHAM.