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Patented Dec. 9, 1902.

F. ADEE.

FLUSHING DEVICE FOR WATER CLOSETS.

(Application filed June 5, 1902.)

(No Model.)

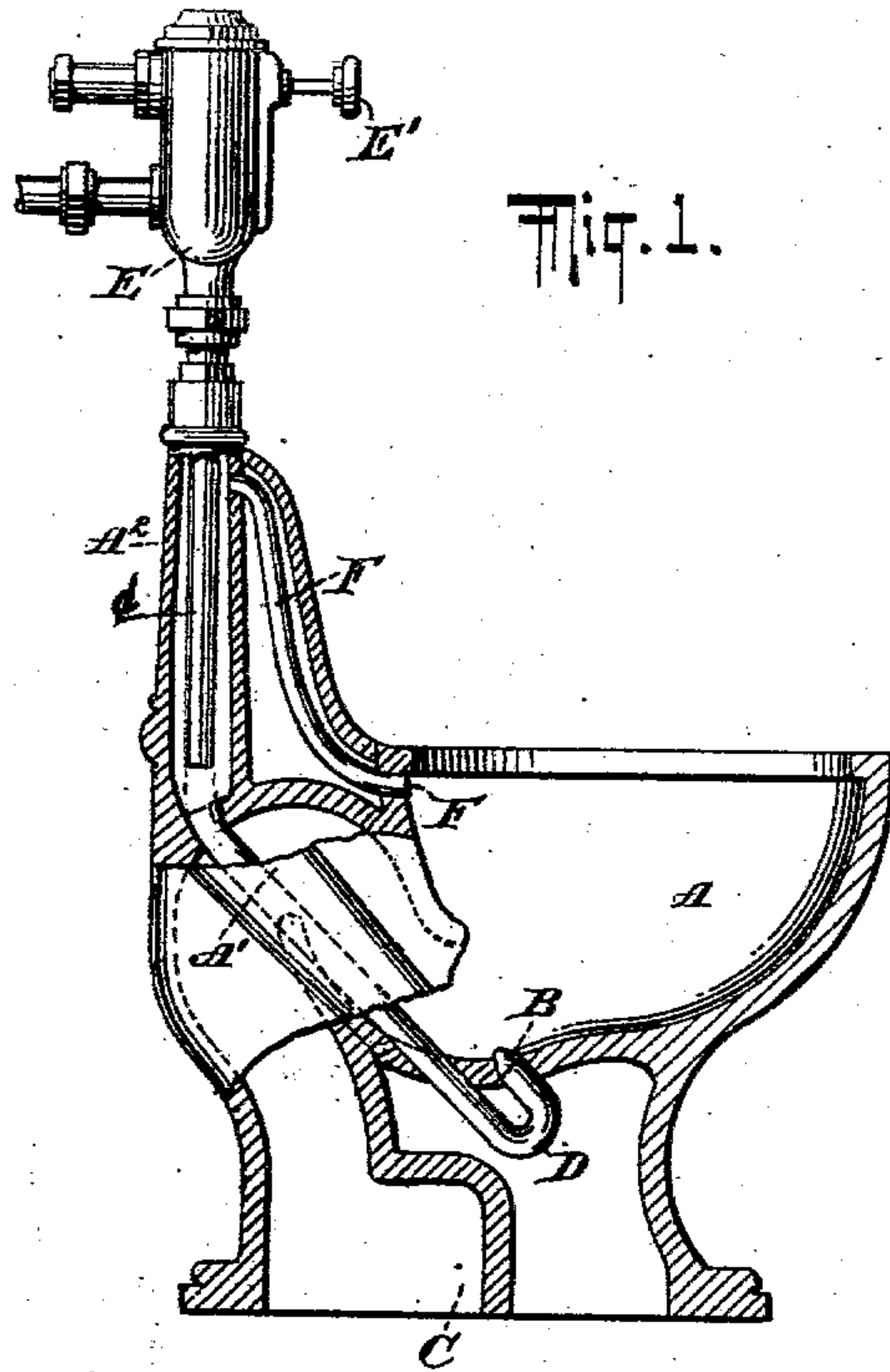


Fig. 1.

Fig. 3.

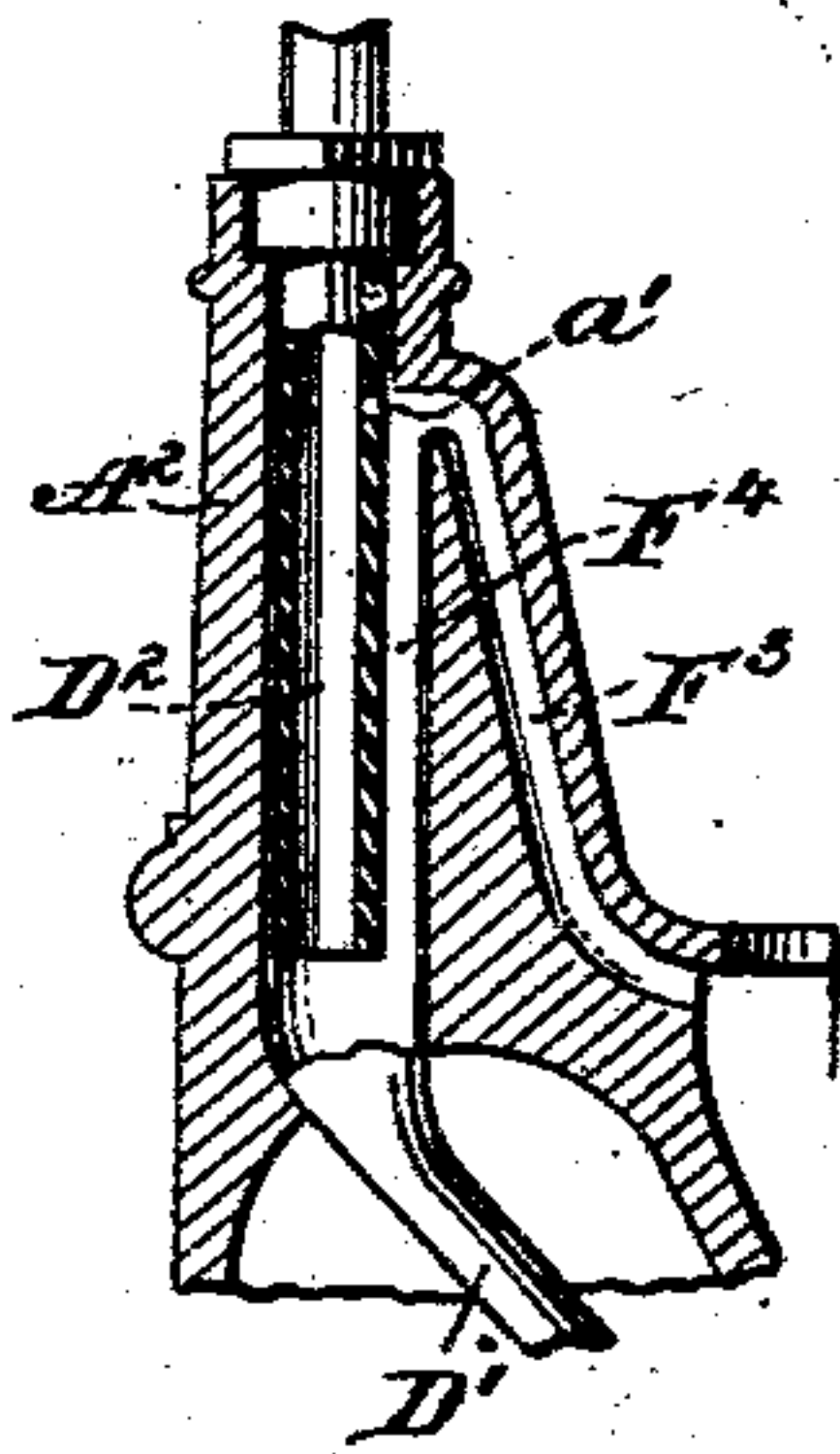
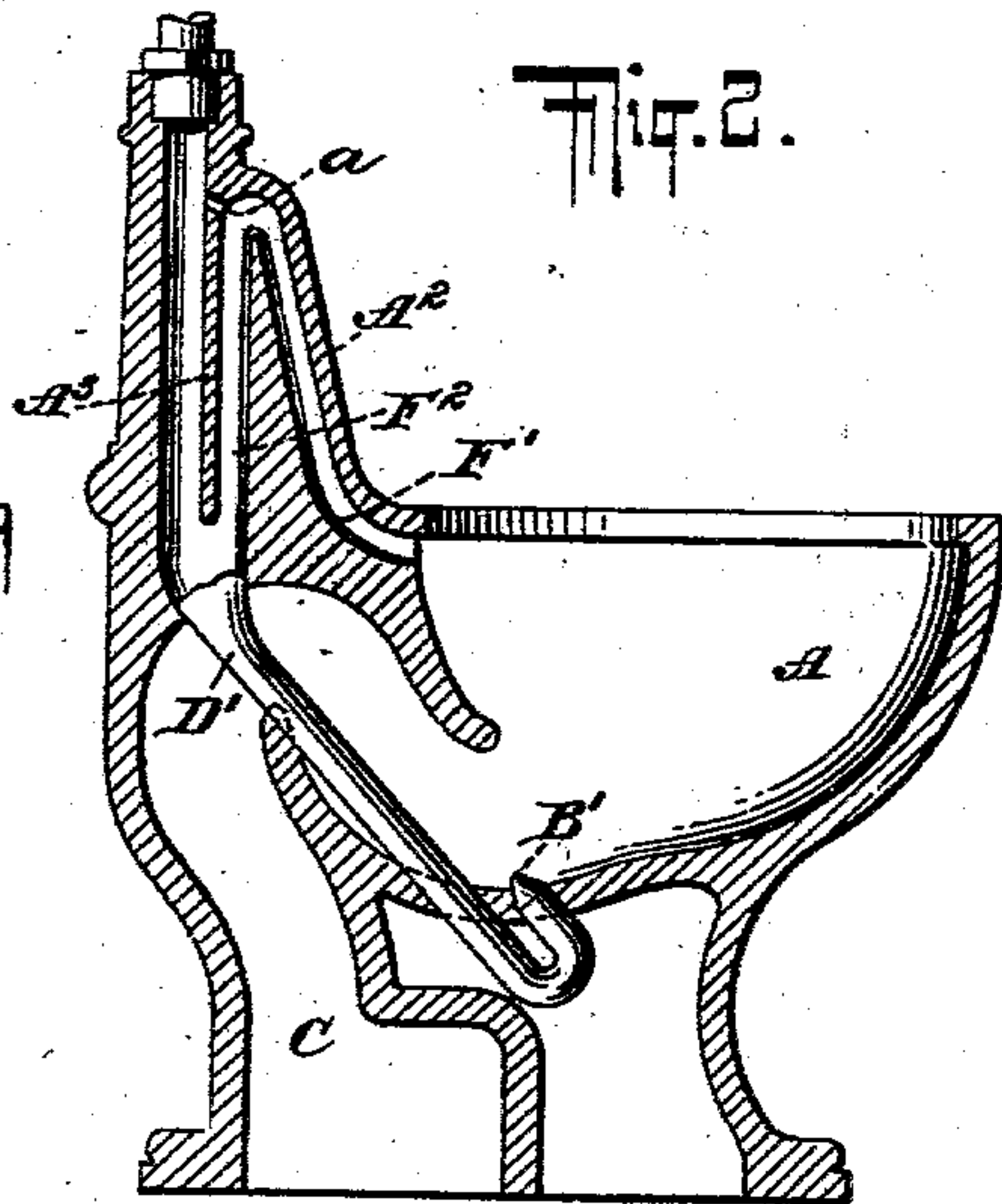


Fig. 2.



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# UNITED STATES PATENT OFFICE.

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## FLUSHING DEVICE FOR WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 715,453, dated December 9, 1902.

Application filed June 5, 1902. Serial No. 110,275. (No model.)

*To all whom it may concern:*

Be it known that I, FRED ADEE, a citizen of the United States, and a resident of the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Flushing Devices for Water-Closets, of which the following is a specification.

My invention relates to flushing devices for water-closets, and has for its object to provide a simple and efficient apparatus for first flushing the bottom of the bowl and then the upper part thereof, with the purpose of avoiding the objectionable churning or eddying action which ensues at first when the flushing-jets are discharged at the same time, one at the top and one at the bottom of the bowl.

The invention will be fully described hereinafter and the features of novelty pointed out in the appended claims.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a side elevation of one form of my invention with parts in section. Fig. 2 is a sectional elevation of another form of my invention, and Fig. 3 is a detail view of a third form of my invention.

As shown in Fig. 1, the bowl A is provided at the bottom with a nozzle B, preferably arranged to throw a jet upwardly and rearwardly toward the discharge-pipe C. The pipe D, which leads to said nozzle, is generally arranged in a hollow rib A', located at the side of the bowl, or the pipe may be formed directly as a channel in the material of which the bowl is made. The upper portion of the pipe D communicates with an upward extension A<sup>2</sup> integral with the bowl A or secured thereto rigidly. Water is supplied through a pipe d, which extends within the extension A<sup>2</sup>, out of contact with the walls thereof, so that an annular chamber is formed within said extension around the pipe d. A flushing-valve of any approved construction is indicated at E, and E' designates the handle or operating-knob of said valve. By pressing this knob the water is admitted to the pipes d D. The valve-casing is preferably supported directly on the extension A<sup>2</sup>, thus hiding the pipe d and making a very neat construction. From the upper portion of the bowl A leads a flushing-channel F, connected

with the annular chamber which surrounds the pipe d. The nozzle B is sufficiently narrow to cause the water to back up in the pipe D and finally into the channel F.

The operation is as follows: When the valve E is open, water will pass through the pipes d D to the nozzle B and will throw the matter in the bowl into the discharge-pipe C. Inasmuch as the nozzle cannot discharge the water as quickly as it arrives, the water will back up from the nozzle, and will thus begin to flow through the channel F and flush the entire bowl, and particularly the upper part thereof. Before the water backs up no water passes through the channel F, because the inlet of this channel is located out of the path of the water flowing through the pipe D. The result, therefore, is first a discharge of water through the lower nozzle only and then both at the top and at the bottom of the bowl. By the time the water begins to flow through the channel F the matter contained in the bowl, or most of it, has been ejected by the jet from the nozzle B. I thus avoid the objectionable churning action always observable when from the start flushing-jets are discharged both at the top and at the bottom simultaneously. I also find that the water rushing through the pipe D will create a suction in the channel F, thus drawing air and foul odors from the upper portion of the bowl and discharging them through the nozzle B. This of course occurs only during the first period of operation—that is, before water begins to back up into the channel F.

In Fig. 2 the pipe or channel D' is formed directly as a channel in the material of the bowl A and of the extension A<sup>2</sup>. The latter is provided with an interior partition A<sup>3</sup>, forming on one side an inlet or intake F<sup>2</sup> for the upper flushing-channel F'. The inlet in this case also is located out of the direct path of the water flowing through the pipe D', so that no water passes into the channel F<sup>2</sup> F' until the water backs up from the nozzle B' to the lower end of the intake F<sup>2</sup>. It will be seen that the channel F<sup>2</sup> F' has the form of a siphon, and to prevent any possibility of having a gurgling noise, produced by air sucked through the siphon, I may provide an aperture or channel a, connecting the bend of the siphon with the adjacent portion of the pipe D'.



In Fig. 3 the extension  $A^2$  has no partition; but a separate pipe  $D^2$  fits into the upper part of the channel  $D'$ , at one side thereof, and thus separates from the direct path of the water an intake  $F^4$ , connected with the flushing-channel  $F^3$ . Here, too, a connecting opening or channel  $a'$  may be provided at the upper end of the intake  $F^4$ . The operation is the same as in the form of construction first described.

In each of the constructions shown the capacity or volume of the water-channel from the level at which the water normally stands in the bowl to the nozzle  $B$  or  $B'$  at the bottom of the bowl is smaller than the capacity of that portion of the water-channel which is between said level and the outlet of the flushing-channel  $F$ ,  $F'$ , or  $F^3$  at the rim. It will be obvious that with such a construction the water will flow out at the bottom of the bowl before it is discharged at the top thereof. A further feature common to the three forms of construction is the arrangement of the upper channel  $F$ ,  $F'$ , or  $F^3$  in such a manner that it extends downward to the rim—that is, water flows to the rim from a point that is located above the rim. The outlet of the upper channel at the rim is preferably located at a lower level than the point at which said channel communicates with the main supply-pipe  $D$  or  $D'$ . The upper channel thus virtually forms a siphon, so as to cause the entire contents of this upper channel, including the contents of the upwardly-directed receiving-limb or intake-leg, to be discharged at the end of the flushing operation. The point at which the upper channel branches off from or communicates with the lower channel, or, in other words, the lower end of the pipe  $d$  or  $D^2$  or of the partition  $A^3$ , is located above the water-level. While the water rises in the upward or intake limb of the upper channel a jet of water is discharged at the bottom nozzle  $B$  or  $B'$

and removes the contents of the bowl before the water rises to the bend or highest portion of the upper channel. The pipe  $d$  or  $D^2$  in Figs. 1 and 3 or the partition  $A^3$  of Fig. 2, with the adjacent portion of the body or extension  $A^2$ , forms a water-supply channel, the lower end of which is located above the water-level and communicates with both the upper and the lower flushing-channel.

I desire it to be clearly understood that the three forms of my invention shown in the drawings are only examples and that the actual scope of the invention is defined in the appended claims.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A bowl having an upper and a lower flushing-channel, the upper flushing-channel being of siphon shape and having its intake-leg in communication with the lower channel, with the inlet of said intake out of the direct path of the water in the lower channel, and with a connecting aperture or passage extending from the upper end of the intake to the adjacent portion of the lower channel.

2. A bowl having a water-supply channel, the lower end of which is above the normal level of the water in the bowl, a lower flushing-channel and an upper flushing-channel which communicate with the said supply-channel at the lower end thereof, said upper channel having an ascending limb extending to a point considerably above the bowl, and a descending discharge-limb leading to the rim of the bowl.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRED ADEE.

Witnesses:

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EUGENE EBLE.