

T. TURRETTINI.
FOUNTAIN.

No. 179,977.

Patented July 18, 1876.

Fig. 1.

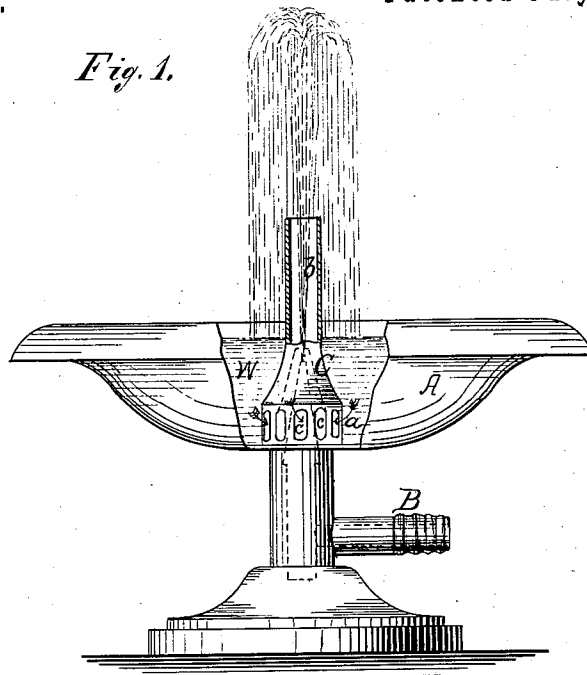
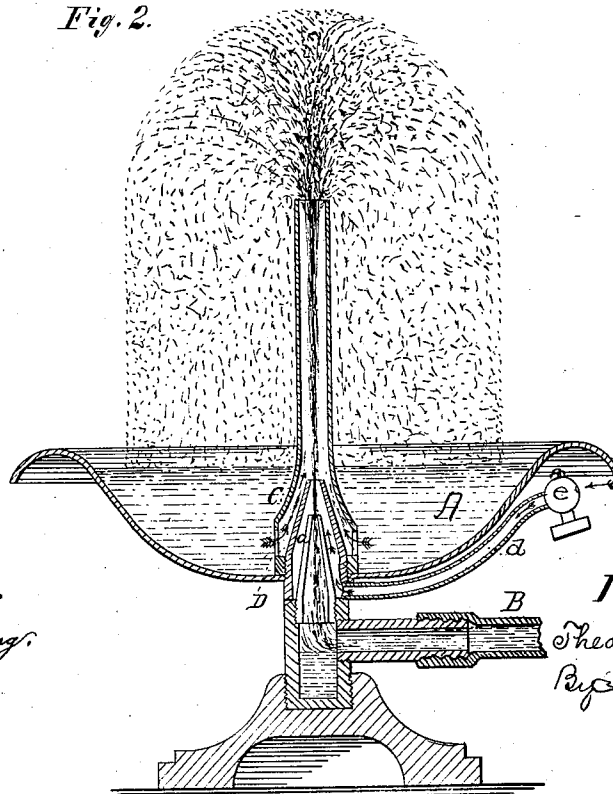


Fig. 2.



Witnesses:

Henry Cichling.
B. E. Clark.

Inventor:

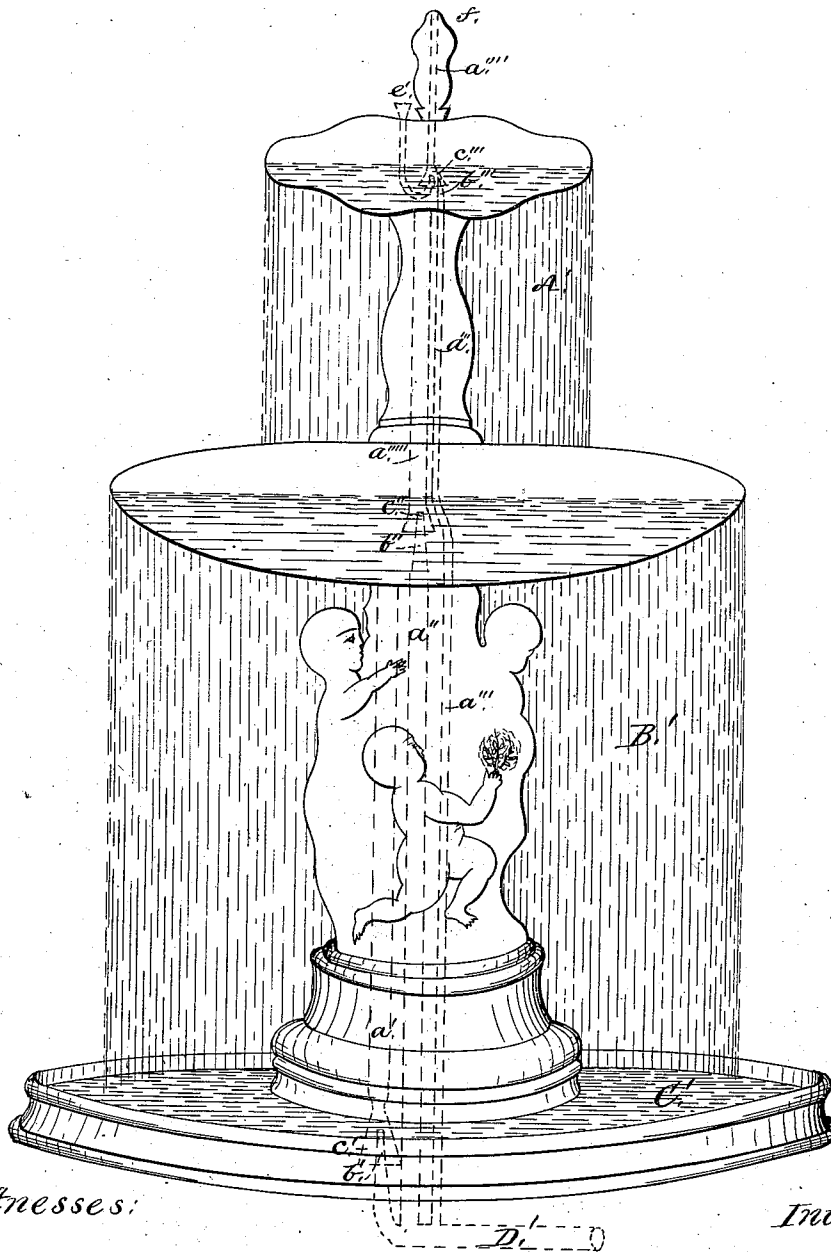
Theodore Turretini
By J. H. Smith
his atty.

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Fig. 3.



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Henry Cichling,
B. S. Clark

Inventor:

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UNITED STATES PATENT OFFICE.

THEODORE TURRETTINI, OF GENEVA, SWITZERLAND.

IMPROVEMENT IN FOUNTAINS.

Specification forming part of Letters Patent No. **179,977**, dated July 18, 1876; application filed March 31, 1876.

To all whom it may concern:

Be it known that I, THEODORE TURRETTINI, of Geneva, Switzerland, have invented an Improved Fountain, of which the following is a specification, reference being had to the accompanying drawings, forming part hereof.

In artificial fountains designed for display, it frequently occurs that the supply of water is limited, and most cities being obliged to elevate, at considerable expense, the water destined for various uses, a very restricted portion of the water can be devoted to fountains for display only. Hence it is often necessary or desirable to economize in the use of water for display; and the object of my invention is to accomplish this result by utilizing, in a fountain apparatus, the pressure exerted by the water in the conduits or pipes supplying the fountain to elevate and discharge, through the jet or nozzle, with the water ejected under pressure, a portion of the water contained in the fountain-basin, and also to increase the display of the water at the jet by mingling air with the water ejected at the nozzle. By thus utilizing the pressure or headway of the supplied water, the display by the water ejected is greatly increased without increasing the quantity of water supplied by the conduits, and thus, by continuing to draw up and eject through the jet the water which has already passed through the apparatus, the expense of supplying large and ornamental fountains is very greatly decreased.

My invention consists in a mouth-piece or nozzle, through which the water is delivered from the supply-pipe under pressure, surrounding which concentrically is an inverted funnel, extending downward somewhat below the level of the water in the basin of the fountain, and also, in combination with the above devices, a second inverted funnel or tube, communicating with the external atmosphere, and arranged concentrically within the funnel first mentioned, about the said mouth-piece, as hereinafter particularly described.

Figure 1 is an elevation of a fountain, showing the arrangement of the devices constituting my invention for utilizing the pressure or headway in the supply-pipe to elevate and

eject a portion of the water in the basin. Fig. 2 is a vertical central sectional view of the same, showing, in combination with the devices shown in Fig. 1, the device for mingling air with the water ejected. Fig. 3 on Sheet 2 is an elevation of a fountain having three basins, one above the other, and shows a duplication of the devices shown in Fig. 1 for elevating the water from the lower to the upper basin, and there discharging it through the jet with the water supplied under pressure. In the jet of the upper basin is also shown the device for mingling air with the water ejected.

A is the basin of the fountain. B is the pipe through which water is supplied to the fountain under pressure. *a* is the nozzle of the pipe B. C is an inverted funnel, which is placed concentrically about the nozzle *a*, and is arranged to extend down somewhat below the level of the water, W, in the basin A. This funnel may be conveniently, and is preferably, extended down to the bottom of the basin, and there secured, as shown in the drawings, Figs. 1 and 2, and is then provided with opening *c* in its walls, whereby communication between the basin and the interior of the funnel is established. The extension upward, *b*, of the funnel constitutes the mouth-piece or discharge-pipe of the fountain.

The nozzle *a* should be so arranged that it will be somewhat below the level of the water in the basin, in order that the water discharged through said nozzle under pressure shall carry with it through the mouth of the funnel a portion of the water lying in the basin; and if a waste-pipe or vent is provided to the basin, or the basin is intended to discharge its surplusage of water by overflowing its brim, the said vent or brim should be so arranged as to preserve the level of the water in the basin somewhat above the mouth of the nozzle.

It is evident that by means of these devices, arranged as set forth, the water discharged through the nozzle *a* by the pressure in the pipe B will act to draw a portion of the water in the basin A into and through the funnel, and eject it through the pipe *b* with that ejected by the nozzle *a*. A portion of the water in the basin being thus

continuously forced into the jet and repeatedly passed through the apparatus, it is obvious that the display by the fountain will be largely increased without incurring increased expense in augmenting the water-supply through the pipe B.

D is a tube of a cone shape, or otherwise formed, with a narrow mouth at its upper end, and arranged concentrically about the nozzle *a*, and between said nozzle and the wall of the funnel C, as shown, thus leaving a space between the nozzle and the tube D, and also between said tube D and funnel C. The tube D is securely closed at its base, and has a pipe, *d*, opening from it into the external air, as shown. A cock, *e*, is furnished to said pipe to regulate or cut off the supply of air. The mouth of the tube D should be placed somewhat above the line of the mouth of the nozzle *a*, as shown. Now, it is evident that the water ejected through the nozzle *a* under pressure will act to draw the air in through the tube D and force it out through the mouth-piece *b* of the cone C, mingled with the water discharged through the nozzle *a* and the water drawn from the basin through the funnel C, whereby the water will be broken up into spray as it is ejected by the fountain, thus greatly enhancing the beauty and ornamental appearance of the fountain.

In Fig. 3 I show a duplication of these described devices, whereby the water which falls from the upper basins to the lower one is elevated again from the lower into the middle basin, and from thence to the upper basin, where it is again used to increase the display in the jet, and thus economize in the quantity of water necessary to be supplied to the fountain.

In Fig. 3, A', B', and C' are, respectively, the upper, middle, and lower basins. D' is the supply-pipe. *a'* is a pipe leading from the lower to the middle basin, having on its lower end a funnel, *c'*, arranged below the level of the water in said lower basin. *b'* is a nozzle leading from the supply-pipe, and is also properly arranged somewhat below the level of the water in said lower basin. *b''* is a nozzle leading from the supply-pipe, and is also properly arranged somewhat below the water-level.

a'' is a pipe similar to pipe *a'*, and leads from the supply-pipe to the middle basin, the nozzle *b''* of which enters the funnel *c''*, fixed on the lower end of the pipe *a''*. The pipe *a''*, connected also with the supply-pipe D', has a nozzle, *b'''*, which enters into the funnel *c'''* on the lower end of the jet-pipe *a'''*, through which the water is ejected from the supply-pipe. The jet-pipe *a'''* has an air-pipe,

d', opening into the funnel or tube *c'''*, and having the mouth-piece *f'*.

The operation of this duplication of my devices is obvious. The water ejected through the jet *a'''*, and which falls successively to the middle and lower basins, is elevated by the action of the water discharged under pressure through the nozzles *b' b''*, passing through funnels *c'* and *c''*, thence to the upper basin, whereby, the nozzle *b'''* ejecting water under pressure through the funnel *c'''*, it is again discharged through the jet-pipe *a'''*, mingled with the air supplied through the pipe *d'* to tube *c'''*, and the display of the water at the jet and the successive falls from one basin to another are largely increased without an increase in the water supplied by the conduit D'.

It is not my intention to claim the duplication of my devices shown in Fig. 3. The arrangement there shown is an illustration of the mode of applying my invention to large fountains, in which basins elevated one above another are employed, whereby the object of my invention, which is the economizing in the supply of water without detracting from the display obtained, is carried out.

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

1. In a fountain apparatus, the funnel C, extending below the level of the water in the basin A, and arranged concentrically about the nozzle *a*, the mouth of said nozzle being placed somewhat below the water-level in said basin, whereby water discharged under pressure through the nozzle *a* will act to carry upward and eject with it, through the funnel C, a portion of the water in the basin A, the whole returning again to the basin, as and for the purpose specified.

2. In a fountain apparatus, the combination of the devices herein described for forcing upward, through the nozzle *a*, water from the fountain-basin by the action of the water ejected under pressure with the tube D, arranged concentrically about the said nozzle within the funnel C, and provided with the air-pipe *d*, the narrow mouth of said tube D being extended somewhat above the tip of the said nozzle *a*, whereby water discharged through the said nozzle under pressure will act to draw into and through the tube D the external air, and mingle it with the ejected water, as specified.

In witness whereof I have hereunto set my hand this 24th day of January, 1876.

TH. TURRETTINI.

Witnesses:

CHAS. H. UPTON,

ALBERT TURRETTINI.