

C. A. DUNLAP.
FOUNTAIN.

No. 556,090.

Patented Mar. 10, 1896.

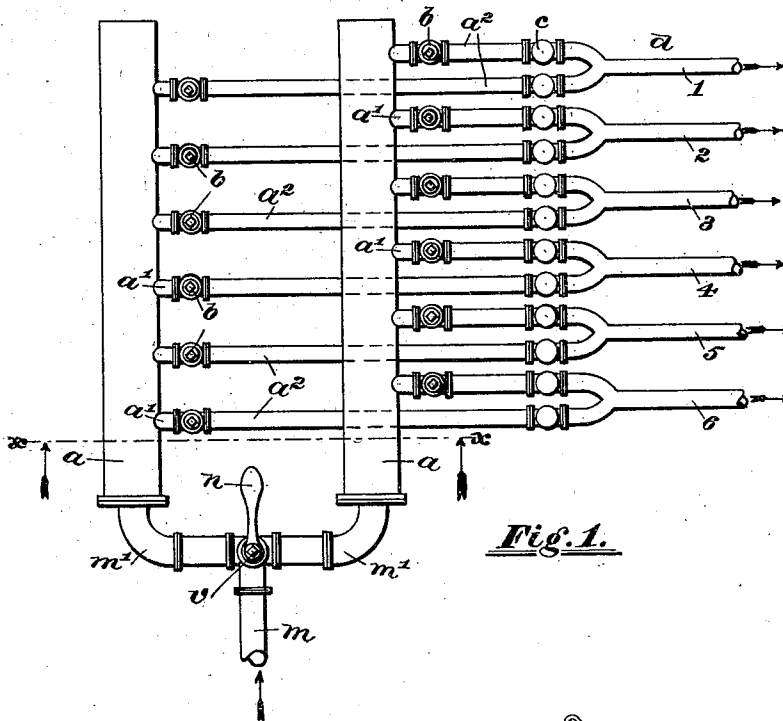


Fig. 1.

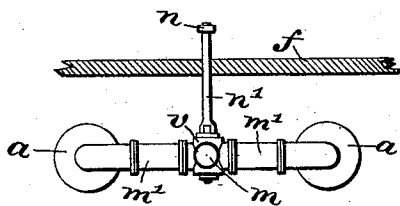


Fig. 3.

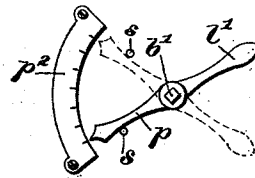


Fig. 4.

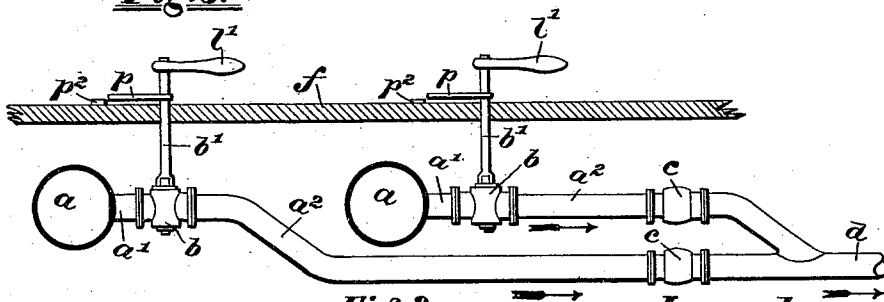


Fig. 2.

Witnesses.

Fred. Arnold.

Iida M. Warren.

Inventor.

Charles A. Dunlap.

by Remington & Henthorn
Attys.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

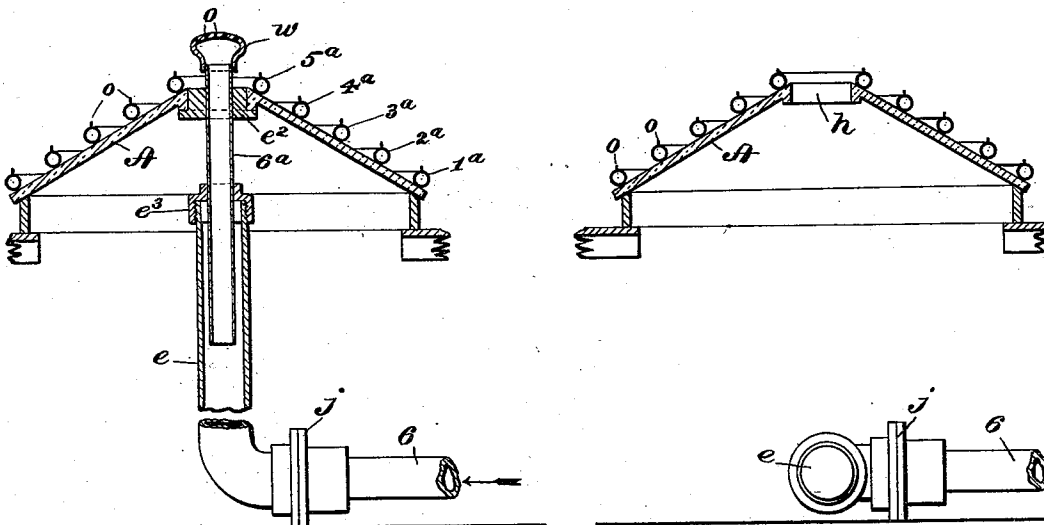
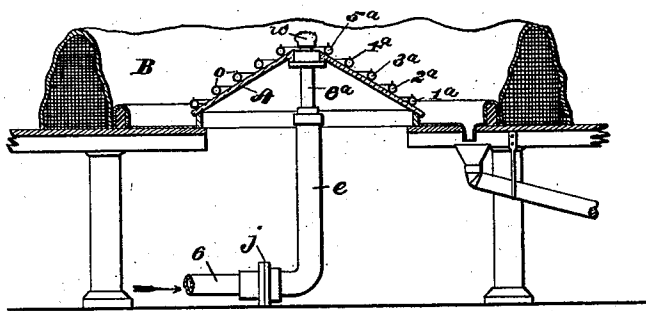
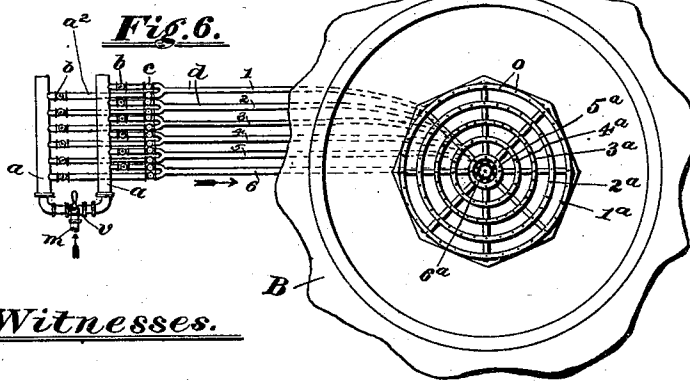


Fig. 7.



Witnesses.

Fred. Arnold.

Ida M. Warren.

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Fig. 8.

by Kimington V. Henthorn
Atty.

UNITED STATES PATENT OFFICE.

CHARLES A. DUNLAP, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF ONE-HALF TO ROBERT J. GILMORE, OF SAME PLACE.

FOUNTAIN.

SPECIFICATION forming part of Letters Patent No. 556,090, dated March 10, 1896.

Application filed August 10, 1894. Serial No. 519,934. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. DUNLAP, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Fountains; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My present invention relates to improvements in water-fountains, and more especially to the type of fountain shown and described in United States Patent No. 469,683, granted to me March 1, 1892; and it consists essentially in the novel construction and arrangement of the water-controlling valves and connections, and also in the peculiar manner in which the central portion of the fountain may be quickly changed to produce other effects, as will be more fully hereinafter set forth and claimed.

The objects I have in view are primarily to provide water-fountains with means whereby not only one or all of its different display-sections may be quickly adjusted or even wholly cut out by the operator at will, but at the same time the water connections leading to the fountain may be adjusted or set to produce a different design upon reversing the main valve interposed between the fountain and the water-supply.

Another object of the invention is to construct the central part of the fountain so that it may be readily withdrawn and adjusted or arranged to produce different effects, even while the main portion of the fountain is in operation.

By means of my present improvements the operator is provided with a conveniently-arranged dual "keyboard," as it may be termed. The arrangement comprises two independent headers or reservoirs communicating with a common reversing or two-way valve interposed between them and the water-main or supply-pipe. Each header is provided with a series of nozzles, controlling-valves, con-

nections and check-valves. The corresponding connections of each header are united in a single pipe beyond the check-valves, and each of said pipes connects with an independent display-ring or discharge-tube of the fountain. By means of this device he can readily manipulate or adjust the controlling-valves of one header as desired and while the fountain is discharging water passing from the previously-adjusted corresponding valves of the other header, the change of water from one header to the other being practically instantaneous by simply reversing the two-way valve.

By means of the invention the central portion of the fountain may be cut out altogether and withdrawn (the fountain being in operation meanwhile) and another and entirely different design or effect produced. For example, different tips or caps may be substituted and the central tube or portion replaced and fastened in position and water again let into said tube, or after the central portion has been withdrawn fireworks or other suitable novelties may be discharged through it, water being discharged through some or all of the other portions of the fountain at the same time, as desired.

In the two accompanying sheets of drawings, illustrating my invention, Figure 1 is a plan view of the dual-valve system or keyboard arranged to be connected with the fountain. Fig. 2 is a vertical transverse sectional view, enlarged, taken on line *xx* of Fig. 1. Fig. 3 is an end view. Fig. 4 is a plan view showing the valve-operating lever, pointer, and dial for indicating the position of the valve's water-way. Fig. 5, Sheet 2, is a vertical central sectional view taken through the fountain proper and showing the removable central portion. Fig. 6 is a similar sectional view, in enlarged scale, showing the central tube as in use. Fig. 7 is a sectional view showing the central tube removed or swung out of position, and Fig. 8 is a plan view of the fountain combined with the dual series of water-controlling valves and connections.

I would state that the several tubular rings 1^a 2^a 3^a 4^a 5^a are or may be constructed and arranged substantially as set forth in my Pat-

ent No. 469,683, hereinbefore referred to, and having suitable discharge-orifices *o*. These rings are supported on a cone-shaped frame A, provided with panes of glass or other transparent or translucent material. The central portion of the present fountain is removable, and as drawn consists of a vertical pipe *e*, arranged to swing in a joint *j*, secured to the inlet connection 6. A discharge-pipe 6^a is fitted to be moved longitudinally in pipe *e*, a packing *e*³ serving to maintain a tight joint. The upper end of the pipe 6^a is screw-threaded or otherwise adapted to receive interchangeable perforated heads or caps *w*. These latter, however, do not exceed in diameter that of the opening or hole *h* formed in the center of the said frame A. If desired, the pipe 6^a may be removably secured to the frame; but practically I find that the internal pressure is sufficient to keep the packing-collar *e*³ in snug contact with the frame and thus maintain a substantially water-tight joint.

After shutting off water from the inlet connection 6 the pipe 6^a may be dropped to its limit and another head substituted, or the whole may be swung downwardly, thus leaving the center opening *h* free for the introduction of fireworks, &c.

The fountain is connected with the water-controlling device about to be described through the medium of independent inlet-pipes *d*, numbered 1 2 3 4 5 6, each being Y-shaped at its forward or inlet end, as clearly shown.

a a indicate two short laterally-separated headers or reservoirs, each having a series of six outlet-nozzles *a'* arranged in a row. The headers communicate with a main supply-pipe *m* through the medium of branch pipes *m'* and an interposed cock or valve *v*, the latter being adapted to shut off water from both headers or to let water into one or the other of them at will. A stem *n'* extends upwardly from said valve, to which is fitted an operating handle or lever *n*. To each of the said nozzles *a'* is secured a suitable cock or valve *b*, which valves in turn are connected with pieces of pipe *a*², common check-valves *c* being interposed between and uniting said pipes *a*² and the forward or branched ends of the inlet-pipes, all as clearly represented. Thus it will be seen that the valved nozzle of one header communicates with one branch of the inlet-pipe *d* and the corresponding nozzle of the other header communicates with the other branch of the same inlet-pipe, the interposed check-valves serving at the same time to prevent water from returning to the valves and headers. By means of this arrangement it is obvious that while water may be passing through one or all of the valves *b* of one header and discharge itself through the orifices of one or all of the fountain-rings the water is at the same time shut off from the other header, so that the operator can set the other series of valves *b* to any degree of opening desired.

In order to enable the operator to accu-

ately set or adjust the water-way of valves *b* to varying degrees, so as to pass different volumes of water, I may provide the movable valve-stem *b'* with a pointer or index *p* secured thereto, and having a suitably-mounted fixed graduated dial or plate *p*² arranged with respect to the pointer. Fig. 4 shows the relative position of the parts, the dotted lines showing the "full-open" position of the valve. *l'* is the valve-operating lever, and *s* are stops for limiting the movement of the valve.

The hereinbefore-described valve-controlling device may be located quite a distance from the fountain and having the several connections concealed. In such case I prefer to use a suitable base or "board" *f*, through which the several valve-stems upwardly extend, the said dial-plate *p*² being secured to it.

It is obvious now that while the fountain may be discharging water (through its several orifices or outlets) flowing to it through one of the adjusted series of valves *b* the operator meanwhile may be manipulating the other series of valves, so as to produce a different design or effect upon shutting off water from the first-named valves and diverting it into the header communicating with the other series of valves.

It is further apparent that a vast number of changes or combinations can be produced by simply varying the amount or degree of the openings of the valves *b*. These may be still further varied or adjusted while water is flowing through them by simply manipulating the handles or keys *l'*.

I would further state that although the several outlets *o* of all the tubular rings may be discharging water simultaneously I find that the best designs and effects are produced when one or more of said rings are for the time being inoperative. For example, rings 1^a, 3^a, and 5^a when in use make a good combination; rings 2^a, 4^a and the center tube 6^a another; rings 2^a and 5^a still another, and so on. It is preferable to so construct and arrange the main inlet-valve *v* that when it stands in the central or neutral position the water then is in communication with both headers to a small degree. This is done so that upon reversing the valve, as in changing from one design to another, all the water will not be shut off from the fountain, the apparent effect being the gradual merging of the previous design into the newer or later one; but when the valve is fully reversed the water is thereby wholly cut off from the other header and its valves *b*, all the water entering into the said newer design then passing through the fellow header or reservoir.

I claim as my invention—

1. The combination with a plurality of headers or water-receivers, as *a*, and an inlet-pipe adapted to conduct water to the fountain proper, of a plurality of branch pipes communicating with said headers and arranged to open or discharge into said inlet-pipe, a self-closing or check valve in each of

said branch pipes to prevent the backflow of water from the inlet-pipe, a water-controlling valve located in each branch pipe between said check-valve and header, and means for
5 controlling the flow of water from a source of supply into said headers, substantially as described.

2. In an apparatus for controlling the flow of water to fountains, the combination of a
10 pair of headers, as *a*, provided each with a series of outlets therefrom, means for controlling the admission of water into the headers from any suitable source of supply, a series of pipes adapted to conduct water
15 to the fountain proper each having inlet branches connected with said header-outlets, a controlling-valve located in each of said branch pipes whereby water can be admitted into the fountain-pipes from either header at will, and check-valves located in the branch
20 pipes, arranged whereby water in passing through the controlling-valves, &c., from one header to the fountain is prevented from flowing back into the other header while the valves thereof are being adjusted or set to
25 produce a different design or effect upon diverting the water from the first-named header into the last-named header, substantially as described.

3. The combination of two headers or reservoirs, a valved connection uniting said headers, a discharge-outlet branch leading from each header, a pipe or conduit into which both branches unite and discharge, and a water-
35 controlling valve and a check-valve located in each branch, substantially as described and for the purpose set forth.

4. In a water-fountain, the combination with a series of suitably-arranged fountain-pipes provided with discharge-orifices and inlet-pipes *d* communicating with the said fountain-pipes, of a pair of independent headers, controllable means for admitting water from a common source into one or the other of said
45 headers at will, independently-controllable discharge-valves, as *b*, communicating with the respective headers, independent pipes *a*² connecting said discharge-valves with the inlet-pipes, and check-valves for preventing
50 water from entering the headers through the said discharge-valves, substantially as described.

5. In a water-fountain of the kind hereinbefore described, the combination with a pair
55 of independent headers, as *a*, and a valved connection uniting the headers adapted to receive water from a common source and admit it into one or the other of said headers at will, of a series of independent concentric rings of
60 pipe arranged one within the other and pro-

vided with discharge-orifices constituting the fountain proper, independent inlet-pipes one for each of said rings, and having connected to each inlet-pipe a suitably-valved branch
65 pipe leading from each header, whereby all the said fountain-rings are connected with both headers, substantially as described.

6. In a water-fountain, a pair of independent headers, means for controlling the admission of water into one or the other of the headers at will, inlet-pipes communicating with the
70 fountain proper, a valved branch pipe from each of the headers to each of said inlet-pipes, and having the valves of said branch pipes provided with pointers and corresponding
75 dials, arranged to indicate the position of the valves with respect to the fountain-outlets, substantially as described.

7. In a water-fountain, a series of independent pipes or rings provided with discharge-
80 orifices and constituting the fountain proper, two or more series of suitably arranged and connected independent inlet-pipes provided with controlling-valves communicating with
85 said discharge-pipes and a header or reservoir for each of said series of valved inlet-pipes, in combination with a suitably-mounted main inlet-valve, as *v*, communicating with a water-
90 main or supply-pipe; said inlet-valve being located between and communicating with the headers and having the valve open slightly into both headers at once when it is in its central or neutral position, substantially as described.

8. In a water-fountain, the combination
95 with a series of suitably-mounted independent pipes or rings of piping provided with discharge-orifices, a removable discharge-tube arranged centrally with respect to the said rings and also forming a part of the fountain
100 proper, and a water-tight base mounted below said rings and forming the top of the fountain-chamber, of a series of inlet-pipes communicating with said rings and tube, a pair
105 of independent headers, a series of independently-controllable valves, as *b*, and branch pipes *a*² communicating with said headers and inlet-pipes, and controllable means for diverting water into one or the other of the headers
110 at will, the water then passing therefrom through one series of said valves and branch pipes into the inlet-pipes, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

CHARLES A. DUNLAP.

Witnesses:

GEO. H. REMINGTON,
IDA M. WARREN.