

Feb. 20, 1962

J. W. BARNETT

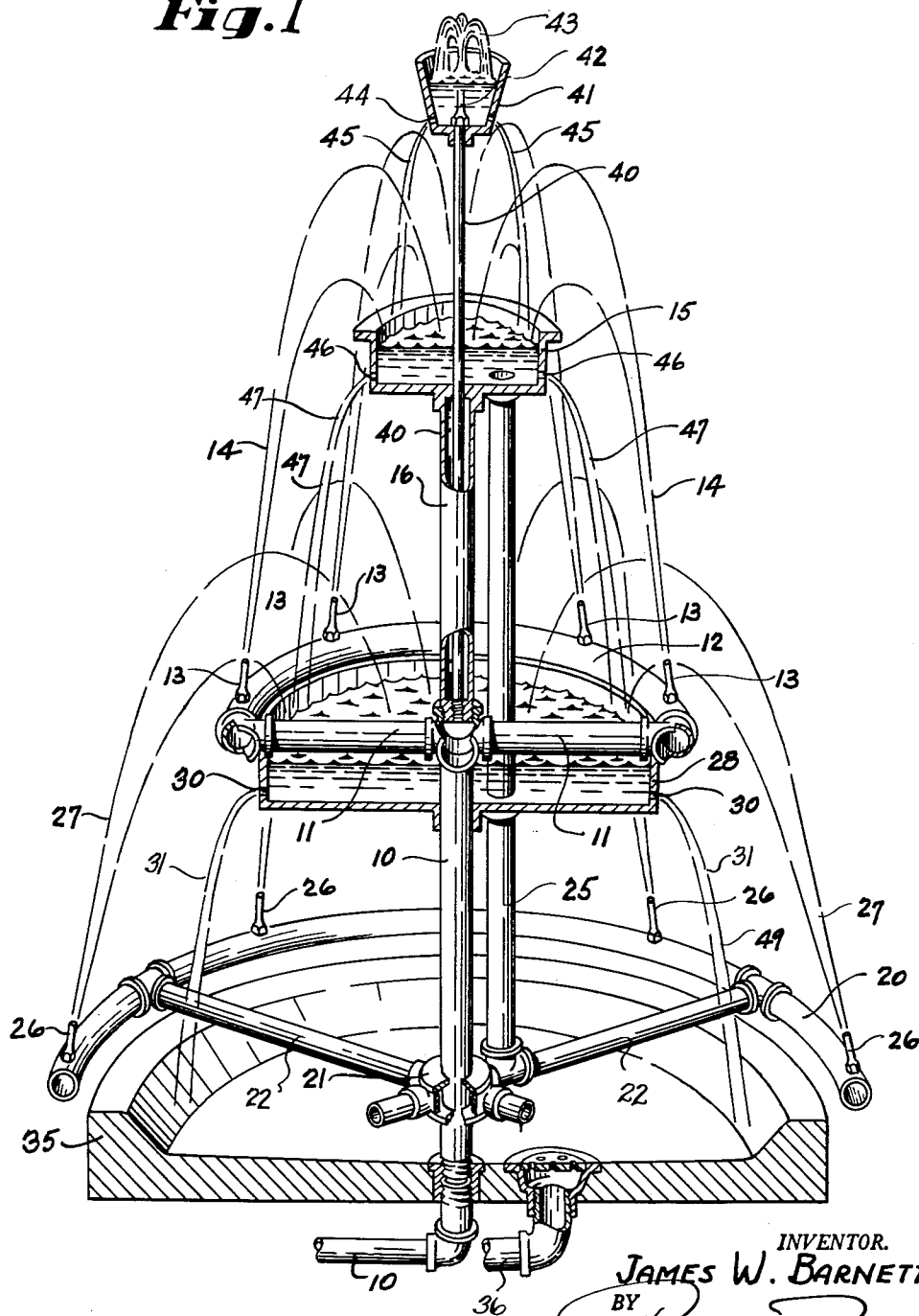
3,022,010

FOUNTAIN

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2 Sheets-Sheet 1

Fig. 1



INVENTOR.
JAMES W. BARNETT
BY *Robinson & Berry*
ATTORNEYS

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J. W. BARNETT

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Fig. 2

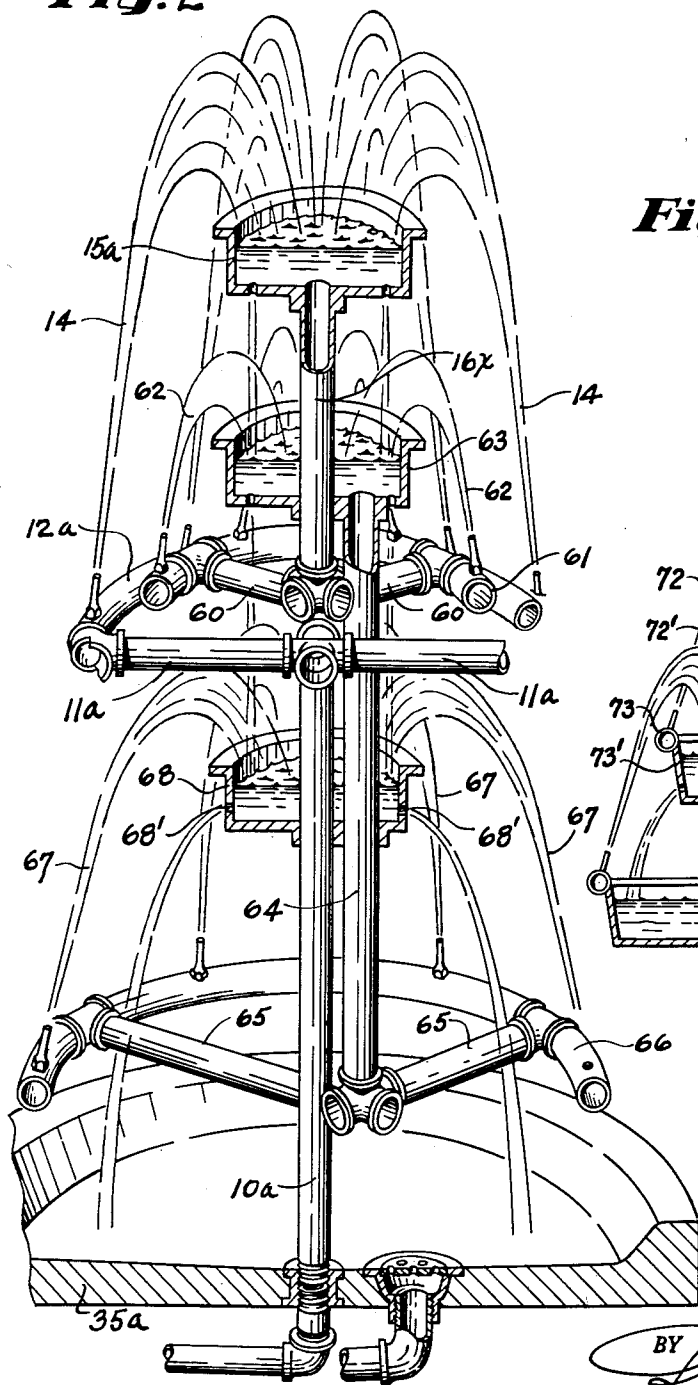
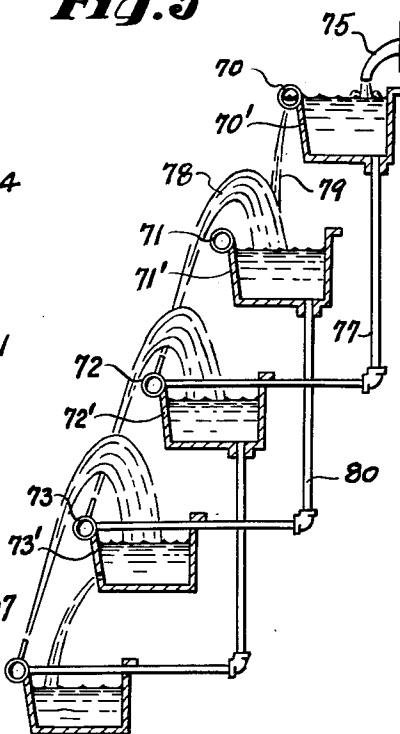


Fig. 3



INVENTOR.
JAMES W. BARNETT

BY
Robinson & Berry
ATTORNEYS

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FOUNTAIN

James William Barnett, 7702 N. 10th St.,
Tacoma, Wash.

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This invention relates to water fountains. More particularly, it has reference to improvements in multiple spray fountains and in the novel manner of re-using the same water supply for successively forming the sprays.

It is the principal object of this invention to provide a decorative and attractive water fountain, employing a succession of upwardly discharging sprays emanating, respectively, from pressure lines set at successively higher levels and received in catch troughs or basins at corresponding successively higher levels, and wherein pressure line connections are provided to supply water from the catch basins to pressure lines at lower level to produce the sprays.

More specifically stated, the present invention resides in the provision of a fountain of the above stated kind or character having a novel water system that provides for the repeated reuse of the water of the highest spray for the production of the succession of lower sprays and wherein the upwardly discharging spray at each level is caught at the top of its rise in a basin and is delivered therefrom under sufficient head pressure to establish the next lower spray.

It is also an object of the invention to provide a fountain as above stated wherein the upwardly discharging sprays at successively higher levels, overlap each other.

Further objects and advantages of the invention reside in the details of construction and combination of parts embodied in the water system as will hereinafter be described.

In accomplishing the above mentioned and other objects of the invention, I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawings, wherein:

FIG. 1 is a vertical, cross-sectional view of a fountain embodying the improvements of the present invention therein.

FIG. 2 is a similar, sectional view of a water fountain of an alternative construction, embodied by the present invention.

FIG. 3 is a cross-sectional view of a fountain of still another form embodying the principles of the present invention therein.

Referring more in detail to the drawings:

In the fountain of FIG. 1, water is supplied under pressure in necessary amount for upward flow through a central, vertical pipe line 10, to a plurality of distributing pipes 11, radiating therefrom, to a continuous or circular pipe line 12 which is equipped at rather closely spaced intervals therealong with spray nozzles 13. These are so positioned and so adjusted as to discharge spray jets 14 upwardly and inwardly therefrom to a predetermined level, there to turn downwardly and immediately be caught in a basin 15. The basin is supported by and at the upper end of an extension 16 of the supply line 10. However, this extension is closed against flow of water therethrough.

Located at a horizontal level that is somewhat below that of the circular pressure pipe line 12, is another pressure pipe line 20, of circular form with a diameter substantially greater than that of the circular pressure line 12 and disposed concentrically about the water supply pipe 10. The circular pressure line 20 is supported from a collar 21 that is secured to and about pipe 10, by a plurality of distributing pipes 22, which are closed at their inner ends

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but which open into the pipe line 20 at their outer ends. Water supply pipes 25 lead downwardly from the bottom of basin 15 to the radial lines 22 to deliver the water from the basin under pressure into ring 20.

The ring 20 is equipped at close intervals therealong with spray nozzles 26 from which spray jets 27 are upwardly and inwardly discharged to cause them to arch over the circular pressure line 12 and to be caught in a basin 28 that is supported immediately below the radially directed pipes 11 at substantial elevation above the pressure line 20.

In operation of this fountain, water is supplied under pressure to pipe line 12, through pipes 10 and 11, to produce the upwardly discharging water spray jets 14 which arch upwardly and inwardly and fall into basin 15. The water caught in this basin flows downwardly therefrom, through one or more pipes 25 to supply the circular pressure pipe line 20 from which the spray jets 27 are discharged upwardly and inwardly to fall in basin 28. Water caught in basin 28 is discharged through small sidewall ports 30 to fall as jets 31 into a catch basin 35 that surrounds the vertical water supply line 10 below the circular pressure line 20. A drainage pipe line 36 leads from the catch basin 35.

To supplement what has already been described in FIG. 1, is a water supply pipe line 40, of relatively small diameter, that leads upwardly from the upper end of pipe 10, through the extension pipe 16, to a point above the basin 15, passing at its upper end upwardly and centrally through the base of a catch basin 41 that is secured about the upper end portion of this pipe. At its upper end, the pipe 40 is equipped with a spray head 42 from which a water spray 43 is upwardly discharged to be caught, as it falls, in the basin 41 from which basin it is discharged through sidewall ports 44 as spray jets 45 directed to fall into the basin 15 which, likewise, is formed in its sidewalls with jet openings 46 for downward discharge as water jets 47 into basin 28 which in turn discharges water jets 31 in a like manner, through sidewall ports 30 into the catch basin 35.

While there is nothing particularly new in the downward falling of water jets from basin to basin, as illustrated by the water jets 45, 47 and 49 at different levels, these jets give background to the succession of upwardly discharging spray jets 27 and 14 and add attractiveness to the fountain.

A succession of upwardly discharging jets, such as those designated at 27 and 14 might be continued indefinitely, each to use the water of the next higher spray, the water as caught in each basin being used to furnish water and head pressure for the next lower spray.

The fountain of FIG. 2 differs from that of FIG. 1 only in piping arrangement and in the vertical spacing or relationship of the pressure rings and basins, which are so spaced as to eliminate the overlapping of the successively arranged sprays as provided for in the series of FIG. 1.

In the FIG. 2 embodiment of the invention, water is supplied, under pressure, to pipe 10a to flow upwardly therein, thence through the several radial lines 11a to the ring-like pressure line 12a. From this pressure line 12a water jets 14 are upwardly and inwardly discharged, to be caught at a high point of their discharge, in the basin 15a from which the water flows downwardly, through pipe 16x to radial distributing lines 60 to supply a pressure ring 61 from which spray jets 62 are upwardly and inwardly discharged. These are caught, at a high point of their discharge, in a basin 63. From basin 63, the water flows through a pipe 64 into radial lines 65, at a level substantially below ring 12a, and into a pressure

ring 66 to be discharged upwardly therefrom as jets 67 that are caught in a basin 68. From basin 68 the water is discharged through ports 68 in its sidewalls, to fall into the catch basin 35a.

The fountains of FIG. 1 and FIG. 2 are of circular form and may be designated as "conical fountains". However, overlapping, upwardly discharging sprays may be placed in a straight line or in curves of various directions without departing from the invention. One such fountain has been illustrated in FIG. 3 wherein a succession of upwardly directed sprays in overlapping relation are shown to emanate from what may be a series of straight or curved horizontal pressure pipe lines in parallel relationship, and at successively lower levels as designated respectively at 70, 71, 72 and 73, extending along the forward top edges of a corresponding arrangement of water catching basins or troughs at successively lower levels, these being designated in FIG. 3 by numerals 70', 71', 72', and 73'. In this fountain, water is received in the upper most trough 70 from a source of supply delivered through pipe line 75. A predetermined amount of this flows downwardly from trough 70' through a discharge pipe 77 to the pipe line 72 and is discharged upwardly therefrom, as spray jets 78, and is caught in trough 71'. Excess or overflow of water received in trough 70 is discharged downwardly therefrom as water jets 79 that supply trough 71'. Water received in trough 71 is discharged downwardly through a pipe 80 to pipe line 73 from which jets are upwardly discharged and caught in trough 72'.

In this fountain arrangement, the succession of troughs at different levels may be continued indefinitely; it being required only that the head pressure for water in any

of the horizontal pipe lines be under sufficient head pressure to discharge the spray upwardly therefrom into the next higher trough.

It is to be noted by reference to FIG. 3 that the water sprays as discharged upwardly from the pipes 73, 72 and 71 in the order enumerated, overlap each other so as to leave no open spaces in the spray from base to top of fountain.

What I claim as new is:

1. A fountain of the character described comprising a plurality of water spray producing pipe lines arranged horizontally at successively higher levels each to discharge spray upwardly therefrom, a like plurality of catch basins arranged at successively higher levels, each to receive the falling spray discharged from the corresponding pipe line substantially at the crest of the spray discharged therefrom, means for supplying water under spray producing head pressure to each of the spray producing pipe lines from a catch basin at a higher level, thus to cause each of the succession of sprays as thus produced to overlap the next higher spray.
2. The fountain of claim 1 wherein each of the water spray producing pipe lines are disposed in succession along the outside edge of the succession of catch basins, and each pipe line receives water caught in the second higher catch basin under a head pressure that will cause the spray as upwardly discharged therefrom to be cast above the next higher pipe line and to fall into the next higher basin.

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