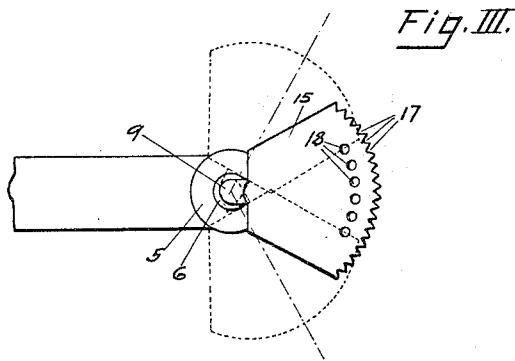
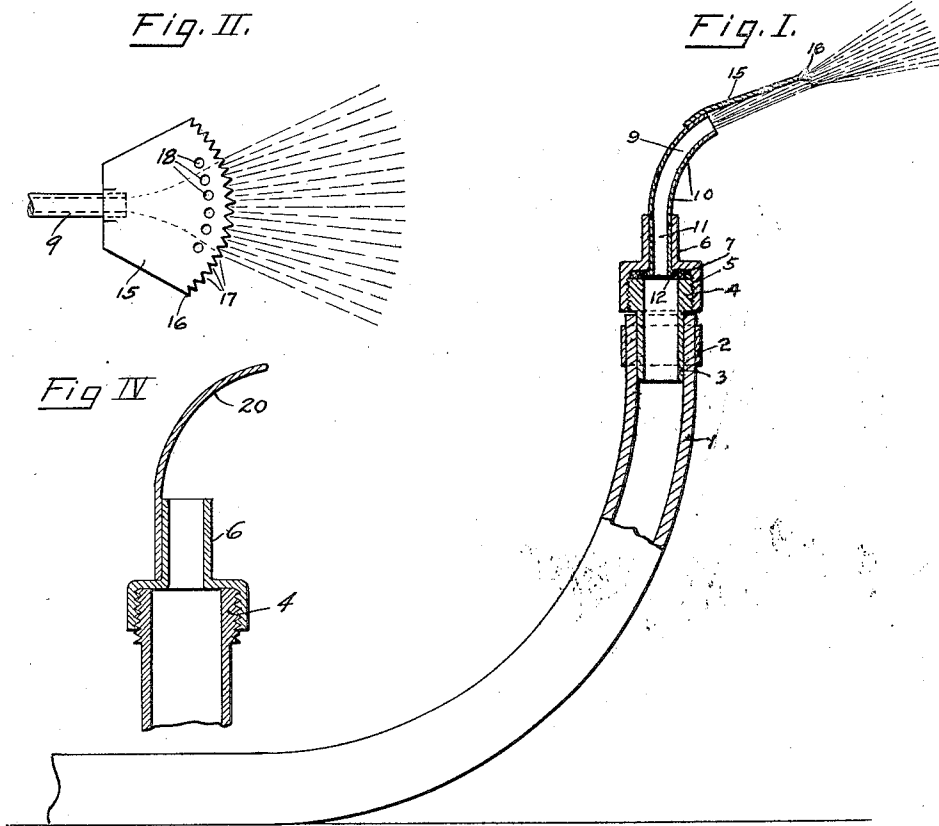


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WATER DISTRIBUTION AND DELIVERY.  
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# UNITED STATES PATENT OFFICE.

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## WATER DISTRIBUTION AND DELIVERY.

Application filed July 30, 1919. Serial No. 314,233.

*To all whom it may concern:*

Be it known that EDWIN E. THOMAS, a citizen of the United States of America, and resident of the city of Portland, in the county of Multnomah, in the State of Oregon, has invented certain new and useful improvements in Water Distribution and Delivery, of which the following is a specification, reference being had to the accompanying drawing.

My invention relates to water distribution and delivery and has for its object the production of means for rendering a flexible pipe terminal self-erecting and sustainable in an elevated position by the force of the current of water which it delivers. Though I refer to my invention as a means of water distribution, it is, of course, applicable to use with any liquid, or even a gas if such a utility were devised.

My device is distinguished from other devices for a like purpose in the fact that it requires no outside means of support other than a flow-controlling pipe, but is self-contained in respect to the means necessary for locating, elevating and directing it.

What constitutes my invention will be hereinafter specified in detail and succinctly set forth in the appended claims.

In the accompanying drawing,

Figure I is a side elevation, partly in section, of a length of hose with my invention in present preferred form of embodiment attached, and shown as in operation.

Figure II is a top plan view of the end of the discharge tip, detached, of the nozzle as shown in Figure I.

Figure III is a view similar to Figure II showing operative adjustments of the discharge tip.

Figure IV is a view corresponding to Figure I, showing a formal modification.

Referring to the numerals on the drawing, 1 indicates, by way of example, a length of pliable hose of any usual or preferred mode of manufacture, such, for example, as one of india rubber or woven fabric. The only consideration that determines its selection is that it must be a pipe of operative flexibility.

To one end of said hose is secured, by any suitable means preferred, as for example, a metal band 2 and part 3 of an ordinary hose-coupling, preferably provided as usual with a threaded cylindrical terminal 4, the

end 4 illustrated constituting a male member of a hose coupling.

To the part 3, the device constituting a preferred form of embodiment of my invention, is shown in the drawings as attached. It comprises a coupling member 4, which in the form shown, includes an internally threaded cylindrical cap 5 that is provided with a preferably integral coaxial hollow bearing piece 6. A usual gasket 7 between the end of the member 4 and the end wall of the cap 5 affords example of means for effecting a water-tight joint between those parts.

It is essential to the objects of my invention only to provide, substantially at the point of delivery of the hose 1, means for effecting a forcible deflected discharge of its fluid contents, said discharge being deflected substantially in the plane of erection desired to be maintained in the terminal portion of the hose or pipe. The language employed in the last preceding sentence is selected advisedly to indicate that a forcible discharge is necessary and that it is necessary only that said deflection of discharge be effected substantially at the point of delivery. In the form of embodiment of my invention illustrated said deflection is effected by the aid of a tube having an inside diameter much less than that of the coupling 3, and bent, as indicated at 10. The constriction afforded by said reduction of diameter gives the requisite force of discharge, and the bend 10 gives, in the aforesaid particular form of embodiment, the required deflection.

I prefer, also, to provide the tube 9 with a straight portion 11, a little greater in length than the length of the member 6, in order that by provision of a loose fitment of the former within the latter, the tube 9 may be easily adjusted, through manipulation, by rotation of it about the longitudinal axis of its portion 11. An annular flange 12 on the inner end of the tube 9 affords means of rotatably securing said tube within its bearing piece 6 without leakage in service.

Upon the discharge end of the tube 9 I prefer, for some purposes only, to provide a baffle-plate or spreader 15. Its function, in the form of embodiment of my invention illustrated, is desirable only as a means of spreading the fluid-discharge into fan-shaped form for sprinkling purposes, and is not therein otherwise essential. To the

same end the plate 15 may be provided with a preferably arcuate forward edge 16, that is preferably fringed with serrations 17. By transverse deflections of its teeth as indicated in Figure I said serrated edge may be made to segregate its sheet of discharge into upwardly and downwardly directed streams disposed in alternating order.

Moreover, additional upwardly discharging streams may be divided out of said sheet of discharge by provision of a row of perforations 18 in the plate 15, the purpose of breaking up of said discharge sheet into variously deflected streams being to disperse for sprinkling purposes the water of discharge equally over the area reached by said discharge, in place of directing it mainly towards the limit of throw of its discharge.

I find that if the bent tube 9 be adjusted so that the longitudinal axis thereof, considered as a whole, coincides with a vertical plane, discharge of its fluid contents under sufficient force of flow will hold the end of the hose fixedly elevated in a vertical plane; but if the discharge end of said tube be turned to one side or the other of the vertical plane, the plane of its fixed erection in service will vary accordingly, thereby, through such adjustment, bringing the point of discharge of the hose closer to or farther from the ground as desired, and increasing or diminishing the area covered by its reach of delivery.

It has been specified that in the form of embodiment illustrated the plate 15 is a non-essential accessory. This is true if it be applied at the end of a bent tube 9. I have discovered, nevertheless, that if as shown in Figure IV it be preferably bent and applied as indicated by 20 directly to the end of a straight tip like the hollow member 6, thereby converting the latter into a straight discharge nipple, the tube 9 being omitted, it will effectively deflect the flow from the hose 1, and thereby exert the self-erecting function upon the end of the hose. It is thereby demonstrated that said self-erecting function is attained by a deflection of the flow discharged from the hose either within or without the hose, confined or unconfined thereby, provided only that said deflection be effected within effective proximity to the end of the pipe to be lifted, or substantially at the point of the flow discharge.

The operation of my device will, it is believed, be fully understood from the foregoing specification without further description.

What I claim is:

1. A device of the kind described, comprising a flexible pipe in combination with means for forcibly deflecting the flow therefrom substantially at its point of discharge, whereby the pipe may be rendered ter-

minally self-erecting and operatively sustainable in a fixed elevated position by the force of the flow of the current which it delivers.

2. A device of the kind described, comprising a flexible pipe in combination with means for forcibly deflecting the flow therefrom substantially at its point of discharge, whereby the pipe may be rendered terminally self-erecting and operatively sustainable in a fixed elevated position by the force of the flow of the current which it delivers, and means for controlling the angle of uplift of the pipe terminal.

3. In a device of the kind described, the combination with a flexible pipe of constricting means for effecting an out-flow at its end, and means for deflecting said out-flow substantially at its point of discharge, whereby the end of said pipe may be uplifted and fixedly sustained in an elevated position exclusively by the force of the current which it delivers.

4. The combination with a flexible pipe, of a bent, constricted discharge tube, the bend thereon being designed and adapted to impart and maintain uplift of said pipe exclusively by the force of the current passing through it.

5. The combination with a flexible pipe, of a hose nozzle, a constricted discharge nipple thereon, and means for deflecting the discharge from the nipple substantially at its point of discharge, whereby the end of said pipe may be uplifted and fixedly sustained in elevated position exclusively by the force of the current it delivers, said means comprising an operatively disposed uplifting flow-deflecting member.

6. A self-lifting hose nozzle consisting of the combination of a flexible hose and a flow-constricting tube provided with a bend therein made and disposed to effect the uplifting function desired, substantially as set forth.

7. A self-lifting hose nozzle consisting of an internally threaded cap provided with a hollow bearing piece, and a bent tube loosely mounted in said piece and provided with a terminal retaining flange inside of said cap.

8. The combination with a flexible hose, of a self-lifting hose nozzle consisting of a flow-constricting tube provided with a bend therein made and disposed to effect the uplifting function desired, and a spreader operatively secured to said tube.

9. The combination with a flexible hose, of a self-lifting hose nozzle consisting of a flow-constricting tube provided with a bend therein made and disposed to effect the uplifting function desired, and a spreader operatively secured to said tube, said spreader having serrations upon its forward edge.

10. The combination with a flexible hose, of a self-lifting hose nozzle consisting of a

flow-constricting tube provided with a bend therein made and disposed to effect the up-lifting function desired, and a spreader operatively secured to said tube, said spreader having serrations composed of transversely deflected teeth.

11. The combination with a flexible hose, of a self-lifting hose nozzle consisting of a flow-constricting tube provided with a bend therein made and disposed to effect the up-lifting function desired, and a spreader op-

eratively secured to said tube, said spreader being provided with a row of sprinkling effecting perforations as set forth.

In testimony whereof, I have hereunto set my hand in the presence of two subscribing witnesses.

EDWIN E. THOMAS.

Witnesses:

JOSEPH L. ATKINS,  
T. B. ATKINS.