

Nov. 18, 1924.

M. S. DUNKELBERGER  
AUTOMATIC BALL SPRAY NOZZLE

1,515,664

Filed June 25, 1923

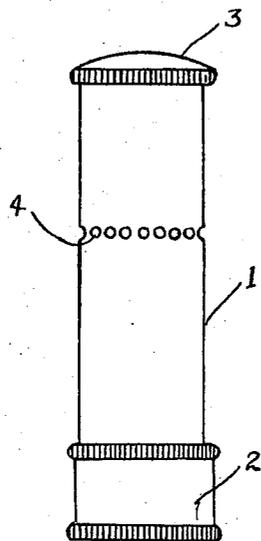


Fig. 1.

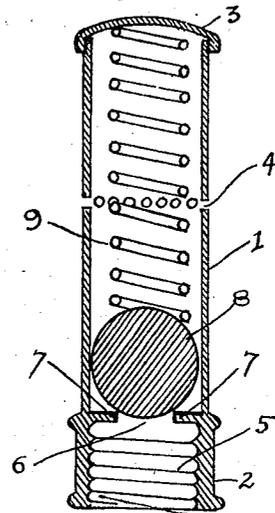


Fig. 2.

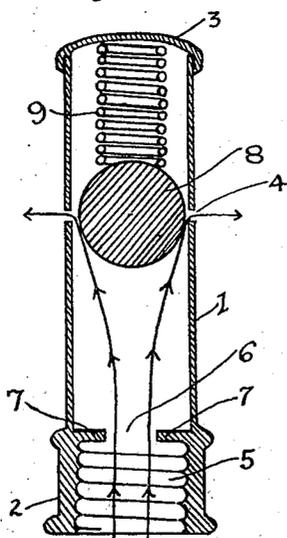


Fig. 3.

INVENTOR,  
*Milton S. Dunkelberger,*  
BY *Howard S. Smith,*  
ATTORNEY.

# UNITED STATES PATENT OFFICE.

MILTON S. DUNKELBERGER, OF DAYTON, OHIO.

## AUTOMATIC BALL SPRAY NOZZLE.

Application filed June 25, 1923. Serial No. 647,595.

*To all whom it may concern:*

Be it known that I, MILTON S. DUNKELBERGER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Automatic Ball Spray Nozzles, of which the following is a specification.

This invention relates to new and useful improvements in automatic ball spray nozzles, and has particular reference to a nozzle for producing a mist spray, for spraying lawns, trees and shrubbery.

It is one of the principal objects of my invention to provide a spray nozzle that will spray water in a uniform manner over a large area, at various pressures, without frequent adjustments.

It is another object of my invention to provide a spray nozzle that will break up the stream of water, by causing it to escape through a series of small holes in the periphery of the nozzles, in the form of a misting spray.

Other important and incidental objects will be brought out in the following specification and particularly set forth in the subjoined claims.

In the accompanying drawings illustrating one form of embodiment of my invention, Figure 1 is a side elevational view of my improved spray nozzle. Figure 2 is a longitudinal sectional view of the same showing the ball and spring arrangement in the upper part of the structure. And Figure 3 is a longitudinal sectional view of the nozzles showing the position of the ball when the device is in use.

Throughout the specification and drawings, similar reference characters denote corresponding parts.

In a detailed description of the form of embodiment of my invention illustrated in the accompanying drawings, the numeral 1 designates a cylindrical barrel preferably constructed of brass, having a base portion 2 and a top or cap portion 3 which is preferably of a convex form and is attached by its internally threaded portion to the externally threaded portion of the cylindrical barrel 1. Between the base 2 and the

cap 3 there is provided in the periphery of the barrel a circumferential series of holes 4.

The base 2 has an internally threaded portion 5 which forms a standard female hose connection. The upper part of the base 2 is provided with an opening 6 in an annular ledge portion 7 that forms a seat for a ball 8 which is preferably constructed of brass. Disposed between this ball and the cap 3 of the barrel is a helical spring 9.

The pressure of the water passing through the opening 6 will raise the ball 8 to the vicinity of the holes 4, as shown in Figure 3, where it will vibrate against the tension of the spring 9, in response to the fluctuating pressure of the water, to break the latter up into different streams that are horizontally forced out of the holes 4 in the form of a fine mist or spray, as indicated by the arrows in said figure. The vibrating ball 8 thus assists the holes 4 in radiating the water from the nozzle so that it may descend uniformly upon a lawn like a misting rain.

When the water is turned off at the hydrant, the ball will be forced back to its normal position on the ledge 7 by the pressure of the spring 9, to close the opening 6.

I do not wish to be limited to the details of construction and arrangement herein shown and described, and any changes or modifications may be made therein within the scope of the subjoined claims.

Having described my invention, I claim:

1. A nozzle comprising a barrel closed at the top and having a base portion providing an entrance for a fluid, an annular ledge in said base portion forming a seat, said barrel having a ring of holes above said seat, resilient means in said barrel above said seat, and a ball substantially equal in diameter to the diameter of the barrel, and free to be raised above said seat by the incoming fluid, into engagement with the resilient means, where it will assume a position in which its equator will lie in the plane of the ring of holes for vibration against said resilient means.

2. A nozzle comprising a barrel closed at the top and having an internally threaded base portion providing an entrance for a fluid, an angular ledge in said base portion

forming a seat, said barrel having a ring of holes above said seat, a helical spring in the barrel whose upper end engages the top of the latter, and a ball substantially equal in diameter to the diameter of the barrel, and free to be raised above said seat by the incoming fluid, into engagement with the helical spring, where it will assume a position

in which its equator will lie in the plane of the ring of holes for vibration against said helical spring. 10

In testimony whereof I have hereunto set my hand this 22nd day of June, 1923.

MILTON S. DUNKELBERGER.

Witness:

HOWARD S. SMITH.