July 7, 1931. J. J. FREEMAN 1,813,733

HOSE NOZZLE

Filed July 30, 1928

Fig. 1.

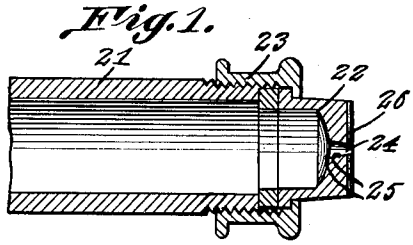


Fig. 2.

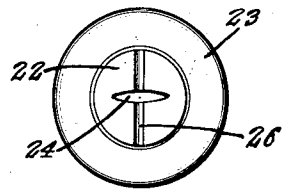


Fig. 5.

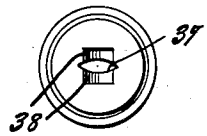


Fig. 6.

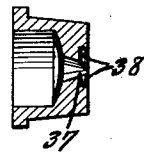


Fig. 3.

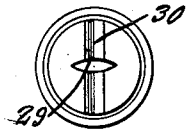


Fig. 4.

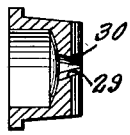


Fig. 7.

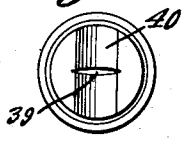


Fig. 8.

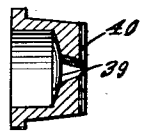


Fig. 9.

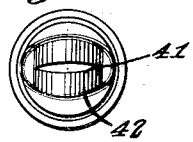
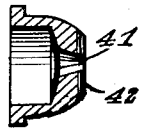


Fig. 10.



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WITNESS:

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1,813,733

UNITED STATES PATENT OFFICE

JAMES J. FREEMAN, OF BRADFORD, PENNSYLVANIA

HOSE NOZZLE

Application filed July 30, 1928. Serial No. 296,210.

This invention relates to nozzles and has for an object the provision of a nozzle tip which may be made integral with or detachably connected to a nozzle to deliver a wide fan-like form of fine spray which will extend for a relatively large radius, and will closely simulate the action of a gentle steady rain.

Another object of the invention is the provision of a nozzle, by means of which plants and other vegetation may be properly watered without danger of washing out the soil.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claim.

In the drawings:—

Figure 1 is a sectional view illustrating a portion of a nozzle with the invention attached.

Figure 2 is an end view.

Figures 3 and 4 are end views and sections respectively showing a slightly different form of tip.

Figures 5 and 6 are end and sectional views of another modified form of the invention.

Figures 7 and 8 are like views of still another form.

Figures 9 and 10 are like views of a further modified form.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, in Figures 1 and 2, the reference character 21 indicates a portion of a nozzle to which a tip 22 is removably attached. This tip forms one embodiment of the invention and is secured to the nozzle by means of a coupling 23. The tip is provided in its outer end with a discharge passage 24 of elongated substantially oval shape and is arranged diametrically of the tip. The passage 24 has its opposed walls 25 relatively inclined so that the passage tapers outwardly and provides a wide fan-like fine spray.

Bisecting the passage 24 in the outer end of the tip 22 is a groove 26 which communicates with the passage and which at its point of communication enlarges the discharge passage slightly so as to slightly increase the capacity of the passage at this point.

In Figures 3 and 4 the passage 29 is wider and shorter than the previously described discharge passages, and the groove 30 which bisects this passage is wider and deeper. The volume delivered through the discharge passage 27 is substantially the same as that delivered through the passages 24 and 27, but the area or radius is restricted.

In Figures 5 and 6, the tip is provided with a restricted passage 37 which communicates with cavities or depressions 38 upon opposite sides of the passage. The stream delivered through the passage 37 will be restricted in volume, but will spread both longitudinally and laterally of the passage.

In Figures 7 and 8, the passage 39 has a relatively wide shallow groove 40 communicating therewith, while the tip shown in Figures 9 and 10 has its passage 41 communicating with a concaved depression 42 in its outer face.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claim.

Having described the invention what is claimed is:

A nozzle tip comprising a body circular in transverse section, said body being hollow and open at its receiving end and having a wall disposed across its discharge end, the inner surface of said wall having centrally converging concaved areas, and the outer surface of said wall lying in a plane at a right angle to the axis of the tip, said wall having thickness at its center whereby said inner and

outer wall surfaces are spaced from each other, said wall having an elongated passageway passing through its center, said passageway having converging concaved side wall areas, the tip having in its outer plane surface a transversely concaved groove disposed at a right angle to the length of the passageway, the surfaces of the groove meeting the surfaces of the passageway at acute angled edges, said edges being bowed downwardly and longitudinally along the groove to produce a fan like form of fine spray.

In testimony whereof I affix my signature.

JAMES J. FREEMAN.