Sept. 10, 1940. M. LESTER 2,214,083

COMBINED IRRIGATING AND FERTILIZING DEVICE

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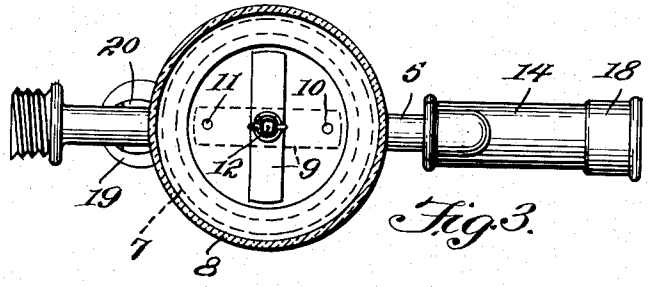


Fig. 3.

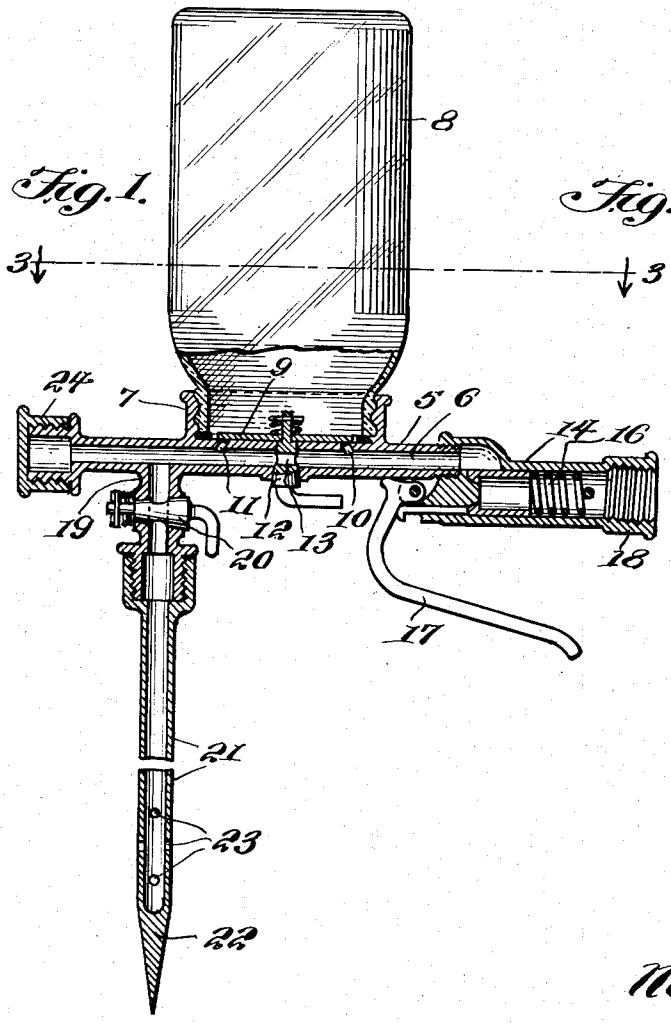


Fig. 1.

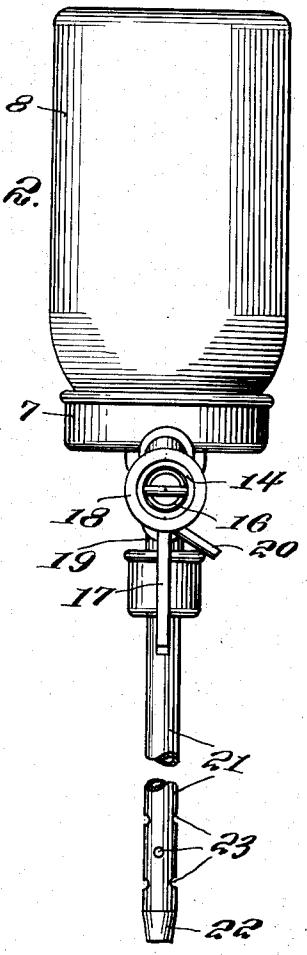


Fig. 2.

Mack Lester
INVENTOR

BY Victor J. Evans & Co.
ATTORNEYS

WITNESS J. T. L. Wright

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COMBINED IRRIGATING AND FERTILIZING DEVICE

Mack Lester, Tacoma, Wash.

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3 Claims. (Cl. 277—4)

My invention relates to a combined irrigating and fertilizing device for plants and has as one of the principal objects thereof the provision of a device of the character described so constructed and arranged as to effect a spraying of the plants above the ground as well as to irrigate and fertilize the ground adjacent the roots of the plants.

Another object of my invention is to provide a device of the character described which is simple in construction, durable in use, efficient in operation and economical in manufacture.

Other objects and advantages will be apparent from the following description, appended claims and annexed drawing.

Referring to the drawing wherein like reference characters designate like parts throughout the several views:

Figure 1 is a vertical sectional view of my invention.

Figure 2 is an end elevation thereof.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

In practicing my invention, I provide an elongated casing 5 fashioned with a centrally disposed bore 6 and between the ends thereof with a housing 7 having detachably threaded therein the open end of a jar 8, the latter preferably constructed of glass or the like and constituting a combined storage and mixing chamber as hereinafter more fully described.

The wall of the casing 5, within the housing 7, has mounted thereon a rotary valve member 9 operable for selectively opening and closing a pair of oppositely disposed upwardly converging inlet and discharge passages 10 and 11 respectively. A conical shaped valve member 12 is rotatably mounted in the casing between the passages 10 and 11 and is formed with an opening 13 for establishing communication between the adjacent ends of the bore 6. The upper end of the member 12 is fixed to the valve member 9 and is provided with a tensioning spring to maintain said valve member 9 in appressed relation with the outer wall of the casing 5. Partial rotation of the valve member 12, for instance 90°, serves to open the passages 10 and 11 and close the bore 6 therebetween or vice versa as the case may be.

One end of the casing 5 has connected thereto a valve housing 14, the latter having slidably mounted therein a valve member 15 normally maintained in closed position by means of a spring 16 for closing the bore extending therethrough.

The spring is interposed between one end of the valve member 15 and a pin extending through the bore of said housing.

The opposite end of the valve member 15 is provided with an arm slidably extending without the housing 14 for engagement with a trigger 17 pivotally mounted on said housing whereby operation of the trigger serves to actuate the valve member 15 against the tension of the spring 16 and permit a flow of liquid through the bore of said housing 14 into the bore 6 of the casing 5. The housing 14 is integrally fashioned with a sleeve 18, the latter being interiorly threaded for connection with a liquid supply pipe or the like whereby water is introduced into the device.

The opposite end of the casing 5 is integrally fashioned with a depending connection 19 provided with a cut off valve 20, the lower end of the connection 19 has threaded thereon the upper end of a tube 21, the lower end of which is fashioned with a sharp point 22 for penetrating the ground. The tube, above said point 22, is provided with a plurality of discharge openings 23 whereby liquid may be discharged from said tube about the roots of plants and the like. The end of the casing 5, adjacent the connection 19, has threaded thereon a cap 24 whereby to close the end of the bore 6.

In operation. the container 8 is provided with fertilizer, for instance in powdered form, and the valve member 12 is operated to close the bore 6 between the passages 10 and 11. The cut off valve 20 is opened to effect communication between the bore 6 and the bore of the tube 21 whereupon the trigger 17 is operated to permit the introduction of water into the bore 6 whereupon the water is introduced into the jar 8 through the passage 10 and mixes therein with the fertilizer. The water thus mixed with the fertilizer, is discharged through the passage 11 into the bore 6 and thence into the tube 21 and sprayed therefrom through the openings 23 about the roots of a plant to fertilize the same.

When it is desired to merely irrigate the roots of the plant, the valve member 12 is actuated to effect closure of the passages 10 and 11 by the valve member 9 and opening of the bore 6 therebetween, whereupon water is discharged directly through the bore 6 into the tube 21 and sprayed through the openings 23 about the roots of the plant to irrigate the same.

When it is desired to fertilize or irrigate the plant above the ground, the cut off valve 20 is operated to close the bore of the connection 19 and the tube 21 is removed from said connection.

The cap 24 is then detached from the end of the casing and a spray nozzle or the like attached thereto and the device operated for irrigating or fertilizing the plant through said nozzle in the same manner as described in connection with the tube 21.

From the foregoing it will be apparent that I have provided a simple and efficient device whereby the roots as well as the tops of plants may be selectively irrigated or fertilized as desired.

It is obvious that the invention is not confined to the herein described use therefor as it may be utilized for any purpose to which it is adaptable. It is therefore to be understood that the invention is not limited to the specific construction as illustrated and described, as the same is only illustrative of the principles of operation, which are capable of extended application in advance forms, and that the invention comprehends all construction within the scope of the appended claims.

What I claim is:

1. In a valve structure, a casing formed with a liquid passage extending therethrough and provided with a housing, said casing having a wall connected to said housing and constituting a partition separating said housing from said passage, said partition provided with inlet and outlet ports for effecting communication between said housing and said passage, a valve member mounted in said casing between said ports for controlling a flow of liquid through said passage, a valve member fixed to said first mentioned valve member and disposed in said housing in appressed relation with said partition for controlling the flow of liquid through said ports, both of said valve members operable in unison to positions closing and opening said passage and opening and closing said ports respectively whereby liquid flowing through said passage is by-passed through said housing for mixture with any contents therein and directed solely through said passage respectively.

2. The structure of claim 1 as set forth and defined therein including, means carried by one of said valve members exteriorly of said casing and housing for simultaneously operating both of said valve members.

3. In a valve structure, a casing formed with a liquid passage extending therethrough and provided with a housing having inlet and outlet ports communicating with said passage, a valve member mounted in said casing between said ports for controlling a flow of liquid through said passage, a valve member fixed to said first mentioned valve member and disposed in said housing for controlling the flow of liquid through said ports, both of said valve members operable in unison to positions closing and opening said passage and opening and closing said ports respectively whereby liquid flowing through said passage is by-passed through said housing for mixture with any contents therein and directed solely through said passage respectively, means carried by one of said valve members exteriorly of said casing and housing for simultaneously operating both of said valve members.

MACK LESTER.