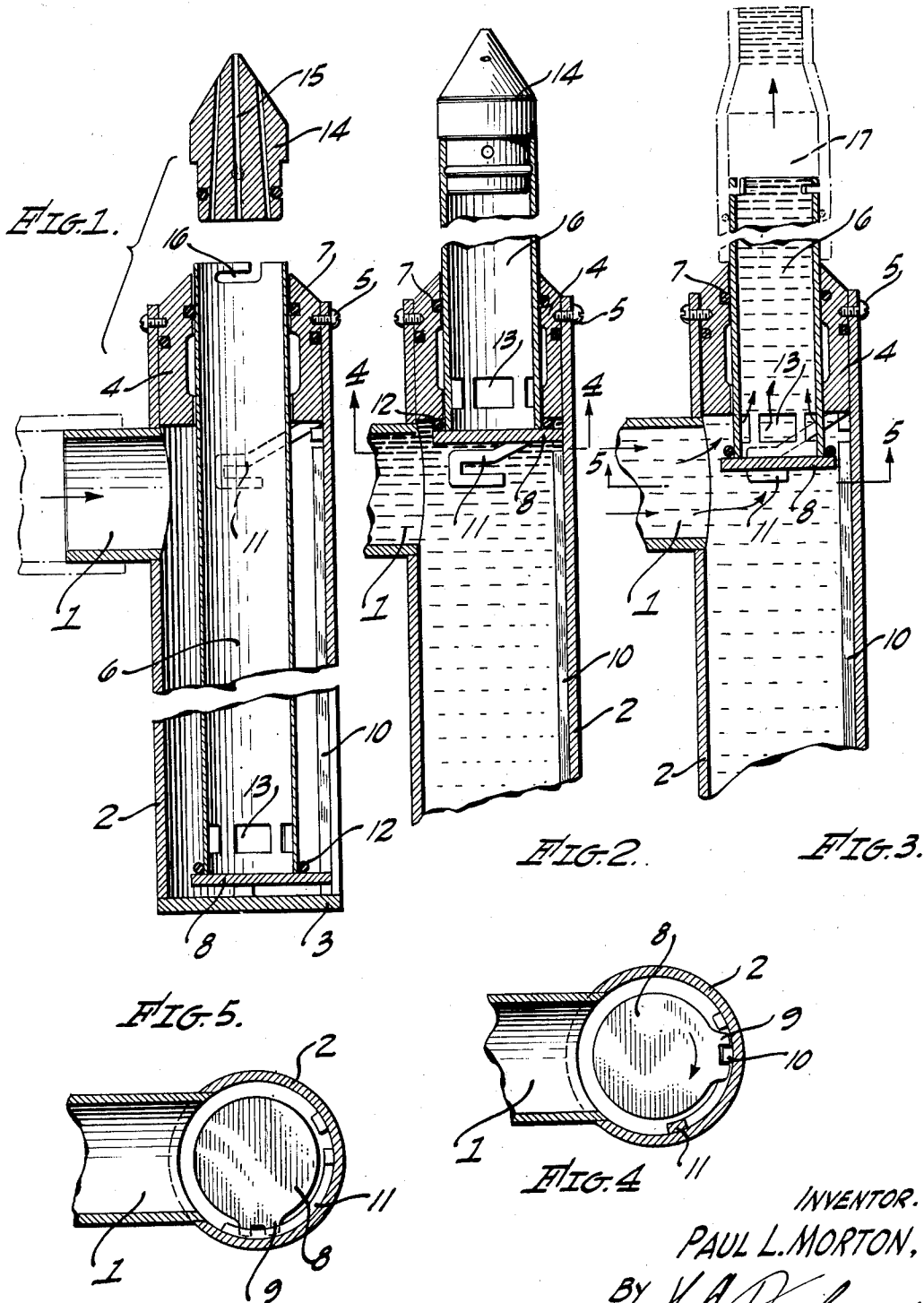


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SOIL PENETRATING TERMINAL
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SOIL PENETRATING TERMINAL

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This invention relates to a soil penetrating terminal which will be pressed upwardly through the soil in which it is buried by pressure of the water in the main line and when the terminal is elevated a suitable sprinkler pipe or other conduit can be attached thereto.

An object of my invention is to provide a novel soil penetrating terminal, which is provided with a removable jet, this jet washing the soil away from the terminal as the terminal is pressed upwardly by the pressure of the water in the main line.

Another object of my invention is to provide a novel soil penetrating terminal, which will automatically shut off the water from the terminal when the terminal reaches its maximum raised position.

Still another object of my invention is to provide a novel soil penetrating terminal, which can be held in a slightly depressed position from its maximum raised position, thereby permitting water to flow upwardly through said terminal from the main line.

Still another object of my invention is to provide a novel soil penetrating terminal, which is simple in construction, effective in operation, and which can be used not only to control the flow of water but also other gases, such as fuel gases for the purpose of heating orchards, etc.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

In the drawing:

Figure 1 is a longitudinal sectional view of my soil penetrating terminal with the terminal pipe in depressed position.

Figure 2 is a fragmentary longitudinal sectional view showing the terminal pipe in completely raised position.

Figure 3 is a fragmentary longitudinal sectional view showing the terminal pipe in partly depressed position and permitting flow of fluid through the pipe.

Figure 4 is a sectional view taken on line 4—4 of Figure 2.

Figure 5 is a sectional view taken on line 5—5 of Figure 3.

Referring more particularly to the drawing, the numeral 1 indicates the main fluid conduit line, which is buried a suitable distance in the soil and which carries the water or other fluid or gas around the orchard or farm plot. It is to be understood that my invention is particularly applicable to overhead sprinkling systems which are

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used in the irrigation of farm plots, particularly orchards, truck gardens, etc.

The pipe 1 extends into a vertical housing 2, and this housing is preferably closed at the bottom, as shown at 3. A guide fitting 4 is fixedly mounted in the upper end of the housing 2 by suitable means, such as a plurality of bolts 5, or the like. A terminal pipe 6 is mounted within the housing 2 and is spaced from the inner walls of this housing, that is, the diameter of the terminal pipe 6 is materially less than the inside diameter of the housing 2. The terminal pipe 6 is movable vertically within the housing 2, as will be further described, and furthermore, this terminal pipe is guided in the fitting 4. A suitable packing 7 in the fitting 4 surrounds the terminal pipe 6 and prevents leakage of fluid around the outside of the pipe.

The terminal pipe 6 is provided with a bottom plate or wall 8 and this plate is formed with a bifurcated lug 9. The lug 9 straddles a vertical rib 10 on the inside of the housing 2, as best shown in Figure 4. A cam rib 11 is formed on the inside of the housing 2 and immediately below the fitting 4. The purpose of this cam rib is to provide a guide and shoulder, to be engaged by the lug 9, to hold the terminal pipe 6 in slightly lowered position or flowing position, as shown in Figure 3.

A packing 12 surrounds the terminal pipe 6 above the bottom plate 8 and this packing bears against the bottom of the fitting 4, as shown in Figure 2, to seal off the pipe 6 and prevent water from flowing therethrough when the terminal pipe is raised to its maximum vertical position.

A plurality of ports 13 are provided in the lower end of the pipe 6 and water flows through these ports and upwardly in the pipe, as will be evident. A jet plug 14, with small jet ports 15 therein, is removably attached to the upper end of the terminal pipe 6, as shown in Figure 2. The plug 14 may be held in the pipe 6 by engaging the bayonet slot 16, or by other suitable means.

When the terminal pipe 6 is completely raised, as shown in Figure 2, a conduit 17, or a sprinkler, or the like, can be attached thereto. The pipe 6 is then pressed downwardly a short distance and is rotated approximately ninety degrees, at which time the lug 9 engages the shoulder 11, thus holding the pipe 6 in partly lowered position with the ports 13 open. Water or other fluid then flows through these ports upwardly, through the pipe 6, into the conduit 17, or through the sprinkler head, or other attachments.

In operation, the main line 1 is buried a suitable distance in the ground. The pipe 6 is then

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pushed downwardly in the housing 2 so that the pipe and the plug 14 mounted thereon, is completely buried. It is then possible to cultivate the soil without danger of hitting or breaking the pipe 6, or other conduit attached thereto. When it is desired to irrigate, it is only necessary to cause water under pressure to flow through the main line 1, this is normally done by the farmer when a pump is started. As soon as the water flows into the housing 2, it will press upwardly against the bottom of the plug 14, and also jet through the openings 15, thus jetting the soil away from above the plug 14 and permitting the terminal pipe 6 to rise above the surface of the ground. When the pipe 6 is raised to its maximum position, it will automatically shut off since the position shown in Figure 2 is now reached. The operator now attaches the appropriate conduit, or other fitting, 17, then presses the terminal 6 downwardly, and rotates it ninety degrees, which reopens the ports 13 and permits fluid to flow upwardly through the terminal pipe and in fittings attached thereto.

Having rescribed my invention I claim:

1. A soil penetrating terminal comprising a cylindrical housing, a ring fitting, means securing said fitting at the upper end of said housing, a pipe extending into said housing below the fitting, a terminal pipe freely and vertically slidable in said housing and through said fitting, said terminal pipe projecting above the fitting in the raised position of the terminal pipe, said terminal pipe having a plurality of intake ports adjacent the lower end thereof, a wall closing the lower end of said terminal pipe, a packing means surrounding the terminal pipe and positioned at the lower end of said pipe and below the ports, said packing means engaging the lower face of said fitting whereby said ports are closed in the raised position of said terminal pipe and latch means below said fitting and engageable by said terminal pipe to hold said packing means unseated, with the packing means spaced a distance below the bottom of said fitting and permitting flow through said ports in the terminal pipe.

2. A soil penetrating terminal comprising a cylindrical housing, a ring fitting, means securing said fitting at the upper end of said housing, a pipe extending into said housing below the fitting, a terminal pipe freely and vertically slidable in said housing and through said fitting, said terminal pipe projecting above the fitting in the raised position of the terminal pipe, said terminal pipe having a plurality of intake ports adjacent the lower end thereof, a wall closing the lower end of said terminal pipe, a packing means surrounding the terminal pipe and positioned at the lower end of said pipe and below the ports, said packing means engaging the lower face of said fitting whereby said ports are closed in the raised position of said terminal pipe and latch means below said fitting and engageable by said terminal pipe to hold said packing means unseated, with the packing means spaced a distance below the bottom of said fitting and permitting flow through said ports in the terminal pipe, said latch means including an inwardly projecting shoulder on the inside of the housing and an outwardly projecting lug on the terminal pipe engaging said

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shoulder on partial rotation of said terminal pipe.

3. A soil penetrating terminal comprising a cylindrical housing, a ring fitting, means securing said fitting at the upper end of said housing, a pipe extending into said housing below the fitting, a terminal pipe freely and vertically slidable in said housing and through said fitting, said terminal pipe projecting above the fitting in the raised position of the terminal pipe, said terminal pipe having a plurality of intake ports adjacent the lower end thereof, a wall closing the lower end of said terminal pipe, a packing means surrounding the terminal pipe and positioned at the lower end of said pipe and below the ports, said packing means engaging the lower face of said fitting whereby said ports are closed in the raised position of said terminal pipe and latch means below said fitting and engageable by said terminal pipe to hold said packing means unseated, with the packing means spaced a distance below the bottom of said fitting and permitting flow through said ports in the terminal pipe, a plug, means removably mounting the plug in the upper end of the terminal pipe, said plug having a plurality of jet ports extending vertically therethrough.

4. A soil penetrating terminal comprising a cylindrical housing, a ring fitting, means securing said fitting at the upper end of said housing, a pipe extending into said housing below the fitting, a terminal pipe freely and vertically slidable in said housing and through said fitting, said terminal pipe projecting above the fitting in the raised position of the terminal pipe, said terminal pipe having a plurality of intake ports adjacent the lower end thereof, a wall closing the lower end of said terminal pipe, a packing means surrounding the terminal pipe and positioned at the lower end of said pipe and below the ports, said packing means engaging the lower face of said fitting whereby said ports are closed in the raised position of said terminal pipe and latch means below said fitting and engageable by said terminal pipe to hold said packing means unseated, with the packing means spaced a distance below the bottom of said fitting and permitting flow through said ports in the terminal pipe, said latch means including an inwardly projecting shoulder on the inside of the housing and an outwardly projecting lug on the terminal pipe engaging said shoulder on partial rotation of said terminal pipe, a plug, means removably mounting the plug in the upper end of the terminal pipe, said plug having a plurality of jet ports extending vertically therethrough.

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