

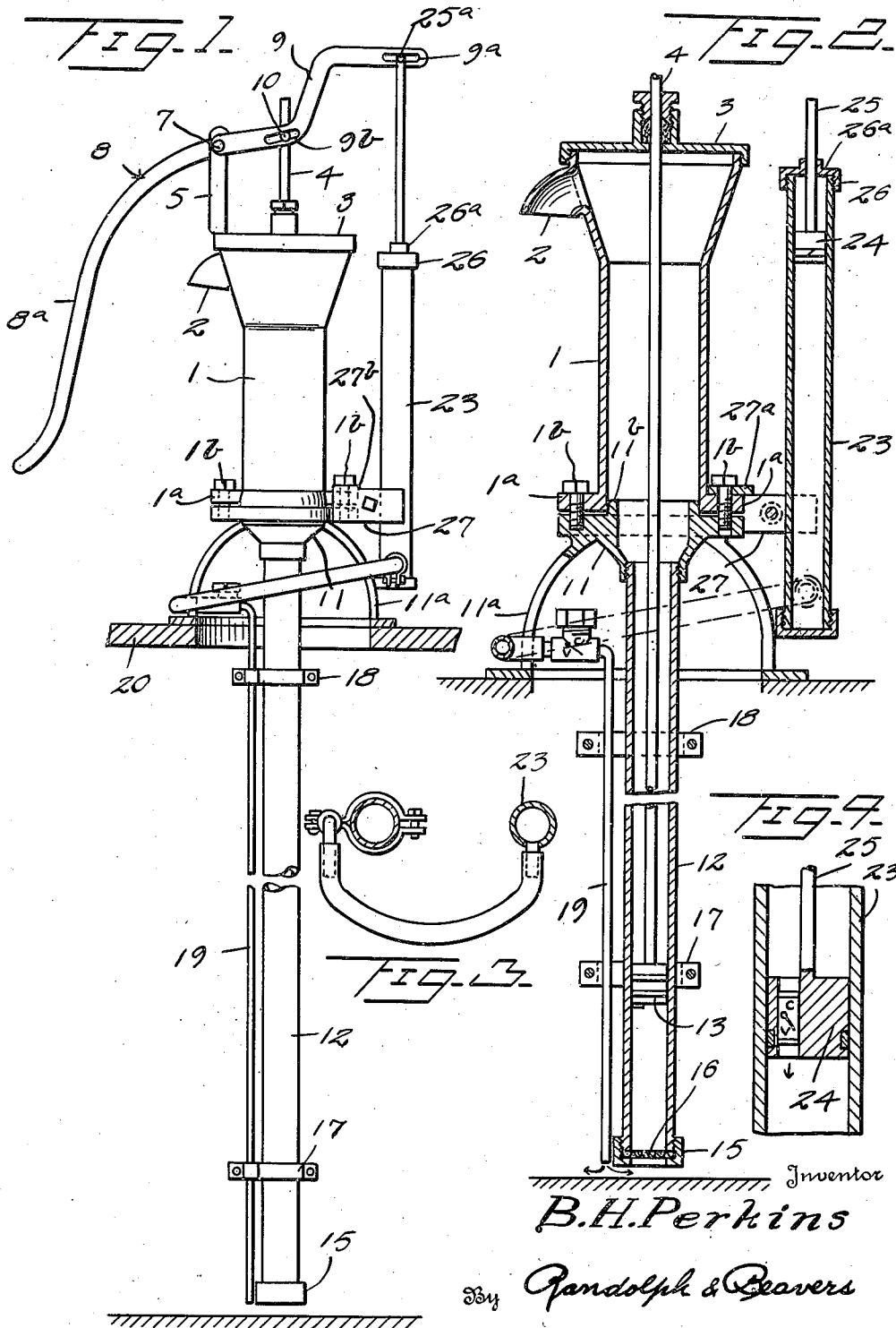
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2 Claims. (Cl. 103-6)

This invention relates to pumps for cisterns.

The object of my invention is to force air into the water during the pumping process so that the oxygen of the air is dissolved in the water, the latter is purified by the ozone of the air and also agitated to enhance freshness.

This and other objects of my invention are accomplished by the construction hereinafter more fully described and claimed and illustrated by the drawing in which:

Figure 1 is a front elevation of my pump;

Figure 2 is a vertical section through the pump;

Figure 3 is a horizontal section through the upper portion of the pump barrel and the lower portion of the air cylinder.

Figure 4 is a vertical central section through the air cylinder and piston and showing the valve.

A casing 1 has at its upper end a portion shaped like an inverted bell in which a spout 2 is formed. The wider opening of the bell is closed by a cover 3 apertured centrally for the passage of pump rod 4. On the left hand edge of the cover is an upstanding fulcrum member 5 slotted at the top with aligned apertures in the upper ends of the slotted portions. A bolt 7 passes through the apertures and an aperture formed in the intermediate portion of a pump lever 8 the outer arm 8a of which functions as a handle.

The other arm 8b of the lever is slotted at the end for the passage of a bolt 10 also passing through the upper end of pump rod 4 extending downwardly.

The casing has opposite flanges 1a at its lower end which rests on the correspondingly flanged upper end of a base member 11, having feet 11a resting on a platform 20 and surrounding an opening formed therein. Bolts 1b passing through the flanges named connect the casing to the base member which has a flange 11b extending into the former. Member 11 has the shape of an inverted bell and its smaller lower end is threaded upon the threaded upper end of a pump barrel 12 within which the piston 13 carried by the lower end of the pump rod moves.

In the piston is a conventional valve which opens during the downstroke of the piston and closes during the upstroke. Screwed upon the threaded bottom end of the pump barrel is an upwardly flanged end piece 15, carrying a valve 16 which opens upwardly.

Around barrel 12 are clamped spaced clamps 17, 18 having laterally extending clamp portions which clamp an air tube 19 extending in parallelism to the barrel to the lower end of the latter and extending upward above the apertured plat-

form 20 which supports the entire structure described. There an air valve 21 opening under downward pressure is connected to the pipe and at its other end to a rubber hose 22 which is bent forwardly around the upper end of the barrel and connected to the lower end of an air cylinder 23 in which works a piston 24 the piston rod 25 of which has a close fit in the cap 26 covering the end of the cylinder.

In the cap is an airhole 26a admitting fresh air to the space above the air piston during the latter's downstroke. The top end of the air piston rod carries a transverse pin 25a working in a slot 9a formed in the extreme righthand end of a bifurcated lever 9 which is also pivoted by its slot 9b at its intermediate portion and the bolt 16 to the upper end of the pump rod and pivoted upon the outer ends of bolt 7.

The air cylinder is supported adjacent its lower end in a clamp 27 received by a strap portion 27a to one of the bolts connecting the casing and base member.

The operation of the pump is as follows. The upward swing of the pump handle forces both pistons down with the result that the valve in the pump piston 13 opens to permit the passage of any air that may have been entrapped between such piston and the water level and finally of the water itself. During the ensuing upstroke of this piston 13 its valve closes and creates a partial vacuum beneath the former so that the water rises in the pump barrel to a level at which it opens the valve during the next downstroke. The upstroke lifts the water until the casing is filled to overflow by the spout 2. Valve 16 opens during the upstroke of the piston and closes during the down stroke.

The down stroke of the air piston closes the valve of the latter and draws air through the hole 26a and forces the air beneath the piston into the water from which it arises in bubbles after leaving some of its oxygen and ozone dissolved in the water. During the upstroke of the air piston the valve opens.

What I claim as new and desire to protect by Letters Patent, is:

1. In a cistern pump, a tubular base member having feet surrounding a well, a pump barrel connected at its upper end to the lower end of the member and having an upwardly opening valve adjacent its lower end, a pump piston having an upwardly opening valve slidable in the barrel and having an upwardly through the base member extending rod, a casing supported at its lower end by the base member in telescopic

relation to the piston rod and having a spout near its upper end and means in the latter for guiding the pump rod, an air pipe open at the lower end extending from the lower end of the barrel upwardly and supported by the latter, an air cylinder supported by the casing and having its lower end in valved connection with the upper end of the air pipe, a piston including a downwardly opening valve slidable in the cylinder and having a rod guided in the upper end of the latter, lever means operable simultaneously for reciprocating the pistons.

2. In a pump, a base, an annulus support provided with legs supporting the annulus on the base, a cylinder rising from the annulus and being detachably connected thereto, an air cylinder

provided with separable fastening means complementary to the detachable connection of the cylinder to the annulus, a manually operated piston in the air cylinder, a barrel depending from the cylinder on the annulus, a piston in the barrel, a rod extending from the piston in the barrel and through the first mentioned cylinder, said last mentioned piston being valvular, a conduit extending from the air output in the air cylinder, around one of the legs of the annulus and downwardly in parallel relation to the barrel to terminate at the lower end of the barrel, and clamp means on the barrel for holding the conduit in a fixed position with respect thereto.

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