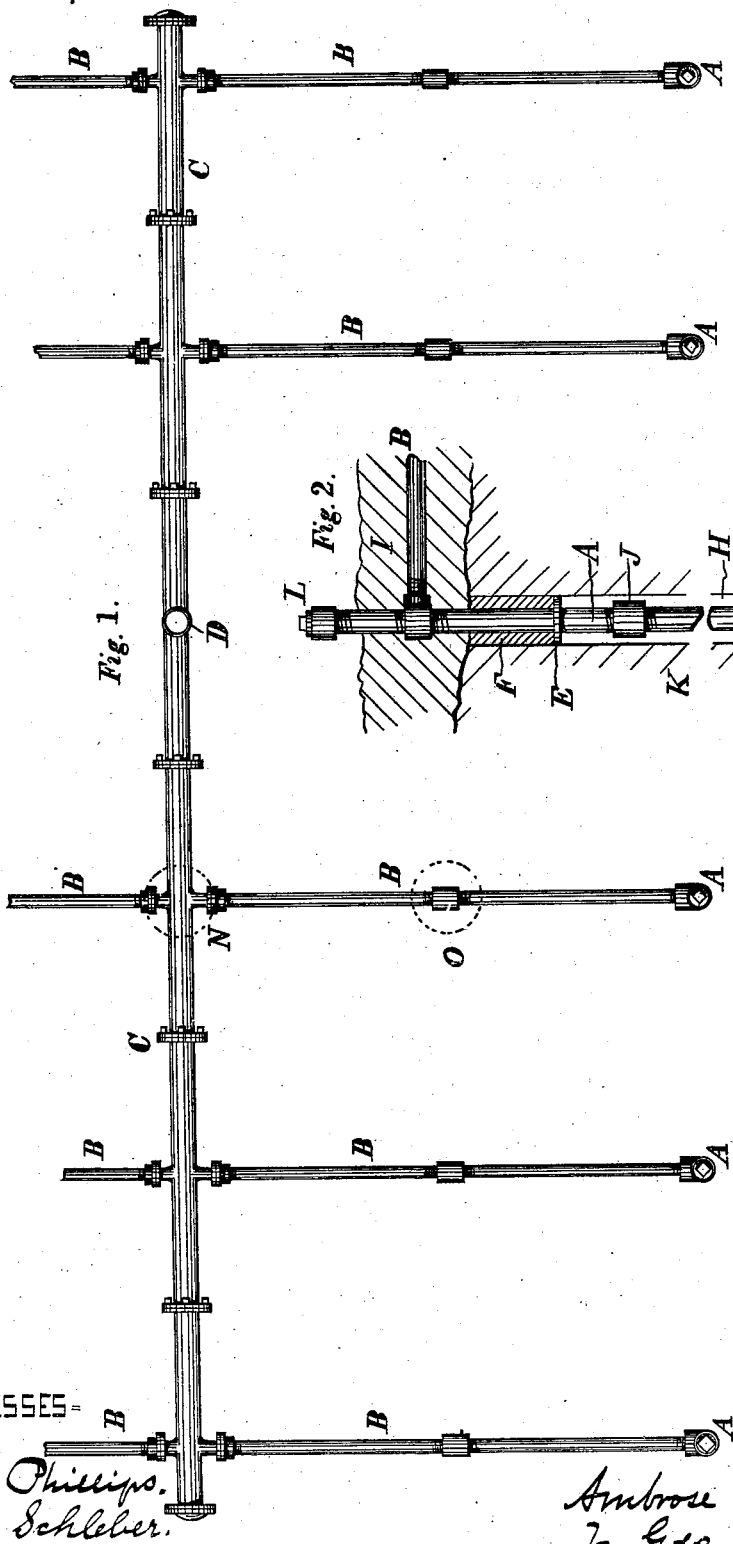
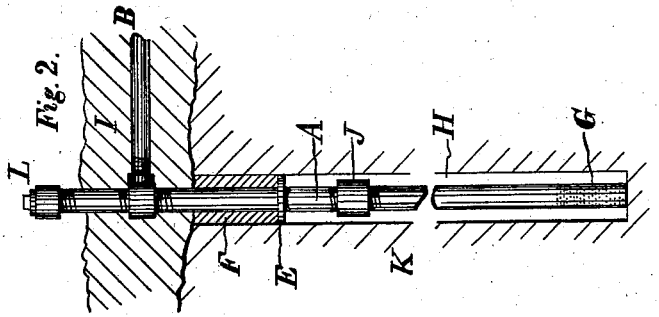
(No Model.)

A. N. LANE.

TUBE WELL.

No. 260,401. Patented July 4, 1882.





WITNESSES=

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UNITED STATES PATENT OFFICE.

AMBROSE N. LANE, OF ROCHESTER, NEW YORK.

TUBE-WELL.

SPECIFICATION forming part of Letters Patent No. 260,401, dated July 4, 1882.

Application filed April 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, AMBROSE N. LANE, of Rochester, Monroe county, New York, have invented certain Improvements in Tube-Wells, of which the following is a specification, reference being had to the annexed drawings.

My invention relates to an improvement in tubular wells; and it consists in providing the well-tube with a flange located below the cement by which the well-tube is surrounded at its upper end.

My invention also consists in extending the well-tubes upward above the connecting mains or piping located below the frost-line, and providing them with removable caps or plugs, whereby access may be had to their interior.

My improvements in wells are represented in the accompanying drawings, in which—

Figure 1 is a plan view. Fig. 2 is a vertical section, showing one of my improved wells as ready for use.

In the accompanying drawings, A A A represent the tubes or piping, which are inserted in holes in the earth or rock and constitute the wells proper. B B B are the connecting-pipes; C, the main, and D the suction-pipe, to which a pump is attached. E, Fig. 2, is a collar or flange applied to the well-tube A, and F represents the filling, of hydraulic or other cement, by which the direct atmospheric pressure is shut off. G represents the perforated basket at the lower end of the well-tube; K, the rock into which the well-tube is sunk, and I the layer of earth above the rock.

In the construction of my improved wells I bore or drill a well-hole, H, of the requisite size, into the earth or rock at the locality where a supply of water is desired, until a permanent water-bearing stratum is reached. The well-tube A, provided at its lower end with any suitable form of strainer—as, for instance, the perforated basket G—and which tube may consist of a sufficient number of sections connected by couplings J, is then inserted into the well-hole H. A short distance above its upper end the well-tube A is provided with a collar or flange, E, which may be shrunk on the tube or otherwise tightly secured thereto. The annular space between the tube A and the sides of the hole H above the collar E is then filled in with water-lime, hydraulic or other suitable cement, F, which, when set, will harden firmly about the pipe and exclude the atmospheric pressure from that portion of the well-hole below it.

In order to provide a large supply of water, I locate a number of my improved wells at suitable distances apart, connecting each well to the main C by the pipes B B. The main C and the connecting-piping B B are located at a sufficient distance below the surface of the earth I to prevent freezing or other injurious effects from the action of cold. Each well-tube A is extended upward to or above the surface of the ground, being provided at its upper end with a removable cap or plug, L, Fig. 2, for the purpose of affording access to the interior of the well-tube.

The pipes B may consist of two or more sections connected by suitable screw-couplings; but the connections with the main C and the connections of the various sections of the main with each other should be made with flange-joints for convenience of cutting down or removal.

From the main C a suction-pipe, D, extends upward at any convenient point in its length, and is connected to any preferred form of pump, by which the desired supply of water is delivered to a suitable reservoir, or through suitable mains and branches, for consumption.

The cement filling about the upper end of tube A prevents the access of surface-water to the well and materially increases the quantity of water obtained from the well.

The air or vacuum chamber may be applied at any point on the main C; or a series of vacuum-chambers may be employed on the connecting-pipes B—as, for instance, at the points indicated by the dotted circles N and O in the drawings.

I am aware that a number of wells have been heretofore connected with a single main provided with a pump.

I claim—

1. The combination of the well-tube A, flange E, and cement filling F, substantially as and for the purposes set forth.

2. The combination of a series of two or more wells, A A, and suitable connecting mains or piping located below the frost-line when the upper ends of the wells project above the mains or piping, and are provided with a removable cap or plug, L, substantially as and for the purposes set forth.

AMBROSE N. LANE.

Witnesses:
GEO. B. SELDEN,
H. G. PHILLIPS.