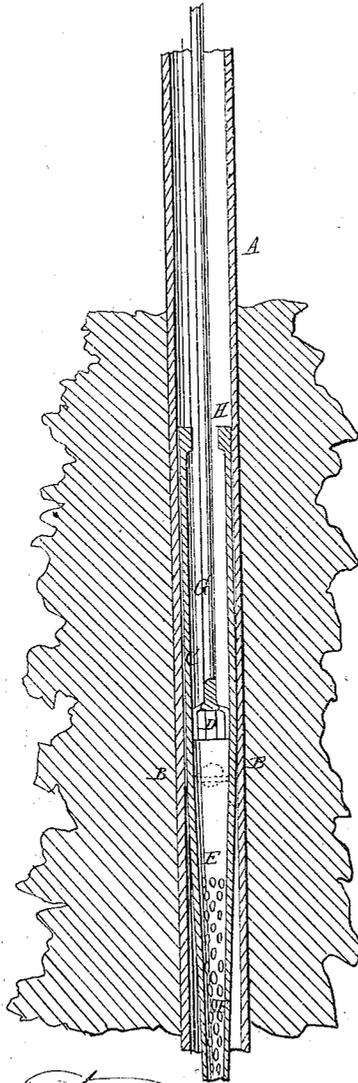


J. H. Bump,

Well Tubing,

No. 51,136,

Patented Nov. 28, 1865.



Witnesses:

Wm. B. Livingston
Wm. C. Lyon

Inventor:

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att'y

UNITED STATES PATENT OFFICE.

JAMES H. BUMP, OF UNADILLA, NEW YORK.

IMPROVEMENT IN TUBES AND PUMPS FOR WELLS.

Specification forming part of Letters Patent No. 51,136, dated November 28, 1865.

To all whom it may concern:

Be it known that I, JAMES H. BUMP, of Unadilla, in the county of Otsego and State of New York, have invented a new and useful Improvement in Tubes and Pumps for Wells; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which the drawing, consisting of only one figure, represents a well and tube made and applied according to my invention.

This invention relates to wells which are made by sinking or driving a tube into the ground without first digging or boring a hole for it. One mode of making such a well is to drive into the earth a tube whose lower end is brought to a point, and which end is perforated, so that after the tube has been driven down to the place where water is found, or to a vein of water, such water can enter the tube through its perforations and can then be pumped up by a piston in the ordinary way.

This invention is meant as an improvement on that mode; and it consists in driving down a soil-pipe of sufficient length to reach a vein of water, and which pipe is lessened in diameter at a certain point near its lower end within it by a tapering swell. The cylinder or pump-barrel is made conical or tapering at its lower end, and is, moreover, perforated in that part. On letting the barrel down into the soil or driving pipe, which pipe constitutes the well-tube, its conical perforated end passes the said contracted part, but the part of the barrel which is of full size is stopped at the throat of the contraction and becomes wedged fast. The piston works in that part of the pump-barrel which is above the contraction. The upper end of the pump-barrel is contracted within, or has an internal flange against which the piston strikes when it is pulled up higher than its working stroke, and thereby loosens the barrel from the well-tube, so that it can be drawn to the top of the well.

A designates the well-tube. It is left open at both ends, and is to be thick and strong and capable of being driven through hard ground and even through rock. The earth is to be

removed from within it by any proper means. At a suitable height in this tube from its lower end, its internal diameter is contracted, as at B, the contraction gradually increasing as it proceeds downward until it suddenly terminates, when the rest of the pipe is again made of the same diameter as it is above the contraction.

Within this tube or pipe is placed the pump-cylinder C, whose lower end, E, is conical and perforated, as seen at F in the drawing. It is driven down into the soil below the end of outer pipe, A, until it wedges tight in the contracted part B of said pipe, it being intended that the parts shall fit water-tight, and that the whole of the perforated end of the cylinder shall be below the said contracted part B.

The upper part of the pump-cylinder C has an internal flange or shoulder, H.

D is the piston, and G the piston-rod. The piston works between the flange or shoulder H, and the contracted or conical end of the cylinder or pump-barrel, where the ordinary valve is placed, as seen in red outline. When it is desired to withdraw the said cylinder it is only necessary to draw the piston upward beyond its stroke, so that it will strike with a jar against the shoulder or flange H, when the cylinder will be disengaged from the outer pipe and can be drawn up to the top of the well.

In operating the pump, the water enters through the perforations F in the conical part E, and so comes free from dirt or foreign matter, and is raised by working the piston through which it passes at each descent thereof, and when the piston is drawn upward its valve or valves close and the water above it is lifted in the usual manner. A valve may be placed above the flange H, and another one in the conical part, E, of the cylinder; but I have not shown any such valves, since their construction and arrangement are well understood by persons skilled in the art of making wells and pumps. The water is carried upward through the pipe A to the top of the well.

I claim as new, and desire to secure by Letters Patent—

1. In wells which are made by driving the ends of tubes into the ground, inclosing a cylinder or pump-barrel, having a conical per-

forated end, within an outer tube driven or placed in the ground, and connecting them by a water-tight joint by means of a contraction in the outer pipe, substantially as shown.

2. Making a flange, or its equivalent, on the inside of the pump-barrel or cylinder so that the cylinder can be removed by the jar of the piston against it, substantially as described.

The above specification of my invention signed by me this 9th day of September, 1865.

JAMES H. BUMP.

Witnesses:

JACOB TELLER,
R. TELLER.