(No Model.)

# B. PUTNEY.

## WELL TUBE.

No. 389,164. Patented Sept. 4, 1888.

Fig. 1.

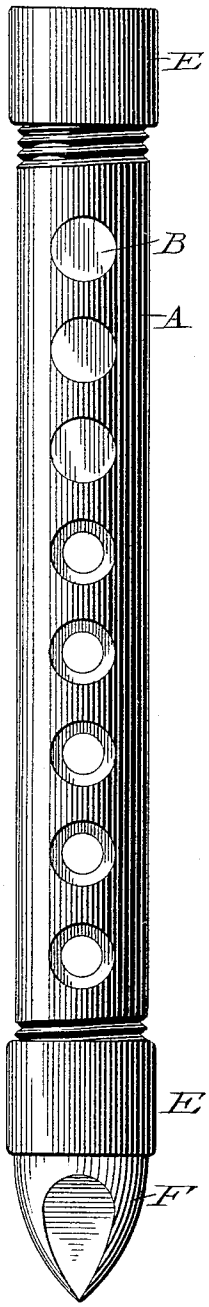



Fig. 3.

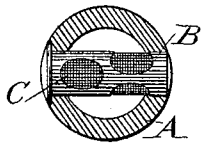



Fig. 4.

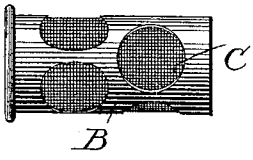



Fig. 5.

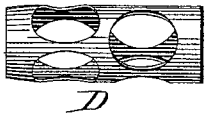



Fig. 6.

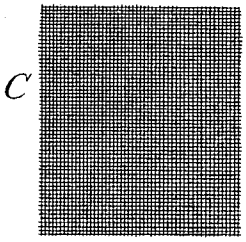
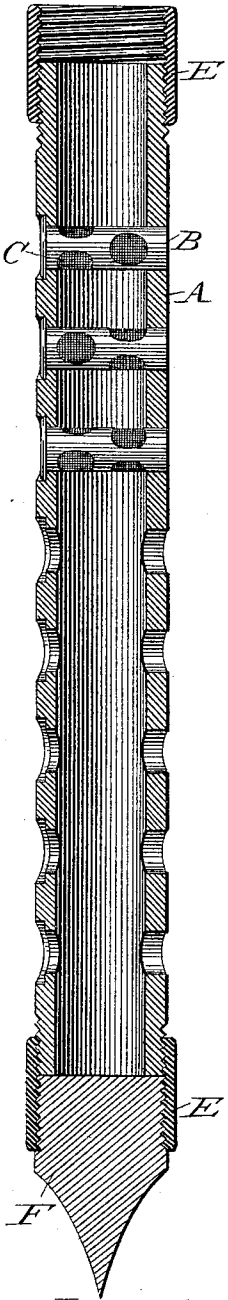



Fig. 2.




Witnesses:
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# UNITED STATES PATENT OFFICE.

BARNARD PUTNEY, OF LUDINGTON, MICHIGAN.

## WELL-TUBE.

SPECIFICATION forming part of Letters Patent No. 389,164, dated September 4, 1888.

Application filed August 5, 1886. Serial No. 210,138. (No model.)

*To all whom it may concern:*

Be it known that I, BARNARD PUTNEY, a citizen of the United States, residing at the city of Ludington, in the county of Mason and State of Michigan, have invented certain new and useful Improvements in Well-Tubes and the Process for Making the Same; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings by letters and figures referring to each and every part, making part of this specification, in which—

Figure 1 is an elevation of the lower end of a well-tube having my improvement applied thereto. Fig. 2 is a vertical section through the center of the same. Fig. 3 is a horizontal section through the same. Fig. 4 is a view of the short horizontal tube fitted in readiness to be set in the main tube; Fig. 5, a view of inside tube ready for driving in tube B. Fig. 6 is a view of one sheet of strainer-web in full size and in readiness to be secured between tubes B and D.

Letter A refers to the main tube, letter B to the short horizontal tubing, letter C to the strainers and filters in the same, letter D to inside tubing holding strainers in place, letter E to the short couplings or connections, and letter F to the boring-point.

A and E refer to common well tubing and couplings now in common use, which are not my invention.

My invention relates to that class of well-tubes known as "drive-well points," which, when connected with a long piece of tubing, may be forced down in the earth with a rotating motion, or in marshes and swamps to a sufficient depth to receive pure water, although they may be used on the high lands, which have generally been provided at their lower end with a strainer made of brass wire or of perforated metal, or both, fastened to the outside, or a tube made of perforated metal passing through the main tube horizontally, the object of these strainers being to separate the quicksand from the water. These strainers, however, have not fully accomplished the object for which they were designed, for when these tubes pass through mud, clay, and hard earth, among rocks and gravel, the friction on them is great, and the strainers are liable to be torn off or filled with clay or mud and entirely ruined before reaching good water. Therefore heavy coarse wire strainers had to be used. Experience shows that these strainers have admitted quicksand whenever they have come in contact with it to such an extent that the pump would be ruined at once, and when used in places where there was no quicksand and the pump stood idle a few days the water would cease to flow through them, and upon close examination there would be found a thin coat of green oxide or verdigris coating them; and it is well known that in the climate of Michigan the water is well saturated with mineral substance and salt, which renders all strainers useless that are made of metal liable to corrode; also, when they are fine enough to exclude quicksand they soon exclude water, and the only remedy heretofore offered was to make an open well or sink a large filter.

My invention has for its object to overcome these difficulties; and it consists in providing the lower end of the well-tube with a sufficient number of metal tubes passing through it horizontally, each tube containing a sand-filter and a very fine and coarse strainer, and when complete to be filled with gravel, loaf-sugar, and tallow, the object of the sugar and tallow being to hold the gravel in place and exclude mud and clay till it reaches water, and when once under water will exclude quicksand and admit the water freely for many years in any climate.

To enable others skilled in the art to construct and use my invention, I will briefly describe the manner in which I have carried it out.

In the drawings, letter A is a piece of common well-tubing with thread at each end, provided with six or more holes drilled two inches apart clear through and countersunk on one side with a rose-bit and on the other side with a tool just like a gunsmith's chamberer for a No. 12 cartridge-shell.

B indicates a piece of tubing composed of thin metal, about No. 20, wire gage, long enough to reach through main tube, and is provided with six or more ports and at one

end with a head and flange like that of a No. 12 cartridge-shell. Letter D is same kind of tubing, same length, two sizes smaller, with a little taper at one end, and with ports to correspond.

The strainer-web is to be cut in pieces large enough to cover all the ports and placed inside tube B, with the coarse strainer D between the tube and fine strainer. Then tube D is started and driven home to secure strainers C C in place. Now pass them through main tube A, drive the head in its chamber, level and flange the open end in the countersink and solder heavy both ends, fill with gravel and pour all but one most full of hot loaf-sugar, fill the mouth one-quarter inch deep with tallow, and keep them dry till used.

In all places where quicksand and sawdust are troublesome, and where there is a large supply of water needed, there can be two or more of these sections joined with said coupling E, and larger tubing may be used. F, the boring-point, is like a carpenter's plumb-bob, with two sides concaved out thin, and may be joined with the coupling E.

I claim—

1. The combination, with the tube A, having transverse perforations, of the short tubes B, extending from side to side of said tube A and having the ends secured in said perforations, the said tubes B having perforations and being provided with an interior screen, substantially as described, and for the purpose stated.

2. The combination, with the tube A, perforated as described, of the perforated transverse tubes B, resting in the perforations of tube A and extending from side to side thereof, the strainers C, inclosed in said tubes B, and the perforated supporting-tubes D inside said strainer, all substantially as described.

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