

(No Model.)

B. R. NORTON.

ARTESIAN WELL.

No. 248,664.

Patented Oct. 25, 1881.

Fig. 1.

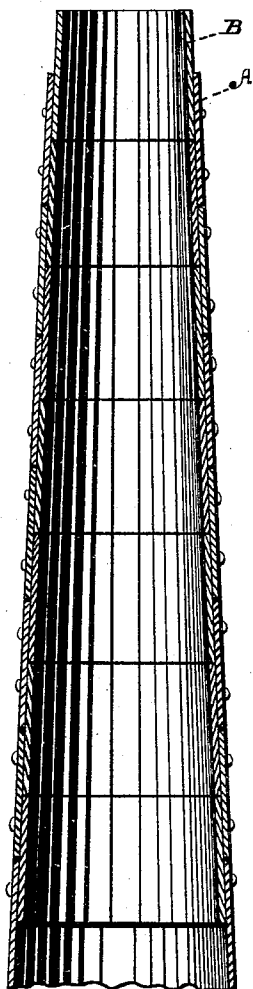


Fig. 2.

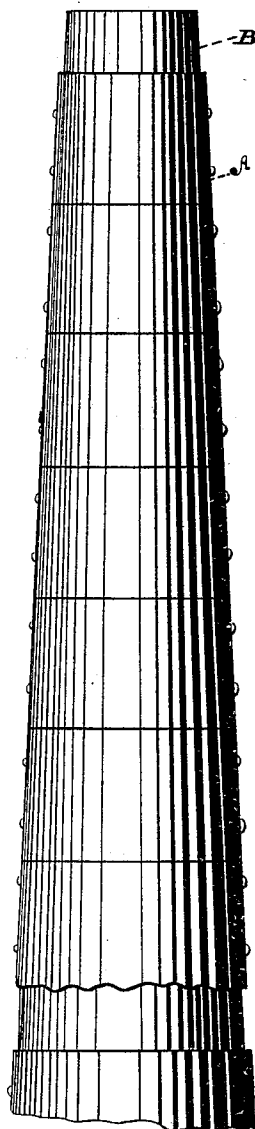
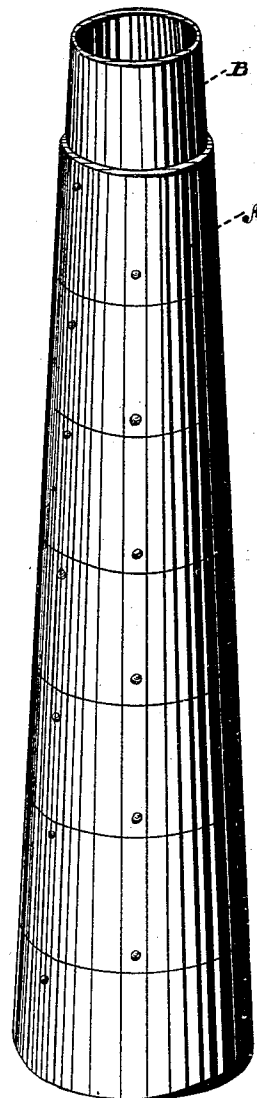


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

BENJAMIN R. NORTON, OF ALAMEDA, CALIFORNIA.

ARTESIAN WELL.

SPECIFICATION forming part of Letters Patent No. 248,664, dated October 25, 1881.

Application filed August 30, 1881. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN R. NORTON, of Alameda, in the county of Alameda, State of California, have invented an Improvement in Artesian Wells; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in the sinking and tubing of Artesian wells; and it consists in the formation of tubes having a greater diameter at their lower ends and tapering gradually toward the top.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 shows a section of the pipes. Fig. 2 is an elevation. Fig. 3 is a perspective view.

The principal difficulty in the old mode of sinking is to force the pipe or tubing of uniform size down to any considerable depth, owing to the lateral pressure of the surrounding earth, and the usual result is, at a depth of from one to two hundred feet, the lateral pressure is so great that the pipe cannot be moved down with all the force available. The only alteration is to put down a smaller pipe inside of the first, and repeat the same as often as the pipe gets stuck fast, and by that mode, if the well should reach a depth of five or six hundred feet, it would be of little practical value, as the diameter of the pipe at the bottom of the well would probably be less than one-half the diameter at the top.

By my improved method I make the well pipe or tubing conical and inclined about two or three inches to the hundred feet, with the large end at the bottom, by which means I not only avoid the difficulty of getting the pipe stuck fast and held by the lateral pressure of the surrounding earth, but utilize the lateral pressure in forcing the pipe down—very little force more than the weight of the pipe and the lateral pressure—where the earth is excavated inside and underneath the pipe. A well, say, of one thousand feet, would be started with pipe thirty inches diameter, and, inclined two inches to the hundred feet it would terminate at the top with pipe ten inches diameter, which practically would be equal in value to a well thirty inches diameter the entire depth, and would cost less; and, further, it would be about impossible to sink a well one thousand feet of thirty-inch diameter of uni-

form-size pipe. A well constructed with conical pipe, as proposed, would be like receiving the water into the large end of the funnel instead of the small end, as by the old mode.

The boring or excavating of the well for conical pipe can be done by hand or steam power, and with any of the well-known tools. I prefer sand-pumps constructed of half-inch boiler-plate, armed on the bottom with heavy barbed irons for picking or loosening the earth or rock, the whole weighing five or six hundred pounds, and worked by a rope attached to a hoisting-engine, alternately hoisting and letting it drop eight or ten feet, which would loosen the earth and fill the sand-pump with the loosened material. The sand-pump would be constantly changed in position, so that it would not strike twice in the same place, and use spring-tools for cutting away the earth from under lower edge of the pipe.

A and B are the sections of my pipe, which are made tapering, as described. Each inner section extends about half-way into the outside section below, and is riveted or otherwise secured to it. The upper end projects out, so that the next section above slips down over it. The inner pipes all abut, and the outer ones also, so that the tube is double throughout its whole length, and has the strength of both tubes.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. Conical tubing or pipe for Artesian and oil wells, having the large end of the pipe or casing at the bottom, substantially as and for the purpose herein described.

2. The exterior tubes, A, and the interior tubes, B, diminishing from the bottom upward, and so joined that each interior section overlaps or extends beyond the outer section to which it is secured, so as to receive the next exterior section, which fits over it, and the ends of each series meet, so as to form a continuous tube, substantially as and for the purpose herein described.

In witness whereof I have hereunto set my hand.

BENJAMIN R. NORTON.

Witnesses:

FRANK A. BROOKS,
S. H. NOURSE.