(No Model.)

H. W. BLAISDELL.

METHOD OF SINKING WELLS.

No. 409,446. Patented Aug. 20, 1889.

Fig. 1.

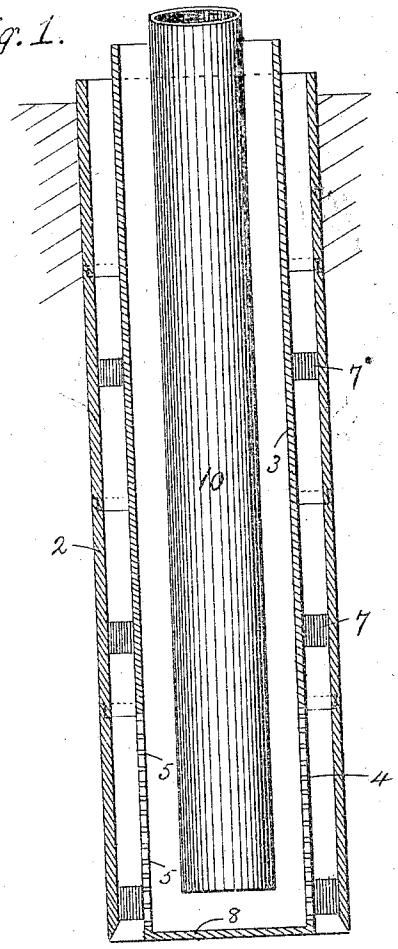


Fig. 2.

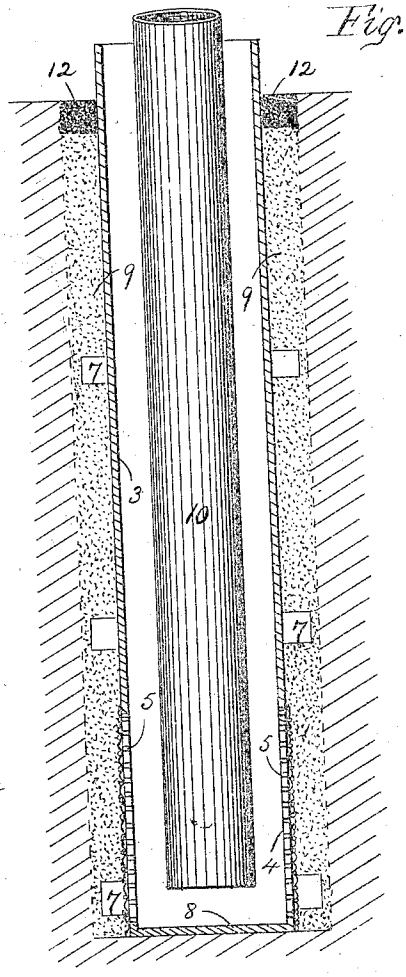
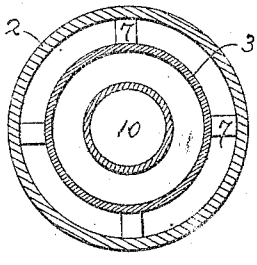


Fig. 3.



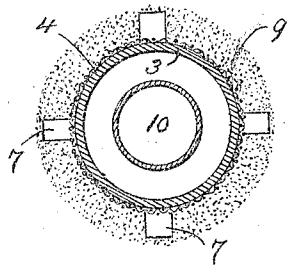


Fig. 4.

Witnesses.
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UNITED STATES PATENT OFFICE.

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METHOD OF SINKING WELLS.

SPECIFICATION forming part of Letters Patent No. 409,446, dated August 20, 1889.

Application filed May 22, 1889. Serial No. 311,698. (No model.)

To all whom it may concern:

Be it known that I, HIRAM W. BLAISDELL, a citizen of the United States, residing at Yuma, in the county of Yuma and Territory of Arizona, have invented certain new and useful Improvements in Methods of Sinking Wells; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to the construction of wells; and it consists in a novel method of sinking and tubing the same.

Hitherto it has been found very difficult to pump much of a stream of water from fine sand without drafting the sand with the water, and the use of a drive-well point is necessary. This is not practicable in many places on account of streaks of clay, should such occur. "Points," so called, are also limited in capacity.

My invention, in brief, consists of a casing, which is first sunk until the requisite depth is reached or the flow of water secured. I then introduce a filter-pipe of somewhat less diameter than the casing, while as the latter is withdrawn coarse sand is poured in to fill the space which now exists between the filter-pipe and the surrounding earthy strata. After the removal of the casing a suction-pipe is introduced within the filter-pipe and the well is in readiness for operation. By this arrangement a large suction-surface or extended "point," as it may be termed, is provided, and the well can be sunk in localities where other methods would fail.

Minor details of this invention will be hereinafter described.

The drawings represent, in Figure 1, a vertical longitudinal sectional elevation of a well under my method before removal of the casing and with the coarse sand in place. Fig. 2 is a similar view with the casing removed. Figs. 3 and 4 are respectively transverse sections of Figs. 1 and 2.

As before premised, the sinking of wells by means of drive-well points is attended with difficulty, and even when successfully accomplished the points are of limited capacity. Again, in very fine sand a driven-well point is a necessity.

To carry out my invention I first sink a well-casing 2 after the manner employed for Artesian wells, and composed of flush-jointed pipe-sections of the requisite diameter. This casing is sunk until the desired depth is reached and a sufficient water-supply obtained. A second pipe 3 is now introduced, styled the "filter-pipe." The latter is of a diameter somewhat smaller than the outer casing 2, and is perforated for a certain distance at its lower extremity. This perforated portion 4 may be made in various ways; but preferably the pipe is pierced with a series of small holes 5, after which this portion is covered with brass wire-cloth of fine mesh. Thus it is evident the point of the filter-pipe may be of any length desired—in fact, equal to the thickness of the strata through which the water is flowing. Exteriorly of the filter-pipe, and prior to its introduction within the well-casing 2, a number of blocks 7 7 are secured exteriorly at points about the filter-pipe at intervals of ten or fifteen feet. These blocks are only temporarily secured, and are intended to serve the purpose of centering the filter-pipe during the operation of drawing the casing and the introduction of the coarse sand. After the filter-pipe is ready it is made up in lengths and introduced within the bore of the well-casing 2, it being understood that the filter-pipe is closed at the bottom by a solid plate 8, to prevent the entrance of sand or other fine material, and when in position rests on the bottom of the boring. Preferably coarse sand or other filtering material is now poured in between the casing 2 and filter-pipe 3, when the outer casing may be withdrawn a short distance, the sand at once filling the space occupied by said casing. This sand or other substance, which may be impervious to water, as hereinafter explained, is introduced in small quantities at a time to prevent the withdrawal of the filter-pipe, which would follow with the casing 2 were too much sand put in at one time.

To obviate the objections which might arise from surface water entering and finding its

way downwardly, or in order to prevent water from any undesirable strata reaching the suction-pipe, I propose to insert a tamping of clay or other analogous material, by which the flow of such water to the source of supply may be estopped at any point along the filter-pipe. In Fig. 2 I have indicated such tamping at 12 to exclude surface water from the water to be supplied; but, as before premised, such tamping may be located at any point along the filter-pipe to cut off undesirable water-flow. When the outer casing is entirely withdrawn, as shown in Fig. 2, the well is completed, with the exception of the suction-pipe 10. The latter is represented as extending nearly to the bottom of the filter-pipe to prevent the tendency of the latter to fill up. By this method a well can be sunk in any soft material, and can be furnished with a point to suit the flow of water. A further advantage is that a well of this description can be made in localities where a driven well cannot be obtained. The expense is not large in making them, and in very fine sand or in quicksand a large stream of water is readily attainable.

What I desire to claim is—

The method of constructing wells which consists in sinking an outer casing, inserting a perforated pipe of less diameter therein, filling the existing space entirely or in part with sand, withdrawing said outer casing, and finally placing a suction-pipe interiorly of the filter-pipe, substantially as herein specified.

In testimony whereof I affix my signature in presence of two witnesses.

HIRAM W. BLAISDELL.

Witnesses:

JOS. J. STEIN,

JOHN GANDOLFO.