

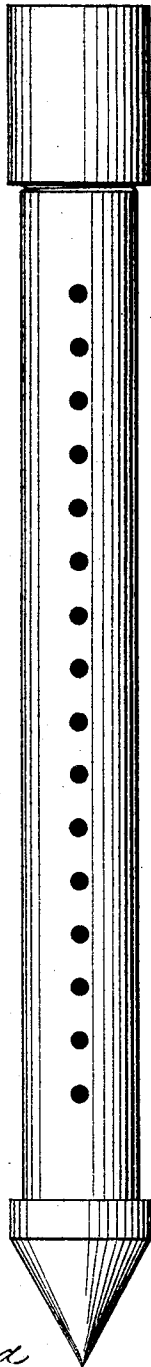
E. S. HOVEY.

Improvement in the Formation of Driven Wells.

No. 123,903.

Patented Feb. 20, 1872.

Fig. 1.

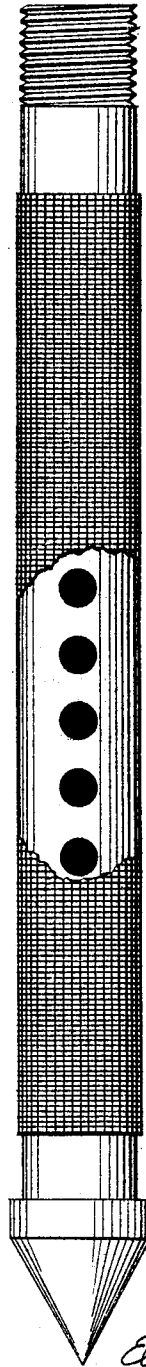


Witnesses.

H. W. Howard

Edm. F. Brown.

Fig. 2.



Inventor.

Elias S. Hovey

By his Attorney

Chas. F. Mansbury

UNITED STATES PATENT OFFICE.

ELIAS S. HOVEY, OF INDEPENDENCE, IOWA.

IMPROVEMENT IN THE FORMATION OF DRIVE-WELLS.

Specification forming part of Letters Patent No. 123,903, dated February 20, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, ELIAS S. HOVEY, of Independence, in the county of Buchanan, and State of Iowa, have invented an "Improved Method of Making Tube-Wells," commonly called "Drive-Wells;" and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawing, in which—

Figure 1 is a side elevation of the first or temporary tool used in driving the well, and Fig. 2 is a similar view of the permanent perforated and gauze-covered tube-end, which is substituted for the temporary tool, as herein-after described.

In localities where tube-wells are commonly employed, the subsoil from which the water is drawn usually consists of gravel intermingled with quicksand. If a perforated tube end, covered with fine gauze, be driven into a soil of that character, the fine sand very soon chokes the gauze, and prevents the entrance of the water into the tube. After a very short time, wells made in that way become entirely useless. My improvement consists in driving the well, in the first instance, with the tool represented in Fig. 1, having large perforations, which, in practice, I usually make an eighth of an inch in diameter, and, after pumping out the fine sand from the gravel in immediate proximity to the well-tube, inserting the tube-end represented in Fig. 2, having large perforations covered with wire-gauze. The effect of this method of making the well is that nothing but coarse gravel is left in immediate contact with the lower end of the tubing, and that gravel forms an open filter, through which the water flows freely, without carrying with it the fine sand and dirt which would clog the gauze and stop the operation of the well.

It will be perceived that the office of the perforated tube first driven into the ground, is solely to receive and remove sand and minute matters that would prove obstacles to the flow of water through a fine reticulated material, in order to create a well-space, or to induce the settling-down to the lower end of the tube of pebbles and such grosser matters as will con-

stitute a filtering bed, through which the water will percolate to the induction orifices of the tube; and that an exterior or finely-woven wire would not answer this purpose, nor would the coarsely-perforated tube, first inserted, answer the subsequent uses of the well when the procurement of pure water is the object sought to be obtained.

A series of practical experiments, running through several years, has convinced me that this method of driving a tube-well is an effectual remedy for the difficulties which have heretofore attended wells of this class in localities where gravel and quicksand formed the subsoil from which water is obtained. The insertion of the coarsely-perforated tube-end alone does not effect the desired object, since the pump will continue to draw fine sand and dirt through the large perforations; but experience has demonstrated that, after the finer particles have been pumped from the gravel in the immediate vicinity of the tube, if a finely perforated tube-end be substituted for the coarse one, the water will continue to flow pure and clean without clogging the meshes of the gauze. The pumping out of the fine sand, &c., through the temporary tube-end so loosens the surrounding soil that no difficulty is found in practice in withdrawing the tube, and reinserting it with the permanent gauze-covered end attached.

Having thus fully described my invention, I do not claim a perforated tube-end for wells, whether open or covered with gauze; but

What I do claim is—

The method or process of making drive-wells, hereinbefore described, the same consisting in the use, in the first instance, of the temporarily coarsely-perforated tool or tube-end represented in Fig. 1, followed by the introduction of the permanent finely-perforated or gauze-covered tube-end, as and for the purpose set forth.

The above specification of my said invention signed and witnessed at Washington, this third day of February, A. D. 1872.

ELIAS S. HOVEY.

Witnesses:

EDM. F. BROWN,
CHAS. F. STANSBURY.