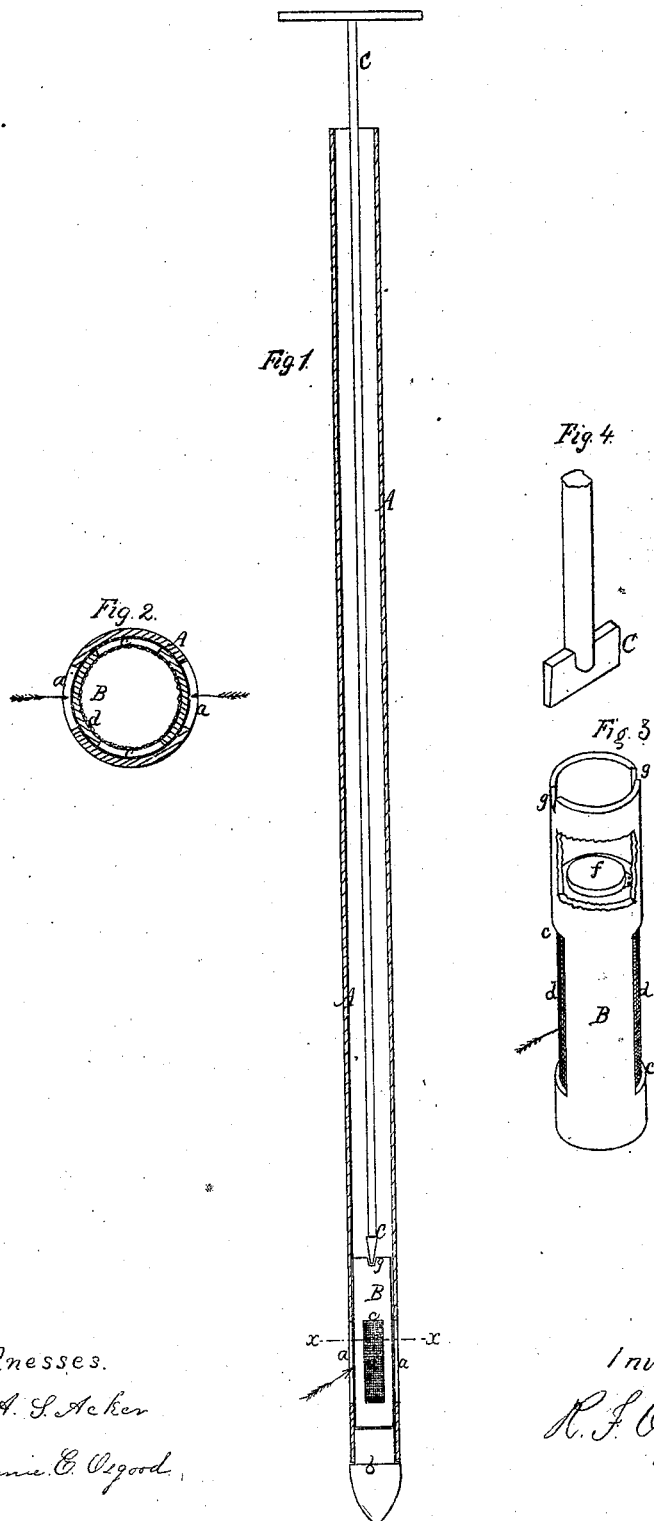


R. F. Osgood.
Method of sinking Well Tubing.
Patented Feb 20. 1866.
No 52,792.



Witnesses.

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IMPROVED METHOD OF SINKING WELL-TUBING.

Specification forming part of Letters Patent No. 52,792, dated February 20, 1866.

To all whom it may concern:

Be it known that I, R. F. OSGOOD, of Rochester, in the county of Monroe and State of New York, have invented a new and Improved Method of Sinking Well-Tubing; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a sectional elevation of my improved tubing with the wrench or key in place for turning the interior cylinder or section; Fig. 2, a cross-section in the plane of line *x x*, Fig. 1; Fig. 3, a perspective view of the interior cylinder or section, with a portion broken away to show the valve therein; Fig. 4, a perspective view of the lower end of the wrench or key.

Like letters of reference indicate corresponding parts in all the figures.

My improvement belongs to that class where tubing is driven into the earth in order to avoid the labor and expense of digging a well.

The invention consists, essentially, in the employment of a short cylinder or section of tube inside the main tubing at the bottom, so arranged that in the act of driving the ports in the sides of the main tubing may be closed to exclude dirt, but when driven in place the cylinder or section may be turned partially around, so as to bring its ports in coincidence with those of the tubing for the admission of water.

It also consists in the employment of wire-cloth covering the ports of the cylinder or section for the purpose of straining the water and excluding foreign matters, and in the use of a valve in the cylinder or section for sustaining of the column of water, &c.

As represented in the drawings, A is the ordinary tubing, which is driven into the earth by entering a hole or passage previously made by a long rod or drill. At its bottom are made ports *a a*, or equivalent perforations, on opposite sides, as clearly indicated in Figs. 1 and 2. To the lower extremity of the tubing is rigidly secured a point, *b*, which may be of the form shown or any other desired.

In the lower end of the tubing is situated a short cylinder or section of tube, B, fitting closely therein, but yet capable of being readily turned. This cylinder has also ports or

perforations *c c* on opposite sides, corresponding in position with those in the tubing. I cover these ports on the inside with wire-cloth *d* of fine texture, so as to thoroughly strain and filter the water that enters and prevent the passage of any extraneous bodies.

At a suitable distance above the ports I also prefer to provide the cylinder or section with a valve, *f*, of any ordinary construction, Fig. 3. The top of the cylinder is provided with notches *g g*, or equivalent, in which catches a wrench or key, C, whose handle extends to the top of the well, by which means the cylinder is turned at any time.

In the act of driving down the cylinder rests in the tubing in the position indicated in Figs. 1 and 2—that is, with the closed sides of the cylinder opposite the ports or perforations of the tubing. This is for the purpose of preventing the pressure against the sides of the tubing in driving from forcing the dirt inward and filling the tubing, as is the case especially in quicksands, where no preventive is employed; but when fully driven down the wrench or key C is lowered till it engages with the top of the cylinder, when the latter is turned around sufficiently to bring the ports or perforations *a c* in coincidence, when the water enters and is raised by means of a pump attached to the top of the tubing. The cylinder holds in the desired position usually by its friction and by the sediment that collects between it and the tubing, which latter also packs it.

A device is already known in which the opening-point is attached to a hollow shank that rests loosely in the tubing. When the whole is driven in place the main tubing is raised so as to expose the hollow shank, which has perforations to admit water.

There are several objections to this arrangement. The main tubing must be raised to admit water, which, owing to the weight and friction, is a considerable labor. The weight of the tubing itself, the action of frost, and many local causes have a tendency to lower the tubing on the shank so as to make its working uncertain.

It will be seen that I obviate these difficulties, for the cylinder or section B has simply to be turned around a little distance, requiring no exertion at all, and when once in place

it is not liable to become displaced under ordinary circumstances, for the motion of the water is not great and the sediment that collects soon fixes it in place. If, however, any difficulty should be experienced from displacement, a small spring can be easily attached to the cylinder, which, pressing against the sides of the tubing, would surely hold it.

The wire-cloth *d* is of especial use in quicksands, where the pressure around the main tubing is constant and unvarying. Much difficulty is experienced in ordinary devices from the quicksand, which constantly presses inward through the ports, and frequently to such a degree as to obstruct the tube and render the whole arrangement useless. By covering the ports with fine wire-cloth or equivalent perforated material all difficulty of this kind is obviated. This covering is also of great benefit in ordinary soils, for it excludes small stones and all extraneous matter, and besides this makes the water much purer by straining.

By the use of the valve *f* in the cylinder it enables me to support the column of water from

the bottom, and if I desire to so do I can then employ the cylinder or section B as a piston. This is of especial importance where the well is of such depth that a lift instead of a suction pump is necessary.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The cylinder or short section of tube B, in combination with the tubing A, arranged in such a manner that in the act of driving the earth is excluded, but when driven the water may be admitted by simply turning the cylinder and without raising the tubing, substantially as described.

2. The wire-cloth *d*, covering the ports, in combination with the cylinder B and tubing A, substantially as specified.

3. The valve *f*, in combination with the cylinder B, substantially as described.

R. F. OSGOOD.

Witnesses:

JENNIE E. OSGOOD,
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