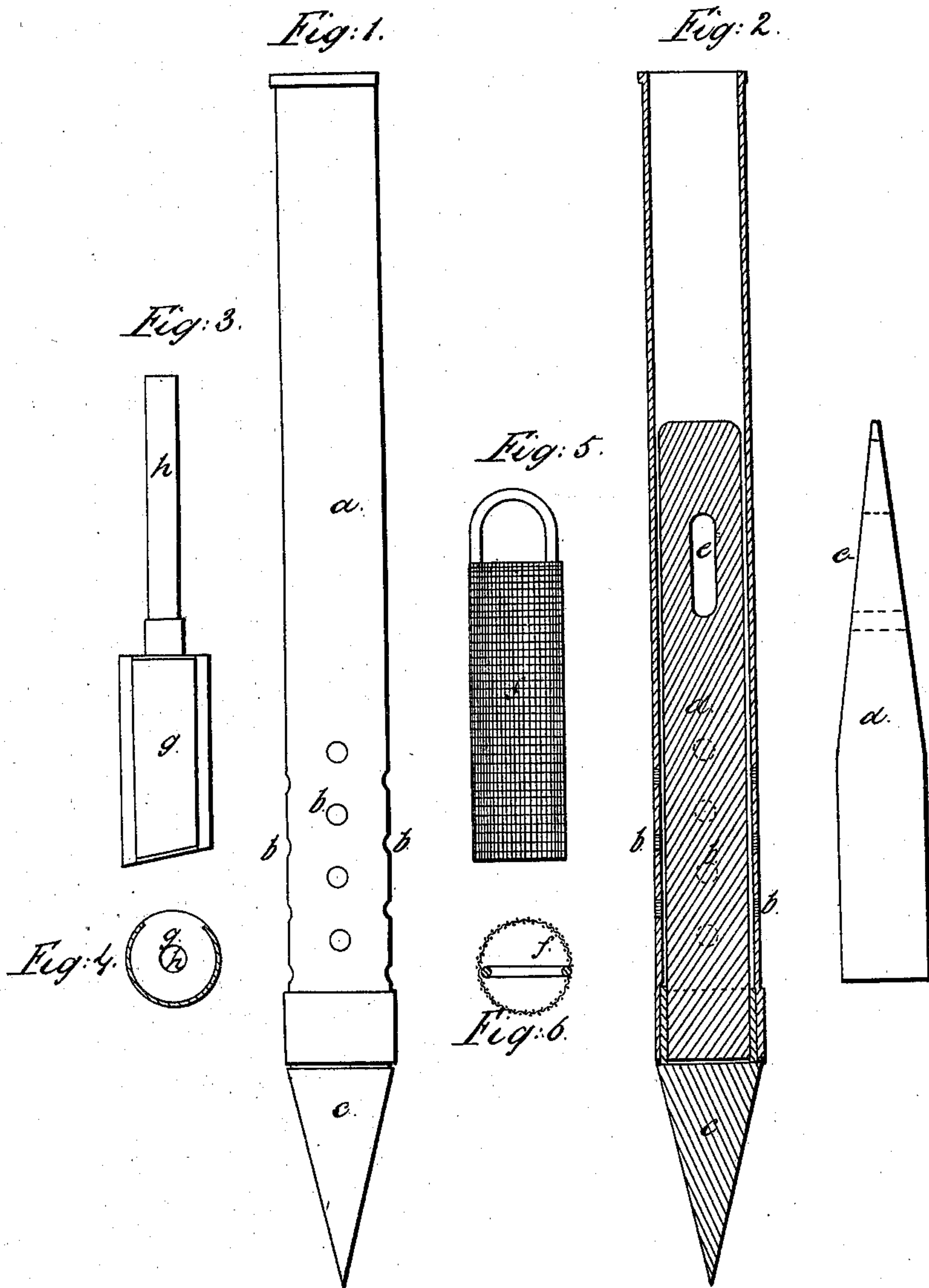


R. Rich.

Tube Well.

N^o 87,592.

Patented Mar. 9, 1869.



Witnesses
Geo. A. Loring
Edward. Griffith

Inventor
Ruben Rich
by his Attorney
Frederick Curtis

United States Patent Office.

REUBEN RICH, OF DORCHESTER, MASSACHUSETTS.

Letters Patent No. 87,592, dated March 9, 1869.

IMPROVEMENT IN TUBE-WELL.

The Schedule referred to in these Letters Patent and making part of the same.

To all to whom these presents shall come:

Be it known that I, REUBEN RICH, of Dorchester, in the county of Norfolk, and State of Massachusetts, have made an invention of certain new and useful Improvements in Tubular Wells; and do hereby declare the following to be a full, clear, and exact description thereof, due reference being had to the accompanying drawings, making part of this specification, and in which—

Figure 1 is a side elevation, and

Figure 2, a vertical and central section of a tubular well containing my improvements;

Figures 3 and 4 being views of the scraper, and

Figures 5 and 6, views of the strainer to be described.

This invention consists in combining, with the well-tube, and previous to, as well as when such tube is being driven into the ground, a short metallic bar, which fills the lower part of such tube, and so as to cover the orifices made in it, the object of this portion of the invention being to prevent admission of sand, or other material into the tube, while driving it, as well as to create a vacuum in such pipe, the bar also serving, by increasing the weight of the tube, to facilitate its passage through the earth, as well as to strengthen the tube.

In the drawings above mentioned as illustrating my invention, *a* denotes the lower portion, or length of a cylindrical tube, now generally employed for tubular wells, such tube *a* being perforated, near its lower end, with a series of orifices, *b b b*, &c., for admission of water to the interior of the tube.

To the lower extremity of the tube *a* is fitted a conical head, or driving-point, *c*, secured thereto in any proper manner, such point being composed of cast-iron, preferably in a "chilled" state.

Within the lower part of the tube *a*, and resting upon the point *c*, is a cylindrical block, or rod, *d*, of such a diameter as to fill the interior of the tube, and of such a length as to cover its orifices *b b b*, the upper end of the said rod *d* having an eye, *e*, formed in it, for convenience of removal.

The cylindrical block fits tightly within the tube, and thus closes the orifices against the admission of dirt and sediment, while the tube is being driven, while, at the same time, it strengthens and stiffens the body of the tube at the point where it is naturally the most weak.

After the tube has been driven, the block is drawn up, by means of the cord, or other device which engages in the hole *e*, and, in its ascent, creates a partial

vacuum, which induces and hastens the entrance of the water.

The movable strainer consists of a cylinder or bag, *f*, of wire cloth, having secured to it one or more "bails," or yokes, *g*, &c., as shown in the drawings, the bail, or yoke serving to secure the cylinder in place against compression, and as a handle for extracting it from or applying it to the tube *a*.

Figs. 3 and 4 of the drawings show an implement for cleaning the well-tube of sand, or other extraneous matter which may have collected therein, such implement consisting of a metallic tube, *g*, having a segment of its circumference cut away, and with its bottom inclined, with respect to the aperture thus formed, as shown in said figs. 3 and 4, the cylinder being provided with a long handle, *h*, for operating it.

As the nature of tubular wells, and the mode of applying or driving them is so well known, a description of this process is not considered necessary in this connection.

It might be well to state, however, that previous to submerging the above-described well, the bar-rod is to be dropped or forced into the lower part of the tube *a*.

After the tube has been driven to the proper depth, this rod is to be removed by a suitable implement, and, if considered necessary, the strainer before mentioned applied in its place.

In some soils, such as coarse gravel, this strainer will not be necessary, while, in case of fine sand, its employment will be found advantageous, if not absolutely necessary; hence my object in making it movable.

It has been found, in practice, that a cast-iron point answers every purpose of a steel one, and, in many cases, more durable.

Although, in the accompanying drawings, it is represented as a straight cone, in practice it will be given a twisted form, in order to cause a rotation of it as it is driven downward.

I claim the peculiar construction of the cleaning-implement, shown in figs. 3 and 4 of the accompanying drawings, when used in connection with tubular wells, for the purpose substantially as before set forth and explained.

I also claim the employment, within the well-tube, of the short metallic block or rod *d*, constructed and operated substantially in the manner and for the purposes shown and described.

Witnesses:

FRED. CURTIS,
GEO. A. LORING.

REUBEN RICH.