F. A. Mack,

Well Tubing,

No. 57,935. Patented Sep. 11, 1866.

Fig: 1.

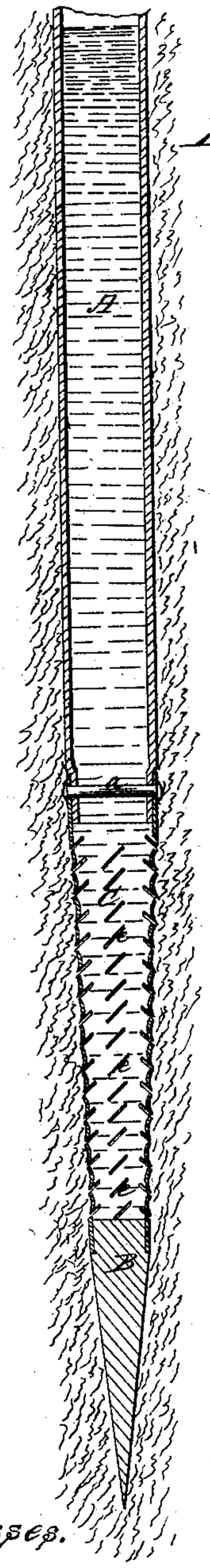


Fig: 3.

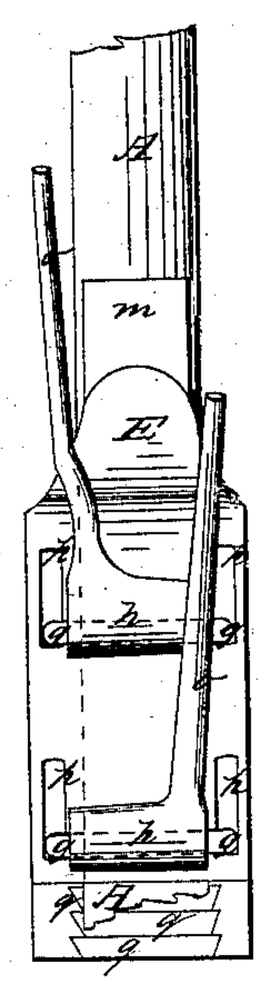
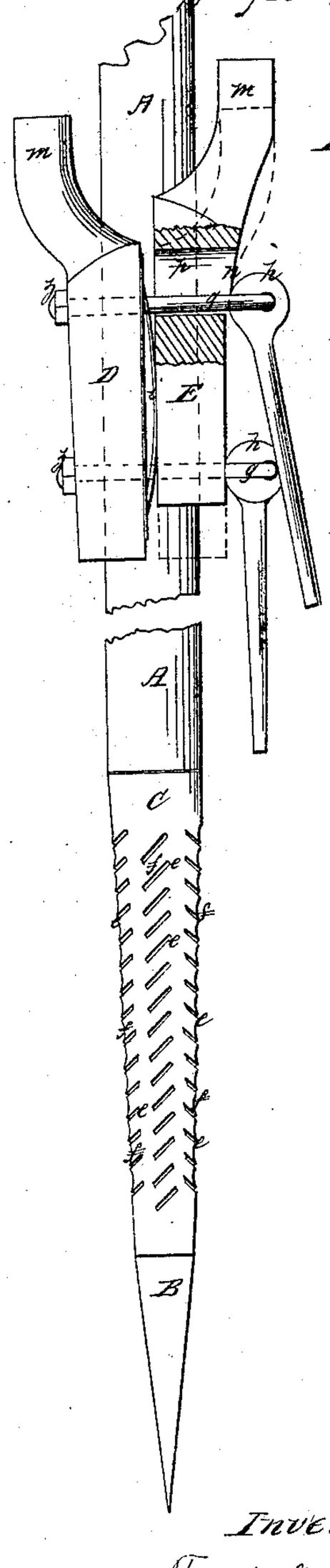


Fig: 2.



Witnesses.

Jay Hyatt.

Louis Fenn

Inventor.

Francis A. Mack

by J. Fraser & Co. atty's

UNITED STATES PATENT OFFICE.

FRANCIS A. MACK, OF NILES, MICHIGAN.

IMPROVEMENT IN WELL-TUBES.

Specification forming part of Letters Patent No. **57,935**, dated September 11, 1866.

To all whom it may concern:

Be it known that I, FRANCIS A. MACK, of Niles, in the county of Berrien and State of Michigan, have invented certain new and useful Improvements in the Construction of Iron Well-Tubes; 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, in which—

Figure 1 is a vertical section of the lower portion of the pipe, represented as driven in the earth. Fig. 2 is a view, in elevation, of the pipe, with my improved clamp in position for driving the pipe. Fig. 3 is a side elevation of the clamp detached.

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

My improvements relate to the method of obtaining water by driving into the ground an iron tube armed at the bottom with a steel point, and provided with perforations for the influx of the water; and the invention consists in the construction of the lower perforated portion of the tube in such a manner as to prevent dirt or sand from entering and clogging the tube.

As illustrated in the drawings, A is a portion of the iron tubing usually employed for driving, to the lower end of which I secure, in any suitable manner, by riveting or otherwise, the perforated and, preferably, galvanized section C, armed at its bottom with the steel or iron point B, which is secured thereto in any proper manner.

The section C is slightly conical, and provided with slits or openings *e e*, preferably inclined, as shown, formed by cutting from the inside of the metal, before it is made into a tube, by a cold-chisel or by stamping, so as to leave the space *f* between each two slits concave or depressed on the outside and convex within, and the edges or lips of the opening protruding outward, as clearly shown in the drawings.

The effect of this construction is to prevent to a great extent the admission of sand, particles of earth, or vegetable matter from entering the well-tube.

The section C being conical causes the upper edge or lip of each incision to project a little farther than the lower one, so that particles of sand in falling would clear the lower and not enter the upper perforation, while the water is absorbed by capillary attraction, and any dirt that was more rapidly washed downward would take the course of the inclined indentations *f f*, and thus avoid the induction-orifices. Should any particles enter these incisions they will pass through instead of remaining to form permanent obstructions, as the openings *e* being so much wider on the inside, caused by the curved divergence of the inner surface of *f* on each side of them, prevents any particles from wedging in the cuts, they being either conducted away by the outer inclined sides of *f*, or else passing readily through the openings into the tube.

The lower end of the tube being constructed as before described, the same is readily driven into the ground by the use of any suitable apparatus.

The manner of forming the openings in the point C enables them to be easily made of any degree of fineness required to adapt it to the different varieties of soil, from coarse sand to marl and the finest clay, which is an advantage over other inventions, and one of great importance.

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

Forming the induction-openings of iron well-tubes of oblique incisions *e e*, formed by cutting from the inside of the tube, having protruding lips or edges with alternating depressions, to prevent the admission of sand or other solid particles within, substantially as set forth.

FRANCIS A. MACK.

Witnesses:

EBENEZER MCILVAINE,
W. K. LACEY.