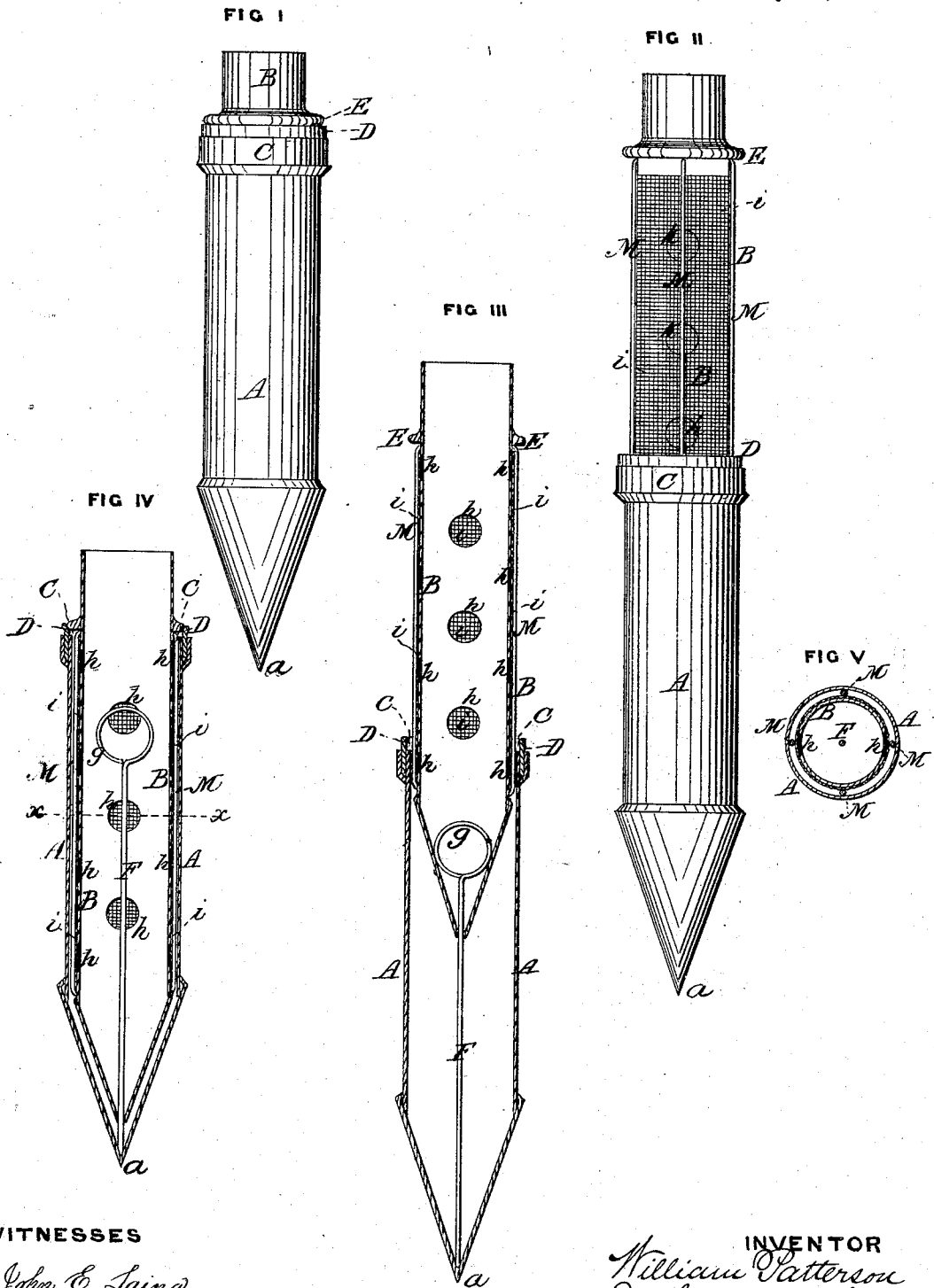


W. PATTERSON.  
Well-Tubing.

No. 166,136.

Patented July 27, 1875.



WITNESSES  
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# UNITED STATES PATENT OFFICE

WILLIAM PATTERSON, OF CONSTANTINE, MICHIGAN.

## IMPROVEMENT IN WELL-TUBING.

Specification forming part of Letters Patent No. **166,136**, dated July 27, 1875; application filed May 20, 1875.

*To all whom it may concern :*

Be it known that I, WILLIAM PATTERSON, of Constantine, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Well-Tubing; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

The object of the present invention is to improve upon that class of well-tubes or driven wells in which a protective casing is employed to surround the water or strainer tube when the same is being driven into the ground; and to this end the invention consists, first, in a pointed protective shell or casing, which surrounds the strainer-tube of a driven well, and is provided with a flexible ring or gasket at its upper end, which encircles the strainer-tube, for the purpose of obtaining a tight joint at the top of the protecting-shell and said strainer-tube, so as to enable the latter to be raised at any time, or when deemed necessary in the act of driving the well, without incurring the liability of dirt or stones entering at the top of the protective tube.

The invention further consists in forming a collar or shoulder at the top of the strainer-tube, which will rest upon the top edge of the protecting-tube when the strainer-tube is pushed into the same, and thus serve, in connection with the lower end of the strainer-tube, to produce two points of contact in driving the well, which will effectually prevent any rebound of the parts.

The invention further consists in applying a draw or extracting rod to the inner side of the pointer-protecting tube, which rod is hooped at its upper end, and passes through the center of the strainer-tube, so that both tubes, and any attached sections, can be readily withdrawn from the ground in case of a failure to reach water, or in order to avoid obstructions.

In the accompanying drawings, Figure 1 represents an elevation with the tube closed;

Fig. 2, a similar view, showing tube open; Fig. 3, a vertical longitudinal section with the tube open; Fig. 4, a similar view with the tube closed, and Fig. 5 a horizontal cross-section taken at line *x x* of Fig. 4.

The closed or imperforate solid shell or casing A, which encircles the strainer section or tube B, is provided with a point, *a*, for readily penetrating the earth.

The shell or casing protects the strainer-tube in the act of driving the well, and when water is reached the strainer-tube is drawn out of the protecting-shell, so as to permit the passage of the water into the strainer-tube, and through its attached sections, if any are used.

The upper end of the shell or casing A is provided with an annular seat, C, into which is inserted an elastic ring or gasket, D, that projects above the top of the seat, and hugs or encircles the strainer-tube B.

The object of said flexible ring is to produce a tight joint at the top of the protecting-shell, between it and the strainer-tube, this being for the purpose of preventing the entrance or passage of dirt or stones whenever it is found necessary to raise the strainer-tube in the act of driving the well. The continued raising of the strainer-tube would very soon cause the accumulation of dirt between it and the protecting-tube were it not for the presence of the flexible ring, which firmly hugs the strainer-tube for obviating such a contingency.

The strainer or inner tube B is closed at the bottom, or made solid thereat, and above the termination of the strainer or water-inlet portion it is provided with a collar or shoulder, E, which rests upon the top-edge or rim of the protecting-tube A, when the strainer-tube is pushed into the same. Thus it will be perceived that two points of contact are formed for sustaining the driving force—namely, the bottom and the top of the protecting-tube. All rebound of the tube being driven is, therefore, effectually prevented.

For the purpose of enabling the protecting and strainer tubes to be withdrawn from the ground with ease and facility, a draw-rod, F, is provided, which rod is attached to the inside of the protecting-tube, and passes

through the center of the strainer-tube, where it terminates in a loop or eye, *g*. A lifting-rod applied to said draw-rod will enable the tubes to be easily withdrawn, as the pulling force can be applied to the bottom and center of the tubes. The looped end of the draw-rod acts also as a stop to prevent the entire withdrawal of the strainer-tube.

The strainer or water-inlet tube is provided with a series of openings, *h*, which are covered with wire-gauze plates, *i*; or an entire wire-gauze cylinder may be made to encircle the tube, to which it is attached by solder, or in any other way.

The strainer or gauze plates are protected from injury by applying thereto guard-wires *M*, which project beyond the wire-gauze, and are located over the water-inlet openings, singly or in pairs. Stones and other obstructions are thus prevented from injuring the gauze or strainer plates.

Having thus described my invention, I claim—

1. The combination of a solid protecting-shell, *A*, having a top seat, *C*, and elastic ring or gasket *D*, with a strainer-tube, *B*, fitted to slide into and out of said casing, as and for the purpose described.

2. The movable strainer or water-inlet tube *B*, having a collar or shoulder, *E*, in combination with the pointed protecting-shell *A*, as and for the purpose described.

3. The combination of the looped draw-rod *F* with the protecting-shell and strainer-tube, said rod being applied and used as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have affixed my signature in presence of two witnesses.

WILLIAM PATTERSON.

Witnesses:

THOMAS HARRISON,  
L. B. FRENCH.