

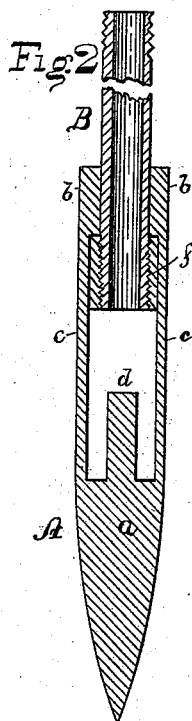
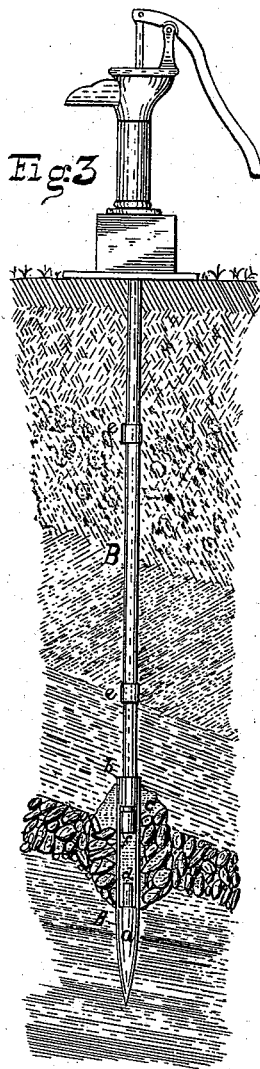
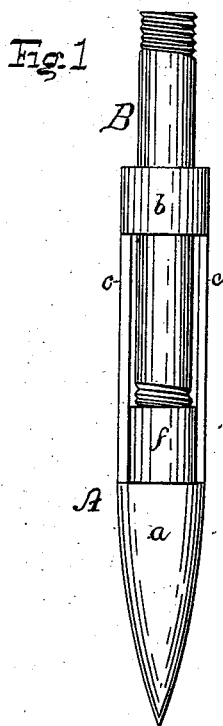
(No Model.)

F. H. FURNISS.

DRIVE WELL POINT.

No. 382,697.

Patented May 15, 1888.



WITNESSES:

H. D. Burrall
Wm. S. Parker

INVENTOR:

Frederick H. Furniss

BY

F. F. Hamer
ATTORNEY.

UNITED STATES PATENT OFFICE.

FREDERICK H. FURNISS, OF WATERLOO, NEW YORK.

DRIVE-WELL POINT.

SPECIFICATION forming part of Letters Patent No. 382,697, dated May 15, 1888.

Application filed November 9, 1887. Serial No. 254,673. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK H. FURNISS, a citizen of the United States, and a resident of Waterloo, in the county of Seneca and State of New York, have invented certain new and useful Improvements in Drive-Well Points, of which the following is a specification.

My invention relates to that class of wells now commonly known as "driven" wells or "drive" wells. Heretofore the lower end of the well has consisted of a more or less sharp or tapering part or "point" to facilitate its passage into the earth, and this point has been adapted to bear the force required and the resistance offered while being driven into the earth far enough to meet a sufficient supply of water. The lower part or portion has also been slotted to permit the water when reached to enter the tube, and perforations and other water ports or inductions have also been there made for the same purpose; but experience has shown that these openings or ports have been liable to become filled or clogged with sand, clay, or other obstructions, and for the purpose of preventing this clogging or obstruction the point has been movably connected to the tube in such a manner that the ports could be closed while the well was being driven and opened when water was reached. This attempt, however, to prevent the clogging of the ports and tube has, so far as I am aware, been only partially successful, and the principal purpose of my invention is to provide improved means for protecting the ports while the well is being driven and allowing a free entrance of water after a supply has been reached. I also aim to improve the well in other respects, all of which will be more fully explained hereinafter.

I have set forth in separate claims the characteristic features of my invention; but to enable others more fully to understand my improvements I will describe them with greater particularity, referring to the accompanying drawings, in which—

Figure 1 is a side elevation of the lower part or portion of a drive-well embodying my invention, and showing the parts in the position they occupy while the well is being driven. Fig. 2 is a vertical central section through the parts shown in Fig. 1, excepting that in Fig.

2 the parts are shown in the position they occupy when arranged to admit the water; and Fig. 3 is a side elevation of the driven well when ready for use.

Like letters of reference indicate like parts.

A represents the point. This point consists of a tapering or pointed portion, *a*, of an annular portion or ring, *b*, and of arms or bars *c c*, connecting the part *a* to the part *b*, and supporting the latter considerably above the former, substantially as shown. I have also shown a stud or extension, *d*, projecting upward centrally from the part *a*; but I desire to state that while I deem it preferable to employ this stud as an auxiliary in retaining the point in a vertical position while being driven, and as an element of additional strength, I do not regard it as an absolutely essential accompaniment to certain features of my invention, as will hereinafter more fully appear. I do not therefore here intend to be restricted to the said stud, excepting as indicated specifically in my claims; neither do I intend to claim the same broadly, as it is not new with me in that sense.

B is the well-tube. This tube may consist of as many sections as may be required, the sections each being of such length as may be expedient, and being coupled together in the usual manner—for example, by means of couplers *e e*. The lower end of the lower section of tubing passes down freely through the ring or hoop *b*, and *f* is a collar on said end. The collar *f* is of such size as to be capable of being moved up and down freely between the bars or arms *c c*, but incapable of being drawn up through the ring or hoop *b*. I deem it best to make the collar *f* removable, preferably by making it internally screw-threaded and by making corresponding screw-threads on the lower end of the tubing.

The well is driven in the usual manner or in any suitable way, when, as will be perceived, the blows or the pressure will carry the collar *f* down upon the upper end or face of the part *a* of the point A if the said collar be not already seated thereon by reason of gravity. The stud *d* will then be in the lower end or part of the tube B and aid in preventing the point A from being tilted laterally as it resists the pressure upon it while it is being

driven, but the arms or bars *c c*, in co-operation with the ring or hoop *b*, may in many cases be sufficient for that purpose, or may be made so.

5 It will be perceived, especially on reference to Fig. 1, that the lower end of the tube is completely closed when the collar *f* rests on the part *a*, and that there are then no openings or water-ports which can become filled or
10 clogged while the parts are in that position or while the well is being driven.

After the well has been driven sufficiently low to bring the point A into or somewhat below a vein of water—in other words, when a
15 supply of water has been reached or tapped—I raise the well-tubing sufficiently to carry the collar *f* above the stud *d*, (or above the upper end of the part *a* when such a stud is not employed,) and if need be up to or against the
20 ring or hoop *d*. It will be observed that the lower end of the well-tube will then be wholly open and unobstructed, and that the water will have free access thereto, and may be drawn up through it and discharged by means of any
25 ordinary pump in operative connection with the tubing—in other words, the capacity of the water-induction is equal to the capacity of the tube.

In case any sand, mud, clay, or other earthy
30 substance should cling to the tube before it is raised, such matter would be pushed off by the act of raising the tube; or if the tube and point were raised together, then by the act of pushing down the point by means of a rod inserted for
35 that purpose into the tubing; also, if any obstructing matter should be sucked up into the tube, the latter may be unscrewed from the collar *f*, raised, cleaned by means of a rod or bar, or otherwise, and returned to and screwed

into the said collar without disturbance to the
40 point A and its surroundings. The point may also be drawn up at any time to seek a better supply of water than that found at the lowest depth to which the well was driven.

I regard the point A as an improved article
45 of manufacture, as it is adapted for the use for which it is intended without a substantial change of form or structure.

Having thus described my invention, what I claim as new, and desire to secure by Letters
50 Patent, is—

1. As an improved article of manufacture, a drive-well point consisting of the tapering
portion *a*, having thereon the vertical central
stud, *d*, the annular part or hoop *b*, and one or
55 more vertical arms or bars, *c c*, supporting the part *b* above the part *a* without inclosing the space between them, substantially and for the purposes specified.

2. The combination, in a drive-well, of the
60 tube B, the collar *f*, removably applied to the said tube, the ring or hoop *b*, the tapering or pointed part *a*, and one or more arms or hoop-supports, *c c*, all arranged, substantially as described, with relation to each other, for the
65 purposes specified.

3. The point A, consisting of the tapering
part *a*, the stud *d*, one or more supports, *c c*,
and the hoop *b*, in combination with the tube
B, having a collar at or near its lower end, sub-
70 stantially as and for the purposes specified.

Signed at Waterloo, in the county of Seneca
and State of New York, this 5th day of No-
vember, A. D. 1887.

FRED. H. FURNISS.

Witnesses:

W. D. BURRALL,
WM. S. PARKER.