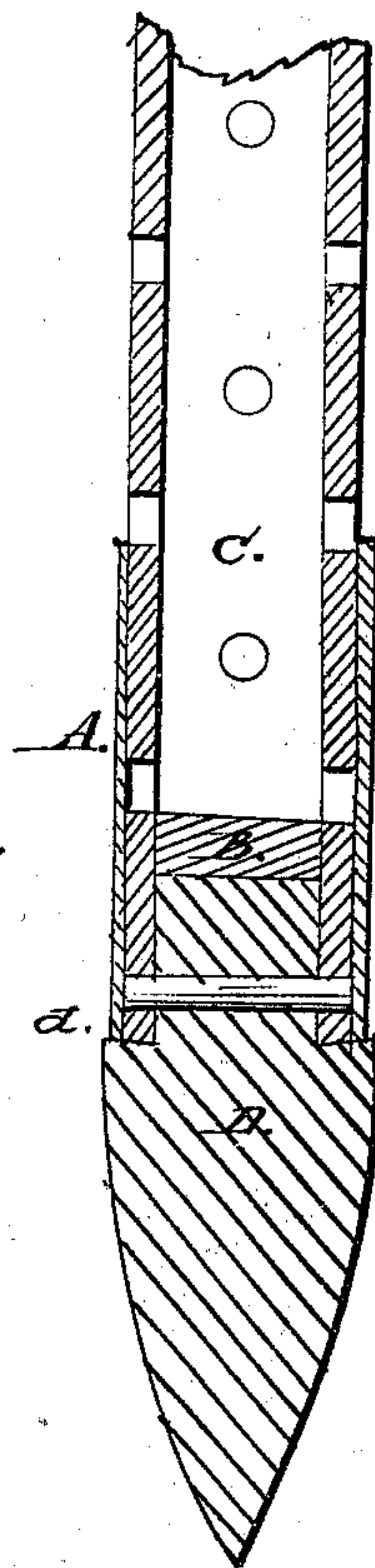
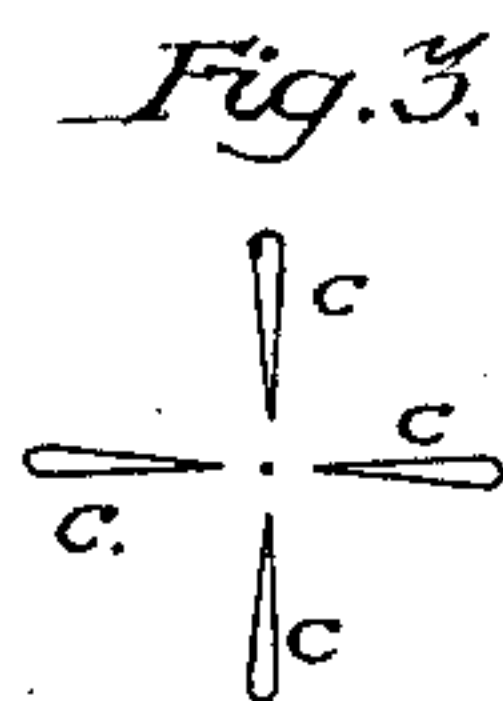
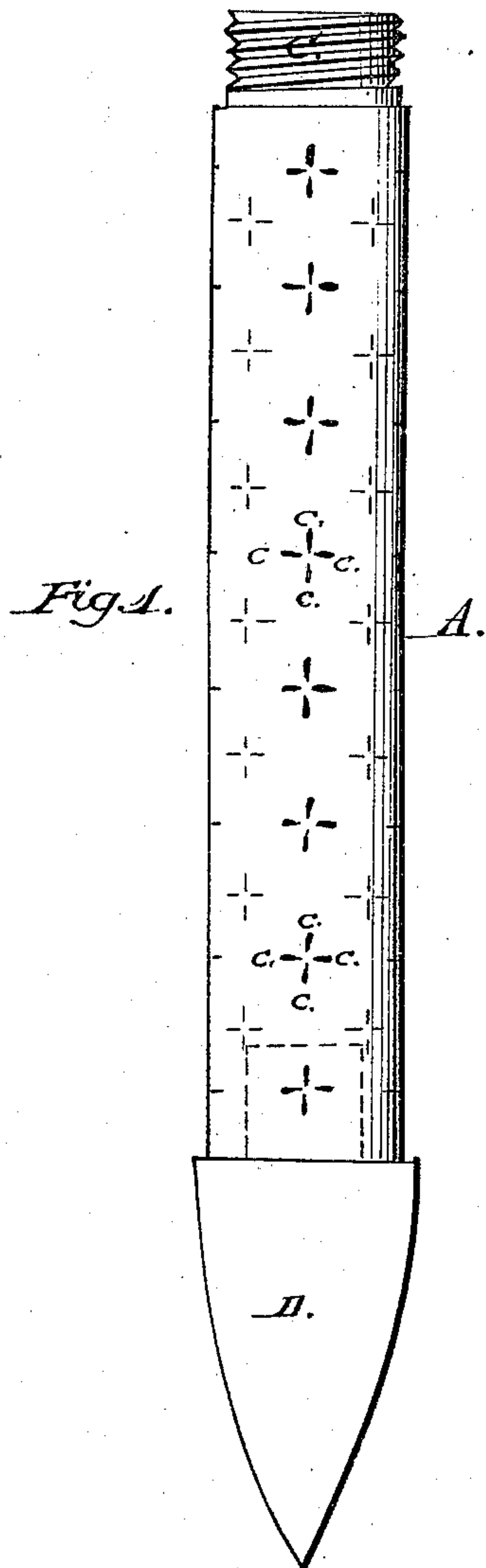


J. A. Sanford,

Well Tube.

No. 86,821.

Patented Feb. 9. 1869.



WITNESSES:

M. Burris
David A. Burr.

INVENTOR:

John A. Sanford
per Att. E. B. Fries
Attorney.

United States Patent Office.

DELOSS A. DANFORTH, OF ELKHART, INDIANA.

Letters Patent No. 86,821, dated February 9, 1869.

IMPROVEMENT IN WELL-TUBES.

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

To all whom it may concern:

Be it known that I, DELOSS A. DANFORTH, of Elkhart, in the county of Elkhart, and State of Indiana, have invented a new and useful Improvement in Drive-Well-Tubes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of tube and point, with outer punctured case;

Figure 2 is a vertical section of the same; and

Figure 3, an enlarged view of the punctures.

Like letters in the different figures of the drawings indicate like parts.

My invention consists, first, of the construction of an outer case over a drive-well-tube, punctured so as to admit water, but not sand; second, of a plug securely fastened in the tube, a proper distance from the lower end thereof, for the upper part of the point to bear against, to prevent the shoulders of the same from being cut or split off by the end of the tube, in driving it into the ground.

A represents the outer case, and *c c c*, the punctures therein, which are made with a punch, the end of which is provided with four or more cutters, tapering to a point toward the centre of the punch, but not meeting, so that the punctures do not join in the centre, as shown in fig. 3.

Alternate rows of the punctures are made by placing the punch or stamp, forming them, on the outside of the plate of the outer case, producing inwardly-projecting edges, which rest against the tube, holding the walls of the case from the tube, and thus allowing space for the passage of the water to the apertures in the tube.

The case is stronger, and operates better, by not joining the punctures in the centre, for, if joined, the

point in the angles between them would be liable to be bent or sprung apart, which would produce an opening large enough to admit sand.

B is a metallic stop or plug, securely fastened by rivet, or otherwise, in the tube C, a proper distance from the end of the same, for the upper end of point D to bear against, as shown in fig. 2.

The shoulders of point D are inwardly depressed, as shown at *d d* in fig. 2, and the lower edge of the tube is made to fit therein, for the purpose of avoiding the spreading of the tube in driving the point into the ground.

The outer case, with punctures as described, will admit water, but prevent sand from entering into the tube.

In localities where the ground is free from rocks or other hard substances, wooden instead of metallic points may be used, but as heretofore constructed, the shoulders were liable to be cut or split off by the pressure of the end of the tube in driving it in the ground. This is prevented by the plug B bearing on the end of the tube, as described.

Having thus fully described my invention,

What I claim therein as new, and desire to secure by Letters Patent, is—

1. The case A with punctures *c c c*, as constructed, alternately from the outside and inside of the case, so as to form alternate edges and depressions on the outside and inside of the same, substantially as described.

2. Case A, as constructed, and tube C, with lug or stop B, in combination with the inwardly-depressed shoulders *d d* of the point D, substantially as described.

As evidence that I claim the foregoing, I have hereunto set my hand, in the presence of two witnesses.

DELOSS A. DANFORTH.

Witnesses:

H. H. YOUNG,
CHAS. H. MOORE.