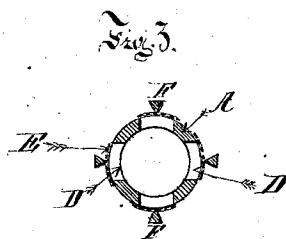
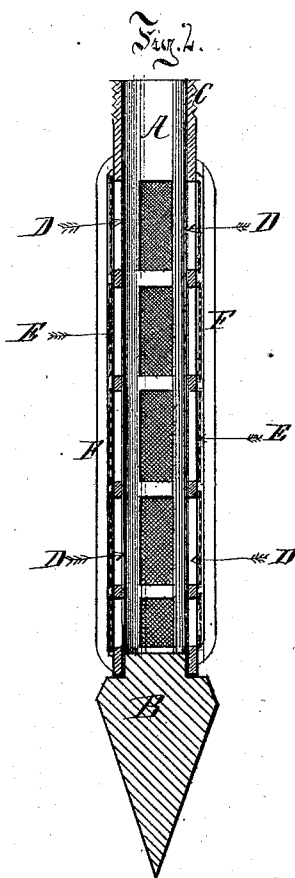
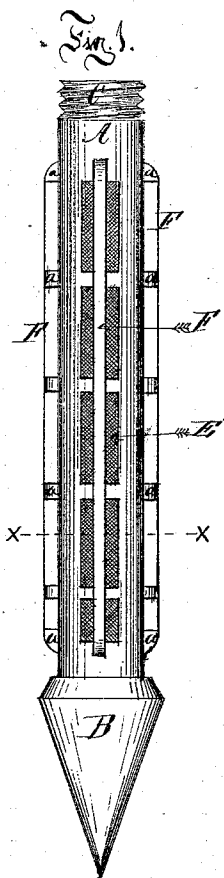


W. C. MACOMBER.
Drive-Well Strainers.

No. 160,692.

Patented March 9, 1875.



Witnesses:
Richard Gerner
Franklin Barritt.

Inventor:
Wm. C. Macomber
Per Henry Gerner

UNITED STATES PATENT OFFICE.

WYMAN C. MACOMBER, OF MINNEAPOLIS, MINN., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE MINNEAPOLIS MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN DRIVE-WELL STRAINERS.

Specification forming part of Letters Patent No. **160,692**, dated March 9, 1875; application filed March 11, 1873.

To all whom it may concern:

Be it known that I, WYMAN C. MACOMBER, of Minneapolis, county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Drive-Well Strainers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, making part of this specification, in which—

Figure 1 is a side view of a section of a drive-well tube embodying my invention. Fig. 2 is a vertical sectional view of the same; and Fig. 3 is a sectional view through line *x*, Fig. 1.

The object of this invention is to overcome certain difficulties experienced in the application or use of drive-wells as heretofore constructed, arising from the necessity of covering the elongated perforations of the tube with wire cloth or gauze to prevent the ingress of sand to the tubes, the frail character of the wire-gauze rendering it liable to be torn off and destroyed in the process of driving the tubes. To remedy this difficulty various forms of guards have been devised for protecting the gauze in the process of driving the tubes, such as straps of iron covering the openings or perforations in the tubes, but sufficiently removed from the wire-gauze covering to permit the ingress of water, and fastened at points intermediate between the perforations; but in practice it was found that these straps were broken down in the process of driving, or so pressed against the wire-gauze by the surrounding pressure as to close the openings and prevent the free ingress of water. To remedy this difficulty round rods or bars were substituted, running lengthwise of the tubes, in lines parallel with and directly over the elongated gauze-covered openings, and soldered directly to the tubes at points intermediate between such openings. This construction, while obviating the danger of breaking down the guards, was found to seriously diminish the capacity of the openings for the supply of water to the tube, inasmuch as the round forms of the guard caused them to recede so slowly from the point of actual contact with the wire-gauze that they

obstructed the free admission of the water to the perforations in the tube. It thus became necessary to either increase the number of the perforations or slots for the admission of the water, and thereby endanger the strength of the well-tubes already weakened as far as practicable, consistent with the strength required for driving, and for the after resistance of the surrounding pressure, or to devise some form of guard which, while effectually protecting the wire-gauze in the process of driving, should at the same time offer the least possible resistance to the flow of water when the tube was in place. With the view of meeting this necessity, and of overcoming the difficulties recited, I devised the present improvement, which consists in forming the guards in a triangular or V shape, and uniting them to the tube, so that they extend directly over the perforations, in such manner as that, while effectually protecting the wire-gauze in the process of driving, the rapidly-receding lines or sides of the triangular guards afford ready access of the water to the perforations in, and consequent ready admission of the water to, the well-tube.

In the drawing, A is a perforated lower section of a drive-well tube. B is the point, inserted in the lower end of the tube. C is a screw-thread, by which the lower section of the tube is connected with and supplemented by the next upper section. D D are the slots for the admission of water to the tube, said slots being elongated vertically, and placed in parallel rows. E is wire-gauze, placed over said slots, and soldered to the tubes. F F are the triangular guards referred to, placed over the slots D D and wire-gauze E, presenting an acute angle adjacent to or in contact with the tube, and soldered to the tube at points intermediate between the slots or perforations, as indicated at *a a*. These guards thus applied, as will be seen from the drawings, present a broad outer base to the action of the earth, and thus force it away from the wire-gauze much more effectually than a round guard would do in the process of driving the tube, thereby preventing injury to the delicate gauze, while at the same time the converging

lines or sides of the guard, terminating in an acute angle at the gauze, permit the ready ingress of water to the perforations or slots in the well-tube.

In practice this construction has been found to effectually overcome the difficulties recited, and, therefore, to remove the objections heretofore urged against the use of drive-wells.

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

The triangular or V-shaped guards F F, constructed and applied substantially as described, for better protecting the wire-gauze covering the slots in the well-tube, and permitting a free ingress of water to the tube, as set forth.

WYMAN C. MACOMBER.

Witnesses:

F. C. GRISWOLD,
M. A. MOREY.