W. P. POWERS.

Filter-Well.

No. 161,546. Patented March 30, 1875.

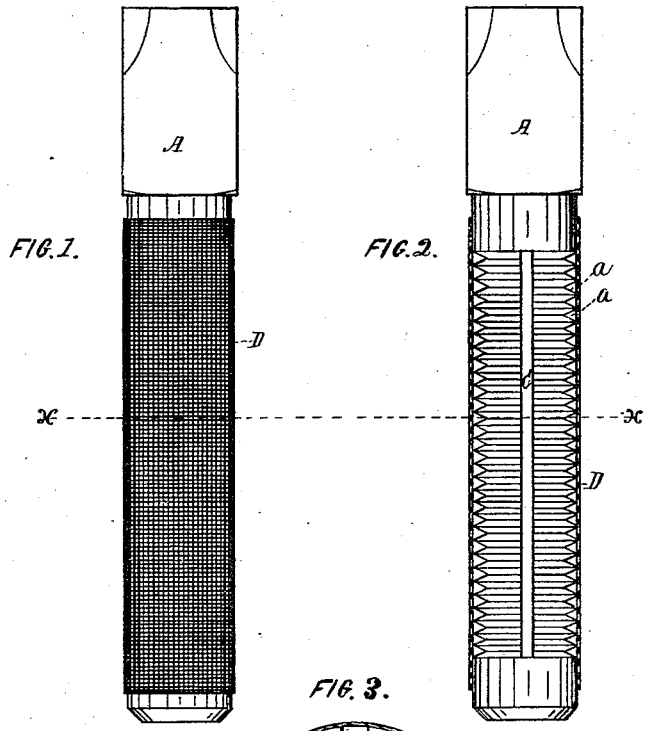

FIG. 1.

FIG. 2.

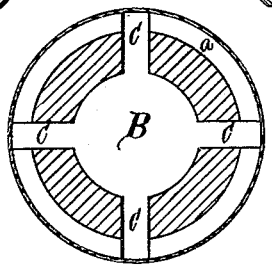

FIG. 3.

Witnesses
C. H. Sheburne
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UNITED STATES PATENT OFFICE.

WILLIAM P. POWERS, OF LA CROSSE, WISCONSIN.

IMPROVEMENT IN FILTER-WELLS.

Specification forming part of Letters Patent No. **161,546**, dated March 30, 1875; application filed October 16, 1874.

To all whom it may concern:

Be it known that I, WILLIAM P. POWERS, of La Crosse, in the county of La Crosse and State of Wisconsin, have invented new and useful Improvement in Filter-Wells; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a side elevation of my said invention. Fig. 2 is a like elevation with the filter removed, and Fig. 3 is an enlarged sectional plan taken on the line *x x* drawn across Figs. 1 and 2.

Similar letters of reference indicate like parts in the several figures of the drawing.

My invention relates to that class of wells formed by sinking a tube into the earth; and the improvement consists in providing the lower end of the tube with a series of V-shaped grooves extending around the periphery of the same, and communicating with the cavity of the tube through vertical slots in the wall of the tube; and in providing the grooved portion of the tube with a covering of fine wire fabric, forming the filter, through which the water passes into the tube through the grooves and slots, as will be more fully understood from the following description and claim.

In the drawing, A represents the lower section or bottom portion of the tube, which is usually made from the tubing used in the manufacture of common wooden pumps; but the same may be increased in size, if desired. The lower portion of the tube is made round, and is provided on its outer surface with a series of V-shaped grooves, *a*, as shown in Fig. 2, which extend around the same. The wall of the tube is provided with a series of vertical slots, C, which communicate with the cavity B of the tube. The horizontal area of these slots is greater than the horizontal area of the cavity in the tube, which admits of a free passage of the water equal to the capac- of the pump. D is the filter, which is made from fine wire fabric or finely-perforated sheet metal, which is permanently secured around the tube over the V-shaped grooves.

It will be observed that the arrangement of the grooves is such that the walls of the same terminate in a feather edge at the periphery of the tube, and against which edge the filter is supported, the object being to increase the sectional area of the grooves through which the water passes into the slots, and at the same time insure sufficient strength in the walls of the grooves to support the filter in position against the pressure of earth and water on the outer surface of the filter.

To use my invention, it is secured within the water-course in the ground by any of the known ways of excavating the earth. A pump is then secured on the upper end of the tube in the ordinary manner, and, as the pump is operated, the water flows through the filter, grooves, and slots into the cavity of the tube, and is drawn upward and discharged from the pump by the action of the same.

Having thus described my invention, I claim—

The tube A, provided with the V-shaped grooves *a* and longitudinal slots C, in combination with filter D, all constructed as specified.

The above specification of my invention signed by me this 3d day of October, 1874.

WILLIAM P. POWERS.

Witnesses:

JOHN H. WHIPPLE,

N. H. SHERBURNE.