(No Model.)

H. A. GARBEN.

SPRING PROTECTION.

No. 489,649. Patented Jan. 10, 1893.

Fig. 1.

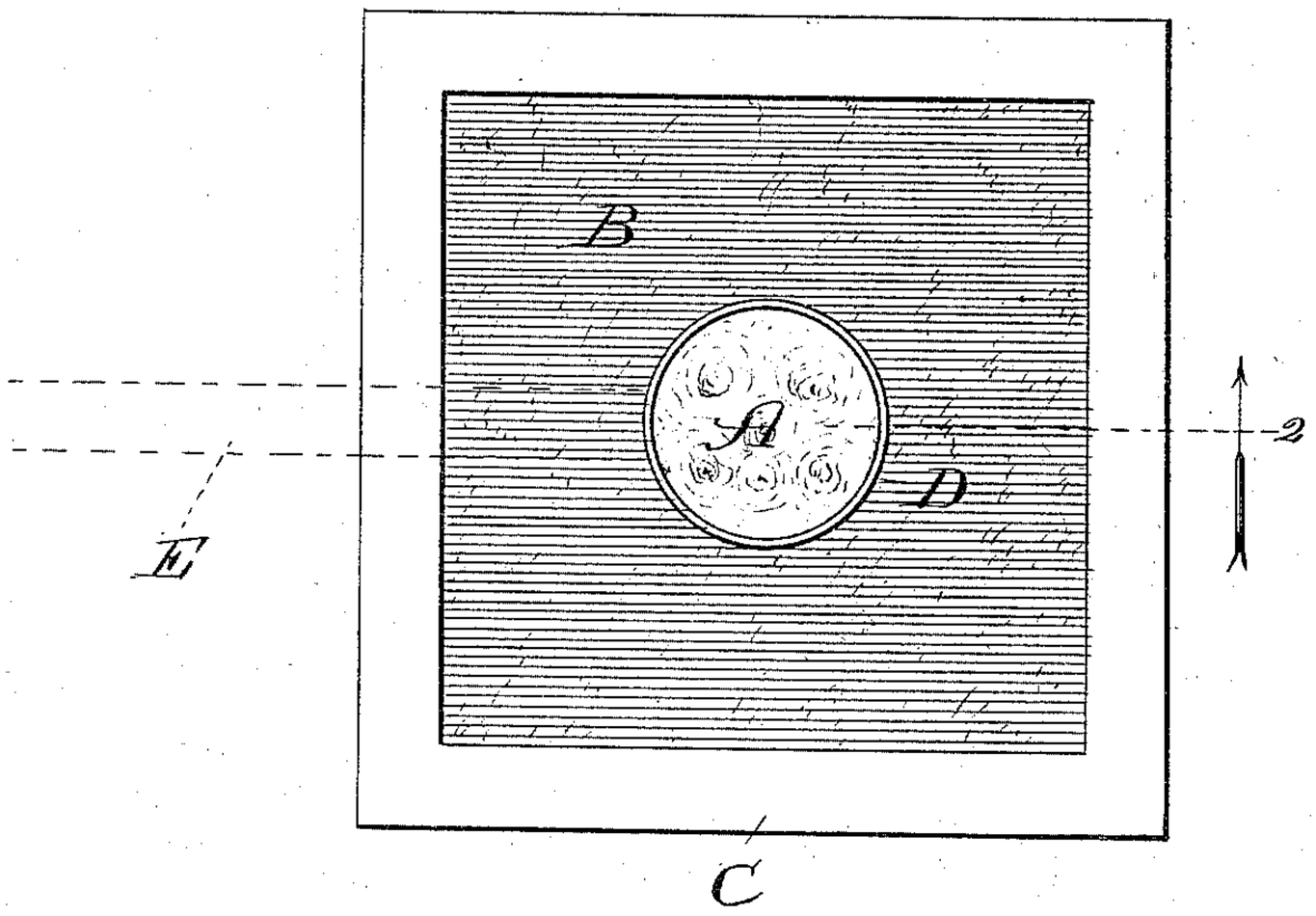
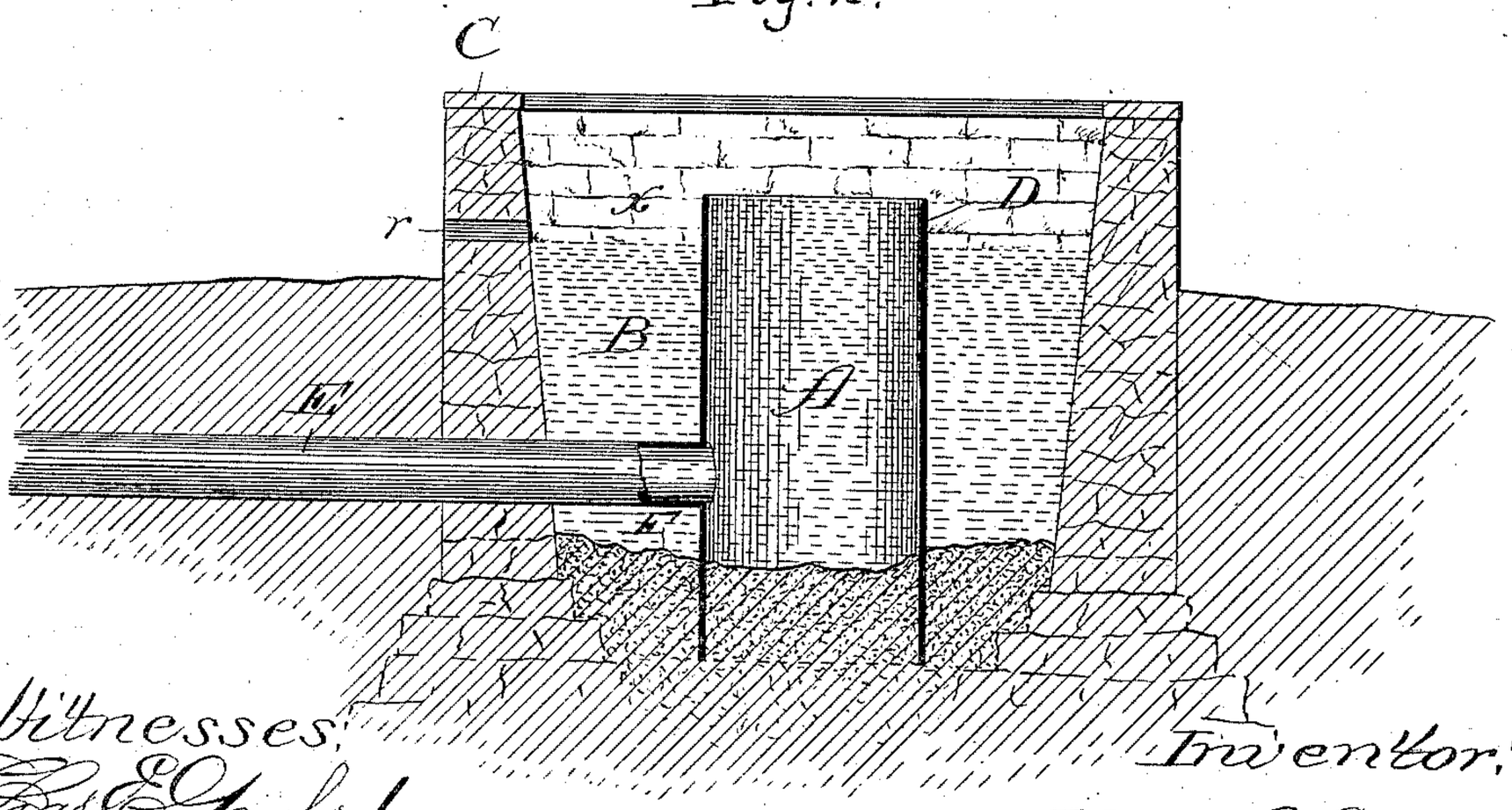


Fig. 2.



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UNITED STATES PATENT OFFICE.

HENRY A. GARBEN, OF CHICAGO, ILLINOIS.

SPRING PROTECTION.

SPECIFICATION forming part of Letters Patent No. 489,649, dated January 10, 1893.

Application filed September 13, 1892. Serial No. 445,761. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. GARBEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Spring Protection, of which the following is a specification.

The invention relates to improved means for protecting springs against contamination of their water with surface water.

It is common to form about a spring, a well of desired depth having walls of masonry, the well forming for the spring-water a reservoir whence the supply is taken. The masonary walls are not impervious to the surface water, particularly under the pressure of the latter after a heavy fall of rain, so that it makes its way into the reservoir and contaminates the spring water therein. I prevent contamination by sinking into the well a bottomless primary reservoir (thereby rendering the well proper a secondary one) formed of impervious or practically impervious material, preferably galvanized sheet-iron and of tubular or cylindrical shape, causing it to envelop the spring where it emerges from the ground, and which cylinder extends upward above the water-line in the well proper or secondary reservoir. Immediately from this primary reservoir, which is suitably tapped, the supply is taken; and it overflows into the secondary reservoir surrounding it. The inner reservoir being impervious the water in the outer one can not become mixed with its contents unless by percolating through the base of the well and becoming, as it were, a feed-supply to the spring, which would tend to purify it of any contaminating substance it might contain, though if it contained any, the proportion would be extremely slight, as the constant overflow from the inner into the outer reservoir dilutes with the pure spring water impure matter in the outer one.

In the accompanying drawings, Figure 1 is a plan view representing a spring provided with my improved protecting means; and Fig. 2 is a section taken at the line 2 on Fig. 1 and viewed as indicated by the arrow.

A denotes the spring proper, or outflow of water from the ground, which may be at any depth, and to which a well is sunk and surrounded by masonry wall C to form a reservoir B for the outflow from the spring, the walls being provided with an overflow *r* above the surface of the ground.

In the well I sink a bottomless (or otherwise open-base) cylinder D, best formed of galvanized sheet-metal, the diameter of which may be say three or four feet and thus, say, about one-fourth that of the reservoir B. The tube D may be sunk to any desired depth into the bottom of the well around the spring A, but extends upward above the water-line (indicated at *x*) in the reservoir B to prevent the contents of the latter entering the reservoir D, which, however, overflows into the outer reservoir. The inner reservoir is tapped, say three or four feet below the surface of the ground, and a pipe E leads from it to supply the spring water say to a house where it may be used for domestic purposes or run into receptacles for storage or transportation. As will readily be seen, no surface water which gains access to the reservoir B can pass through the reservoir D, the contents of which, therefore, remain uncontaminated therewith unless some of it percolates through the bottom F of the well and thus feeds the spring A; but, as hereinbefore suggested, if there be thereby any contamination it is so slight as be inappreciable.

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

1. In combination with a spring, a well, and a shell in the well around the spring, forming a direct-supply or primary reservoir for the spring water and forming with the surrounding elevation a secondary reservoir in the well, substantially as and for the purpose set forth.

2. In combination with a spring A, a well having masonry walls C, a galvanized sheet-metal tube D sunk into the base of the well around the spring thereby forming a primary reservoir for the spring water and forming with the said walls a secondary reservoir B in the well, and a supply-pipe E leading from the reservoir D, substantially as and for the purpose set forth.

HENRY A. GARBEN.

In presence of—
M. J. FROST,
W. N. WILLIAMS.