W. H. Wiley,

Water Filter.

No. 60,311. Patented Dec 4, 1866.

Fig. 3.

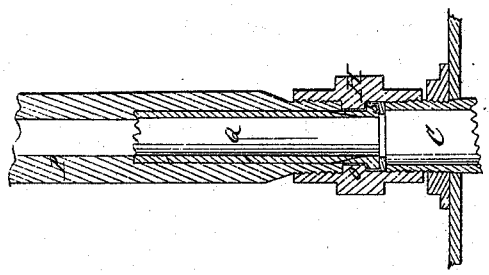


Fig. 1.

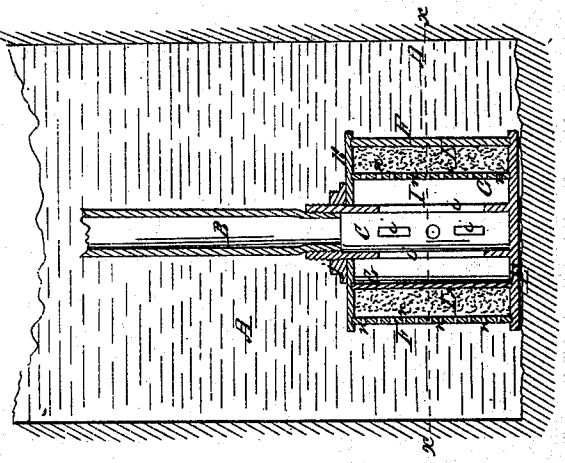
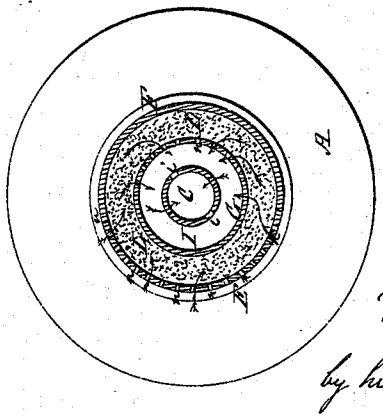


Fig. 2.



Witnesses.
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Inventor
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United States Patent Office.

IMPROVEMENT IN WELL AND CISTERN FILTERS.

WILLIAM H. WILEY, OF FREDONIA, NEW YORK.

Letters Patent No. 60,311, *dated December* 4, 1866.

SPECIFICATION.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM H. WILEY, of Fredonia, in the county of Chatauqua, and State of New York, have invented a certain new and improved Well and Cistern Filter; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a central vertical section of my improvements, represented in the bottom of a well.

Figure 2 is a horizontal section of the same in plane of line *x x*.

Figure 3 is an enlarged sectional view of the coupling H, for connecting either a lead or wooden pipe with the filter.

Like letters designate corresponding parts in all the figures.

The object of my improvement is to provide a filter that may be attached to the tube of a well or cistern, and then let down into the same, whereby the water is subject to a thorough filtration before it is pumped up for use; and the invention consists in the manner of constructing the filter, as hereafter described, by which it is specially adapted to the use and purpose above stated.

In the drawings, A represents the bottom portion of a well, with my improved filter therein; B, (fig. 1,) is a section of an iron well tube, coupled to the filter-tube C, in any ordinary manner as shown; E, the base-plate, fixedly connected with the central tube C, to form the foundation and bottom of the filter; F, G, the outer and inner sides of the filtering chamber, formed of porousm aterial, or partly perforated cases, secured as represented, or in any other suitable way, and D the upper disk or plate covering the filter. These disks are solid with the exception of a hole in the upper one, D, for the passage of the tube C. The lower base-plate E and the tube C are preferably cast in a single piece, but may be rigidly connected together by bolts or other means; the latter being provided with apertures or perforations, *i i*, in its sides, of any desired form for the influx of the water, and with both an internal and external thread at its upper end for coupling with tube B, and for the purpose presently to be explained. The upper or cover plate, D, is made to fit over the end of tube C, and rest upon the ends or top of the cases F and G, where it is firmly secured in place by the nut *j*, which screws on the end of the tube C, as shown in fig. 1. The sides may be of any porous material, as baked earthen, brick, or other porous substance, or of the metallic cases F, G, which are provided with fine perforations, *n* and *n'*, on one side of each and on opposite sides of the filter, so that the water as it enters the perforated side of the outer case, cannot pass directly and readily through the packing, L, and inner case into the water chamber, I, but is compelled to percolate around between the two cases through the filtering material, L, (which may be of any suitable kind) till it reaches the perforations, *n*, *n'*, in the inner case G, as shown by arrows most clearly in fig. 2. In wells and cisterns where lead or wooden tubes are employed for elevating the water, I make use of a coupling, H, (fig. 3,) for connecting either to the tube C of the filter. This coupling is constructed as shown, and consists of a thimble or collar provided with a ledge or shoulder, *o*, at the centre, running transversely around the inner surface so as to lessen the size of the bore or opening, while at both ends of the thimble, above and below this shoulder is cut an internal thread, for screwing on the end of C, and the end of the wooden tube P, (shown in red lines.) If a lead tube, Q, is desired to be used instead of the wooden one, the coupling is slipped over the same, so that the flange or collar, *s*, at the end of the tube will be below the shoulder, *o*. The coupling H is then screwed on the end of tube C, the end of which presses the flange *s*, against the shoulder *o*, firmly securing the former in place. Aring of rubber or other suitable packing material may be interposed between the flange *s* and end of C, to insure the joint being water tight.

If desired. the cases F and G, either or both, may be made of crocks or cylinders of unglazed earthenware, when the perforations *n n'* may be dispensed with, if preferred, as the earthenware is sufficiently porous to freely admit the percolation or passage of the water through it into the filtering space, and from thence into the reservoir I and tube C. When so constructed, the pores of the opposite sides may be closed by glazing the surfaces on alternate sides to produce the effect obtained by the mode of perforating, where metal is used. A single crock or case of earthenware may be employed, thereby dispensing with the space and filtering material L, in which case it should be made of greater thickness; or the sides of the filter may be constructed of bricks laid up in mortar, through which the water will readily pass by filtration, the brick or earthenware forming an excellent material for most effectually straining and otherwise purifying the same.

The object of my invention is to enable a compact and portable filter to be constructed in connection wtih the suction-pipe of the pump so as to enable the complete filtering apparatus to be lowered into a well containing water by means of said pipe, and removed therefrom for repairs, when required, in like manner, and this I accomplish by making the base plate E serve as a platform on which the sides of the filtering chamber are erected, whether of brick, earthen, or of loose porous material supported by outer and inner walls, and completing the whole with the cover-plate D, which is screwed down so as to press closely on the sides. By coupling the central tube C to the pump-pipe B, the filter becomes attached to the pipe so as to be handled by it. This obviates the necessity of emptying a well of water in order to construct or insert the filter in it, and makes it entirely unnecessary for workmen to descend into a well at all.

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

A portable well and cistern-filter composed of the sub-plate E, filtering cylinder F G, disc D, nut or fastening *j*, and perforated central tube C, combined with and attached to the pump-tube B, the whole constructed and arranged substantially as and for the purposes set forth.

I also claim the partially perforated sides F and G, when constructed as described, in combination with the porous packing L, base-plates D, E, and tubes C and B, arranged and operating substantially in the manner and for the purpose described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM H. WILEY.

Witnesses:

JAY HYATT,

LYMAN P. PERKINS.

60,311.