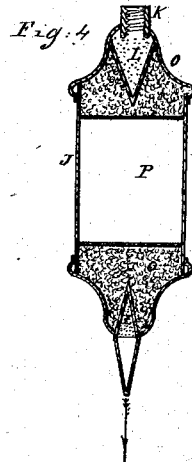
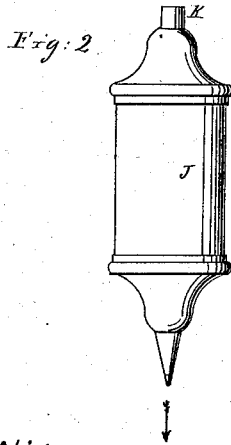
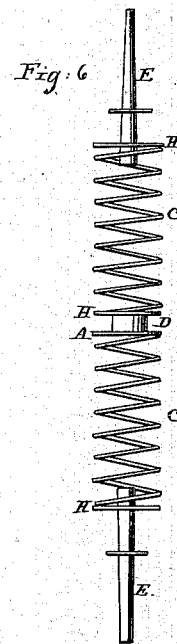
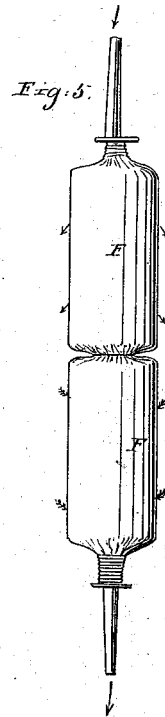
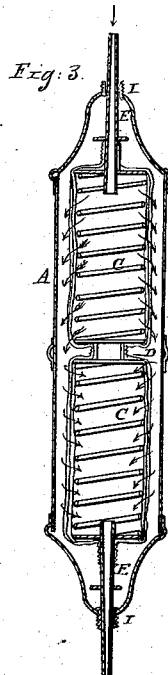
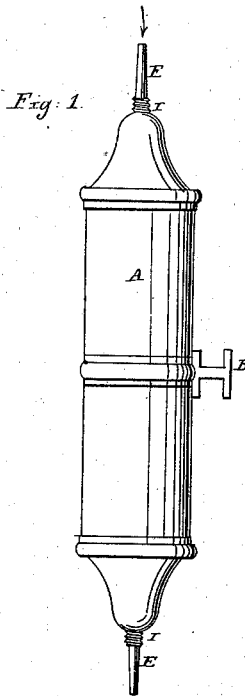


# T. Simmons, Water Filter,

N<sup>o</sup> 47,261.

Patented Apr. 11, 1865.



Witnesses:

Lewis L. Coburn  
W. Bawp

Inventor:

Thomas Simmons

# UNITED STATES PATENT OFFICE.

THOMAS SIMMONS, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN FILTERS.

Specification forming part of Letters Patent No. 47,261, dated April 11, 1865; antedated April 3, 1865.

### *To all whom it may concern:*

Be it known that I, THOMAS SIMMONS, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Water-Filters; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and letters of reference marked thereon, which form a part of this specification, and in which—

Figures 1 and 2 show the side elevations of the two parts of my filter. Figs. 3 and 4 represent vertical central sectional views of the same; Fig. 5, the interior of one of the parts of my filter with just the outside or case removed. Fig. 6 represents the coil-wire and its attachment that forms the very inmost part of the filter.

To enable those skilled in the art to manufacture and use my invention, I will proceed to describe the same with particularity.

The same letters of reference refer to corresponding parts in the different figures.

My filter complete consists of two parts. The upper part, which is shown in Fig. 1, will alone filter all ordinary water perfectly clean, but if the water is particularly foul it is better to attach the carbon cup shown in Fig. 2.

A is the case or outside of the filter, and if made in separate pieces the pieces are soldered together after the inside is put in.

C C are two coils of wire, each terminating at either end by the horizontal plates H, to which they are attached.

D is a short block between the two inner plates H, and E E are tubes extending from the chambers within the coils C C, through the end plates H and the outside case of the filter, as shown. There is wound around the coiled wire C C a number of thicknesses of flannel, and outside of that a number of thicknesses of cotton cloth, or, instead of the said flannel and cotton cloth, any other fibrous material that would answer for filtering purposes might be used, and said cloth is wound firmly at each end to the tubes E E, and the center is also wound firmly to the center piece, D, thus forming two separate compartments. This, then, is put into the case A. I I are hollow screws that are soldered to the case A, and through which the tubes E E pass. They are for the purpose of attaching the carbon-cup. The carbon or coal cup consists of the case J and a perforated cone, L, at each end. Around each of said perforated cones coarse gravel O

is put, the center of the cup being filled with coal. (Represented by P.) The unfiltered water comes from the cistern, through the tube E, into the upper compartment c, and filters through the fibrous material F into the space between it and the case A, and, falling down around the lower compartment c, filters through into said compartment and passes out through the lower tube, E. If the water is not sufficiently filtered, the carbon-cup is attached by screwing the nut K, which is soldered to said cup, onto the screw I, which brings the end of the tube E within the upper perforated cone, L, when the water passes immediately through the coarse gravel and charcoal in said cup and out at the bottom thereof, as indicated by the arrow.

It is readily seen that the compartment that the water first passes into would become foul first, and that by inverting said part of the filter and attaching the other compartment to the cistern the filth is soon washed out of the inside of the lower compartment; in other words, by the filter being made so that it will work just the same either end up it is made a perfect self-cleaner. On account of the water being so thoroughly cleansed before it passes into the carbon-cup that does not become foul in a long time. Projection B is attached to a band passing around the center of the filter, and serves as a convenient way of suspending the filter for use. I consider the use of the spiral wire of great importance, as it gives a great surface to the fibrous covering to the water, and it is also so constructed as to give elasticity to the cloth and continue an even pressure upon it. I have also used my filter in the process of clarifying liquors and find it very serviceable.

Having thus fully described my water-filter, what I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the spiral wire C, the horizontal plates H, and the fibrous covering F, when inclosed inside of a case, A, substantially as and for the purposes set forth.

2. The combination and arrangement of the above with the carbon-cup, substantially as and for the purposes described.

THOMAS SIMMONS.

Witnesses:

LEWIS L. COBURN,  
A. BAWYOU.