

A. T. Dunshee.

Water Filter.

Nº 91,924.

Patented Jun. 29, 1869.

Fig. 2.

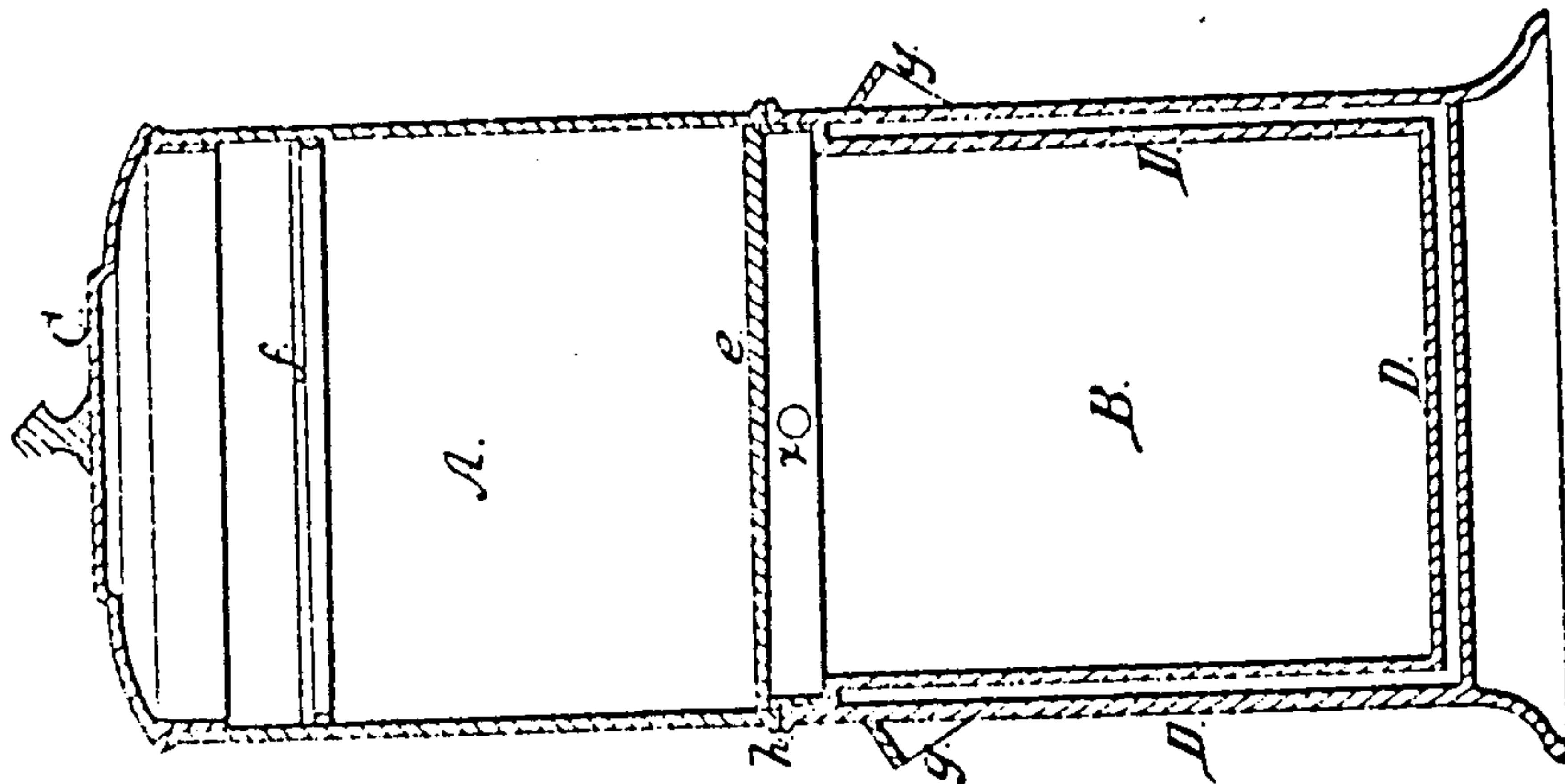
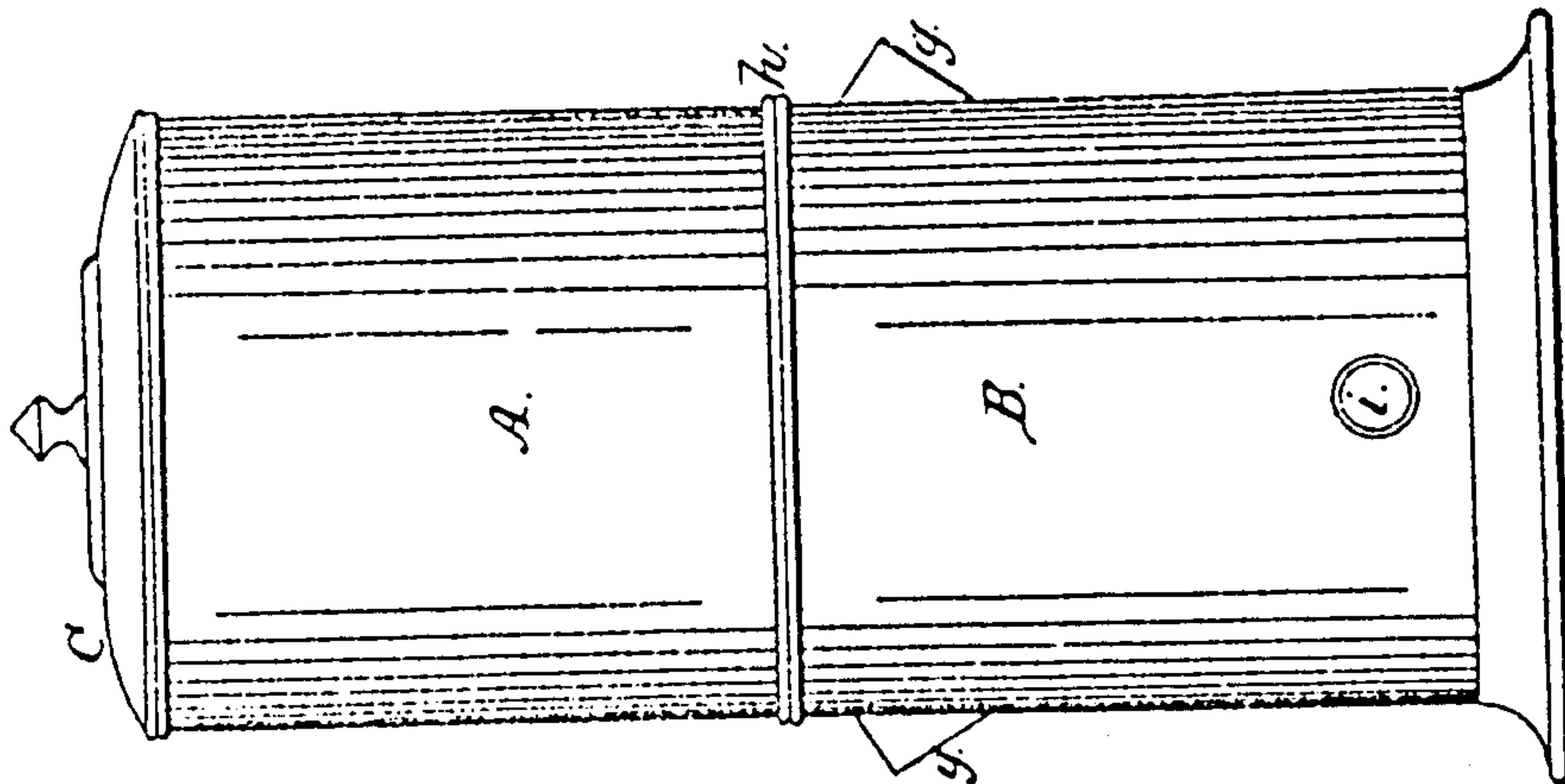


Fig. 1.



Witnesses.

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ANDREW T. DUNSHEE, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 91,924, dated June 29, 1869.

IMPROVEMENT IN WATER-FILTERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ANDREW T. DUNSHEE, of the city of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented a new and useful Improvement in Water-Filter, the same being an improvement of the water-filter for which I received Letters Patent of the United States, which Letters Patent bear date September 24, 1861; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my present improvement consists in interposing between the inner and outer shell or walls of the chamber for receiving the filtered water, an air-tight space, through the medium of which the condensation of the atmosphere on the outer wall of said water-chamber is avoided, thereby preventing the trickling and dropping down of water caused by the condensation of the atmosphere on the outer wall of said water-chamber, when it contains water the temperature of which is lower than the atmosphere that surrounds the water-filter.

My invention also consists in the use of a single air-opening, placed below the filtering-medium, and so arranged that it can be closed or partially closed, and thereby regulating the filtering-capacity of the filter.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, which form part of my specification—

Figure 1 is a side elevation of my improvement in water-filter.

Figure 2 is a vertical section of the same.

In the drawings—

A represents the filtering-part of the filter.

This part is provided with a lid, C, and perforated disks *e* and *f*.

On the upper side of the disk *e* is placed a thick piece of flannel cloth, or a piece of woollen blanket, the diameter of which should be a little more than the diameter of the disk *e*, so that its outer edge or periphery will rest against the inner surface of the wall of the filtering-chamber.

The chamber A is then charged with the filtering-material, which consists of a series of layers of wood-charcoal, arranged as follows:

The layer of charcoal, which rests on the flannel cloth or blanket placed on the upper side of the disk *e*, should consist of small pieces of wood-charcoal, each piece being about the size of a hazle-nut. This first layer should be about four inches in depth.

The second layer, which rests on the first layer,

should consist of small grains of wood-charcoal, each grain being about the size of an ordinary grain of wheat, and this second layer should be about two inches in depth.

The third layer, which rests on the second layer, should consist of wood-charcoal, pulverized very fine, and made damp with water, and should be about one inch in depth.

About one inch above the third or upper layer of the wood-charcoal, is arranged the perforated disk *f*.

The perforations in the disks *e* and *f* should be very small, with about two perforations to each superficial inch square of the disks.

The filter is made in two parts, A and B, and is joined or fitted together at the point marked *h*.

The opening *x* is used for the purpose of admitting air into the water-chamber B, and for regulating the filtering-capacity of the filter.

When the opening *x* is closed, or partially closed, (which may be done by a wooden plug,) the filtering-process will be slow, the full capacity of the filter being only obtained when opening *x* is entirely un-stopped.

The part B is provided with handles, marked *g*, and should be provided with a suitable water-cock, secured in the opening *i*.

The case of the filter may be made of wood, stone, pottery, tin, sheet-zinc, or sheet-iron, coated with any protecting-substance, and may be made in any form or any size desired. By preference I make them cylindrical.

The following is the operation of my improved water-filter:

Having all things constructed, arranged, and prepared as hereinbefore described, I put ice in the chamber B, for cooling the water, which is filtered in chamber A. The water to be filtered is poured in on the disk *f*, from which it falls in fine streams on the upper layer of the pulverized and damp charcoal, through which it passes to the second layer, and trickling down through it and the third layer, and passing through the piece of flannel cloth or blanket, passes through the perforations in the disk *e*, drops down into the chamber B, perfectly filtered and purified.

When the upper surface of the upper filtering-layer becomes foul or clogged, and thereby inoperative, it can be made operative by removing about one-fourth of an inch in depth of the upper surface, and replacing fresh filtering-material in the stead of that removed.

The advantage of my improvement in water-filter consists in preventing the condensation of the atmosphere on the outer surface of the filter, by use of the air-tight space D between the walls of the water-chamber B, which space also acts as a non-conductor, and thereby saves ice.

By having a single air-passage, z , which may be closed or partially closed, the filtering-process may be increased or diminished, at the pleasure of the user.

I wish it clearly understood that I do not claim, broadly, the use of double walls in the construction of a water-filter, for such device is old and well known.

Having thus described the nature, construction, and operation of my improvement,

What I claim as of my invention, is—

The arrangement of the air-tight space D , and the single opening z , when used in combination with a water-filter, provided with disks e and f , and filtering media, the whole being constructed, arranged, and operating substantially as hereinbefore described, and for the purpose set forth.

A. T. DUNSHEE.

Witnesses:

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