

(No Model.)

R. J. ROBERTSON.
FILTER.

No. 598,115.

Patented Feb. 1, 1898.

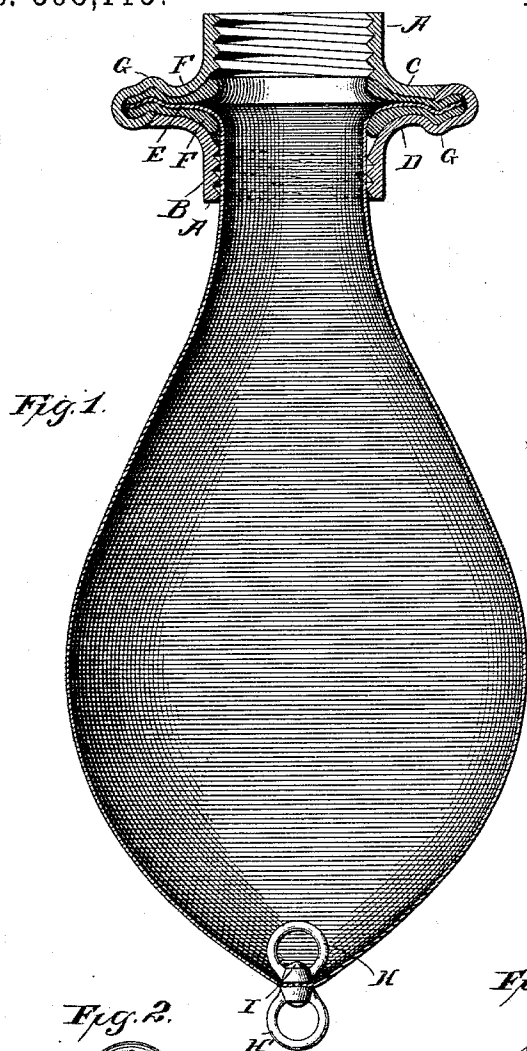


Fig. 1.

Fig. 4.

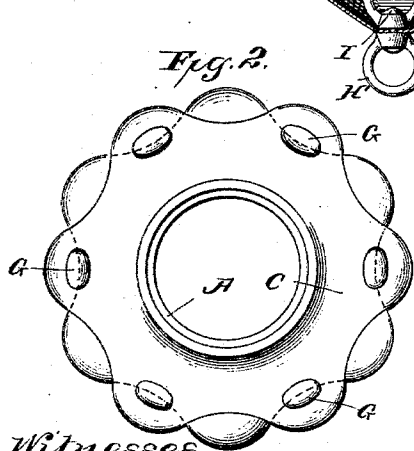
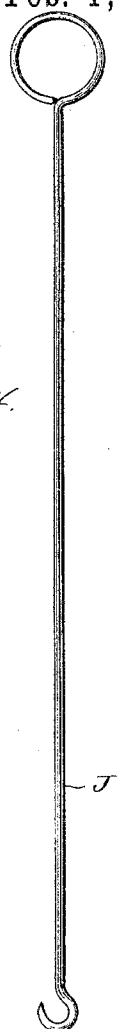


Fig. 2.

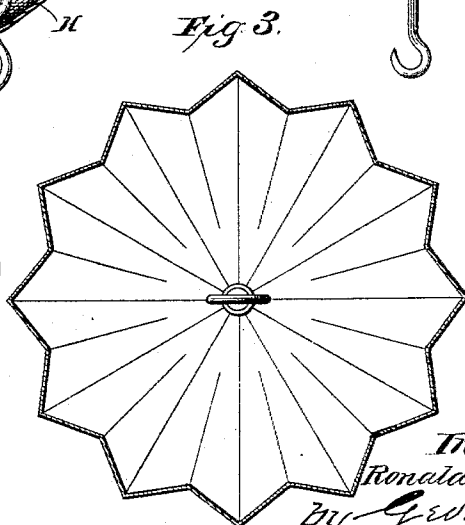


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

RONALD J. ROBERTSON, OF CHELSEA, MASSACHUSETTS.

FILTER.

SPECIFICATION forming part of Letters Patent No. 598,115, dated February 1, 1898.

Application filed April 24, 1897. Serial No. 633,774. (No model.)

To all whom it may concern:

Be it known that I, RONALD J. ROBERTSON, a subject of Queen Victoria, residing at Chelsea, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improvement in Filters, of which the following is a specification.

My invention relates to a new and useful improvement in filters, and has for its object to provide a cheap, simple, and effective device by means of which water or other liquids may be filtered of all mechanical impurities, and to a certain extent from chemical impurities; and a further object is to so construct a filter as to render it reversible, thereby bringing about its cleansing automatically, and an incidental object of my improvement is to adapt it for household purposes and render its manipulations so simple that a person of little or no mechanical skill may apply and use the same.

It is a well-established fact that the best agent of filtration is the deposit from the water itself, and as this deposit is often largely organic matter and usually contains a large number of animalculæ of such a character as to absorb and neutralize chemical impurities as well as diseased germs, as those organisms exist in all putridinous matter, then it is only necessary to provide proper means for separating this foreign matter from the first water which passes through the filter, to thereafter purify the water both mechanically and to a large extent chemically. All of these objects I attain by my improved filter.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, its construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a central vertical section of a filter made in accordance with my improvement; Fig. 2, a plan view in detail of the flanged nuts which I utilize in securing the filter to a faucet; Fig. 3, a horizontal cross-section of a filtering-bag of slightly-modified form; and Fig. 4 represents a hooked rod for reversing the filter.

In carrying out my invention as here em-

bodied I provide two threaded nuts A and B, which have formed therewith the flanges C and D, respectively, and these flanges are scalloped, as clearly shown in Fig. 2, and so arranged that the scalloped ends may be over and under turned and clenched upon the flared mouth of the filtering-bag, as indicated at E, and to further secure this mouth against withdrawal compressible washers F are placed upon each side thereof and recesses G formed in the flanges, so that when the scalloped ends are under and over turned they will force both the washers and mouth of the bag into conformity with these recesses. The bottom of the bag has two rings H and H' secured thereto by a rivet I passed through eyes formed in the rings, and this arrangement will permit one of the rings at all times to be within the bag, so that when the bag is to be reversed it is only necessary to engage the inner ring by means of the hooked end of the rod J, (shown in Fig. 4,) and draw the bag inside outward until passing it through the nuts, when the passage-ring will be the inside ring and the device will, after cleaning off impurities, be ready for use with a new surface presented for filtration.

In practice one of the nuts is screwed upon the end of a faucet, and after a certain amount of water has passed through the filtering-bag a deposit of foreign matter, as before set forth, will accumulate upon the inner surfaces of the bag, and thereafter this deposit will serve as a filtering agent and extract from the water passing therethrough all impurities held in mechanical suspension, as well as neutralizing and absorbing the major parts of the chemical impurities and diseased germs which may be contained therein. After the deposit of foreign matter has reached such a point as to clog the further passage of the water the filtering-bag is reversed, as before described, the outside rinsed or otherwise cleansed, when by attaching the opposite nut to the faucet a new filtering-surface is presented which will act in the same manner as just set forth.

If desired, the filtering-bag may be scalloped in cross-section, as shown in Fig. 3, and for some purposes this is advantageous, since it will present a greater surface as a filtering

medium with a funnel; but it is obvious that the exact shape, size, or design of the filtering-bag is immaterial, the only essential being that it be of sufficient size to accomplish the result desired, and in practice it is preferable that it shall be of such a size as to avoid any depressure coming therein, since this would disturb the layer of deposit, as well as force the water to percolate there-through at too great a rate of speed to accomplish the desired result.

I do not wish to limit the use of my improvement to household purposes alone, since it may be used for all classes of filtering, either for water or other liquids.

In pottery—for instance, in the preparation of clay and other material that require great dilution, washing, and the water again abstracted to a nicety of plasticity or other use, in such cases large stop-cocks with bags graduated in fineness consistent with the purpose would be needed for the prevention of incrustation and mud in steam-boilers—my filter would be an applicable economy; also in many other manufacturing and chemical processes this improvement would be eminently serviceable. In some cases the deposit would be the object of filtration.

Having thus fully described my invention, what I claim as new and useful is—

1. In combination, two nuts threaded to run upon a faucet, said nuts having flanges formed therewith having scalloped edges, a filtering-bag having a flared mouth clamped between the flanges of the nuts by the overturning

and overturning of the ends of the scallops, substantially as described.

2. The combination of two nuts, scalloped edges formed therewith, a filtering-bag, the mouth of which is clamped between the flanges of the nuts, substantially as described.

3. In combination, the nuts A and B adapted to run upon a faucet, flanges formed with said nuts, washers interposed between said flanges, a filtering-bag having a flared mouth which latter is clamped between the washers, and two rings for reversing the bags, substantially as shown and described.

4. The herein-described combination of two nuts, scalloped flanges formed therewith, a filtering-bag, the mouth of which is clamped between said flanges, washers for preventing chafing or leakage between the faucet-mouth of the bag and flanges, two rings for reversing the bag, and a hooked rod to bring about this last-named result, as specified.

5. In a device of the character described, a filtering-bag, a ring secured on each side thereof at the bottom, in combination with a hooked rod to engage the rings and reverse the bag, substantially as described.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

RONALD J. ROBERTSON.

Witnesses:

JAMES A. COUTTS,

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