(No Model.)

R. F. SCANNELL & J. E. LIPSCOMBE.

Filter.

No. 230,347. Patented July 20, 1880.

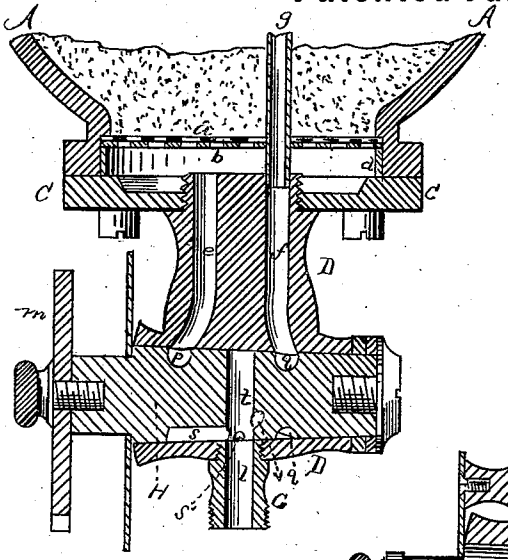


Fig. 1

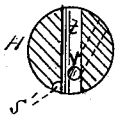


Fig. 5

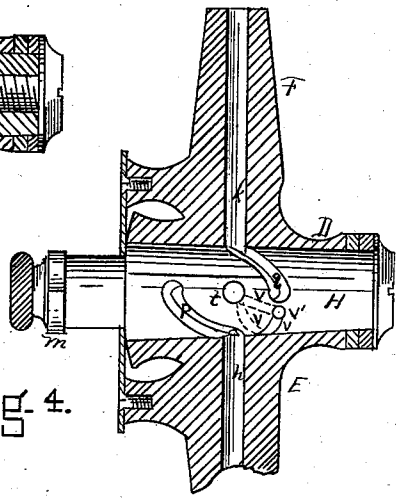


Fig. 4.

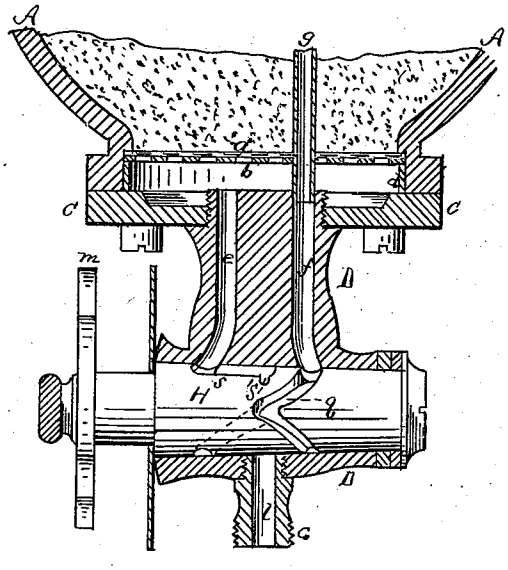


Fig 2

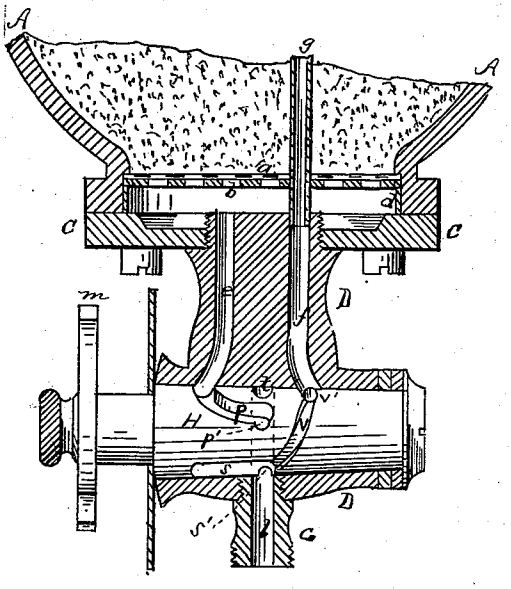


Fig 3.

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UNITED STATES PATENT OFFICE.

ROGER F. SCANNELL AND JOHN E. LIPSCOMBE, OF BOSTON, MASS.

FILTER.

SPECIFICATION forming part of Letters Patent No. 230,347, dated July 20, 1880.

Application filed May 1, 1880. (No model.)

To all whom it may concern:

Be it known that we, ROGER F. SCANNELL and JOHN E. LIPSCOMBE, both of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Filters, of which the following is a specification.

This invention is an improvement upon the filter for which Letters Patent were granted to us April 6, 1880, said Letters Patent being numbered 226,243; and the said improvement relates entirely to the plug, which is supplied with a certain additional channel or hole and enlargements of certain portions of channels shown in the said previous invention, by means of which the water may not only be filtered and pass through unfiltered, and the filter be cleansed by reversing it, so that the water passes first through pipe *g* in said patent and then through the charcoal, but in addition to all this, which is accomplished in said patented invention, the water remaining in the filter after the reversing cleansing process may itself be filtered by passing it first through the charcoal and then through pipe *g* and then out through a waste-pipe. In other words, an additional means for cleansing is provided, which cleanses the water left in the filter and passes it through the filter without reversing its direction.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a longitudinal vertical section of the filter described in said Letters Patent with our present improvement applied to the plug in position for filtering. Fig. 2 is a similar section with the plug reversed for cleansing in the manner described in said patent. Fig. 3 is a similar section with the plug in position for the final cleansing accomplished by means of our improvement. Fig. 4 is a horizontal section with the plug in the position shown in Fig. 1. Fig. 5 is a cross vertical section of the plug, taken through the central hole therein.

A is the chamber containing the charcoal or other substance for filtering; *c*, the bottom plate of the same; *a*, wire-gauze; *b*, perforated plate; *d*, ring or guard supporting gauze *a* and plate *b*.

D is the faucet or cock, having passages *e* and *f*, the former leading to the carbon-chamber A and the latter to the vertical tube *g* in said chamber. Passages *h* and *k* lead respectively to the supply-pipe E and the house-pipe F, and passage *l* to the waste-pipe G, and all said passages connect with the plug H. The plug H is provided with the channels *p q s*, the hole *t*, and pointer *m*.

All the above parts are constructed and arranged as described in the said Letters Patent. Their operation is, briefly, as follows: To filter the water, turn the plug by means of the pointer *m* into the position shown in Figs. 1 and 4. The water enters through passage *h* in the supply-pipe E, passes through passage *p* in the plug and passage *e* in the faucet, up through the carbon in the chamber A, down through tube *g*, faucet-passage *f*, plug-passage *q*, and passage *k* in the house-pipe F.

To cleanse the filter, reverse the plug by means of the pointer *m*, so that it is in the position shown in Fig. 2. The water passes from passage *h* through channel *q*, passage *f*, up through tube *g*, down through the carbon, through passage *e*, channel *s*, hole *t*, and passage *l*, into the waste-pipe G.

It will readily be seen that after the cleansing process above described there is still a filterful of water, (amounting to some gallons,) which, as soon as the plug is turned so as to let the water on to the house, must pass to the house, carrying impurities with it. By means of the improvement below described this filterful of water, instead of being turned back into the house, is turned back through the filter, as though it were going to the house, but is instead conducted to the waste-pipe.

In this improvement a connection, *p'*, is made at the central end of the channel *p* by removing a portion of the plug at that point, and a similar connection, *s'*, is made at the central end of the channel *s*. Also a hole or channel, as desired, is made, as shown by *v*, Figs. 3 and 4. This hole or channel terminates in the hole *t*, and its course is shown in the two figures named. The more direct way is to carry it directly to the hole *t* by boring the plug, thus making a straight hole, as shown in broken lines, Figs. 4 and 5; but either a hole or channel is satisfactory.

The operation is as follows: After the

reversing process, the plug being in the position shown in Fig. 2, turn the plug three-eighths of a turn to the left, as shown in Fig. 3. This brings the part p' of the channel p into connection with the passage h in the supply-pipe E, the opposite end of passage p (or a part near to the opposite end) into connection with the passage e, the end v' of the hole v into connection with the passage f, and the part s' of the channel s into connection with the passage l in the waste-pipe. Hence the water passes from passage h through connection p' and channel p into pipe e, thence up through the carbon, washing out the reversed water remaining there, down through tube g, pipe f, connecting end v' of hole or channel v, and through said hole v into hole t, and thence through the part s' of the channel s, which enters the hole t, into the passage l of the waste-pipe G.

Thus it will be seen that this cleansing process carries the water through the carbon before carrying it through pipe or tube g. The cleansing process described in the Letters Patent above alluded to did just the reverse of this.

In this improved supplementary cleansing process the water goes through the same way as when being filtered.

Having thus fully described our improvement, what we claim, and desire to secure by Letters Patent, is—

In combination with the faucet D, provided with passages e f l, the plug H, provided with hole t, connection s', channel p and connection p', and hole or channel v v', arranged and constructed to operate substantially as and for the purpose herein set forth.

ROGER F. SCANNELL.
JOHN E. LIPSCOMBE.

Witnesses:
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