

No. 771,971.

PATENTED OCT. 11, 1904.

J. A. DAVIDSON.
FILTERING STONE.

APPLICATION FILED OCT. 30, 1903.

NO MODEL.

Fig. 1.

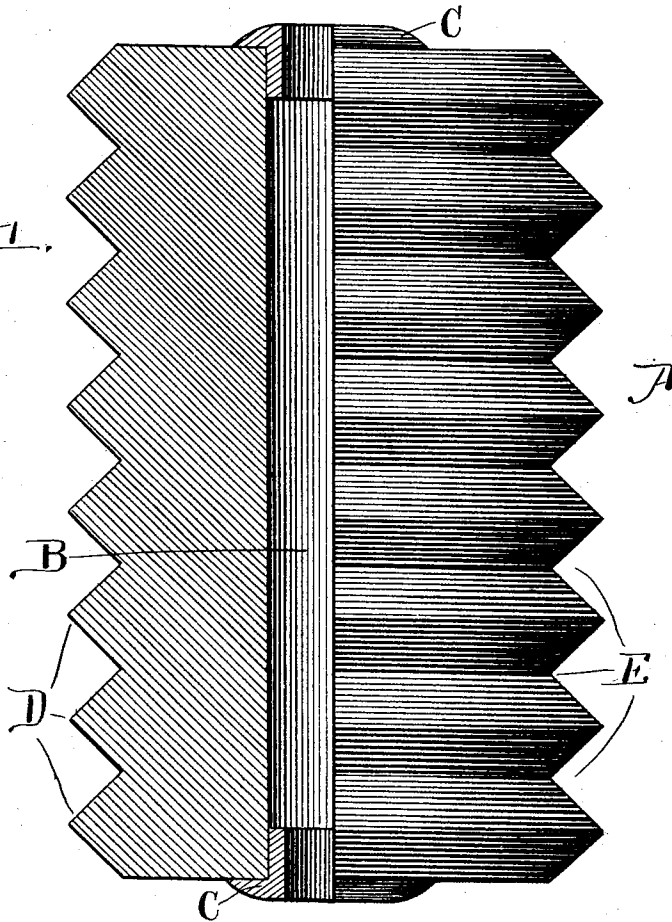
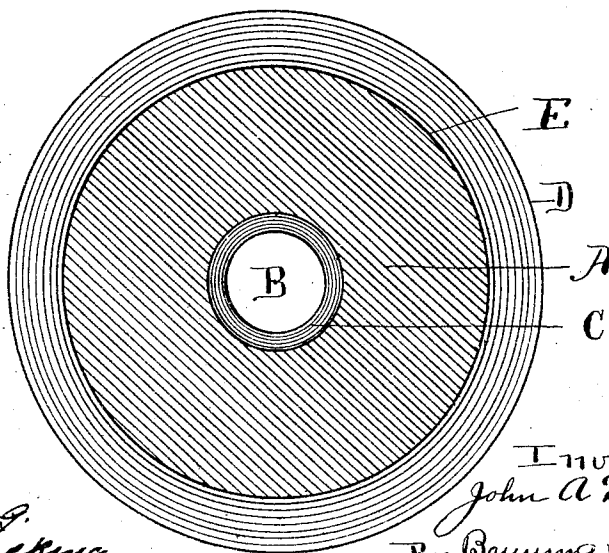


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN A. DAVIDSON, OF CHICAGO, ILLINOIS.

FILTERING-STONE.

SPECIFICATION forming part of Letters Patent No. 771,971, dated October 11, 1904.

Application filed October 30, 1903. Serial No. 179,131. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. DAVIDSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Filtering-Stones, of which the following is a specification.

In the art to which this invention relates it has been found from experience that the filth and sediment in the water collect almost entirely upon the outer surface of the filtering-stone and that but very little of such material passes through the surface into the body of the stone, so that the capacity of the stone for filtering water is determined very largely by its external surface and not by the thickness or bulk of its body. The water after passing through the surface will be but slightly impeded in passing through the body of the stone, so that with a given pressure a much larger amount of water can be filtered in a given time through a stone having a larger exterior surface than through a stone having a smaller exterior surface, regardless of the size or bulk of the stones. The filth or sediment collecting on the outer surface forms a coating or covering for the stone, through which it is difficult for the water to permeate, so that a stone having an increased surface will collect a proportionately-decreased amount of sediment on every square inch of said surface, from which it is obvious that the filtering operation will be greatly improved. It is to overcome the difficulties heretofore mentioned and, furthermore, to provide a stone which can be used with filters of ordinary construction that the stone of the present invention is made.

The invention consists in the features of construction hereinafter described and claimed.

In the drawings, Figure 1 is a view, partly in section, of the stone of this invention; and Fig. 2, a cross-sectional view of the same.

The stone A is formed of a homogeneous block of porous material such as is ordinarily used in the construction of filter-stones and is provided on its interior with a chamber B, at the ends of which are metallic bushings C for the attachment of the discharge-pipes, as is usual in the construction of filters. The exterior surface of the stone is formed to have a series of circumferential ridges D, having

between them a series of depressions E, which arrangement greatly increases the external surface of the stone, and at the same time the position of the ridges and depressions enables the stone to be cleaned or scoured in the usual manner by means of rotary scourers, brushes, or other suitable devices. The stone being formed integrally of a single piece of porous material, it will be apparent that the porosity of the stone at all points will be the same; but as the sediment collects on the corrugated surface of the stone the porosity at this point will be decreased, thereby necessitating greater facial surface in order to allow to pass therethrough the maximum amount of water which the body of the stone is capable of filtering. Moreover, regardless of the collection of sediment on the surface of the stone, it is apparent that after the water has been forced through the surface and into the body of the stone its passage therethrough will be comparatively easy, whereas the initial forcing of the water into the stone requires either a greater pressure or a more extended facial surface. It will thus be apparent that the stone of the present invention will filter a much greater quantity of water than a filtering-stone of equal bulk having a plain cylindrical shape and that the efficiency of the filter will be proportionately increased without in any way complicating the device or increasing its cost of manufacture.

What I regard as new, and desire to secure by Letters Patent, is—

A filtering-stone formed from a single block of porous material of uniform density throughout its entire extent, said block being of cylindrical shape and provided on its interior with a longitudinally-extending water-chamber cut in the stone and having the walls of the chamber formed by the substance of the stone, and provided on its exterior with a series of circumferentially-extending low ridges and shallow depressions adapted for the contact of a rotary scraper when in use, the ridges and depressions being formed of the porous substance composing the body of the stone, substantially as described.

JOHN A. DAVIDSON.

Witnesses:

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