

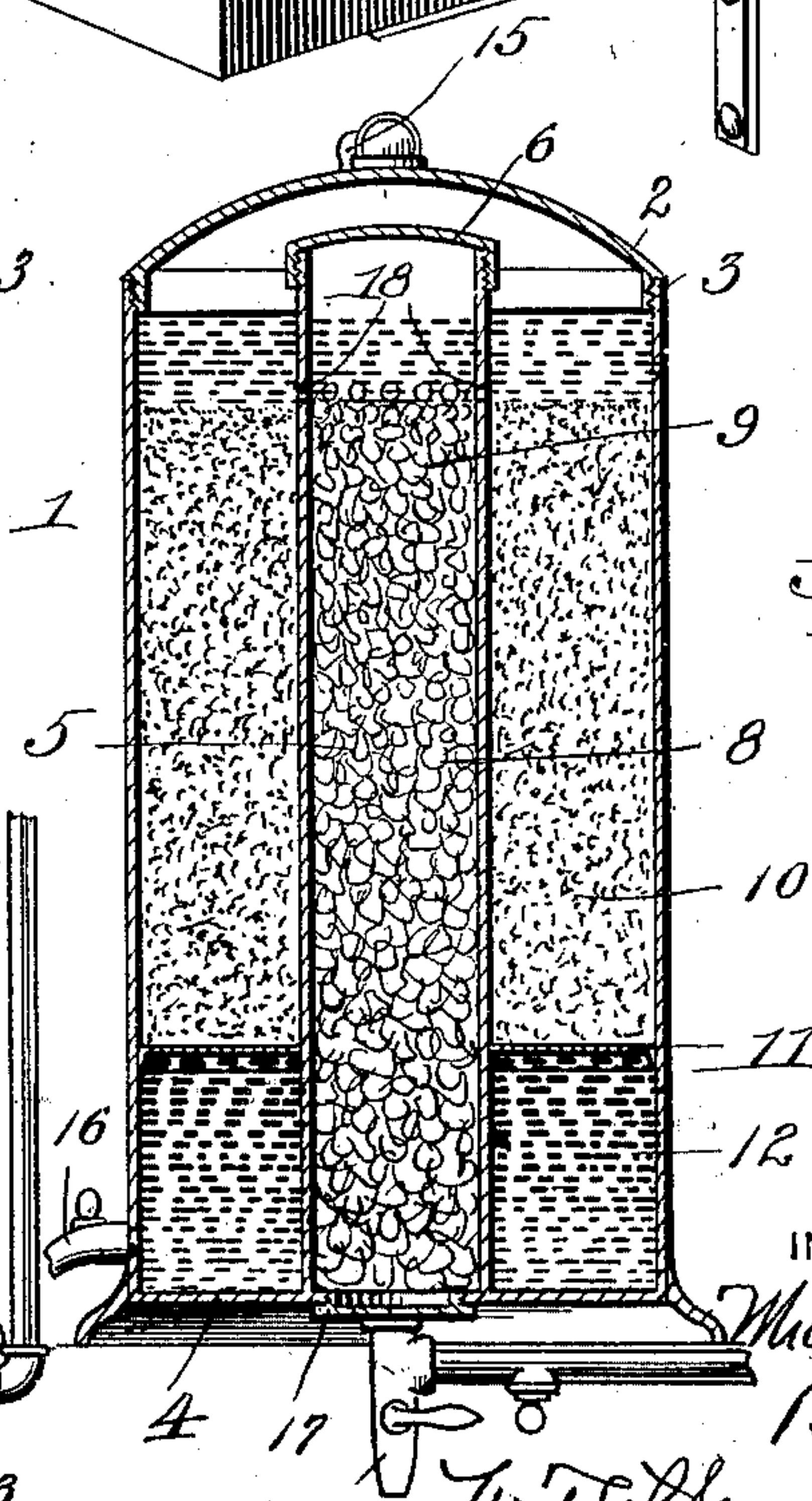
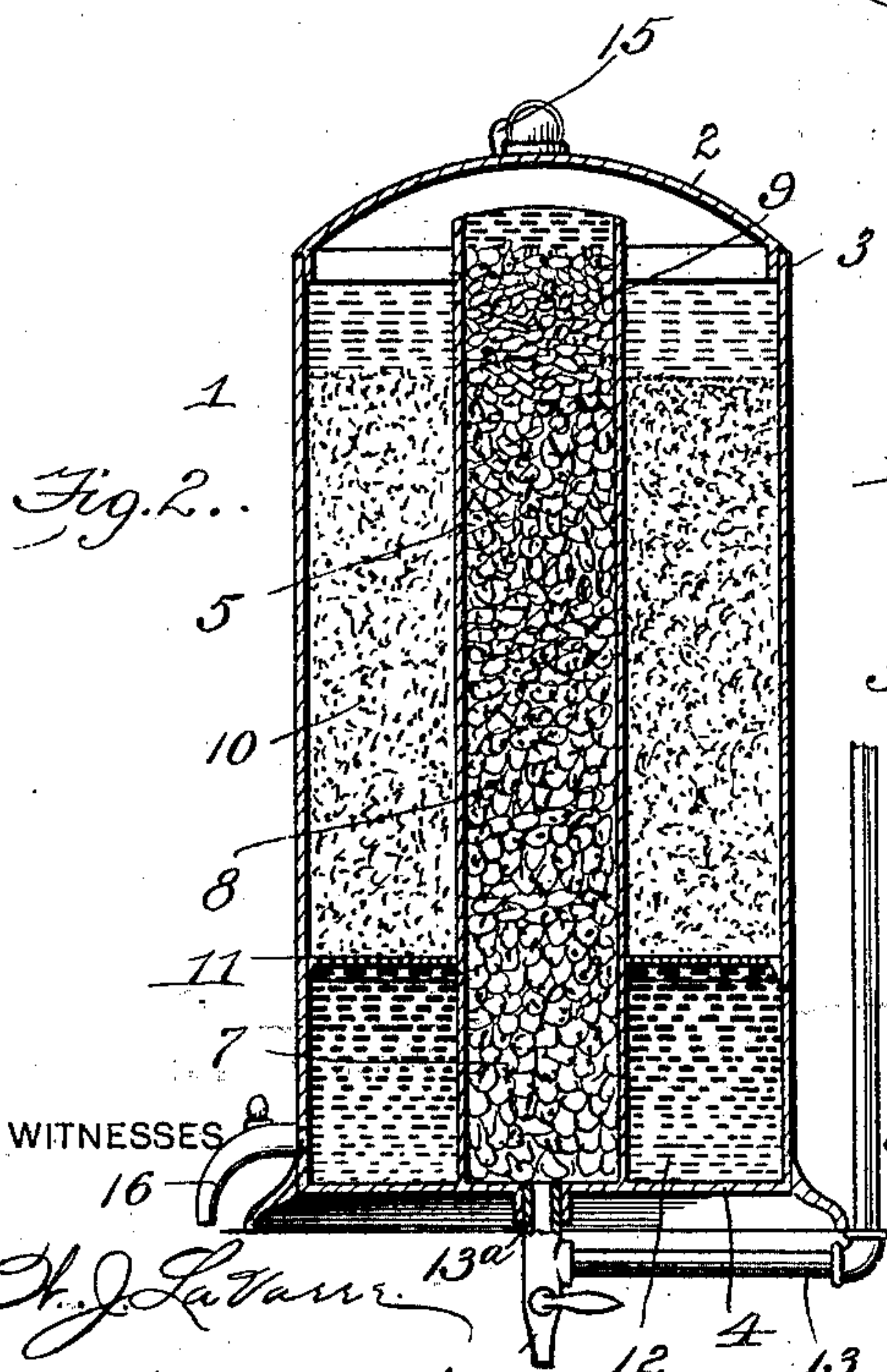
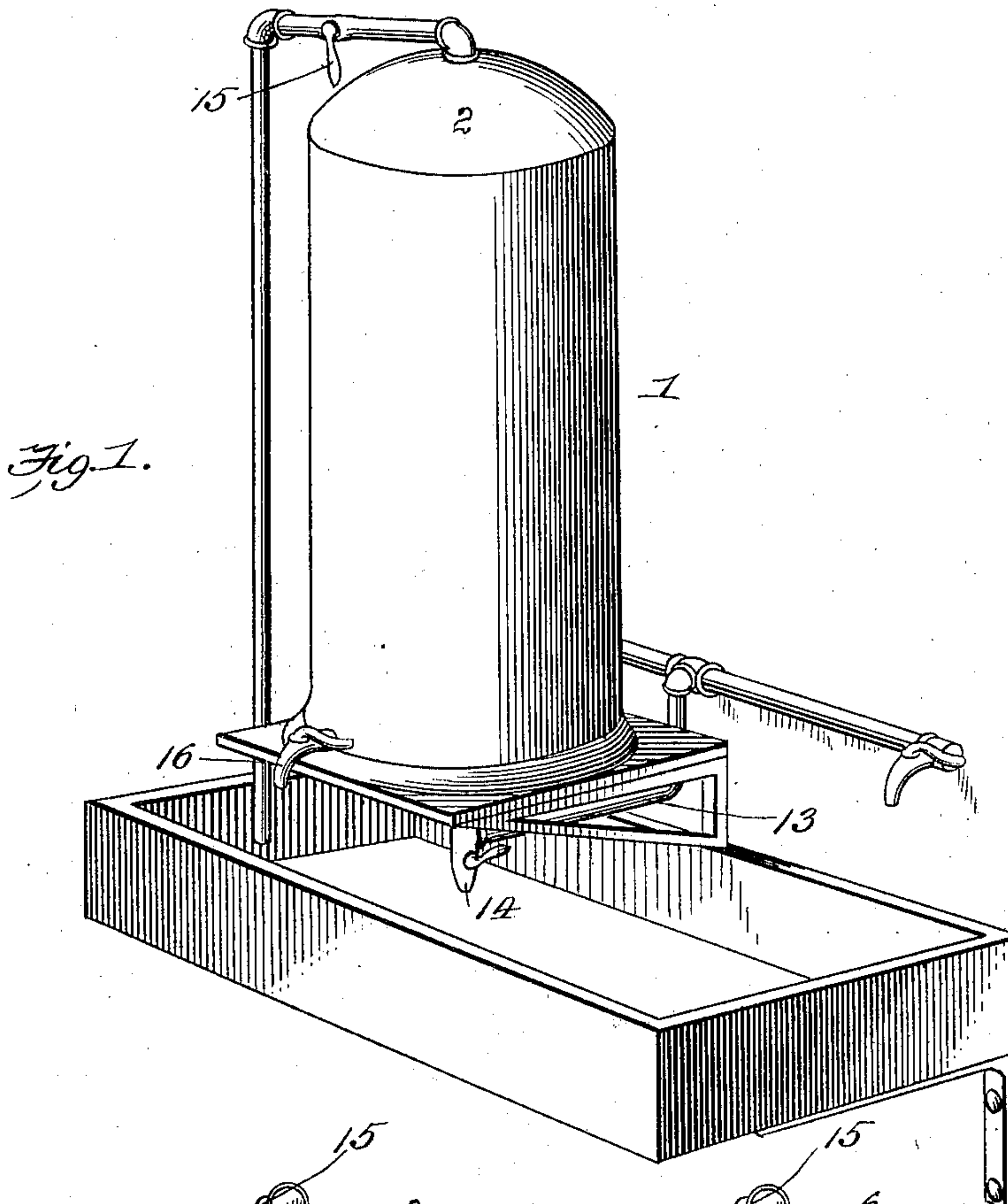
No. 626,977.

Patented June 13, 1899.

M. CUSICK.
FILTER.

(Application filed Oct. 10, 1898.)

(No Model.)



WITNESSES

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UNITED STATES PATENT OFFICE.

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FILTER.

SPECIFICATION forming part of Letters Patent No. 626,977, dated June 13, 1899.

Application filed October 10, 1898. Serial No. 693,176. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL CUSICK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Filters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to
10 make and use the same.

My invention relates to filters; and it consists of certain novel features of combination and construction of parts deemed necessary to provide a filter of reliable efficiency and of
15 cheap construction, as will be hereinafter fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved filter complete in its operative position. Fig. 2 is a vertical central section thereof, while Fig. 3 is a similar view to that shown in Fig. 2, showing a certain modified construction which may be adopted, if desired.
20

The details of my invention will be referred to and designated by numerals, the same numeral indicating the same part throughout the several views.

In materializing my invention I provide the
30 main section or body 1, which is preferably cylindrical, as shown, though other form of outline, it will be understood, may be adopted, and is provided with a suitable cap or lid 2, preferably securely attached to the body, as
35 by means of the screw-threads 3 or otherwise, as shown in Figs. 1 and 2.

The body-section 1 may have other outlines than that of a cylinder, as it may be octagonal or other preferred shape in cross-section, and centrally within the same I mount
40 upon the bottom 4 and permanently attached thereto the interior tubular section 5, the upper end of which may be left open, as shown in Fig. 2, or provided with a threaded cap 6, as shown in Fig. 3. The central tube 5 is
45 filled with any suitable sediment or impurity arresting material—as coarse gravel, sand, charcoal, or the like, as indicated, the coarse gravel 7 being preferably disposed in the
50 lower end of said section 5, the coarse sand 8 disposed in the central portion thereof, and the charcoal 9 is placed at the top, though it

will be understood that any preferred arrangement of these materials may be made. It will be understood that the disk 11 tightly
55 fits around the central tube 5, or may be otherwise attached thereto, while the outer edge of said disk is secured in any preferred way to the inner surface of the body-section 1, in order that the disk may support the load
60 placed thereon. After the tubular section 5 is thus mounted in the central portion of the body-section it will be seen that an annular chamber is formed around it, and it is my purpose to place in said annular chamber a
65 quantity of fine sharp sand 10, said sand extending nearly to the top of the tubular section 5, as clearly shown in Figs. 2 and 3, said sand resting upon the perforated disk 11, which forms a complete diaphragm for the
70 body-section and not only supports the sand 10 thereon, but also divides the body-section into an upper and lower annular compartment, the upper compartment being occupied by the sand 10, as stated, while the lower
75 compartment 12 is occupied by the pure water after it is passed through the process of filtration.

A suitable supply-pipe 13, leading from the source of supply, is properly connected, so as
80 to be directly in communication with the bottom end of the tubular section 5, as by the pipe-section 13^a, the lower end of said section being provided with the drip-cock 14, as shown in Fig. 2, the purpose of which will be here-
85 inafter fully set forth. A drain or exit pipe 15 is connected to the upper end of the body-section, so as to be in communication with the interior thereof, and is provided with the stop-cock 15', while the pure-water reservoir or
90 chamber 12 is provided with the faucet 16, by means of which the pure water may be readily withdrawn as needed.

In Fig. 3 I have shown a simple modified construction from that presented in Fig. 2,
95 inasmuch as the tubular section 5 is provided at its upper end with the closure or cap 6 instead of being left open, as shown in Fig. 2, while the lower end of said tubular section 5 is provided with the cleansing-cap 17, the pur-
100 pose of which is to permit the lower portion of the coarse sand, gravel, and charcoal contained in the tubular section 5 to be easily removed by unscrewing said cap 17, which

will readily permit clean material to be introduced and the filter restored to its perfect operative condition.

It will be understood that while I have shown both constructions I desire to reserve the right to employ either one of them, as circumstances may indicate as most desirable.

The operation or use of my improved filtering apparatus may be stated to be as follows:
10 The water in the pipe 13 when said pipe is suitably connected with a source of supply may by its own pressure cause itself to enter through the section 13 into the tubular section 5, and thence upward through the filtering material and out at the open end of said
15 section, as shown in Fig. 2, or through the annularly-disposed perforations 18, if that form of construction is employed which is shown in Fig. 3, and the water will thence
20 pass downward through the filtering material 10 and the perforated diaphragm 11 into the receiving-reservoir 12, where it may be readily drawn off from time to time.

If that form of construction illustrated in
25 Fig. 2 is employed, the material in the tubular section 5 may be easily cleansed by simply opening the stop-cock 15', which will cause the impurities gathered by the material in the tubular section 5 and also by the upper strata
30 of the material 10 to pass off through the pipe 15, since it will be clear that the water in passing out of the end of the tubular section 5 or through the perforations 18 will agitate the upper layer of sand 10 sufficiently to disengage all the particles of impurities previously
35 deposited at this point and cause the same to flow off through the pipe 15.

It is obvious that in first filling the filter with water it will be necessary to leave the
40 stop-cock 15' open in order to permit the air to freely pass out as the body-section 1 becomes filled. In order to prevent the filter from freezing, I provide the stop-cock 14, which when open will thoroughly drain the
45 central tubular section 5, while the remainder of the water may be completely drawn off through the faucet 16.

While I have described the preferred accessories deemed necessary to embody my invention, I desire to reserve the right to make
50 any modification thereof which may reasonably fall within the scope of my invention, and I do not therefore wish to be confined strictly to the exact showing I have made.

Believing that the advantages and operation of my invention will be fully apparent from the foregoing specification, considered in connection with the accompanying drawings, further reference to the details is deemed
60 unnecessary.

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

1. The combination of the body-section having a threaded cap and an exit-pipe in its
65 upper end, a central tube attached to the bottom of said body and disposed in the central portion thereof, a cap or lid fitting the bottom of said interior tube whereby the contents thereof may be readily accessible, and
70 suitable means to direct the flow of the water upward through the central tube and thence downward through the filtering material provided therefor, or for directing said flow out at the top of the body-section, as
75 specified and for the purpose set forth.

2. A filtering apparatus consisting of a body-section, a central tube-section open at the upper end and provided with a removable
80 closing-cap at its lower end, a perforated diaphragm fitting around the central tube and attached by its outer edge to the inner surface of the body and designed to support thereon a quantity of filtering material, in combination with a supply and discharge pipe
85 connected to the body-section in the manner specified and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

MICHAEL CUSICK.

Witnesses:

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