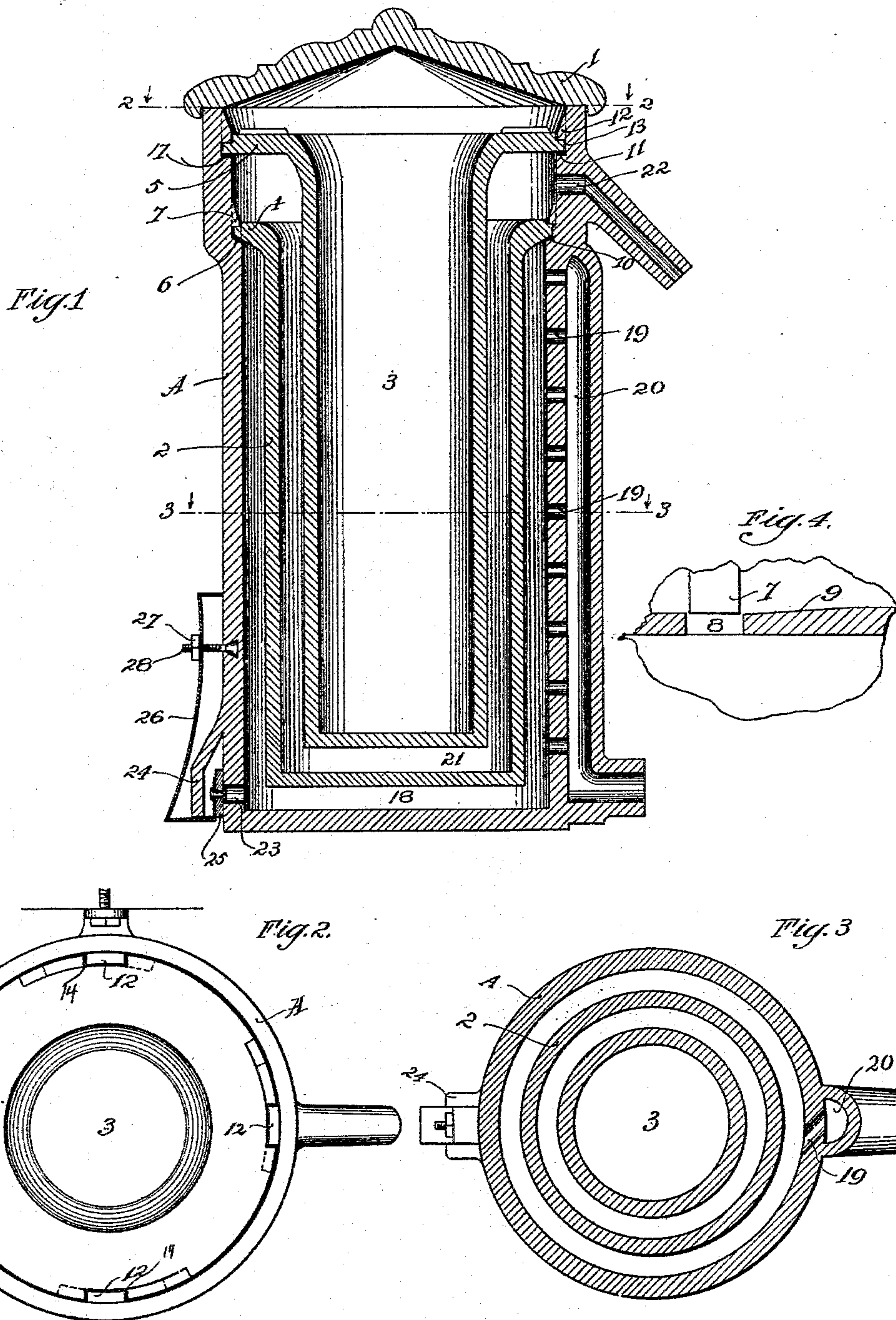


(No Model.)

H. R. KUERSTEN.
FILTER.

No. 515,833.

Patented Mar. 6, 1894.



Witnesses:
Arthur Leitz
A. S. Johns.

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UNITED STATES PATENT OFFICE.

HUGO R. KUERSTEN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
HERMANN MICHEL, OF SAME PLACE.

FILTER.

SPECIFICATION forming part of Letters Patent No. 515,833, dated March 6, 1894.

Application filed July 12, 1893. Serial No. 480,307. (No model.)

To all whom it may concern:

Be it known that I, HUGO R. KUERSTEN, 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 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 make and use the same.

This invention relates to a novel construction in a filter and consists in the features of construction and combination of parts herein-after fully described and specifically claimed.

In the accompanying drawings illustrating my invention: Figure 1 is a vertical sectional view of a filter constructed in accordance with my invention. Fig. 2 is a top plan view of the same with the cover removed. Fig. 3 is a cross sectional view on the line 3 3 of Fig. 1. Fig. 4 is a fragmentary detail view showing the means I employ for securing various parts of the filter.

Referring now to said drawings A indicates the casing of my filter which is preferably constructed of glazed earthenware. The cover 1 rests upon the upper end of the casing A and can be secured by any convenient means. Located within said casing is a filtering jar 2 and an interior jar 3 for holding a supply of ice. These jars are of such size as to provide a space between each other and between the filtering jar and the casing A and are each supported by flanges 4 and 5 at their upper ends upon the casing A. The filtering jar 2 is made of porous earthenware suitable for filtering purposes, and the flange 4 on the upper end thereof rests on an upwardly facing shoulder or projection 6 on the interior of the casing A. The periphery of the flange 4 is notched as shown at 8, so as to pass over lugs 7 on the inner face of the casing and located over the shoulder 6. Adjacent to the notches 8 of the flange 4 the upper face of the flange is inclined as at 9 so that when the jar 2 is placed in position within the casing A upon said shoulder 6 and then turned slightly the inclined lines 9 will bear against the lugs 7 to force the said flange 4 down upon the shoulder 6, and I employ a packing ring 10 that is located between the

flange 4 and shoulder 6 so as to provide a water tight joint between these parts. The ice jar 3 is supported by a shoulder 11 upon the casing on the upper end thereof and through this shoulder 11 are located lugs 12 that serve to engage the inclined face 13 of the flange 5, which flange is also notched as shown at 14 to pass the lugs 12, and by means of this construction and packing ring 17 between the flange and shoulder 11 I provide a water tight joint between said jar 3 and the casing.

From the foregoing it will be seen that within the casing A two separate water tight chambers are made separated by a porous jar and that the jars 2 and 3 can be easily removed and as readily replaced for cleaning or other purposes.

Water is admitted to the outer chamber 18 through a plurality of inlet ports 19 through the wall of the casing A. These ports 19 are arranged one above the other to the top of the filtering jar 2 and communicate with the passage 20 on the outside of the casing, which passage communicates with the source supplying the water under pressure. In this way it will be noticed that I supply the water to the outer chamber 18, which being under pressure will percolate and pass through the filtering jar in the inner chamber 21, and after filling the same will pass out through the outlet port 22 at the upper end of said chamber 21, said outlet port being made through the wall of the casing at a point between the connection of the flanges 4 and 5 therewith. A supply of ice can be placed within the inner jar 3 to cool the water in the chamber 21, and it being noted that said chamber is comparatively narrow the water will be efficiently cooled.

It is manifest that the filter can be cleaned by removing the jars 2 and 3 which can be readily accomplished, but I have also constructed my filter so that it may be cleaned without removing any of the parts, and for this purpose I make an opening 23 in the chamber of the casing A which is protected by a surrounding spout 24 and within the said spout 24 and over the opening 23, I have arranged a valve 25, that is carried by a spring arm 26. The other end of this said spring

arm bears against the casing and the tension thereof is controlled by an adjusting nut 27 upon a bolt 29 secured to the casing and passes through said spring arm. The said nut 27
5 can be quickly adjusted and in the inner portion of the filter said nut is screwed up sufficiently to hold the valve against the opening 23 under sufficient tension to prevent the water from escaping therefrom under ordinary
10 tension; but when it is desired to clean the filter the said valve can be opened or pulled back either by hand or loosening up the adjusting nut 27 so that the force of the water will overcome the tension of the spring. It
15 will be noted also that if it is desired to draw unfiltered water it can be done in this manner.

In a filter of this kind it is obvious that the greatest accumulation of filtered matter which should be cleaned from the filter congregates
20 upon the face of the filtering jar and in filtering the streams of water entering through the ports 19 will strike against the outer face of the filtering jar and wash these impurities away, and as a further and separate improve-
25 ment in filters I incline the ports 19 so that they are practically at a tangent to the outer face of the filtering jar as is clearly shown in Fig. 3, so that the water entering through
30 these ports 19 will be directed around the cylinder to more efficiently wash the same.

It will be understood of course that in washing the filter the pressure of the water can be increased or the same pressure used, in which latter case it will be necessary to loosen the tension upon the valve 25.

I claim as my invention—

1. A filter comprising a casing A, a filtering jar 2 located therein and having water tight connections therewith, a jar 3 located within said filtering jar 2 and having water tight connections with the walls of said casing, inlet ports through said casing to connect with the chamber between the same and said filtering jar, and an outlet port between said filtering jar and said jar 3, substantially
45 as described.

2. A filter comprising a casing a removable filtering jar 2 located therein and inlet ports between said filtering jar 2 and the casing, a removable jar 3 located within the filtering jar 2 and supported upon the casing, and an outlet port between said jars 2 and 3, substantially
50 as described.

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

HUGO R. KUERSTEN.

Witnesses:

HARRY COBB KENNEDY,
GEO. H. HALL.