

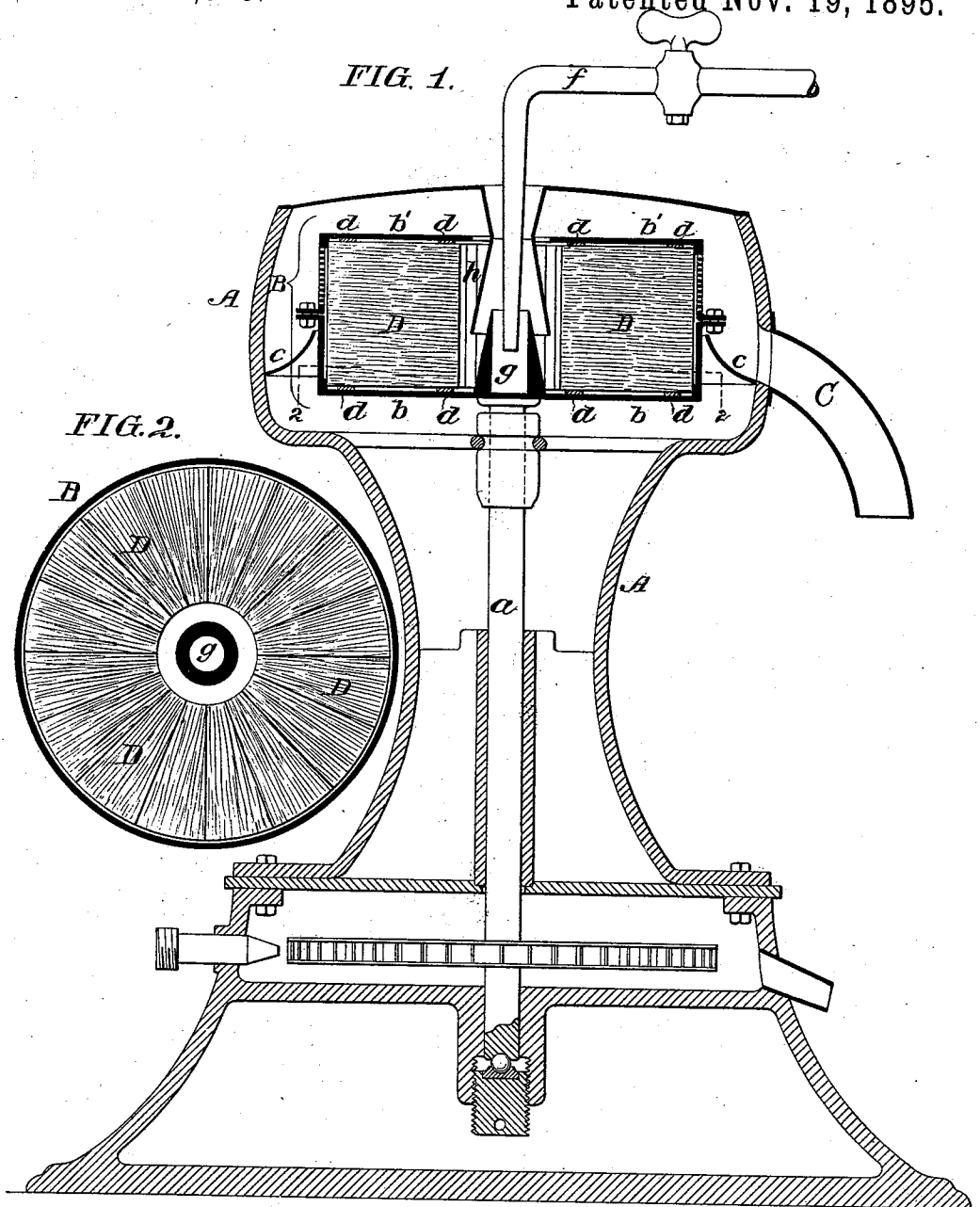
(No Model.)

M. R. ISAACS.

PURIFYING LIQUIDS AND APPARATUS THEREFOR.

No. 550,073.

Patented Nov. 19, 1895.



Witnesses :

R. Schleicher.

Fred C. Connor.

Inventor:

Mone R. Isaacs

by his Attorneys

Howson & Howson

UNITED STATES PATENT OFFICE.

MONE R. ISAACS, OF PHILADELPHIA, PENNSYLVANIA.

PURIFYING LIQUIDS AND APPARATUS THEREFOR.

SPECIFICATION forming part of Letters Patent No. 550,073, dated November 19, 1895.

Application filed December 15, 1894. Serial No. 531,951. (No model.)

To all whom it may concern:

Be it known that I, MONE R. ISAACS, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Purifying Liquids and in Apparatus Therefor, of which the following is a specification.

The object of my invention is to provide simple and expeditious means for purifying
10 liquids by removing therefrom impurities held in mechanical suspension therein or such other impurities as are capable of being removed by filtration. This object I attain in the manner hereinafter set forth, reference
15 being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of means employed for carrying out my invention; and
20 Fig. 2 is a sectional plan view on the line 2 2, Fig. 1.

The main feature of my invention is the purification of liquids by passing them through blocks of wood presenting their end grain to the flow of liquid, such flow being
25 caused by centrifugal action.

The drawings represent a centrifugal filter for carrying out my invention, A representing a casing having bearings for a vertical shaft *a*, which is rotated either by means of
30 an impact-wheel, as shown, or by a belt and pulley, or in any other available way. The upper end of the shaft carries a cylindrical filter-bucket B, which is composed of a lower cup-shaped section *b* and an upper inverted
35 cup-shaped section *b'*, these sections being provided with flanges united together by suitable bolts. Within this filter-bucket is a lining D, composed of segments of wood fitted in the bucket, so as to constitute a
40 complete ring and so disposed as to present the end grain at their inner faces, these blocks being firmly secured in place between the upper and lower halves of the filter-bucket, and suitable packing-rings *d* being
45 employed to prevent any escape of liquid above or below the blocks—that is to say, between said blocks and the casing of the bucket.

The liquid is introduced through a valved
50 pipe *f* into a hollow cone *g*, projecting upwardly from the bottom of the filter-bucket,

the upper end or mouth of this cone being overlapped by the lower edge of an inverted hollow cone *h*, depending from the cap or cover of the casing A. The liquid entering the
55 lower hollow cone *g* therefore escapes from the top of the same and is thrown downward and outward against the inner faces of the blocks D by the action of the overlapping cone *h*, the stream striking the blocks about
60 the center of the same and immediately spreading over the entire inner surface of each block prior to seeking its way through the pores of the blocks in obedience to the pressure due to the centrifugal action result-
65 ing from the rapid revolution of the filter-bucket.

The outer portion of the casing of the upper half of the filter-bucket is perforated for the escape of the liquid passing through the
70 filter-blocks D, the liquid escaping from the casing A through a side spout or trough C, and being prevented from gaining access to the lower portion of the casing A by means of an internally-projecting rib or flange *c*.
75 By this means the rapid and effective filtration or purification of many different liquids can be effected, the process providing for the removal not only of impurities held in mechanical suspension in the liquid, but also
80 of other impurities which will be caught and retained by the wooden blocks as the liquid is passing through the same. For instance, I have found the apparatus to be available for the freshening of salt-water, the saline
85 constituents of the same being caught and held in the pores of the wooden blocks.

When the blocks become clogged to such an extent that their filtering properties are materially reduced, they may be readily removed from the filter-bucket after the sections of the same have been separated, and can then be restored to proper condition by being steamed or boiled.

The wooden blocks employed may have a
95 grain of any desired degree of fineness, depending upon the character of the liquid to be treated and the degree of filtration desired.

Having thus described my invention, I claim and desire to secure by Letters Patent—
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1. The mode herein described of purifying liquids, said mode consisting in driving said

liquid by centrifugal force through wooden blocks presenting the end grain to the flow of the liquid, substantially as specified.

2. A centrifugal filter consisting of a rotatable filter bucket having a lining of wooden segments presenting the end grain at their inner surfaces, the walls of the bucket being perforated for the escape of the filtered liquid and the wooden segments forming a central liquid receiving chamber substantially as specified.

3. A centrifugal filter consisting of a rotatable filter bucket containing a filter ring composed of segmental wooden blocks presenting the end grain at the inner surfaces, and packing at top and bottom of said filter ring to prevent the flow of liquid above or below the same, the walls of the bucket being perforated for the escape of the filtered liquid and the wooden segments forming a central liquid receiving chamber substantially as specified.

4. A centrifugal filter in which are combined a rotatable bucket composed of upper

and lower halves secured together, and a filtering ring composed of segmental wooden blocks confined between the upper and lower halves of the filter bucket and presenting the end grain at their inner faces, substantially as specified.

5. A centrifugal filter in which are combined a rotatable filter bucket having its outer casing perforated in the upper part and imperforate in the lower part, a filter ring contained within said casing and composed of wooden blocks presenting the end grain at their inner faces, and an outer casing having a discharge spout and an internal rib or flange for preventing access of the discharged liquid to the lower portion of the casing, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MONE R. ISAACS.

Witnesses:

FRANK E. BECHTOLD,
JOSEPH H. KLEIN.