

A. McDONALD & A. BROWN-DURIE.
 FILTERING APPARATUS.
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1,006,253.

Patented Oct. 17, 1911.

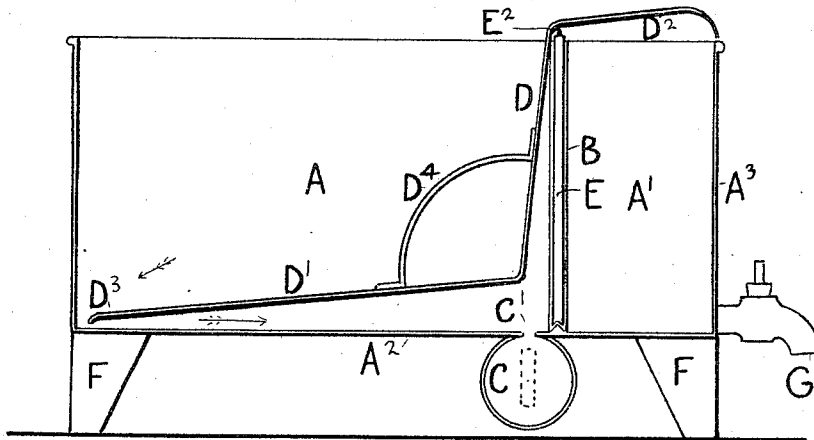


FIG 1

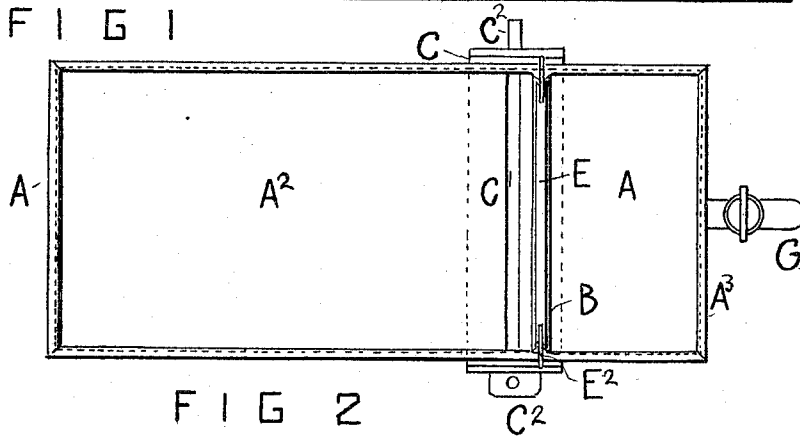


FIG 2

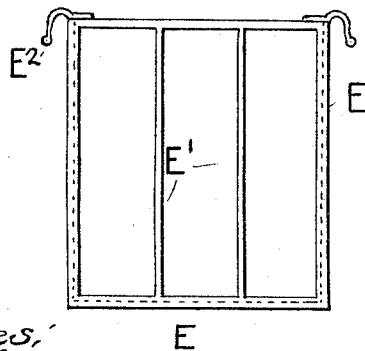


FIG 3

Witnesses:
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UNITED STATES PATENT OFFICE.

ARCHIBALD McDONALD, OF HENLEY, NEAR DUNEDIN, AND ALEXANDER BROWNDURIE, OF DUNEDIN, NEW ZEALAND.

FILTERING APPARATUS.

1,006,253.

Specification of Letters Patent.

Patented Oct. 17, 1911.

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To all whom it may concern:

Be it known that we, ARCHIBALD McDONALD, farmer, and ALEXANDER BROWNDURIE, solicitor, both subjects of His Majesty the King of Great Britain, and residing, respectively, at Henley, near Dunedin, and at Princes street, Dunedin, in the British Dominion of New Zealand, have invented certain new and useful Improvements in Filtering Apparatus; and we declare the following to be a full specification of the same.

The object of the invention is to make an efficient filtering apparatus, which, though primarily intended for milk, is obviously adapted for other liquids for separating sediment from them.

Hitherto the strainers generally strain downward, or so that any sediment remains on the straining surface, not only choking it, but on adding liquid, the sediment often is broken up and much gradually passes through. We make a receptacle of convenient shape, preferably as shown, but in any case, one in which an upright filtering diaphragm is so placed that two compartments are formed, into one of which, liquid is poured and through which it percolates to the other compartment, from which it is drawn off.

The liquid is poured on a baffle plate arranged to prevent the disturbance of any sediment after it has settled. Just behind this diaphragm, in the receiving compartment, a sediment well is formed under the bottom, with a long narrow entrance from the bottom to it. This well is preferably of circular section as being easier to clean which is done by the removal of screw plugs.

Referring to the accompanying drawing:—Figure 1 is a longitudinal section of the apparatus with the tap in elevation and Fig. 2 is a plan of same with the baffle protecting plate removed. Fig. 3 is an elevation of the filtering partition or diaphragm, removable for easy cleaning.

A is the receiving compartment and A¹ the storage compartment for the filtered liquid.

A² is the floor of both compartments.

B is the guide frame of V section secured to, or part of, the sides and floor, dividing the receptacle into the two compartments above specified.

C is the sediment well, located beneath and open to the floor A² at the slot C¹, and further provided with screw plugs C² C².

D D¹ is a protecting or baffle plate a little way from, but covering the filtering surface and the floor of the receiving compartment and closer to these at the outer ends than at the angle of juncture, the portion D connecting the lower portion D¹ with the top D². The top portion D² of plate D may be extended over compartment A¹ to prevent liquid inadvertently being poured there but it should be sufficiently high for ventilation. The plates D and D¹ fit closely at their sides to the sides of compartment A, but leave a space at the outer end D³, around which the liquid flows freely.

D⁴ is a convenient handle for removing the baffle bodily from the receptacle.

E is the removable skelton-frame carrying the filtering diaphragm and provided with longitudinally grooved sides and bottom to slide into outer frame B. The top rail and strengthening bars E¹ E¹ of said frame E are plain. This is covered with metallic gauze, flannel, blotting paper or other known substance for filtering and may have hooks E² E² to clip the edges to prevent bulging.

F F are feet keeping the well C off the ground and allowing for ventilation under the bottom.

G is a tap for drawing off the liquid, from end A³. When tap G is closed and liquid poured into compartment A, it falls on plate D¹ and runs around end D³ and over the floor A² allowing any sediment to get into the well C through slot C¹. As the liquid rises it filters into compartment A¹ until its level in both compartments is the same. When any liquid is drawn off by tap G the filtering begins afresh. When fresh liquid is added, it washes any sediment from the filtering diaphragm and same falls into the well C, so that the said diaphragm is always clean while the sediment remains undisturbed in well C. We believe the filtering diaphragm should be as upright as possible.

In this invention any suitable sizes, materials or shapes of compartments may be adopted.

We claim as our invention:—

1. In a filtering apparatus, the combination of a receptacle; a vertical filtering diaphragm arranged in said receptacle and ex-

tending transversely thereacross, to divide the same into juxtaposed receiving and storage compartments; a sediment well arranged beneath the floor of said receiving compartment, said floor being formed with a transverse slot located at the foot of said diaphragm and constituting the entrance to said well and a baffle comprising an inclined lower portion disposed within the receiving compartment, an upper portion extending across the top of the storage compartment, and an intermediate vertical portion connecting said upper and lower portions and arranged within said receiving compartment in front of said diaphragm.

2. In a filtering apparatus, the combination of a receptacle; a vertical filtering diaphragm arranged in said receptacle and ex-

tending transversely thereacross, to divide the same into juxtaposed receiving and storage compartments; and a baffle comprising an inclined lower portion disposed within the receiving compartment, an upper portion extending across the top of the storage compartment, and an intermediate vertical portion connecting said upper and lower portions, and arranged within said receiving compartment in front of said diaphragm.

In testimony whereof, we hereby affix our signatures, in presence of two witnesses.

ARCHIBALD McDONALD.
ALEXANDER BROWN-DURIE.

Witnesses:

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THOS. FRASER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."