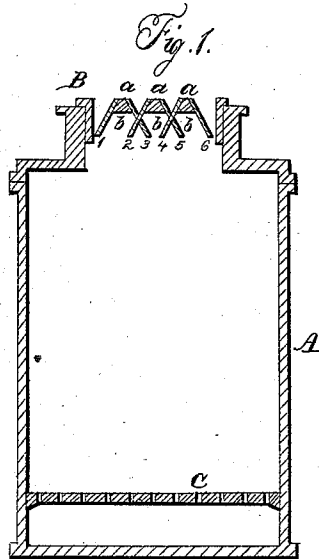
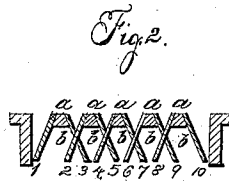


J. MEYER.

Filter.

No. 79,849.

Patented July 14, 1868.



Witnesses:

Wm H Clifford
Wm Frank Searey

Inventor:

John Meyer

United States Patent Office.

JOHN MEYER, OF PORTLAND, MAINE.

Letters Patent No. 79,849, dated July 14, 1868.

IMPROVED MACHINE FOR SEPARATING IRON FROM SUGAR.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN MEYER, of Portland, in the county of Cumberland, and State of Maine, have invented a new and useful Improved Process and Device for Separating Iron Particles from Pulverulent Substances; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable others to make and use my invention, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side sectional elevation of a vat or receiver, with my invention applied thereto.

Figure 2, a detail side sectional elevation of my improvement.

In the manufacture of sugar from sirup, it is found in practice to be the fact that certain minute particles of iron find their way into the manufactured article, or, at least, that there is a presence of iron in the sugar. This results from the sirup taking up certain particles thereof as it is conducted through iron pipes, or rests in iron vats, at certain stages of the process. This sirup, as is well known, is filtered through pulverized charcoal, the charcoal being placed in vats in such manner that the sirup poured thereon passes through the vat, and through a perforated disk or bottom therein, and is then drained off. During this process of filtration, some or all of the iron in the sirup is deposited or strained off into the charcoal, and there remains, so that subsequent quantities of the sirup take up the iron from the charcoal, and its presence in the sugar is attested by the color it imparts to tea when used to sweeten the same. This is particularly true of brown sugar, which, under such condition, will impart a dark color to the beverage.

My invention has in view particularly to remove this iron, or to prevent its becoming incorporated into the sugar, but also has other applications not necessary to be specified.

A reference to the drawings will aid in an understanding of my invention.

A is a vat or receiver, having an opening at the top, B, and a perforated strainer, C. Charcoal is placed on the strainer C. The sirup is introduced at B, and drained off, when filtered, from below C. The charcoal is also introduced at B, being poured or dropped into the vat through the opening at the front. 1, 2, 3, 4, 5, &c., show a network of metallic strips or bars, fastened at the top to cross-pieces *a*. Between the strips *a* and bars 1, 2, &c., are the openings *b*. As represented in the accompanying drawing, these are placed in a circular head or cylinder at the top of the vat. These metallic pieces, 1, 2, 3, 4, &c., are all magnets or magnetized pieces of iron, and the pieces are so arranged that the charcoal introduced at the top must come in contact with these pieces before it falls into the vat. After passing through the head or short cylinder, the particles of iron are attracted to these bars, 1, 2, &c., and remain adhering thereto, so that the charcoal descends into the vat, leaving its iron on the magnetic metallic plates at the top.

It is obvious various devices may be employed in place of the one herein shown, and I do not propose to limit this application to any particular form or structure. For instance, a common sieve, with magnetic bottom, or rolls or tubes, or a perforated disk, could all be employed to advantage, as could a metallic hopper.

Although my invention contemplates particularly the manufacture of sugar, it may be employed, of course, for other purposes where it is useful, and where the substance itself in which the iron is found is not subject to magnetic attraction.

I further desire to specify that a sieve may be employed, to which an oscillating motion may be imparted, to screen the charcoal, and an aggregation of magnets placed above the sieve, to attract the iron particles as the substance is agitated.

The fact that different metals are subject to magnetic attraction is well known, and, of course, I do not claim broadly attracting or deviating metals by magnetic attraction; neither do I claim the processes set forth in the English patent of Alfred L. S. Chenot and Eugene C. A. Chenot, 1856, No. 1,588; neither do I claim separating metallic substances from pulverulent substances broadly.

What I claim as my invention, and desire to secure by Letters Patent, is—

As an improvement in the process of filtering sirup in manufacturing sugar, the improved filtrator herein shown and described, having the metallic sieve, for the purpose of eliminating the particles of iron which have become mixed with the charcoal in the process of preparing the same.

JOHN MEYER.

Witnesses:

WM. H. CLIFFORD,

WM. FRANK SEAVEY.