E. W. DEMING.

CLOSED FIBER STRAINER.

APPLICATION FILED JUNE 19, 1909.

962,324. Patented June 21, 1910.

Fig. 1.

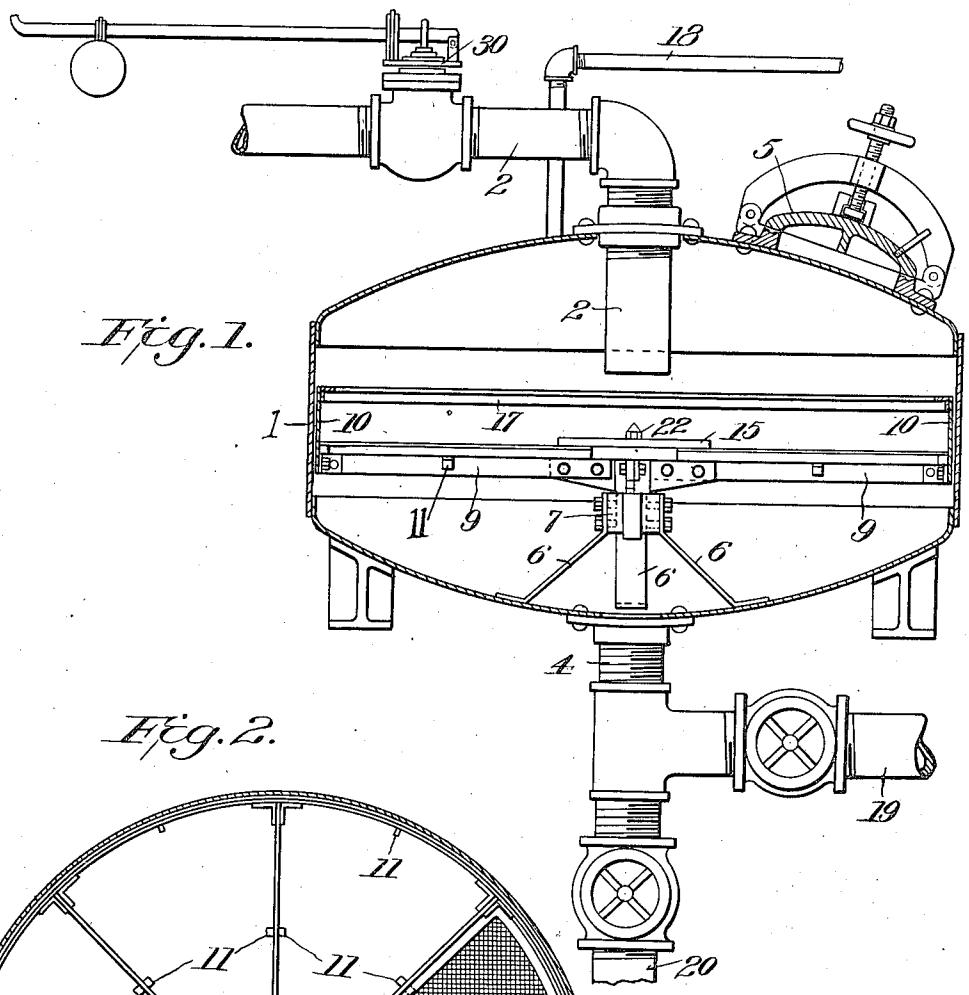
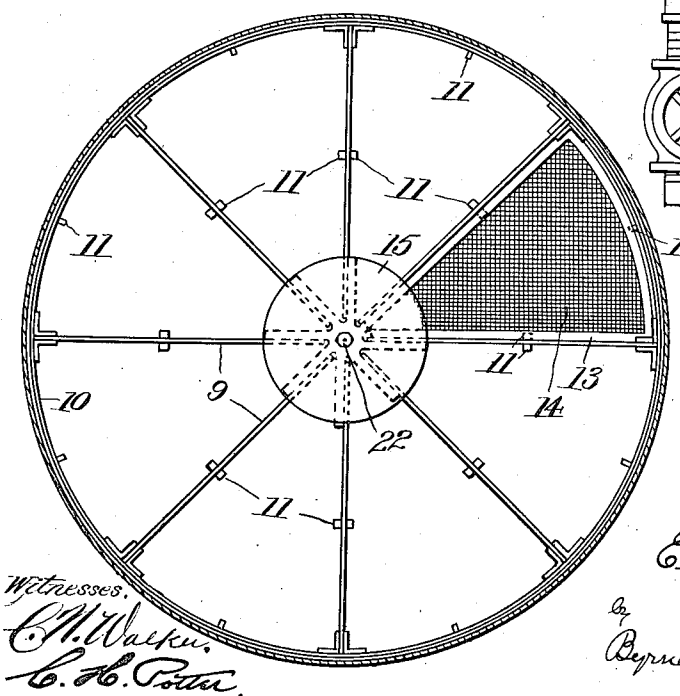


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

EUGENE W. DEMING, OF NEW YORK, N. Y., ASSIGNOR TO DEMING APPARATUS COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

CLOSED FIBER-STRAINER.

962,324. Specification of Letters Patent. Patented June 21, 1910.

Application filed June 19, 1909. Serial No. 503,218.

To all whom it may concern:

Be it known that I, EUGENE W. DEMING, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Closed Fiber-Strainers, of which the following is a specification.

My invention relates to a liquid strainer particularly adapted for use in systems for treating sugar juices, and has for its object to provide a strainer, which will remove from the juice any wood fibers in suspension therein, and which can be operated either under pressure or under partial vacuum.

Referring to the drawings:—Figure 1 is a sectional elevation; Fig. 2 is a plan view looking downward on the section plane 2—2 of Fig. 1.

In the drawings, 1 indicates a closed receptacle, preferably circular in cross-section, and having passing through the top an inlet pipe 2, for delivering liquid, for example, clarified and settled juices flowing from the separators, which may be of the type described in my prior Patent No. 885,450. At the bottom is a delivery pipe 4. The top of the receptacle has therein a manhole opening, closed by a cover 5, having, as shown, a suitable closure device. Mounted on the bottom of the receptacle are four legs 6, on which is carried a centrally arranged bearing block 7, which forms a bearing for the shaft 8, to which are connected a series of radially disposed arms 9 constituting a frame, suitably fastened at their outer ends to a deep retaining ring 10 extending upwardly from the arms 9. On the ring 10 and arms 9 are bearing pins 11, which serve to support sector-shaped wood frames 13, (only one being shown), to the inner face of which are secured screening plates 14, of wire mesh or perforated plate. The ring 10, secured to the ends of the arms 9, has a stiffening ring 17 riveted to the inner face of its upper edge.

A flat impact plate 15 is located above the perforated screens, beneath the inlet pipe 2, and is secured to the frame by a bolt 22 having a conical head. The incoming juices strike this plate 15 and are thrown violently outward, the juice passing through the perforations, while the separated fibers are carried by the flow toward the edge of the screen, to accumulate near the retaining ring 10.

A pipe 18 permits a vacuum to be maintained within the filter chamber, and may conveniently be connected to the vacuum evaporators. The inlet pipe 2 from the separators has mounted thereon a safety-valve 30, and the exit pipe is provided with valved connections 19, 20 to enable the juice to be discharged directly to the evaporators or to a collecting tank. The collected fibers may be removed through the manhole, the rotatable table being turned for this purpose to bring all parts of it within reach. Suitable mechanical means, such as gearing operated by hand or by power, may be used to rotate the table, if desired.

This closed fiber strainer enables the fiber-containing juices coming from the separators at a temperature of 200° F. to be filtered and delivered to the evaporators without loss of heat or contamination, which would result from exposure to the air. The vacuum connection enables the liberated gases to be removed. The removal from the juice of the cane fibers is important, since if allowed to remain in the juice, they gather moisture, and induce fermentation which destroys the sugar and impairs its keeping qualities when stored. The lime salts also tend to combine with the fiber and cause increased incrustation on the heating surface of the evaporating vessels.

I claim:—

1. A fiber strainer comprising a closed vessel having an inlet and outlet for liquid, a screen horizontally disposed between said inlet and outlet and mounted for rotation, and a peripheral retaining ring carried by said screen.

2. A fiber strainer comprising a closed vessel having an inlet and outlet for liquid, a screen horizontally disposed between said inlet and outlet and mounted for rotation, a peripheral retaining ring carried by said screen, and a vacuum connection to said vessel.

3. A fiber strainer comprising a closed vessel having a substantially central inlet for liquid, an outlet therefor, a screen horizontally disposed between said inlet and outlet and mounted for rotation, a peripheral retaining ring carried by said screen, and an impact plate beneath the liquid inlet.

4. A fiber strainer comprising a closed ves-

sel, a screen horizontally disposed therein and mounted for rotation, a peripheral retaining ring carried by said screen, and means for directing a liquid stream radially outward over said screen, whereby the separated matters are conveyed to the periphery of the screen.

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

EUGENE W. DEMING.

Witnesses:
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G. ALLIGER.