H. J. LAHOUSSE.

Paper-Pulp Digesters.

No. 148,125. Patented March 3, 1874.

Fig. 1.

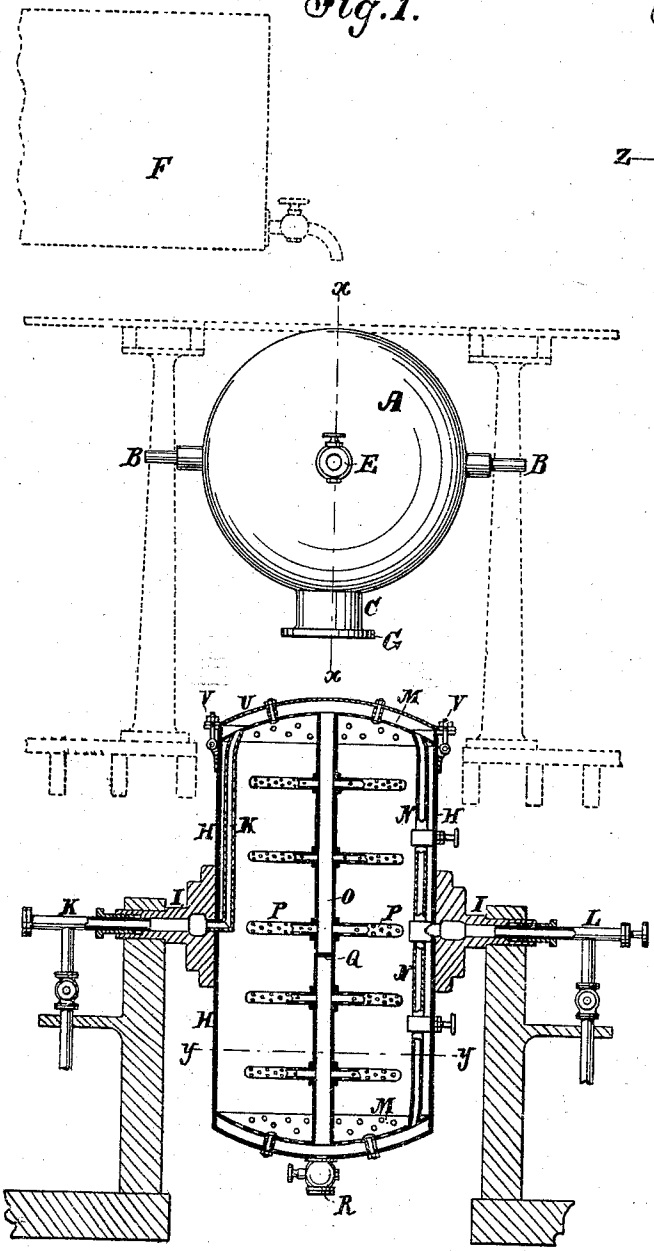


Fig. 2.

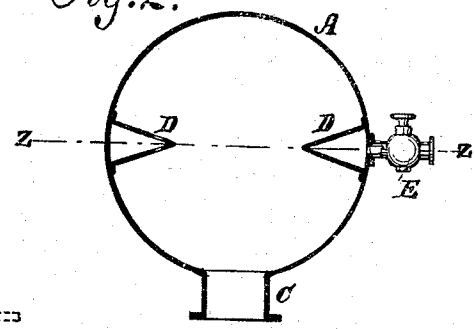


Fig. 3.

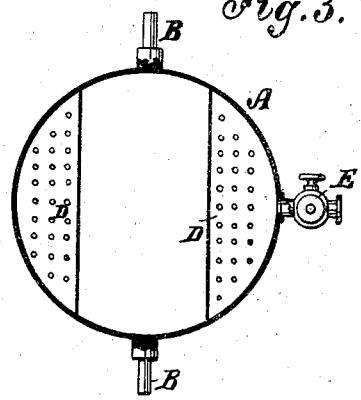
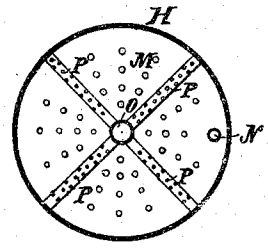


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

HECTOR J. LAHOUSSE, OF PRAGUE, BOHEMIA.

IMPROVEMENT IN PAPER-PULP DIGESTERS.

Specification forming part of Letters Patent No. **148,125**, dated March 3, 1874; application filed September 27, 1873.

To all whom it may concern:

Be it known that I, HECTOR J. LAHOUSSE, of Prague, in Bohemia, have invented a new and useful Improvement in Paper-Pulp Digesters, of which the following is a specification:

The invention will first be fully described, and then pointed out in the claim.

The boiler is mounted in its transverse axis upon hollow trunnions, with pipe connections for the admission of steam and water, and contains perforated plates and pipes for distributing the steam and water when applied. It also has one of its heads arranged so as to be readily removed, and is placed under the steep-chest to receive the stock directly therefrom, and at the lower end it has a large cock for drawing off the stock. Besides the steep-chest and the boiler, there is also a tank above the steep-chest for containing the alkaline solution, so arranged that the said solution can be let into the steep-chest directly from it.

Figure 1 is a side elevation of the steep-chest, and sectional elevation of the boiler; it is also a side elevation of the tank in dotted lines. Fig. 2 is a sectional elevation of the steep-chest on the line *x x* of Fig. 1. Fig. 3 is a horizontal section of the steep-chest on the line *z z* of Fig. 2; and Fig. 4 is a horizontal section of the boiler, taken on the line *y y* of Fig. 1.

Similar letters of reference indicate corresponding parts.

A is the steep-chest; it is mounted on the trunnions B, and has a large hollow neck, C, on one side, perforated plates D inside, and the cock E outside. The straw, or similar fibrous material, (after being cut in an ordinary cutter, or other suitable machine,) and the alkaline solution, are charged into said steep-chest at the neck C when said chest is upright, and discharged from it by turning it bottom side up, as it is represented in Fig. 1, the liquor being let in from the tank F. The opening is closed tight by a plate, bolted or otherwise fastened on the flange G, and the chest is then revolved during the steeping process. The stock and the alkaline liquor fall upon the perforated plates D as the chest revolves to equalize and facilitate the action of the liquor. The cock E is used to draw off the alkaline liquor before emptying the stock into the boiler, a pump being, by preference, used when said liquor is not to be used in the boiling process. H is the boiler; it is mounted on the hollow trunnions I in its transverse axis. One of said trunnions has a steam-pipe connection, L, and the other a water-pipe connection, K. Inside of the boiler the steam-pipe branches each way to the perforated disks M, by pipe N, which delivers the steam behind said disks, from which a small quantity escapes directly through the perforations into the chamber containing the stock, while the greater portion enters the central pipe O, to be distributed through the perforated arm P. Said pipe O has a stop at Q to equalize the application of the steam. The water-pipe discharges behind one of the disks M, while the exhaust-cock R is attached to the other end of the boiler. The top U of the boiler is removable, being held on by the bolts V, jointed to the boiler's sides, and swinging into notches in the edge of the cover.

The process is as follows: The straw, or other fibrous material, being first chopped up fine in any suitable way, is charged into the steep-chest, and a quantity of alkaline liquor let in from the tank F, which will be a little stronger if it is only to be used in the steep-chest than if it is to be also used in the boiler. The charge is retained in the steep-chest about four hours, or thereabout, and then let into the boiler and boiled, by steam let on through pipe L, four or five hours, the boiler being revolved slowly at intervals, after which the stock is thoroughly washed by water let in through pipe K.

If the caustic-alkali solution is to be used in the steeping process only, it is pumped off through the cock E before the stock is let into the boiler; but if it is to be boiled in the alkali solution, the liquid is let in with the stock, and more added, if necessary. When the caustic solution is drawn off at the completion of the steeping process, it may be used over again.

The stock is next bleached by the usual treatment, which, as well as the subsequent

washing, may be applied in the boiler, if preferred, or in the ordinary "rag" or "stuff engine."

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The boiler H, having hollow trunnions I, branched steam-pipe N, water-pipe K, perforated disks M, central pipe O, perforated pipes P, and stop Q, substantially as specified.

The above specification of my invention signed by me this 28th day of May, 1873.

HECTOR JOSEPH LAHOUSSE.

Witnesses:

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