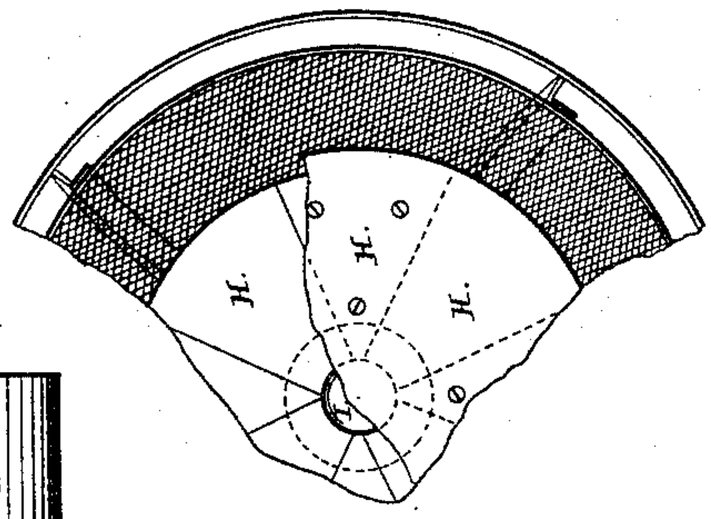
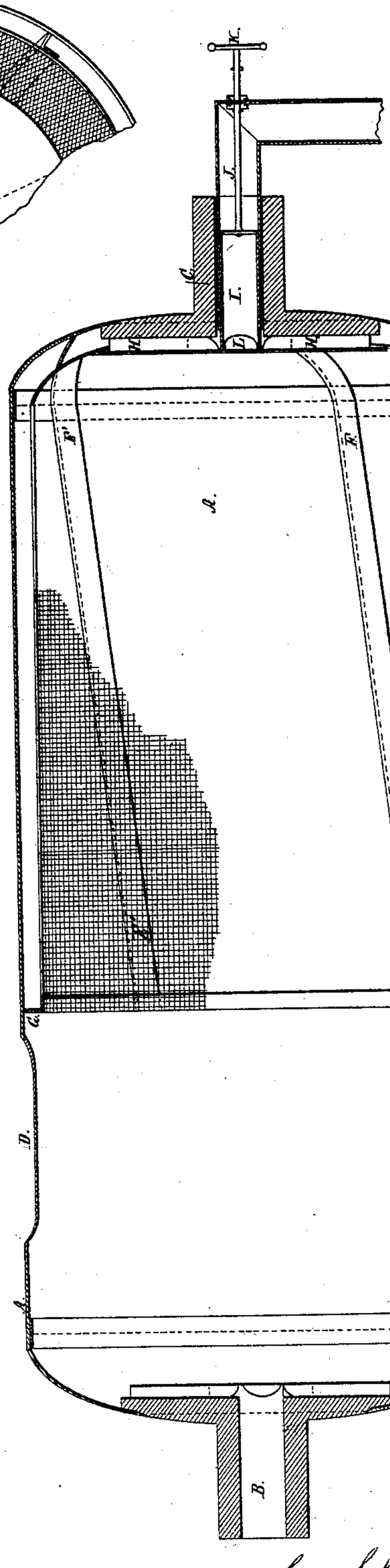
C. S. Buchanan.

Pulp Washer.

No. 28,062. Patented May 1, 1860.





Witnesses.

Y. Beaumont

B. Chauncey

Inventor.

Chas S Buchanan

UNITED STATES PATENT OFFICE.

C. S. BUCHANAN, OF BALLSTON SPA, NEW YORK.

BOILER FOR PREPARING PAPER-STUFF.

Specification of Letters Patent No. 28,062, dated May 1, 1860.

To all whom it may concern:

Be it known that I, COE S. BUCHANAN, of Ballston Spa, Saratoga county, State of New York, have invented a Combined Boiler and Washer for Preparing Paper-Stuff, Such as Rags, Rope, Various Kinds of Waste, Straw, &c.; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in providing a common rotary boiler with an internal concentric strainer fastened to the boiler and having between it and the boiler, ribs in the form of gutters running longitudinally to convey the liquid to the openings in the head through which it reaches the journal and is discharged outside. I also provide the journal with a peculiar plug by which when there is a pressure of steam in the boiler either liquid or steam may be allowed to escape.

To enable others skilled in the art to make and use my invention, I will now proceed to describe the same.

A A is a common rotary boiler, B, C, are the hollow journals, D is a man hole and E F are ribs fastened to the boiler. The strainer is fastened to those ribs, and consists either of strong metallic cloth, as represented in the model, or of perforated plates covered with wire cloth. The ribs E F and the strainer extend the whole length of the boiler, or a portion only in which case the interval or space between the boiler and the strainer is closed at one end by a ring G G. At the other end the ribs E F make a turn and are extended on the head till they reach the hole in the journal. That part of the ribs which extends on the the head is covered with a solid circular plate screwed on to it and thus forms passage ways H H H H. Inside the journal and extending to this plate is a ring or tube or cylindrical plug I, provided with a rod J and crank K by means of which it is turned around. A hole through this plug and notches in its sides L allows the liquids and steam to pass out, the plug being stationary while the boiler rotates.

The mode of operation is as follows.

First: When the apparatus is used simply for washing with either cold or warm water the stuff having been placed in the boiler and the man hole closed, the vessel is made to rotate and the water is admitted into the journal B opposite that having the hollow plug in it; this water strains through the stuff and reaches the bottom of the cylinder from where it is elevated by the ribs E F and brought upward above the center when it goes down through the passageways H H H H. The side of the plug I having a notch or hole in it, is turned upward so as to receive the water and prevent its falling to the bottom of the vessel through the passageways leading downward.

Second. When the apparatus is used for boiling and washing under pressure, the liquids and steam are introduced through the journal as before described and the boiler is made to rotate; the result is that the boiling liquids will be elevated by the ribs, and as the escape through the journal C is mean while closed, they will empty on the top of the stuff and thus circulate through it making the boiling more effectual. If it be wanted to discharge some liquor plug I is turned the side having the hole downward and the escape pipes to the journal are opened. The pressure of steam will force the liquid up through the passageways and out through the journal. If under the same circumstances the hole in the plug is turned upward steam or steam and liquids will escape, but if the boiler is at rest steam only will get out.

The arrangements described apply equally well to vessels heated by steam introduced through the journals or by fire applied to the outside. When the heads are made of cast iron the passageways H H H H can be formed by cores in the mold, and if the strainer be also made of cast iron it will be found economical to cast the ribs and strainer in sections, each section forming a part of a rib, and a part of the strainer.

Having thus described my invention what I claim as my invention and desire to secure by Letters Patent is.

1. The combination with a rotary boiler or vessel, of a cylindrical strainer arranged within said boiler or vessel substantially in the manner and for the purposes specified.

2. In rotary boilers or vessels provided with cylindrical and concentric strainers, I claim the construction and arrangement of ribs in the form of gutters substantially as described and for the purposes set forth.

3. I claim providing the hollow journals of boilers or vessels constructed to operate as

described, by rotation,—with a tubular plug, capable of being shifted on its axis, such plug having one or more openings at the inner end so arranged as to allow of their coinciding with the channels or ways on the boiler heads, for the discharge from the boiler of liquid or steam or of both liquid and steam substantially as described and for the purposes specified.

COE S. BUCHANAN.

Witnesses:
H. BEAUMONT,
DAVID MARX.