

(No Model.)

B. CAWTHORN & J. P. CORNETT.

APPARATUS FOR BREAKING AND BLEACHING FIBROUS MATERIALS.

No. 535,237.

Patented Mar. 5, 1895.

Fig. 1

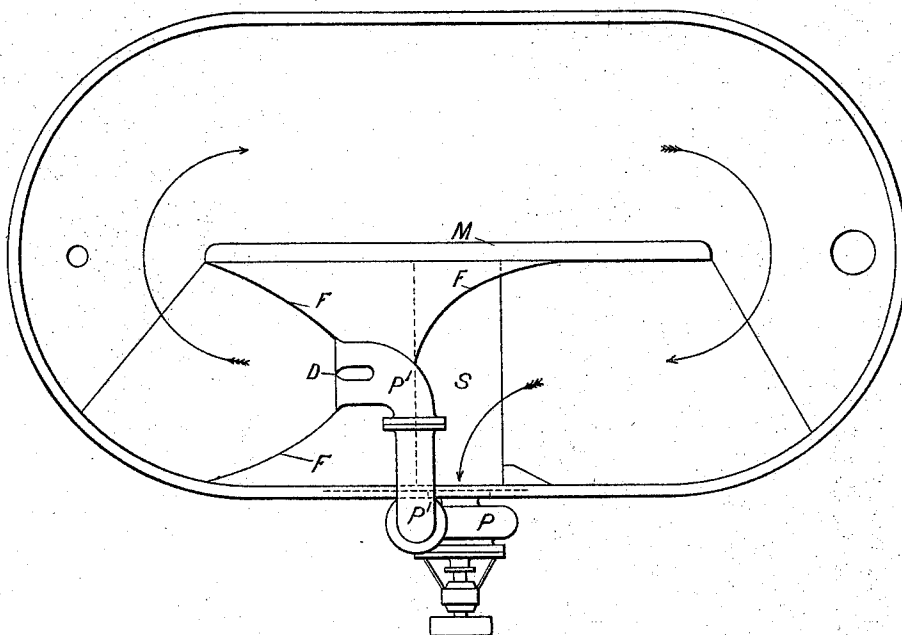
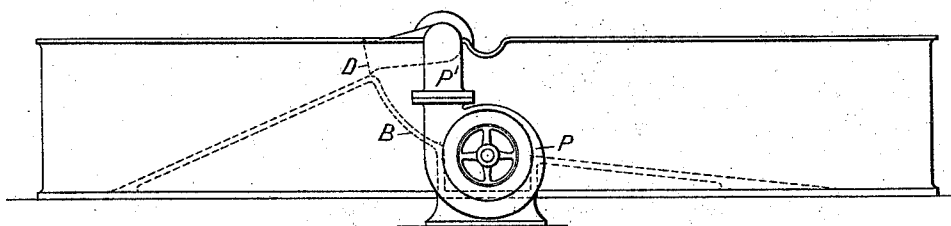


Fig. 2



Witnesses

J. A. Hawley.

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Inventors

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UNITED STATES PATENT OFFICE.

BENJAMIN CAWTHORN, OF HYLTON, R. S. O., AND JAMES P. CORNETT, OF CLAXHEUGH, ENGLAND.

APPARATUS FOR BREAKING AND BLEACHING FIBROUS MATERIALS.

SPECIFICATION forming part of Letters Patent No. 535,237, dated March 5, 1895.

Application filed July 19, 1894. Serial No. 517,968. (No model.)

To all whom it may concern:

Be it known that we, BENJAMIN CAWTHORN, residing at Ford's Paper Works, Hylton, R. S. O., and JAMES PORTEUS CORNETT, residing at 5 Claxheugh, near Sunderland, in the county of Durham, England, subjects of the Queen of Great Britain and Ireland, have invented certain Improvements in Apparatus for Breaking and Bleaching Fibrous Materials, of which 10 the following is a specification.

This invention has reference to improvements in apparatus used in the process of breaking and bleaching fibrous materials.

To effect our purpose we may readily apply 15 our improvements to existing "Hollander" engines by removing the roll and plate and by connecting to the plate orifice a pump or elevator adapted to withdraw the contents of the vat or engine and deliver them again at a 20 suitable level or head to promote adequate circulation, propulsion, agitation and constant exposure of fresh surfaces of fiber to the bleaching agent or liquor in the vat or engine. At the suction and delivery sides of 25 the backfall certain guiding walls or feathers are built to facilitate the flow of the vat contents in the engine as hereinafter described.

The pump may preferably be of the centrifugal or other like type and in this manner a great saving in motive power and in 30 bleaching material may be effected.

We will describe our improvements with reference to the accompanying drawings, in which—

35 Figure 1 shows a plan view and Fig. 2 a side view of an ordinary "Hollander" engine in which the roll and plate are removed, the parts being arranged in accordance with our invention.

40 It will be observed that to the side of the vat where the orifice for the plate is situated we attach the suction pipe of a centrifugal pump P the delivery pipe P' from which we

carry upward to deliver at D over the top of the ordinary backfall B of the engine. The 45 fibrous material together with the bleaching liquor in the vat is thus caused to be circulated and propelled round and round the midfeather M of the engine by the action of the pump P which also has the effect of thoroughly agitating and breaking the fiber and 50 by its constant exposure to the bleach the fiber is more thoroughly bleached and with less power and bleaching material than has hitherto been the case.

The vat must be fitted inside with guiding 55 feathers or walls F to direct the course of the material therein both to the pump and therefrom as indicated in the drawings.

The plate bed S it will be observed thus 60 serves as a conduit leading to the pump-suction pipe.

What we claim as our invention, and desire to secure by Letters Patent, is—

The combination with the vat of an ordinary "Hollander" engine having a midfeather 65 M of curved guiding feathers or walls F situated on both sides of the backfall B and a centrifugal pump P the suction pipe of which is fitted to the vat on one side of the backfall 70 and the delivery pipe of which is carried upward to deliver at D over the backfall into a diverging channel-shaped space formed by the walls F as shown the several parts being arranged and adapted for use substantially 75 as herein set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

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