(No Model.) 2 Sheets—Sheet 1.

A. A. WHEAT.

BEATING AND WASHING ENGINE.

No. 606,174. Patented June 21, 1898.

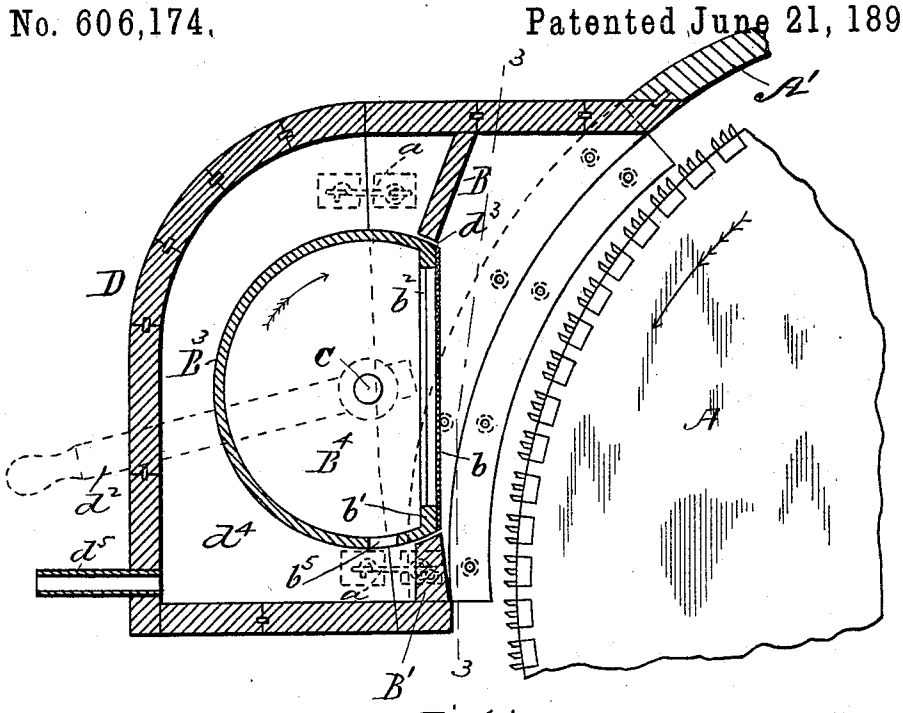


Fig. 1.

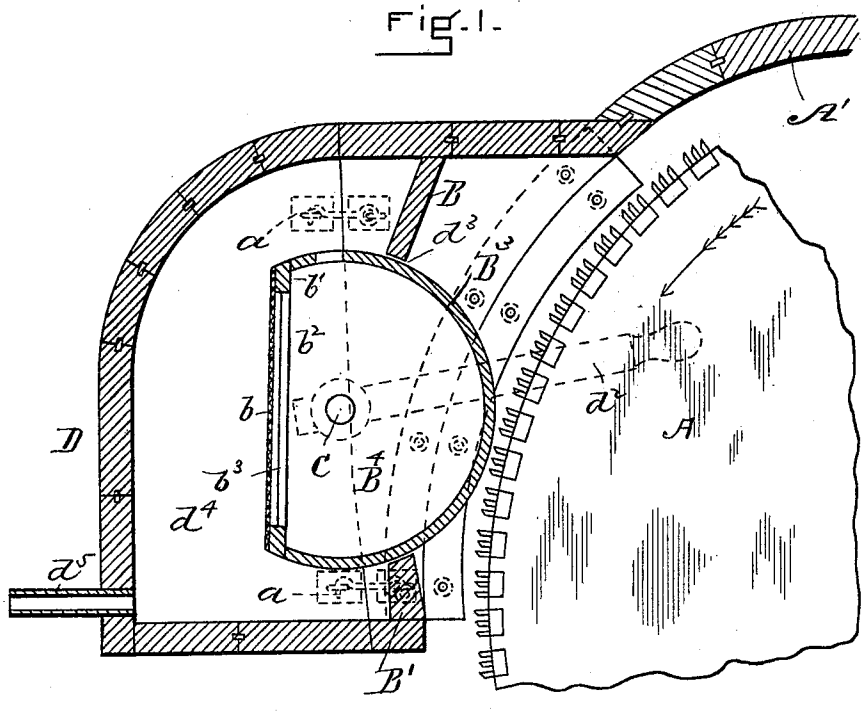


Fig. 2.

WITNESSES

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THE NORRIS PETERS CO. PHOTO-LITHO., WASHINGTON, D. C.

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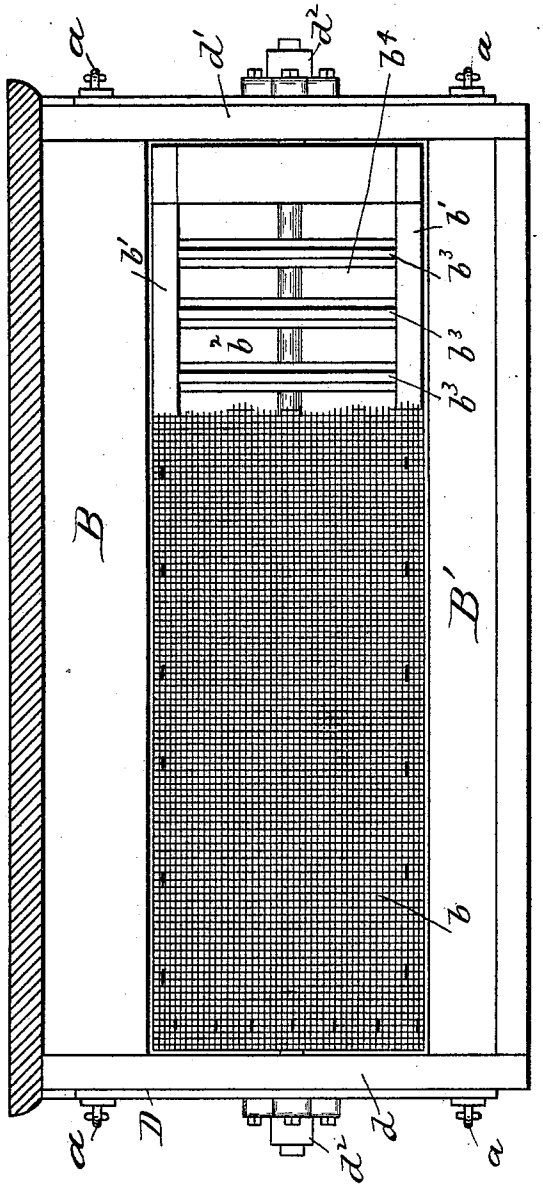


Fig 5

WITNESSES

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UNITED STATES PATENT OFFICE.

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BEATING OR WASHING ENGINE.

SPECIFICATION forming part of Letters Patent No. 606,174, dated June 21, 1898.

Application filed June 10, 1897. Serial No. 640,119. (No model.)

To all whom it may concern:

Be it known that I, ALLEN A. WHEAT, a citizen of the United States, residing at West Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Beating or Washing Engines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to the arrangement and combination, in a beating or washing engine, of a revolving roll with a screen adapted to be turned into and out of operative relation to it, and to a holder for said screen, which is of peculiar shape and which operates not only to hold the screen, but to close the opening occupied by the screen when the screen is in an inoperative position, and also to permit the turning of the screen from an operative to an inoperative position while the machine is in operation without producing any opening or space through which the pulp may escape during such movement.

My invention is particularly adapted for use in a beating-engine of that type in which the pulp is carried completely around the beater-roll, but it may also be used in the ordinary beating-engine, in which most of the pulp passes beneath the beater-roll without being carried around.

In the drawings, Figure 1 is a view in vertical section of a portion of a beating or washing engine, showing a part of a rotary beating-cylinder and a portion of its inclosing casing and the extension or auxiliary casing which forms the drum-chamber in which the revolving drum which carries the screen is mounted, the screen being in operative position. Fig. 2 is a similar view, representing, however, the screen as in inoperative position. Fig. 3 is a view in elevation, representing the screen and the drum and its inclosing chamber, looking from the dotted line 3 3 of Fig. 1.

A is a part of a revolving roll of a washing and beating engine which is inclosed in the usual casing A'. It rotates in the direction of the arrow in Fig. 1 and its bars throw the pulp and water against the partition at its back, which is made up of the stationary sections B B' and the movable drum-section B^4. The movable drum-section B^4 is flattened and open on one side and has a wire screen *b*, preferably of rectangular form, (see Fig. 3,) which is fastened at its edges by staples or other fastening means to the edge or border *b'* of the drum B^4, surrounding a rectangular opening b^2, and the bars b^3, separated from each other by recesses b^4, extend vertically across the opening back of the screen and serve to reinforce and hold it against the pressure of the pulp and water thrown against it by the revolving bars.

The drum B^4 is mounted upon the shaft C, which has bearings in or upon the sides *d d'* of the drum-chamber D, and the drum is secured to the shaft and is turned thereby, one or both ends of the shaft extending through the sides and receiving handles d^2, by which the drum may be turned from the position represented in Fig. 1 to the position represented in Fig. 2 and back.

It will be seen that the drum-chamber D is removably secured to the main casing A' by means of the fastening-hooks *a*, so as to allow convenient access to the drum B^4 for repairs or cleaning.

A portion B^3 of the drum B^4 opposite the screen *b* is preferably made cylindrical in form, as represented, in order that the close joint at d^3 between the lower edge of the stationary partition B and the upper surface of the drum and section B^3 may be maintained while the screen is being turned from its operative position (see Fig. 1) to the inoperative position represented in Fig. 2, it being understood that the drum is turned in the direction indicated by the arrow in Fig. 1.

It will be understood that the screen and drum may be turned while the beating-engine is in operation and while the pulp and water are being thrown against the screen *b* or the cylindrical side B of the revolving drum B^4, and that it is not desirable to expose any opening at such a time in such partition through which pulp may be forced and wasted. It is true that there is an opening formed between the lower part of the screen and the

stationary partition B′ during this turning; but this opening is not long maintained, and the upper part of the drum and section B^3 is immediately moved into the space between the screen and the beating-cylinder and serves to receive the pulp and water and act as a shield for covering the opening thus temporarily established.

The drum-chamber D forms an extension from the casing A′, which covers the rotary beating-cylinder and forms the chamber d^4 of a size to receive the section B^3 when in operative position.

The drum B^4 has an outlet b^5 in the cylindrical portion B^3, through which water forced through the screen escapes when the drum is in the position represented in Fig. 1, the water then flowing into the lower part of the chamber d^4, from which it escapes through an escape-pipe d^5. It will be understood that this screen is used while the pulp being treated is relatively coarse, but that after it becomes finer the screen is no longer available and is then moved out of position while the engine is in operation, and the screening may be done by the other or continuously-revolving drum-washer now in use on beating-machines.

I would say that it is necessary to turn the screen in one direction only while the machine is in operation—that is, from the position represented in Fig. 1 to that represented in Fig. 2. The screen is restored or turned back to the position represented in Fig. 1 when the engine is stationary, being provided with unworked or beaten pulp.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a beating or washing machine the combination with a rotary beating-cylinder, of an inclosing casing for said cylinder, an auxiliary drum-chamber opening into said first-named chamber, and a rotary drum to close said opening, said drum being provided with a screen on one side and a water-outlet.

2. In a beating or washing engine, the combination with a rotary beating-cylinder, of an inclosing casing for said cylinder, an auxiliary chamber in proximity to said casing, a partition separating the interiors of the said casing and chamber and having an opening therethrough, a rotary drum having a flattened screened side and a cylindrical imperforate portion which are adapted to be alternately interchanged to close the opening in said partition and provided with a water-outlet.

3. The combination in a beating or washing engine with the beating-cylinder A, of the drum-chamber d^4 having an opening between it and the cylinder-casing, a drum B^4 contained within said chamber d^4, means for turning said drum B^4, the screen-partition B^2 carried by said drum B^4, and the curved drum-section B^3 having a water-outlet.

4. The combination in a beating or washing engine of the beating-cylinder A, the case D having a chamber d^4, an opening between the said chamber and the cylinder-casing, the partial partitions B, B′ and the rotary drum B^4 having the screen B^2, an outlet, the curved section B^3, the said curved section B^3 maintaining a close joint with the lower edge or bottom of the partition B as the drum is being turned to move the screen from an operative to an inoperative position and the section B^3 to a position to close the opening.

5. In a beating or washing engine, the combination with a beating-cylinder, of an inclosing casing for said cylinder, an auxiliary chamber, a partition having an opening separating the interiors of said cylinder-casing and auxiliary chamber, a screen to span the opening in said partition, a cover to close the opening, and mechanism by means of which the cover is thrown into operative position when the screen is moved out of operative relation to the beating-cylinder and the screen is brought into operative position when the cover is moved away from said opening.

6. In a beating or washing engine, the combination with a beating-cylinder, of an inclosing casing for said cylinder, an auxiliary chamber removably secured in proximity to said cylinder-casing, a partition having an opening separating the interiors of said cylinder-casing and auxiliary chamber, a screen to span the opening in said partition pivoted in said auxiliary chamber, a cover, also pivoted in said auxiliary chamber, to close the opening, and mechanism by means of which the cover is thrown into operative position when the screen is moved out of operative relation to the beating-cylinder and the screen is brought into operative position when the cover is moved away from said opening.

ALLEN A. WHEAT.

In presence of—
CHAS. MCKERNON,
CAMPBELL CHAPIN.