No. 799,434. PATENTED SEPT. 12, 1905.

J. H. BAKER, G. F. SHEVLIN & F. H. BAKER.

STOCK DISTRIBUTER FOR CENTRIFUGAL PULP SCREENS.

APPLICATION FILED NOV. 5, 1904.

2 SHEETS—SHEET 1.

Fig 1

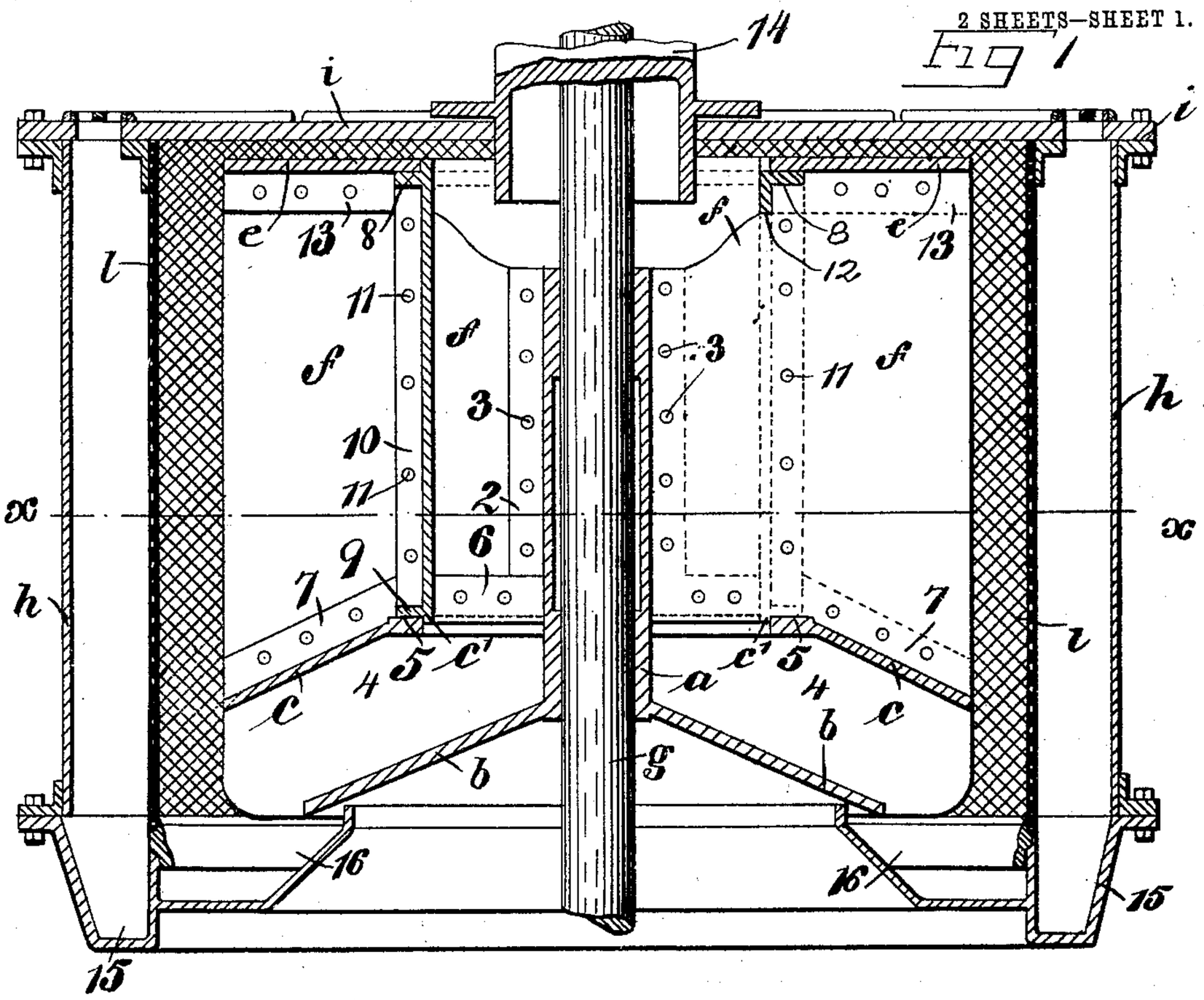
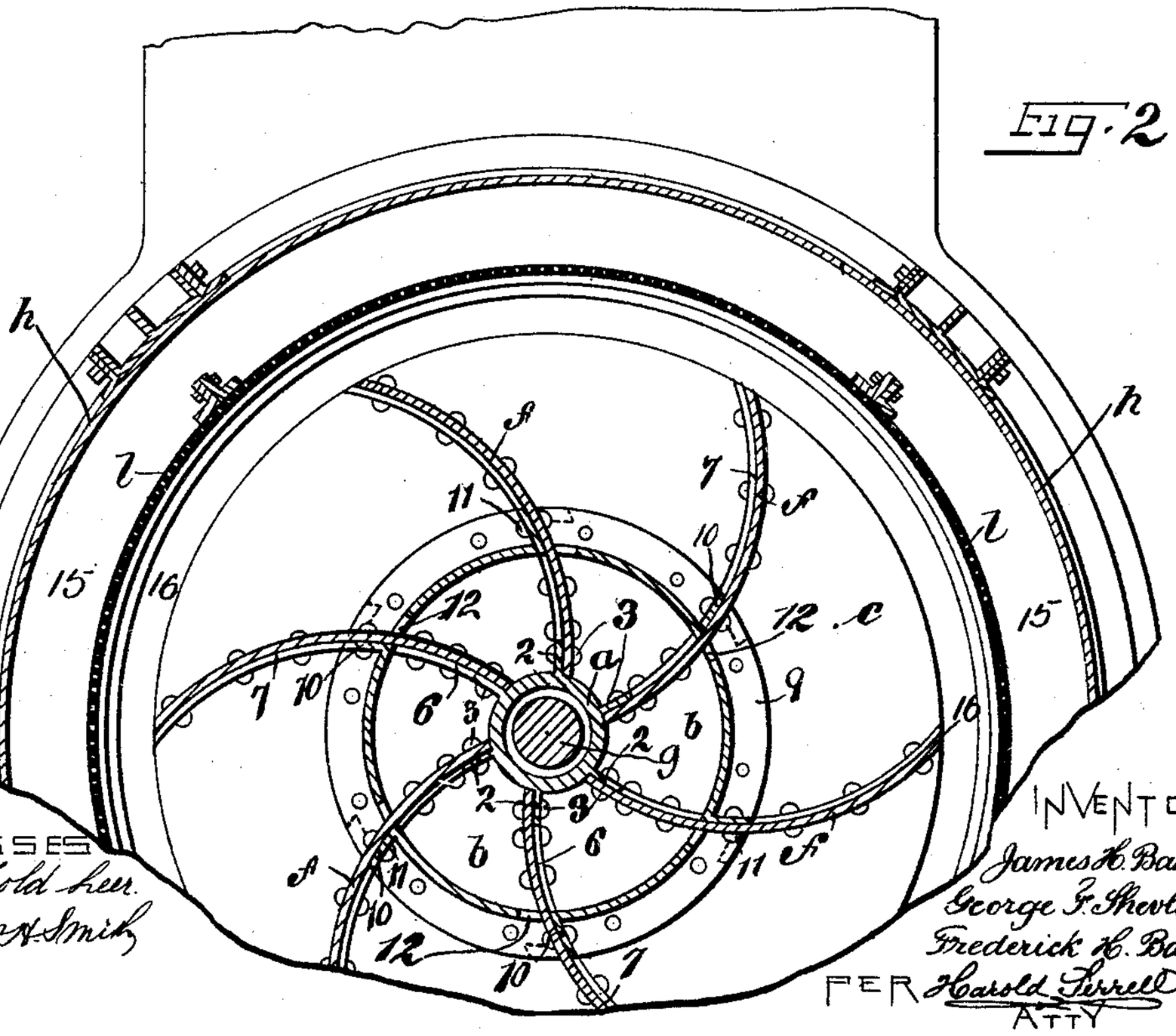


Fig. 2



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2 SHEETS—SHEET 2.

Fig. 4

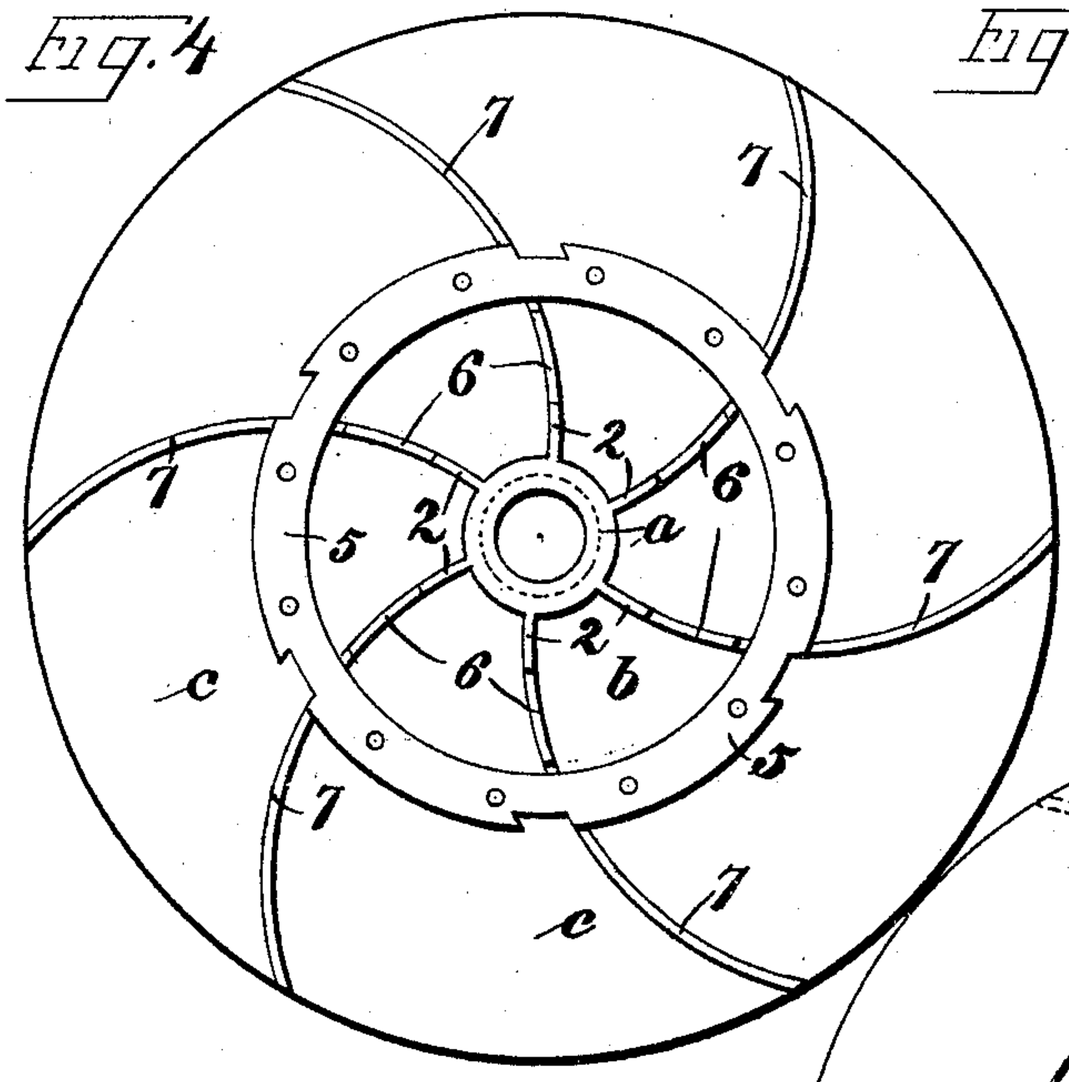


Fig. 6

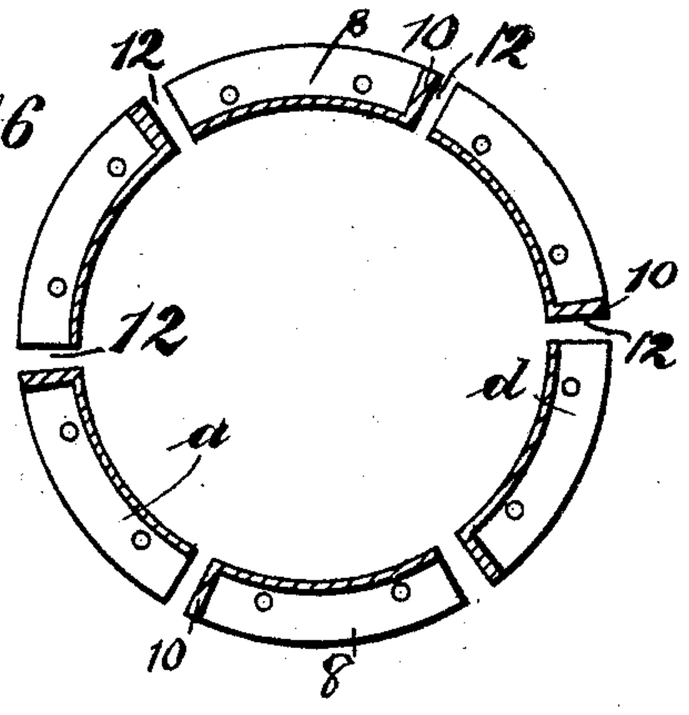


Fig. 7

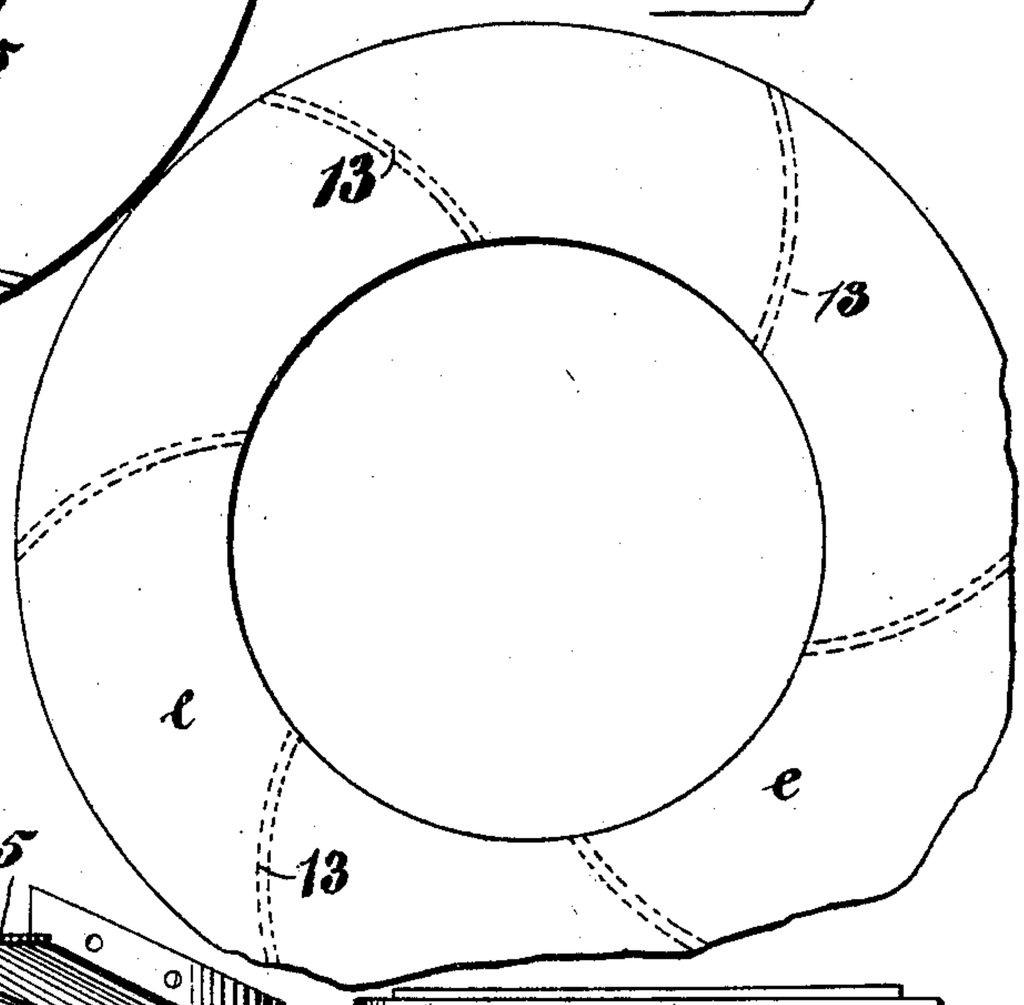


Fig. 3

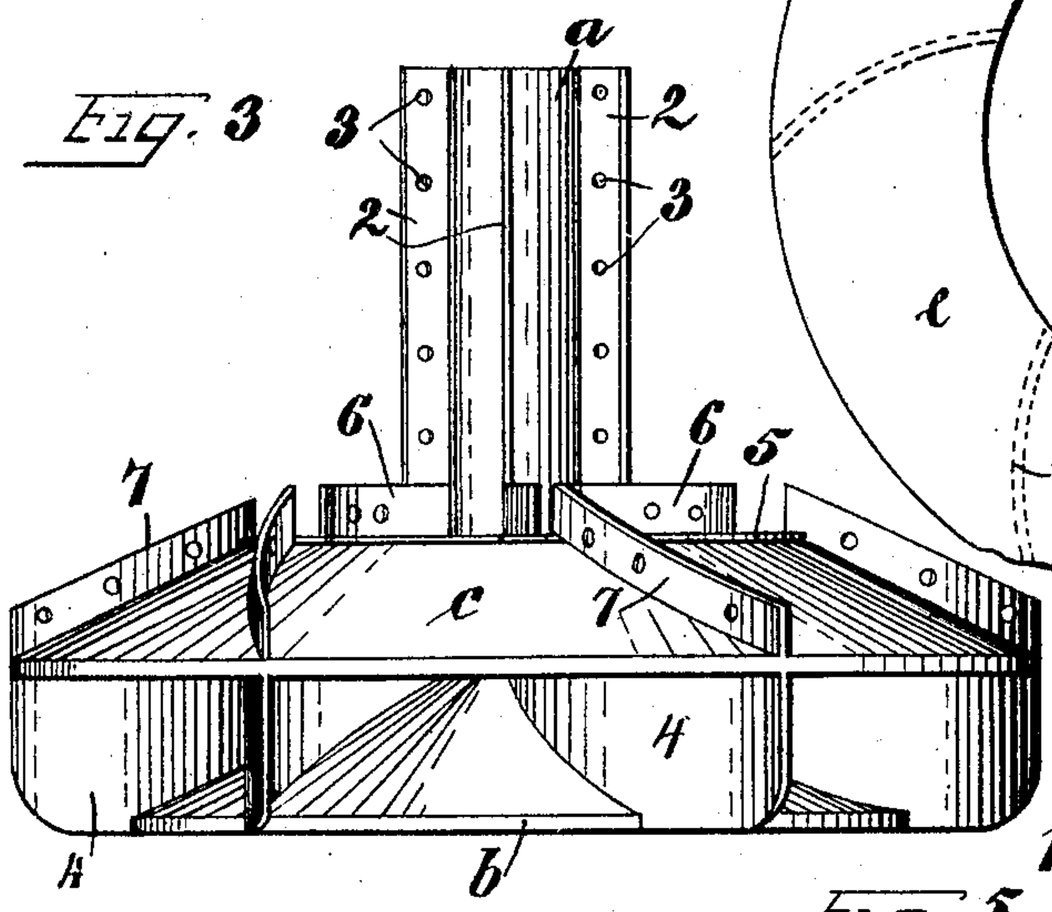
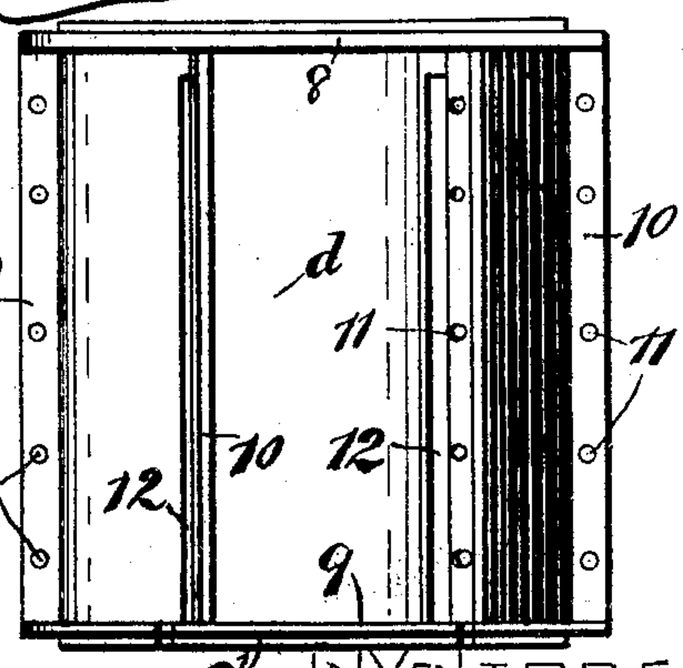


Fig. 5



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UNITED STATES PATENT OFFICE.

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STOCK-DISTRIBUTER FOR CENTRIFUGAL PULP-SCREENS.

No. 799,434. Specification of Letters Patent. Patented Sept. 12, 1905.

Application filed November 5, 1904. Serial No. 231,503.

To all whom it may concern:

Be it known that we, JAMES H. BAKER, GEORGE F. SHEVLIN, and FREDERICK H. BAKER, citizens of the United States, residing at Saratoga Springs, in the county of Saratoga and State of New York, have invented an Improvement in Stock-Distributers for Centrifugal Pulp-Screens, of which the following is a specification.

Our invention relates to centrifugal pulp-screens, and particularly to the stock-distributer portion thereof, and is an improvement on the stock-distributers of the centrifugal pulp-screens shown and described in Letters Patent granted to us November 19, 1901, No. 686,962; February 11, 1902, No. 693,215, and May 12, 1903, No. 727,878.

Heretofore and as set forth in the hereinbefore-named Letters Patent the stock-distributers of centrifugal pulp-screens have commonly consisted in an integral member comprising a hub, cover and bottom plates, curved blades extending from the hub to a point external of the periphery of the plates, and a ring or barrel member extending between the plates and intermediate of the peripheries thereof and the hub, thereby forming a receptacle of several compartments for receiving the pulp and paper-stock, which is then passed through openings in the body of the ring or barrel member and is thrown against the screens by the centrifugal action exerted by the blades in the revolution of the distributer. We have found, however, from experience and by experiment that in this form of distributer the heavier and lumpy parts of the paper-stock which cannot pass through the openings in the ring or barrel member lodge in the bottom of the distributer and tend to unbalance the same, thereby impairing the efficiency of the machine; and the object of our invention is the provision of a stock-distributer in which this particular difficulty is overcome.

In carrying out our invention we employ a stock-distributer built up of several parts and composed of a base member comprising a hub, spaced-apart flanges and intermediate curved walls, a barrel member having slots therein, blades extending from the hub through the slots in the barrel member and to the periphery of the upper flange of the base member, and also a cover-plate. These parts are secured together in any desired manner and mounted upon a vertical shaft forming part of the centrifugal pulp-screen, which apparatus may embrace any or all of the improvements shown and described in the hereinbefore-named Letters Patent granted to us.

In the drawings, Figure 1 is a central vertical section of our improved stock-distributer. Fig. 2 is a partial sectional plan on line *x x*, Fig. 1. Fig. 3 is an elevation of the base member of the distributer, and Fig. 4 is a plan of the same. Fig. 5 is an elevation of the barrel member; Fig. 6, a sectional plan of the same, and Fig. 7 a plan of the cover-plate.

a represents a hub provided with a plurality of longitudinal ribs 2, in each of which is a series of bolt or rivet holes 3. An inclined flange *b* is preferably made integral with the lower end of the hub *a*, and a correspondingly-inclined flange *c*, having an opening therein surrounding the hub *a*, is connected to the flange *b* by partition-walls 4, and the diameter of the periphery of the flange *c* is appreciably greater than the diameter of the periphery of the flange *b*.

Surrounding the opening in the flange *c* is an annulus 5, and those parts of the partition-walls 4 adjacent to the hub preferably terminate in the ribs 6, so that there are openings adjacent to the hub, providing communication from a space above the flange *c* to the compartments between the flanges *b* and *c*, formed by the partition-walls 4. On the upper surface of the flange *c* there are ribs 7, provided with bolt or rivet holes, as are also the ribs 6, and the walls 4, ribs 7, 6, and 2 are all approximately in the same curved line and vertical position.

d represents the barrel member, which is preferably cylindrical and provided at the upper end with a flange 8, at the lower end with a flange 9, and with longitudinal flanges 10 on its outer surface, which latter flanges are provided with bolt or rivet holes, (indicated at 11.) The barrel member *d* is also provided adjacent to each longitudinal rib 10 with a slot 12, extending through the lower flange 9 and to a point adjacent to the upper flange 8.

e represents a cover-plate provided with a central circular opening and on its under side

with a series of ribs 13, and *f* represents the blades or wings which extend from the hub through the slots in the barrel member and to the periphery of the flange *c*.

In assembling the parts hereinbefore described the barrel member *d* is placed with its bottom flange 9 resting upon the annulus 5 surrounding the opening in the upper flange *c*, with the lower end *c'* fitting within said opening, and these parts are secured together by rivets secured in the annulus 5 and passing through the flange 9 or otherwise, as may be found convenient. The blades *f*, which are made to conform to the curve of the ribs 2, 6, and 7, are secured along one edge to the ribs 2 on the hub, also along the ribs 6 and 7, the ribs 13 on the cover-plate, and the ribs 10 on the outer surface of the barrel member *d*, said blades passing through the slots 12 of the barrel member, as hereinbefore stated.

The hub of the stock-distributer is secured upon the vertical shaft *g* of the centrifugal pulp-screen, which comprises the cylinder 14, by which the pulp and paper-stock are conveyed to the distributer, casing *h*, cover *i*, screen-plates *l*, and troughs 15 and 16 for the good stock and slivers, respectively, and any of the features which are shown and described in the hereinbefore-named Letters Patent.

It will now be apparent that in the operation of the stock-distributer hereinbefore described the pulp and paper-stock upon being delivered to the distributer will pass into the compartments in the barrel member formed by that part of the blades contained therein and that that portion of the pulp and paper-stock of ordinary consistency will pass through the slots in the barrel member and be thrown against the screens by the centrifugal action exerted by that portion of the blades exterior of the cylinder, whereas the heavier and lumpy fiber will find its way to the bottom portion of the distributer and into the compartments formed between the flanges *b* and *c* by the walls 4 and by the centrifugal action exerted by these walls will be thrown against the screens at a different portion thereof from that which the stock of ordinary consistency is thrown and, moreover, that that portion of the heavier and lumpy fiber which does not pass through the screens will therefore find its way to the trough 16 and be conveyed away with the slivers.

We claim as our invention—

1. A stock-distributer for centrifugal pulp-screens, including a circular revoluble centrifugal member, structurally comprising means for laterally delivering the lighter particles and apertures of liberal area at the lower portion for delivering the heavier and more lumpy fiber to be screened below and independent of the stock of ordinary consistency.

2. A revoluble centrifugal stock-distributer for centrifugal pulp-screens, comprising a circular revoluble member, means associated therewith for laterally delivering the stock of ordinary consistency on the upper portion of the screen, and means located at the lower portion of the revoluble member, and also associated therewith for delivering the heavier and lumpy fiber on the lower portion of the screen.

3. A stock-distributer for centrifugal pulp-screens, comprising a hub, flanges, curved partition-walls between said flanges and extending from the hub to the periphery of the upper flange, a barrel portion, blades and a cover-plate.

4. A stock-distributer for centrifugal pulp-screens, comprising a hub, inclined spaced-apart flanges of different diameters, curved partition-walls between said flanges and extending from the hub to the periphery of the upper flange, a barrel portion, blades and a cover-plate.

5. A stock-distributer for centrifugal pulp-screens, comprising a hub, an inclined lower flange integral with the hub, an upper correspondingly-inclined flange of greater diameter than the lower flange and provided with an opening surrounding the hub, partition-walls extending between the said flanges and from the said hub to the periphery of the upper flange, a barrel portion, blades and a cover-plate.

6. A stock-distributer for centrifugal pulp-screens, comprising a hub, an inclined lower flange integral with the hub, an upper correspondingly-inclined flange of greater diameter than the lower flange and provided with an opening surrounding the hub, partition-walls extending between the said flanges and from the said hub to the periphery of the upper flange, a barrel portion having longitudinal slots therein, blades passing from the said hub through the slots in the barrel portion and to the periphery of said upper flange and a cover-plate.

7. A stock-distributer for centrifugal pulp-screens, comprising a hub, longitudinal ribs thereon, an inclined lower flange, a correspondingly-inclined upper flange of greater diameter than the lower flange and having an opening therein surrounding said hub, curved ribs on the upper surface of said upper flange, curved partition-walls extending between said flanges and from said hub to the periphery of the upper flange, a barrel portion having longitudinal slots therein, longitudinal ribs on the surface of said barrel portion adjacent to the slots therein, a cover-plate, curved ribs on the under side thereof, and blades each of which is connected to a rib on the hub, passes through a slot in the barrel portion and is connected to a rib on the surface of the barrel portion, a rib on the upper flange and a rib on the cover-plate.

8. The combination with the pulp-screen, of a circular revoluble centrifugal member

substantially agreeing in height with the height of the screen and structurally comprising means for delivering the lumpy fiber to the lower part of the screen and for simultaneously delivering the lighter fiber stock of ordinary consistency to the upper and major portion of the screen.

9. A stock-distributer for centrifugal pulp-screens, including a revoluble centrifugal member, comprising a central receiving vessel with spaced-apart discharge-apertures, a series of intersecting curved blades or wings with the lower portion of said member provided with lateral inclined passage-ways for the delivery of the heavier stock.

10. A stock-distributer for centrifugal pulp-screens, including a revoluble centrifugal member, comprising a central receiving vessel with spaced-apart discharge-apertures, parallel inclined spaced-apart flanges below and merging with the said vessel, and a series of curved blades or wings intersecting the central vessel at said apertures and having their vertically-disposed counterpart between said flanges dividing up the same into radial inclined passage-ways for the delivery of the heavier stock.

11. A stock-distributer for centrifugal pulp-screens, including a revoluble centrifugal member, comprising a central receiving vessel with long vertically-disposed spaced-apart discharge-apertures, parallel inclined spaced-apart flanges below and merging with the said vessel, and a series of curved blades or wings intersecting the central vessel at said apertures and having their vertically-disposed counterpart between said flanges dividing up the same into radial inclined passage-ways for the delivery of the heavier stock.

Signed by us this 21st day of October, 1904.

JAMES H. BAKER.
GEORGE F. SHEVLIN.
FREDERICK H. BAKER.

Witnesses:
HARRY J. YOUNG,
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