C. E. RHODES.

PULP DISTRIBUTER.

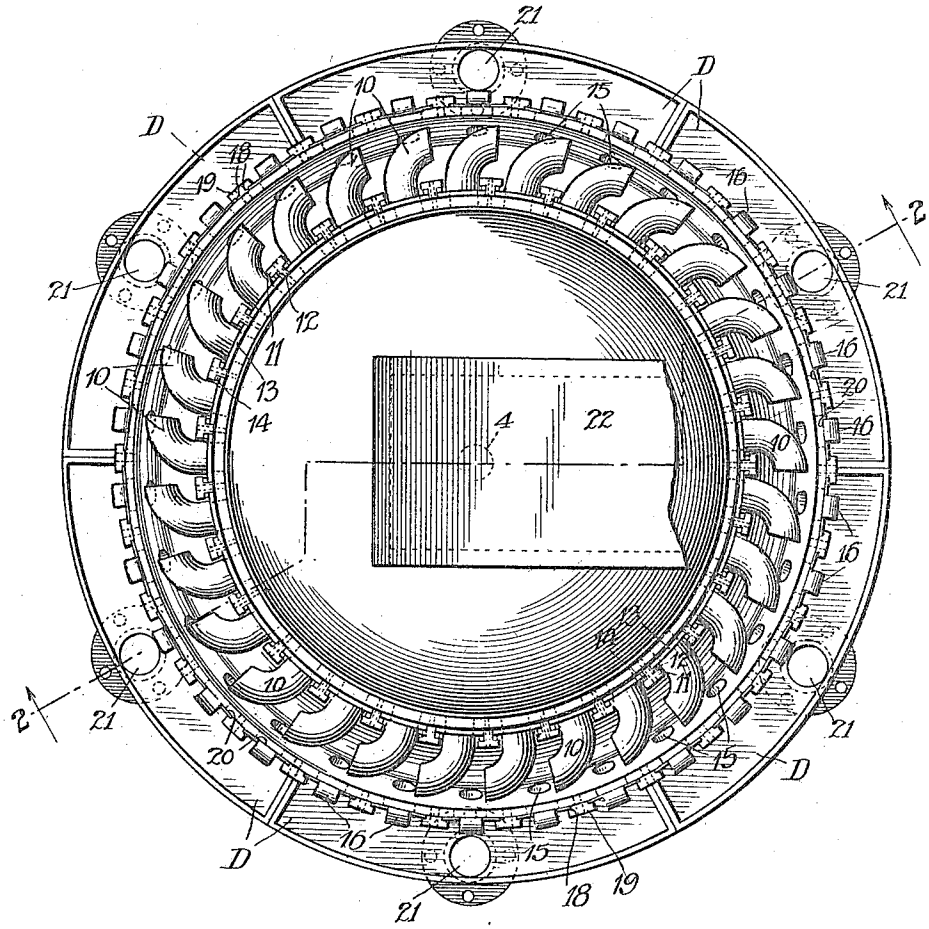
APPLICATION FILED MAR. 31, 1913. RENEWED OCT. 13, 1916.

1,208,373.

Patented Dec. 12, 1916.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
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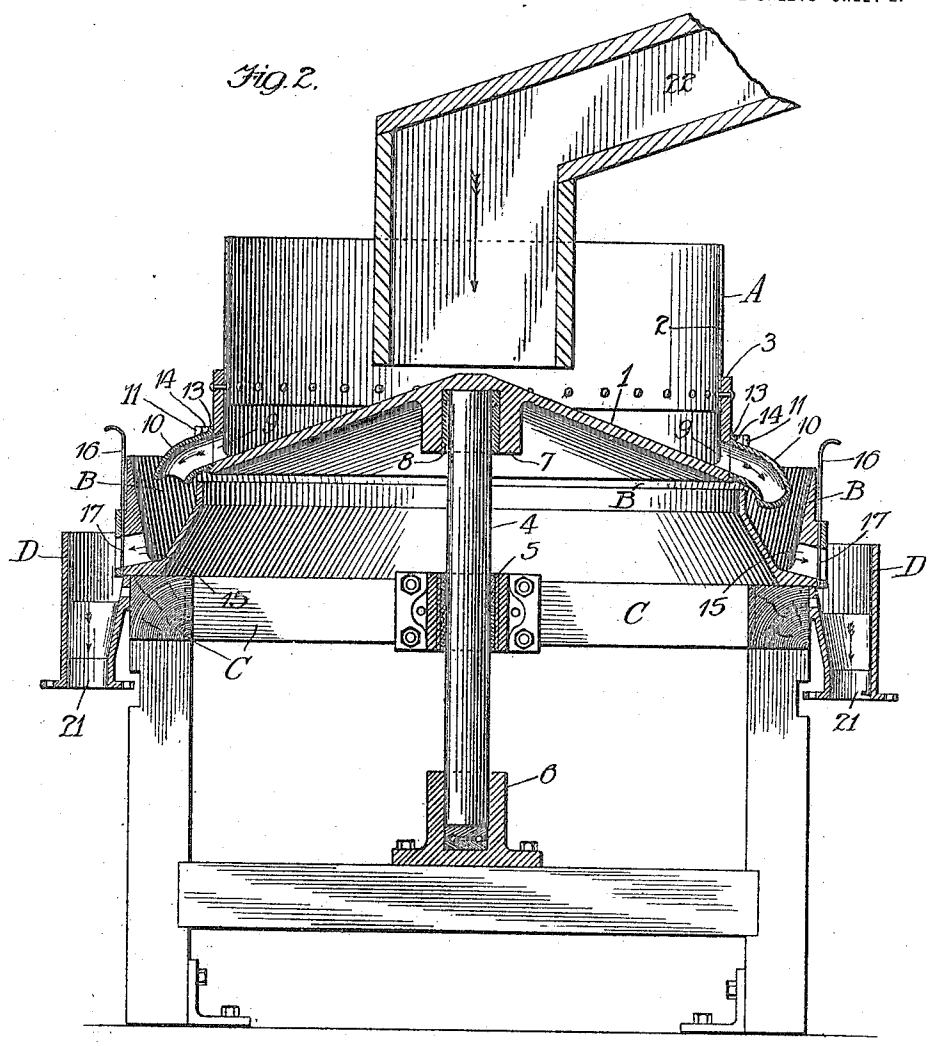
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

CLARENCE EDGAR RHODES, OF EL ORO, MEXICO.

PULP-DISTRIBUTER.

1,208,373. Specification of Letters Patent. Patented Dec. 12, 1916.

Application filed March 31, 1913, Serial No. 757,880. Renewed October 13, 1916. Serial No. 125,511.

To all whom it may concern:

Be it known that I, CLARENCE EDGAR RHODES, a citizen of the United States, and a resident of El Oro, State of Mexico, Mexico, have invented certain new and useful Improvements in Pulp-Distributers, of which the following is a specification.

This invention relates to distributers particularly designed and adapted for distributing battery pulp to classifiers, vanners, tables, tube mills and other machines used in the treatment of ore and in general to distribute any kind of pulp that is sufficiently liquid, or any kind of liquid.

The objects of the invention are to provide a pulp or liquid distributer of simple and cheap construction which will have large capacity without being excessively large in size; which, in operation, will keep the pulp constantly and thoroughly agitated; which will furnish its own motive power; which, after being once adjusted, requires no further care and attention; by means of which the pulp may be distributed to any or all of a plurality of machines or devices in constant predetermined quantities; and in the operation of which, if one or more of the machines or devices supplied by said distributer are cut off, the amount of pulp previously delivered to such machines or devices will be uniformly and automatically distributed among the other machines or devices to which pulp is being supplied.

To effect the foregoing objects, a pulp distributer of my invention comprises the various features, combinations of features and details of construction hereinafter described and claimed.

In the accompanying drawings, in which my invention is fully illustrated, Figure 1 is a top plan view of my improved distributer; and Fig. 2 is a sectional view thereof on the line 2—2 of Fig. 1.

My improved distributer comprises a receptacle, designated as a whole A, consisting, as shown, of a bottom section 1 preferably made of hard white cast iron and sides 2 made of sheet metal, preferably sheet steel, the lower end of which is riveted or otherwise rigidly secured to the upper edge of an upright marginal flange 3 formed at the edge of the bottom section 1 of said receptacle. Said receptacle A is secured to the upper end of an upright shaft 4 mounted to rotate freely in suitable bearings, comprising a bearing 5 closely adjacent to the under side of said receptacle A and a step bearing 6 for the lower end of said shaft, said step bearing preferably being a ball bearing, in order that said receptacle may turn easily. As shown, a central boss 7 is formed on the under side of the bottom section 1 of said receptacle, formed in which is a recess adapted to receive the upper end of the shaft 4, said receptacle being keyed to said shaft so as to rotate therewith. As it would be very difficult to machine the recess for said shaft directly in the boss 7 when made of white cast iron, I cast a soft metal bushing 8 into said boss in which said recess is formed directly. The bottom of the receptacle A preferably is outwardly and downwardly inclined at a slight angle to the horizontal in order that the pulp contained therein will tend to drain to the sides of said receptacle. Formed in the flange 3 of the bottom section 1, preferably in such relation that their lower sides will coincide substantially with the upper surface of the bottom of the receptacle A, are holes 9 which preferably form a series extending entirely around said receptacle. Secured to said receptacle A in communication with the holes 9 are spouts 10. As shown, said spouts are secured to said receptacle in the following manner: Secured to the outer surface of the flange 3 between the holes 9 are upright ribs 11, formed in the adjacent edges of which are grooves 12 which are adapted to receive the edges of flanges 13 formed on the spouts 10. Wedges 14 inserted between said flanges 13 and the outer sides of the grooves 12 secure the spouts 10 in position.

The spouts 10 are directed rearwardly relatively to the designed direction of rotation of the receptacle A, preferably at an angle of about 45 degrees, whereby the streams of water discharged from said spouts will operate, in an obvious manner, to rotate said receptacle A.

My improved pulp distributer also comprises a stationary launder, designated as a whole B, which is supported upon a suitable frame work, consisting, as shown, of timbers C. Said launder B forms a circular trough and is supported in such position that the spouts 10 on the receptacle A will discharge into said launder. The sides of said launder preferably extend somewhat above the discharge ends of the spouts 10, so as to pre-

vent the liquid discharged therefrom from splashing over the sides of said launder. Formed in the launder B, preferably in such relation that their lower sides will be substantially flush with the bottom of the launder, are holes 15 which preferably form a series extending entirely around said receptacle. Said holes are adapted to be closed by means of plates 16 formed in which are holes 17 corresponding to the holes 15. The edges of said plates 16 are slidably fitted to guide grooves 18 formed in the adjacent edges of ribs 19 on the outer surface of the launder B at opposite sides of each of the holes 15, the relation being such that the inner sides of said guide grooves will be formed by the outer surface of the receptacle B. As shown, the ribs 19 consist of separate pieces riveted or otherwise rigidly secured to said launder B. The plates 16 are adapted to be raised and lowered, thus regulating the discharge through the holes 15, and to provide for using flat plates 16, the portions of the surface of the launder B with which said plates are designed to contact are made flat, as shown at 20.

The pulp discharged from the launder B through the holes 15 is caught in boxes D secured to the frame C by means of bolts or in any other suitable manner. The outer sides of said boxes preferably extend upwardly about even with the tops of the holes 15, so as to prevent the streams of liquid discharged from said receptacle from passing over and beyond said boxes. Said boxes D entirely surround the launder B and comprise boxes of proper length to cover different numbers of holes 15, whereby the amount of pulp distributed to different machines or devices used in connection with said distributer may equal the discharge from one or more of the holes 15. Each of the boxes D is provided with a discharge opening 21 and comprises means for making pipe connections thereto, thus providing for connecting said boxes with the machines or devices to which the pulp is to be supplied.

Like the bottom portion 1 of the receptacle A, the spouts 10, the launder B and the boxes D are preferably made of white cast iron, which is very hard and will render all parts of the machine very durable and long lived under the wear to which they will be subjected in use.

The pulp or other liquid to be distributed is adapted to be delivered into the receptacle A through a suitable supply pipe 22.

While I have herein referred to my improved apparatus as a "pulp distributer", it is equally well adapted for distributing any kind of liquid and I do not therefore desire to limit myself to any particular application or use.

I claim:—

1. In a distributer for liquid pulp and the like, the combination of a receptacle rotatable on a vertical axis and provided with discharge openings, means in connection with said discharge openings and rendered operative by the discharge of liquid therefrom for rotating said receptacle, a launder into which said discharge openings are adapted to deliver, and distributing connections to said launder, substantially as described.

2. In a distributer for liquid pulp and the like, the combination of a receptacle rotatable on a vertical axis and provided with discharge openings, spouts which communicate with said discharge openings, the discharge ends of which are directed rearwardly, a launder into which said spouts are adapted to deliver, and distributing connections to said launder, substantially as described.

3. In a distributer for liquid pulp and the like, the combination of a receptacle rotatable on a vertical axis the bottom of which declines outwardly and downwardly and which is provided with discharge openings adjacent to its outer edge, spouts which communicate with said discharge openings the discharge ends of which are directed rearwardly, a launder into which said spouts are adapted to deliver, and distributing connections to said launder, substantially as described.

4. In a distributer of the type described, the combination of a receptacle rotatable on a vertical axis, and provided with discharge openings formed in the side walls of said receptacle, spouts which communicate with said discharge openings, a launder into which said spouts are adapted to deliver, said launder being provided with discharge openings, means for controlling said discharge openings, boxes into which said discharge openings deliver, and means for making pipe connections to said boxes, substantially as described.

5. In a distributer of the type described, the combination of a receptacle rotatable on a vertical axis, and provided with discharge openings formed in the side walls of said receptacle, spouts which communicate with said discharge openings, a launder into which said spouts are adapted to deliver, said launder being provided with discharge openings, means for controlling said discharge openings, boxes into which said discharge openings deliver, and means for making pipe connections to said boxes, substantially as described.

6. In a distributer of the type described, the combination of a receptacle rotatable on a vertical axis and provided with discharge openings, spouts, means for securing said spouts to said receptacle comprising guide

grooves on said receptacle at each side of the discharge openings therein, flanges on said spouts adapted to engage said grooves, and wedges inserted between said flanges and the outer sides of said guide grooves, a launder into which said spouts are adapted to deliver, said launder being provided with discharge openings, boxes into which said discharge openings deliver, and means for making pipe connections to said boxes, substantially as described.

7. In a distributer of the type described, the combination of a receptacle rotatable on a vertical axis and provided with discharge openings, spouts which communicate with said discharge openings, a launder into which said spouts are adapted to deliver, said launder being provided with discharge openings, plates slidably fitted to guide grooves formed on said launder at opposite sides of the discharge openings therein, said slides being provided with openings adapted to be brought into register with the discharge openings in said launder by movement of said plates, boxes into which said discharge openings deliver, and means for making pipe connections to said boxes, substantially as described.

8. In a distributer of the type described, the combination of a receptacle rotatable on a vertical axis and provided with discharge openings, spouts which communicate with said discharge openings, a launder into which said spouts are adapted to deliver, said launder being provided with discharge openings, plates slidably fitted to guide grooves formed on said launder at opposite sides of the discharge openings therein, and provided with openings in their lower ends adapted to be brought into register with the discharge openings in said launder by raising said plates, boxes into which said discharge openings deliver, and means for making pipe connections to said boxes, substantially as described.

9. In a distributer of the type described, the combination of a receptacle rotatable on a vertical axis, the bottom of which declines outwardly and downwardly, discharge openings formed in the side walls of said receptacle, spouts which communicate with said discharge openings, a launder into which said spouts are adapted to deliver, said launder being provided with discharge openings, means for controlling said discharge openings, boxes into which said discharge openings deliver, and means for making pipe connections to said boxes, said boxes comprising boxes of different numbers of discharge openings in said launder, substantially as described.

10. In a distributer of the type described, the combination of a receptacle, an upright shaft rotatably mounted in suitable bearings to which said receptacle is secured, said receptacle being provided with discharge openings, spouts which communicate with said discharge openings, a launder into which said spouts are adapted to deliver, said launder being provided with discharge openings, means for controlling said discharge openings, boxes into which said discharge openings deliver, and means for making pipe connections to said boxes, substantially as described.

In testimony that I claim the foregoing as my invention, I affix my signature this 18th day of March, 1913.

CLARENCE EDGAR RHODES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."