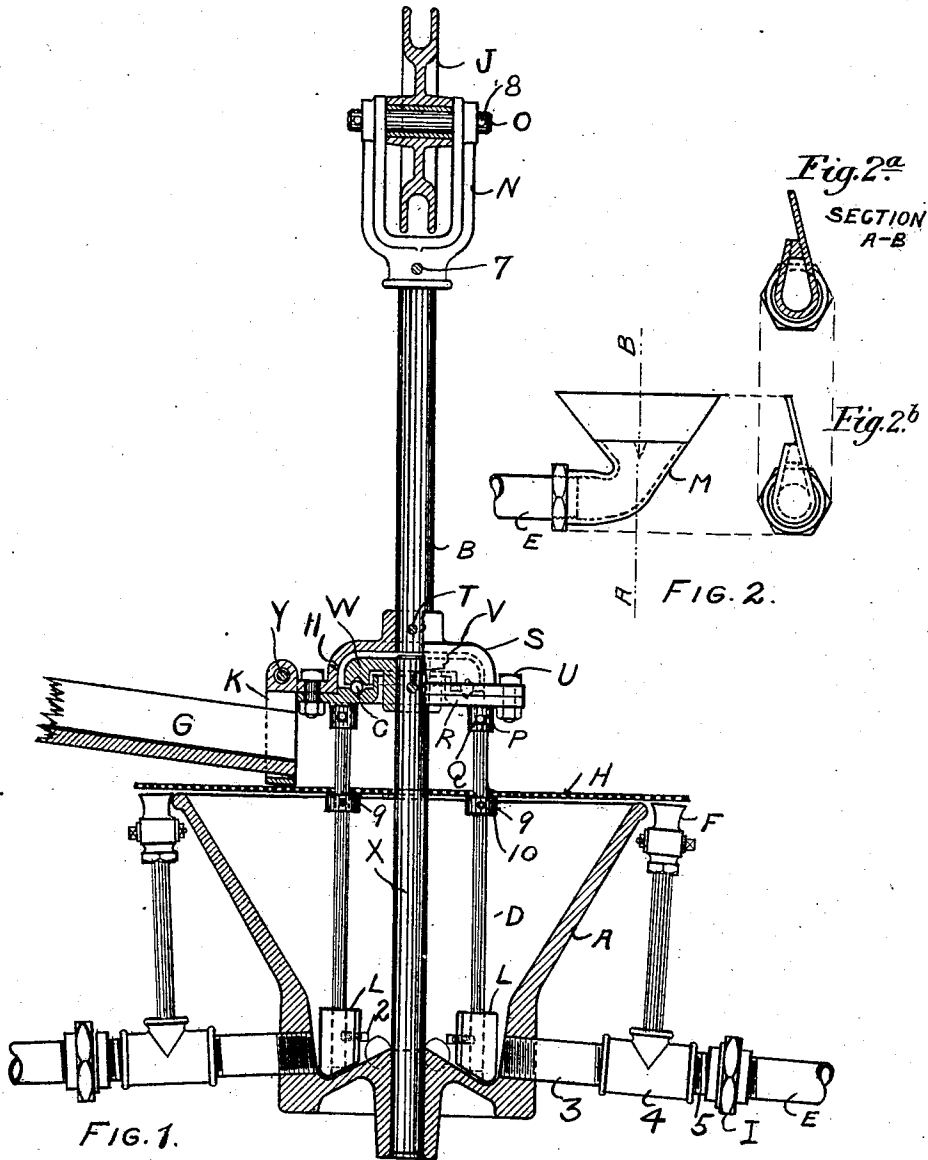


E. H. MOYLE.
 REVOLVING DISTRIBUTER FOR PULP OR LIQUID.
 APPLICATION FILED NOV. 16, 1904.

968,182.

Patented Aug. 23, 1910.

2 SHEETS—SHEET 1.



WITNESSES:

R. N. Morse

W. E. Hinne

INVENTOR.
 Edward Henry Moyle

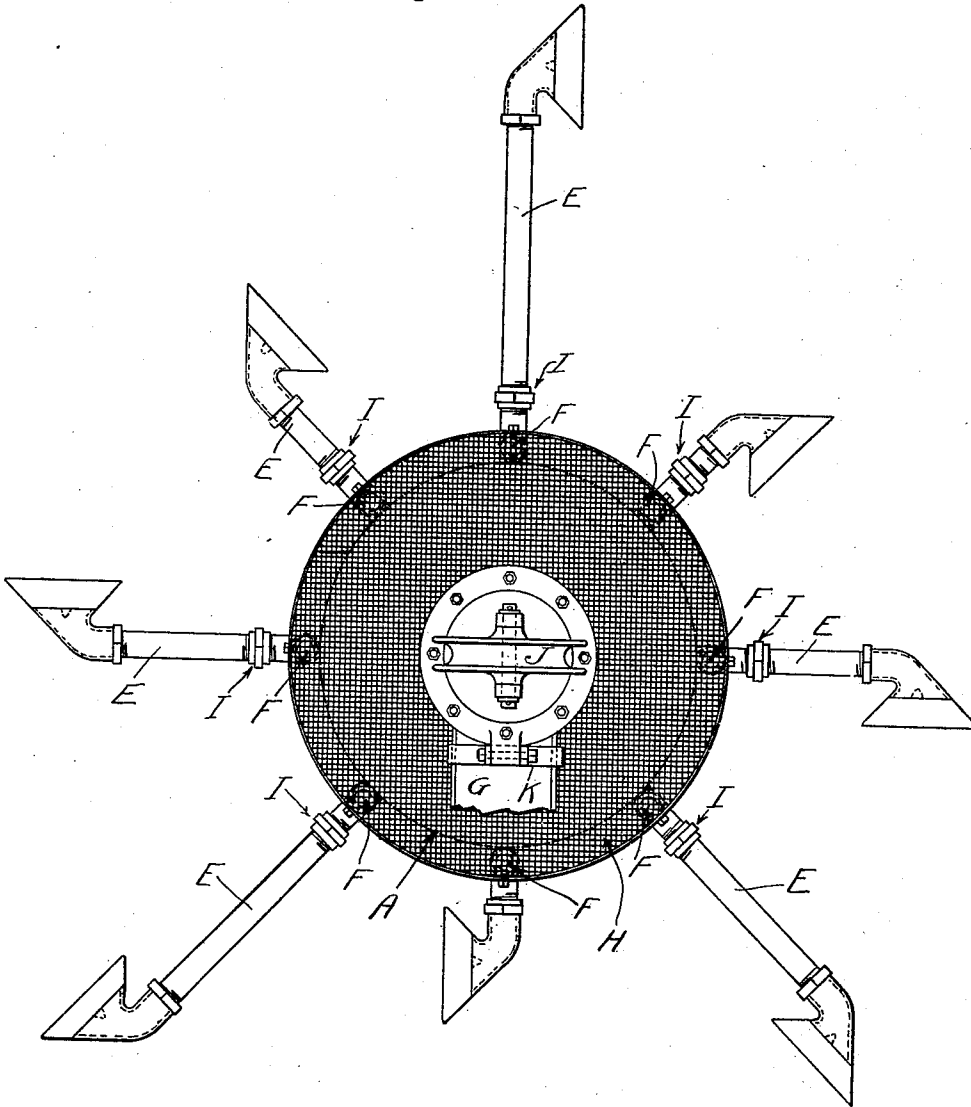
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2 SHEETS—SHEET 2.

Fig. 3.



Witnesses:
 Frank L. Graham,
 Isabel Hall.

Inventor,
 Edward Henry Moyle.
 by
 Thomas H. Hatcher, Attorney.

UNITED STATES PATENT OFFICE.

EDWARD HENRY MOYLE, OF LOS ANGELES, CALIFORNIA.

REVOLVING DISTRIBUTER FOR PULP OR LIQUID.

968,182.

Specification of Letters Patent. Patented Aug. 23, 1910.

Application filed November 16, 1904. Serial No. 233,045.

To all whom it may concern:

Be it known that I, EDWARD HENRY MOYLE, a citizen of the United States, residing at Los Angeles, State of California, have invented new and useful Improvements in Revolving Distributers for Pulp or Liquid, of which the following is a specification.

This invention relates to improvements in distributers, and the main object of my invention is, to provide means whereby the pulp or a mixture of water and sand and the like, can be thoroughly mixed before being deposited in a tank or vessel.

Another object of the invention is to increase the capacity of distributers of this character.

A further object of the invention is to govern the capacity of the non-radial outlets of the bowl.

Another object of the invention is to provide a means of admitting air to the outlet pipes.

A further object is to govern the speed or travel of the distributer.

Another object of the invention is to provide for fastening the supply trough.

A further object of the invention is to provide for the transmission of the distributer to another tank or vessel.

Another object of the invention is to provide for the spreading of the pulp or mixture of water and sand when it is discharging at outlets.

Another object of the invention is to provide for the easy revolving movement or travel of the distributer with its wearing parts submerged in oil.

Figure 1, is a vertical section of a revolving distributer, supply trough and transmission sheave. Figs. 2, 2^a and 2^b are a plan view, sectional view and sectional view respectively of the spreader which is located at the outlets. Fig. 3 is a diagrammatic plan view showing the arrangement of the distributing pipes.

A indicates the bowl. B the supporting shaft or hanger to bowl. C the balls upon which the bowl A and its parts revolve. D the mixing arms upon which are the adjustable wing plates L, which are used for mixing the pulp and also in governing the speed or travel of the distributer.

E are the outlet pipes of bowl B which are of unequal lengths. The outlets are preferably arranged with the longest outlet

diametrically opposite the shortest one and the others arranged in the same relative positions so that the spreader is balanced at all times in all directions.

M are the spreaders at the end of outlet pipes E, one of which is shown in plan view, end view, and a section taken on the lines A—B.

F are the controlling valves to regulate the pulp or the sand and water which passes through the outlets E, (which are of various lengths).

G is the supply trough, which feeds the pulp or the water and sand to the bowl.

K is the hanger or bracket which supports trough G.

H is a screen for retaining chips of wood and the like, and preventing their admittance to the bowl "A" and controlling valves "F."

I is a union or coupling, and J is a sheave for transmitting the distributers to another tank, as for instance, by means of a rail. Under this system, it also provides for the machine hanging plumb or level; although I do not wish to confine myself to a sheave alone as a flanged wheel or wheels on a track or tracks, can be used as well.

N is a yoke to connect the supporting shaft B to the sheave J.

O is the pin upon which the sheave J revolves.

P are bosses on the ball race plate R, in which the mixing arms D are fastened and held in place by the set screws Q, or any well known means.

S is the hanger plate or cup, which is fastened to the supporting shaft B by a pin T, or any well known means; the said hanger plate or cup S being used for fastening the ball race plate R by bolts U, or the like.

V is a pin or set screw which fastens the supporting shaft X to upper ball plate W.

W is the upper ball plate or ball race which rotates upon the balls C, and to which is fastened the revolving shaft X, which is fastened to bowl A.

The inner edge of the plate R is flanged or turned up to form a rim for holding oil in which the balls C are submerged.

Y is a pin or bolt for fastening the hanger K.

2 is a set screw for adjusting or fastening the plate L to mixing arm D.

3 is a nipple or pipe for connecting bowl A to tee 4; 5 is a nipple or pipe for connect-

ing tee 4 to union I; M is a spreader casting, which is at an angle to outlet pipes E, and said spreader casting located at the extreme end of outlet pipe E. This spreader casting M is formed at an angle, so that when the pulp discharges through same, it causes the bowl A to revolve, and the spreader casting M to spread the pulp, water and sand, or the like.

7 is a pin or set screw used to fasten the supporting shaft B to the yoke N.

9 are collars for supporting the screen H. 10 are pins for fastening said collars to the arms D. 8 is a pin for retaining the pin O, and 11 is an oil-hole.

In operation the pulp and solution are fed into the bowl A through the trough G and screen H, and from there it passes into the pipes E. As it escapes from the ends of the pipes it passes through the spreaders M, and by reason of the inclination of the spreaders and the reaction of the escaping material the bowl is caused to rotate and thereby deliver the material in even streams around within the tank, the different spreaders being preferably arranged at different distances from the bowl to cause the distribution to be uniform from center to circumference as well as circumferentially. As the bowl is thus automatically carried around, the material in the bottom is subjected to the action of the agitators or wings L which thoroughly mix it before it passes into the pipes E, and thereby prevents pockets or bunches of rich material being deposited in the tank which are apt to be more dense than the coarser material and therefore require longer time for percolation. The wings also assist in forcing the material into and through the pipes by reason of their inclination which is secured by the adjustment of the arms D. They also help to regulate the rotation of the bowl by being so set as to present more or less of their surfaces to the advancing material. The passage of the material through the pipes E is also partly controlled by the valves F in the stand-pipes extending up from the respective pipes E which can be set so as to permit of the entrance of a greater or less amount of air into said pipes; as the greater the amount of air admitted, the faster the flow of the material. This permits of regulating the flow of the material so that a greater quantity will not pass through the shorter pipes than the longer ones, and thereby prevents more material being deposited toward the center than the periphery, as would be the case unless some means were adopted to prevent it.

I am aware that there are distributors for distributing pulp, sand and water, or the like in vessels, I therefore do not claim such a combination broadly; but,

What I claim is:—

1. In a pulp distributor, a bowl, distribut-

ing pipes leading therefrom, means at the outlets of said pipes for causing the bowl to rotate by reaction, and means for agitating the material in the bowl before it passes into said pipes.

2. In a pulp distributor, a bowl, pipes of different lengths projecting therefrom, non-radial means at the outlets of said pipes for discharging the material and thereby causing the bowl to rotate, and means for agitating the material before it passes into said pipes.

3. In a pulp distributor, a bowl, distributing pipes leading therefrom, a spreader at the outlet of each pipe discharging at an angle to the pipe, and means for agitating the material in the bowl before it passes into said pipes.

4. In a pulp distributor, a bowl, pipes of different lengths radiating therefrom, a rearwardly-extending flat, fan-shaped spreader at the outer end of each pipe for discharging the material and causing the bowl to rotate, and means for agitating the material before it passes into said pipes.

5. In a pulp distributor, a bowl, pipes of different lengths projecting radially therefrom, the outer end of each pipe being provided with a reaction discharge, means for regulating the passage of material through said pipes, and means for agitating the material before it passes into said pipes.

6. In a pulp distributor, a bowl, pipes of different lengths projecting radially therefrom, the outer end of each pipe being provided with a reaction discharge, a stand-pipe on each of said pipes, a regulator in each stand-pipe, and means for agitating the material before it passes into said pipes.

7. In a pulp distributor, a bowl, distributing pipes projecting radially therefrom, automatic means for causing the rotation of the bowl, and adjustable means within the bowl for regulating the entrance of material to the pipes and controlling the rotation of the bowl.

8. In a pulp distributor, a bowl, distributing pipes projecting radially therefrom, automatic means for causing the rotation of the bowl, adjustable plates in the bowl for regulating the entrance of material to the pipes and controlling the rotation of the bowl.

9. In a pulp distributor, a bowl, distributing pipes projecting radially therefrom, each provided with means for automatically causing the rotation of the bowl, rotatably adjustable arms in the bowl, each provided with a wing-plate at its lower end, and means at the upper end for securing each arm in its adjusted position.

10. In a pulp distributor, a hanger, a bowl rotatably suspended therefrom, and provided with radially-extending pipes, means for causing the bowl to rotate auto-

matically, and means for controlling said rotation.

11. In a pulp distributor, a hanger, a plate on the lower end thereof, a shaft below the hanger, a plate on its upper end for engaging with the other plate, a bowl secured to the shaft and provided with radially-extending pipes, and means for rotating the bowl.

12. In a pulp distributor, a hanger, a plate on the lower end thereof provided with an inwardly-projecting portion, a shaft below the hanger, a plate on the upper end thereof adapted to be supported by said inturned portion, a bowl on said shaft provided with radially-extending pipes, and means for rotating the bowl.

13. In a pulp distributor, a hanger, a plate on the lower end thereof provided with an oil-hole, a ball race-plate secured to said plate, the inner edge of which is flanged upward, balls in said race, a plate on said balls, a shaft secured to the second-mentioned plate, a bowl secured to the lower end of the shaft and provided with radially-extending pipes, and means for rotating the bowl.

14. In a pulp distributor, a hanger, a plate secured to the lower end thereof, a bowl rotatably suspended from the hanger and provided with radially-extending pipes, arms depending from said plate, and an adjustable plate on the lower end of each arm.

15. In a pulp distributor, a hanger, a plate secured to the lower end thereof provided with bosses, a bowl rotatably suspended from the plate, pipes extending radially from the lower portion of the bowl, rotatable arms extending from said bosses down into the bowl, a wing plate on the lower end of each arm, and a set screw in each boss for securing said arms against rotation.

16. In a pulp distributor, a rotatable bowl provided with distributing means, a stationary screen above the bowl, and means for feeding pulp to the bowl through the screen.

17. In a pulp distributor, a hanger, a plate at the lower end thereof provided with arms, a bowl rotatably suspended from said plate and provided with distributing means, a screen supported by said arms at the top of the bowl, and a trough for feeding pulp onto the screen.

18. In a pulp distributor, two axially aligned shafts, means for rotatably connecting the same, means at the upper end of the upper shaft for movably supporting it, and a pulp distributor connected with the lower end of the other shaft.

19. In a pulp distributor two axially aligned shafts, anti-friction means for rotatably connecting the adjacent ends of said shafts, a yoke at the upper end of the upper shaft, a sheave in the yoke, and a pulp distributor secured to the lower end of the lower shaft.

20. In a pulp distributor, a rotatable bowl provided with distributing means, controlling valves to regulate the distributing means, and a screen covering the rotatable bowl and the controlling valves.

21. In a pulp distributor, a bowl, distributing pipes leading therefrom, a shaft supporting the bowl, and a wheel directly above and supporting the shaft and adapted to travel along a supporting way.

22. In a pulp distributor, a bowl, distributing pipes of different lengths extending radially therefrom, the longest pipe being located diametrically opposite the shortest pipe and the other pipes being arranged in the same relative positions, whereby the bowl and pipes are balanced at all times, and means at the outer end of each pipe for discharging the material therefrom so as to cause the bowl to be rotated by reaction.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD HENRY MOYLE.

Witnesses:

G. F. BECKHAM,

J. E. SCHWENG.