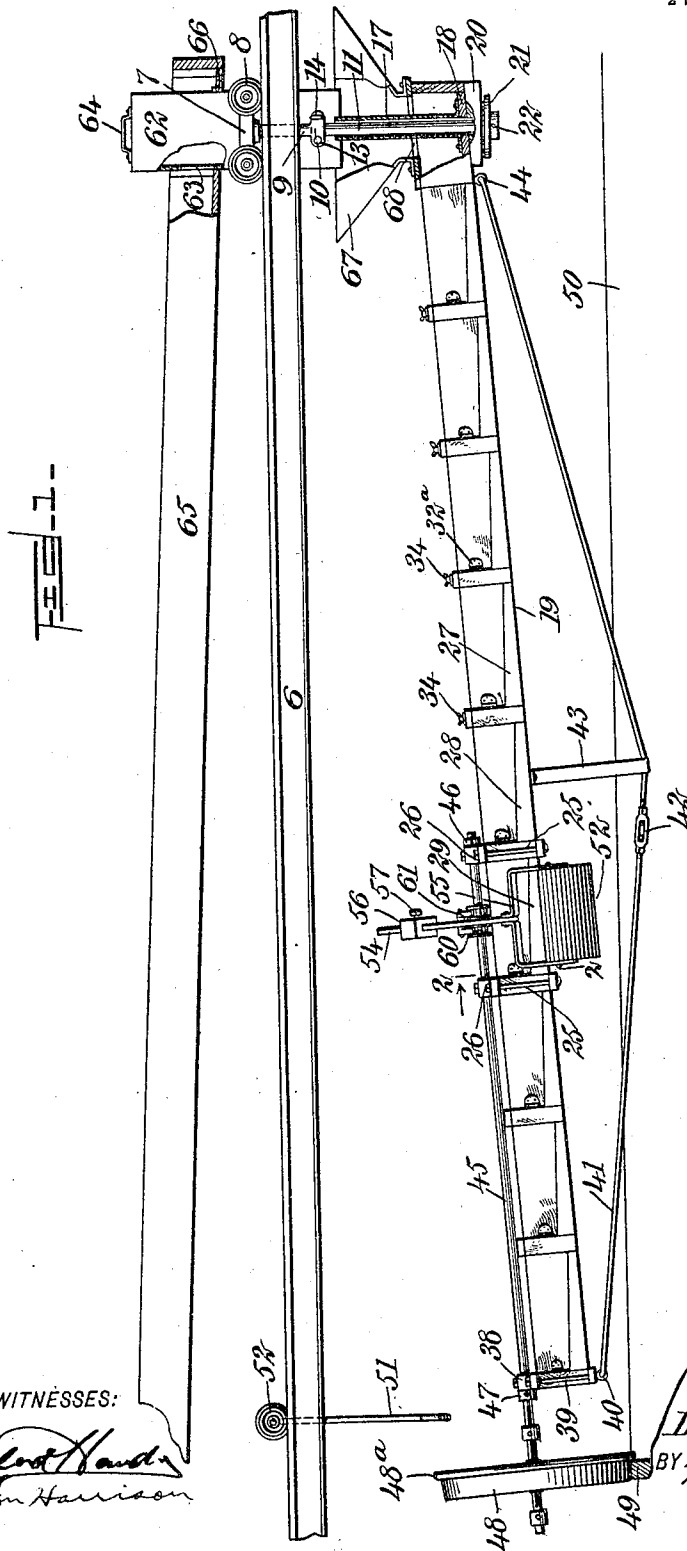


No. 838,196.

PATENTED DEC. 11, 1906.

D. LONIE.
PULP DISTRIBUTER.
APPLICATION FILED DEC. 5, 1905.

2 SHEETS—SHEET 1.



WITNESSES:

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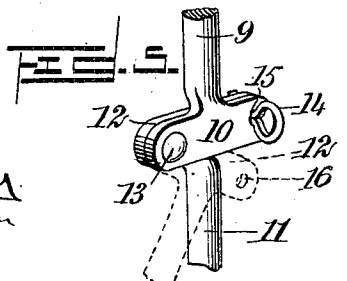
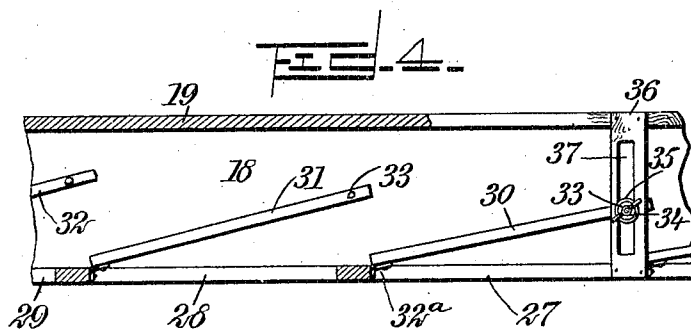
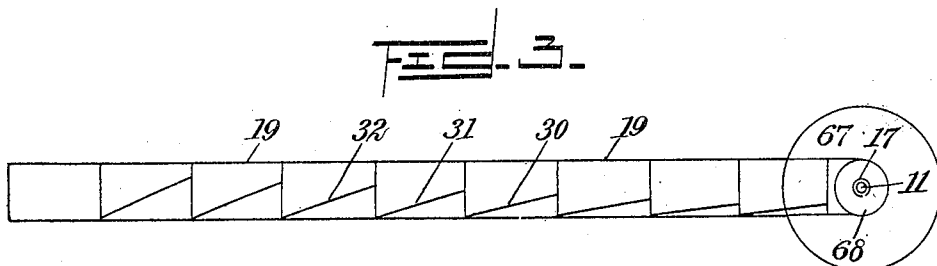
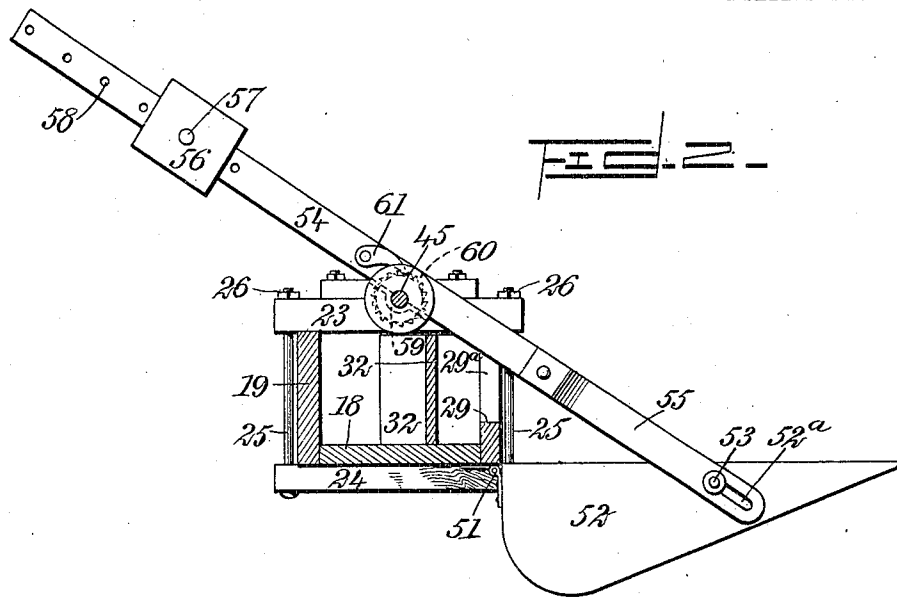
ATTORNEYS

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2 SHEETS—SHEET 2.



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DAVID LONIE, OF FAIRVIEW, BRITISH COLUMBIA, CANADA, ASSIGNOR
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PULP-DISTRIBUTER.

No. 838,196.

Specification of Letters Patent.

Patented Dec. 11, 1906.

Application filed December 5, 1905. Serial No. 290,360.

To all whom it may concern:

Be it known that I, DAVID LONIE, a subject of the King of Great Britain, and a resident of Fairview, in the Province of British Columbia and Dominion of Canada, have invented a new and Improved Pulp-Distributor, of which the following is a full, clear, and exact description.

My invention relates to pulp-distributers intended for general use, and more particularly to such types of pulp-distributers as are used in connection with cyanid-mills and similar apparatus for extracting precious metals from ores and tailings.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation, partly broken away, showing the mechanism ready for use. Fig. 2 is an enlarged section upon the line 2 2 of Fig. 1 looking in the direction of the arrow and showing the automatic dumping-pan. Fig. 3 is a diagrammatic plan view showing the radially-movable chute. Fig. 4 is an enlarged fragmentary section through the radially-movable chute, showing the gates 30, 31, and 32, together with means for adjusting the same; and Fig. 5 is a perspective view of the joint used for allowing the chute to be raised for purposes of moving the same from one tank to another.

An elevated track 6 is engaged by a car 7, provided with wheels 8, each directly engaging the track. Depending from the car 7 is a stem 9, provided with a head 10. Depending from this head 10 is another stem 11, provided with a head 12, the heads 10 and 12 being connected by a pivot 13. By this means the stem 11 is adapted to swing relatively to the stem 9, as will be understood from Fig. 5. A key 14 is inserted through holes 15 16 in the heads 10 and 12 and normally prevents the stem 11 from swinging. (See full and dotted lines in Fig. 5.) Encircling the stem 11 is a tube 17, which is mounted upon the bottom 18 of a chute 19, the latter being adapted to move angularly around the stem 11 as a center. An angle-block 20 engages the under side of the chute and is supported by an annular plate 21, the latter being held in position by means of a pin 22, so that it may be readily disengaged by withdrawing

the pin. Mounted upon the top and bottom of the chute 19 are beams 23 24, held against the chute by bolts 25, secured rigidly in position by means of nuts 26, as will be understood from Fig. 2. The chute 19 is provided throughout its entire length with a series of dams 27 28 29, and over these dams is a series of gates 30, 31, and 32, the latter being provided with pins 33, which are each engaged by a thumb-nut 34, as will be understood from Fig. 4. Beneath each thumb-nut is an annular plate 35, which engages a bridge 36, provided with a slot 37. By loosening the thumb-nut 34, moving the gate 30 to the desired angular position, and tightening the thumb-nut the several gates may be adjusted to different angles. (See Figs. 3 and 4.) Each gate, such as 30, 31, and 32, is also connected with a hinge 32^a to accommodate its position to any angle desired. Surmounting the outer end of the chute 19, so as to support the same, is a bearing 38, connected by bolts 39 with an eye 40. Connected with this bolt is a tie-rod 41, provided with a turnbuckle 42. Engaging this tie-rod is a brace 43, which engages the lower side of the chute, as will be understood from Fig. 1. The tie-rod also engages an eye 44, disposed comparatively near the opposite end of the chute. A revoluble shaft 45 is provided with set-collars 46 47 and is free to turn. Mounted rigidly upon this shaft 45 is a wheel 48, provided with a flange 48^a and engaging the upper surface 49 of a cylindrical tank 50. When the chute 19 is moved angularly around the stem 11 as a center, the wheel 49 simply rolls around upon the top of the tank, as will be understood from Fig. 1.

A hook 51 is connected with and depends from a carriage 52, adapted to travel along the track 6. This hook 51 supports the shaft 45 and the chute 19 when the latter are raised into such position that the hook may directly engage the shaft. When the shaft and the chute are thus raised and supported, the entire chute, together with all of its immediate attachments, may be moved around the track 6 from one tank to another. By means of hinges 51 a dumping-pan 52 is supported in such position that it may readily be filled, as will be understood from Fig. 2. Mounted upon opposite sides of the dumping-pan 52 are pins 53, which pass through slots 52^a in a fork 55, the latter being readily mounted

upon and movable with a rocking beam 54. A weight 56 is slidably mounted upon this rocking beam and is provided with a thumb-bolt 57, whereby it may be adjusted relatively to the rocking beam. This thumb-bolt is adapted to engage different holes 58, so that by moving the weight 56 to any desired distance upon the rocking beam 54 and securing it in proper position the weight of the pan 52 may be readily counterbalanced.

The rocking beam 54 is provided with a bearing 59, which engages the shaft 45. Mounted rigidly upon this shaft is a ratchet-wheel 60, and loosely engaging this ratchet-wheel, for the purpose of operating the same, is a pawl 61. Whenever the pan 52 is filled with the ore product, such as tailings admixed with water, the weight of the pan is so increased that the counterweight 56 is raised slightly and the pawl 61 and the ratchet-wheel 60 cause the shaft 45 to turn to a small extent. This causes a partial rotation of the wheel 48, and therefore advances the general position of the chute 19. The idea is that the chute 19 moves around step by step, each step representing a filling and emptying of the dumping-pan. A box 62 is provided with an opening 63 and with a handle 64, the latter being used for lifting it from and replacing it upon the car 7. The trough 65 is cut away at 66, so as to allow the box 62 to be placed within it, as indicated in Fig. 1. When the box is in the position shown, the opening 63 registers with the trough 65, so that the tailings may pass obliquely down through the trough 65, opening 63, and box 62. Encircling the tube 17 is a hopper 67, provided with an aperture 68, opening into the chute 19.

The operation of my device is as follows: The car 7, provided with the box 62, is moved along the track 6 to a point directly over the tank 50, of which there may be any number disposed at intervals below the track. The car 7 is now centered relatively to the tank, and the hook 51 is released, so as to lower the wheel 48 into engagement with the upper surface 49 of the tank. The tailings are now discharged through the trough 65, passing downward into the hopper 67 and thence into the chute 19. The several gates 30, 31, and 32 having been adjusted to different angles, as indicated diagrammatically in Fig. 3, the tailings are discharged over the several dams 27, 28, and 29, substantially the same amount passing over each dam. In this way the distribution is made absolutely equal, the same quantity being discharged from a dam near the center as from a dam near the outer circumference of the tank. The pan 52 is now filled, and owing to the superincumbent weight of the material contained it dumps into the tank automatically, as above described. Each motion of the dumping-pan 52 turns the shaft 45 and causes the chute 19 to move one step forward, as above explained.

The net result is that the angular position of the chute 19 is continually changing, so that the tailings being constantly discharged over the dams 27, 28, and 29 are evenly distributed into the tank. The subsequent processes for recovering the precious metals from the tailings are well known and need not be here described. It will be noted that the several gates 30, 31, and 32 are adjusted progressively—that is, reckoning outward from the center of revolution each successive gate is opened a little wider for the inflow of the tailings, and this insures evenness of distribution. When it is desired to move the chute 19 and its accompanying parts to another tank, the shaft 45 is lifted, so as to be supported by the hook 51, and the car 7 is pushed along the track. The box 62 may be lifted out for the purpose of adjusting it to the next inlet-chute 65.

By the arrangement above described a single chute and its accompanying parts can do the entire distributing-work of a cyanid plant containing a considerable number of tanks.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a pulp-distributor, the combination of a chute, means for rendering the same movable upon a center, a revoluble shaft connected with said chute and provided with a revoluble member, a track for supporting said revoluble member, a pan mounted upon said chute and adapted to be filled, and mechanism connecting said pan with said revoluble member for the purpose of moving said chute.

2. In a pulp-distributor, the combination of a track, a car mounted thereupon, a chute connected with said car and adapted to move around the same as a center, and mechanism connected with said chute and controllable by the flow of the pulp therefrom for causing said chute to travel around said car as a center.

3. In a pulp-distributor, the combination of a chute adapted to move into different positions, a revoluble shaft for actuating said chute, and mechanism controllable automatically by the flow of pulp through said chute for actuating said revoluble shaft.

4. In a pulp-distributor, the combination of a movable chute, a discharge-gate mounted upon said chute, means for discharging into said chute the material to be operated upon, and motor mechanism operated by the movement of the material so discharged for causing said chute to move.

5. In a pulp-distributor, the combination of a chute provided with a discharge-gate, a revoluble member for supporting said chute, a surface upon which said revoluble member rests, and motor mechanism connected with said chute and controllable automatically

by the flow of the pulp for moving said chute into different angular positions.

5 6. In a pulp-distributor, the combination of a movable car, a track for supporting the same, a chute connected at one of its ends with said car and adapted to rotate around the same as a center, means for discharging pulp into said car, and mechanism for regulating the discharge of said pulp from said chute.

15 7. In a pulp-distributor, the combination of a chute, means for causing the same to rotate around a center, a plurality of gates mounted upon said chute, means for adjusting said gates to different angles, and mechanism for discharging into said chute the pulp to be distributed.

20 8. In a pulp-distributor, the combination of a car, a two-part stem depending therefrom and provided with a joint, a chute journaled upon the lower part of said stem and provided with gates for discharging pulps, and means for causing said chute to rotate upon said stem as a center.

25 9. In a pulp-distributor, the combination of a track, a car mounted thereupon and adapted to travel, a chute connected pivotally with said car and adapted to be partly

supported by said car, and mechanism independent of said car and movable upon said track, for partially supporting said chute at a point removed from said car. 30

10. The combination of a track, a car mounted to travel thereupon, a chute swiveled upon said car, means connected with said car for discharging pulp or the like into said chute, and mechanism for partially supporting said chute, said mechanism being provided with wheels for engaging said track. 35

11. The combination of a chute, means for enabling the same to travel angularly around a center, means for discharging pulp into said chute, a pan carried by said chute and adapted to receive pulp or the like discharged therefrom, a medium connected with said pan and actuated by movements thereof for changing the normal position of said chute. 40 45

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses 50

DAVID LONIE.

Witnesses:

H. E. GRANT,
WM. J. LARKIN.