

No. 616,140.

Patented Dec. 20, 1898.

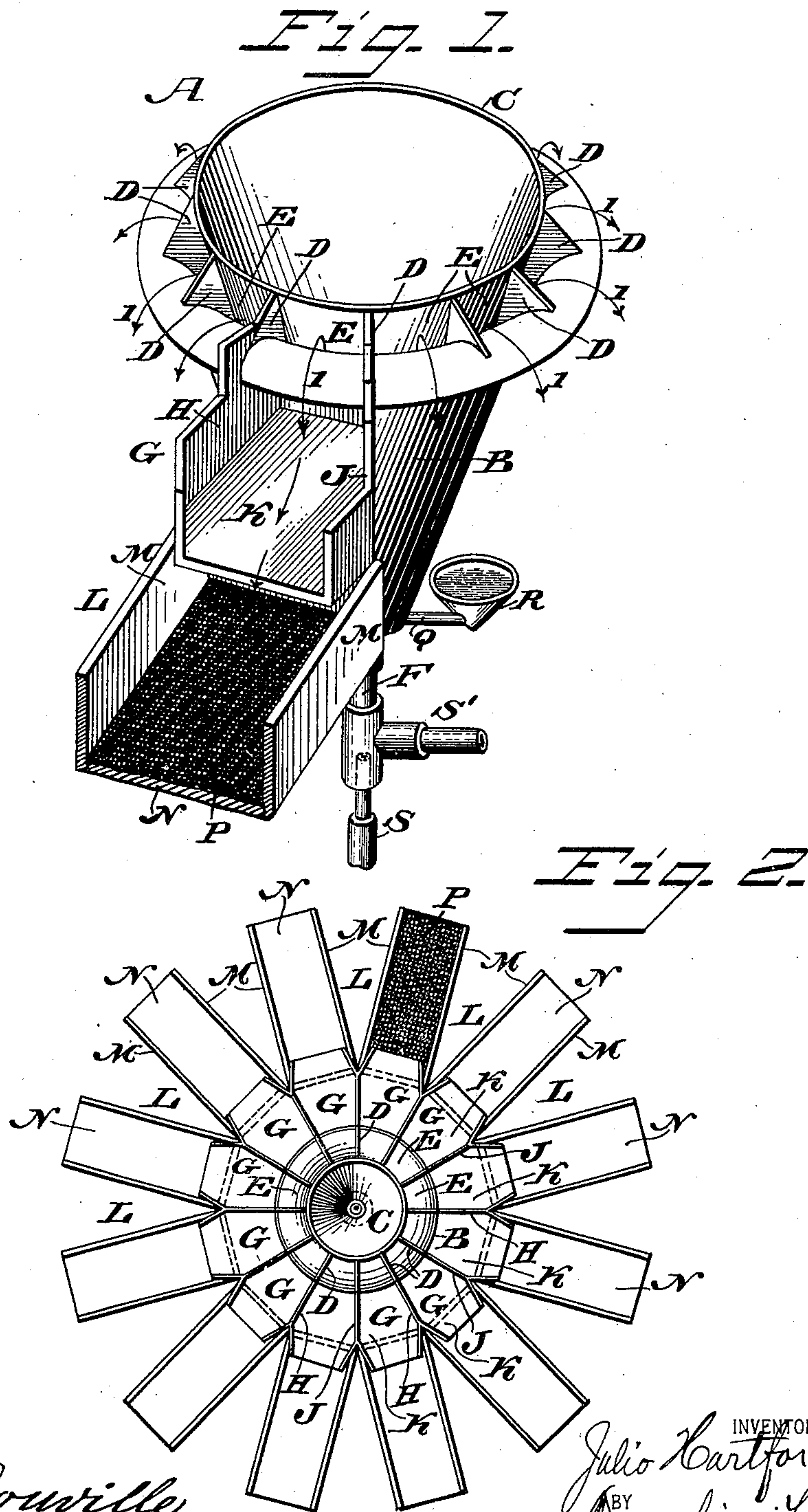
J. H. RAE.

CONCENTRATOR AND DISTRIBUTER.

(Application filed Oct. 21, 1897.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES

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INVENTOR.

Julio Hartford Rae,
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ATTORNEYS

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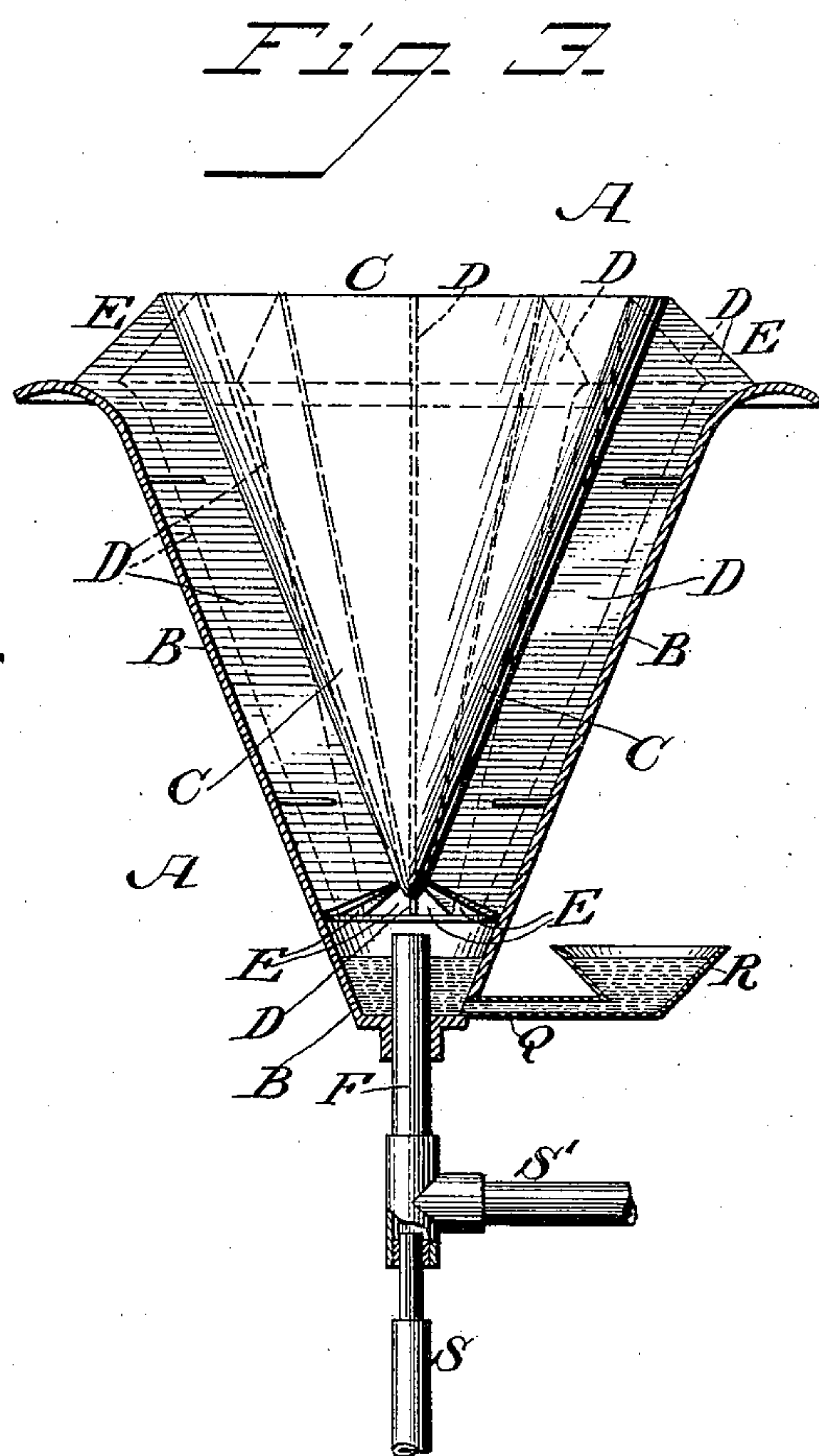
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UNITED STATES PATENT OFFICE.

JULIO HARTFORD RAE, OF PHILADELPHIA, PENNSYLVANIA.

CONCENTRATOR AND DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 616,140, dated December 20, 1898.

Application filed October 21, 1897. Serial No. 655,902. (No model.)

To all whom it may concern:

Be it known that I, JULIO HARTFORD RAE, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Concentrators and Distributers, which improvement is fully set forth in the following specification and accompanying drawings.

10 My invention consists of an improved construction of distributer and concentrator, the novel features of which will be hereinafter fully set forth, and particularly pointed out in the claims.

15 Figure 1 represents a perspective view of a portion of a distributer and concentrator embodying my invention. Fig. 2 represents a plan view, on a reduced scale, of the distributer and concentrator, showing the parts in assembled position. Fig. 3 represents a longitudinal sectional view of Fig. 1, certain of the parts being shown in elevation.

Similar letters of reference indicate corresponding parts in the figures.

25 Referring to the drawings, A designates an amalgamator, the same in the present instance consisting of an inverted cone B, within which is located the inverted cone C, it being noted that plates D are placed between the cones B and C, so as to keep the two latter separated from each other and also divide the space between said cones into compartments E, through which latter passes the pulp during the process of amalgamation, said pulp 35 being fed to the amalgamator A through the pipe F.

G designates distributers, the same consisting of the sides H and J and bottom portions K, it being noted that each distributer G is 40 open at one end to permit the pulp, which overflows from the amalgamator A and drops into said distributers, as indicated by the arrows 1, to escape therefrom and fall upon the concentrators L, which latter consist of the sides M and bottom portions N, it being noted that said portions N are covered with canvas or other suitable material P, so that the latter may catch the pulp that falls thereupon and at the same time permit the water in the pulp 50 to escape through the open ends of the concentrators L.

The operation is as follows: The outer wall

of the cone C and the inner wall of the cone B and the plates D between said cones may be coated with quicksilver, if desired, so that 55 the loose particles of gold, silver, and other precious metals in the pulp may adhere to the same while the latter is being forced through the amalgamator A. The loose particles of gold and silver which do not come in contact 60 with the coated faces of the cones B and C and plates D, being heavier than the other portions of the pulp, drop into the lower portion of the cone B and are caught by quicksilver therein, which passes from said bottom 65 portion through the pipe Q and enters the receptacle R, from which the amalgam therein may be removed in any suitable manner, although it will be understood that other means 70 than the pipe Q and receptacle R may be employed without departing from the spirit of my invention. The lighter particles of the pulp in the amalgamator are forced upwardly through the compartments E by a jet of water from the pipe S or S', said pipe S preferably 75 serving as an injector or forcing-pipe to propel the material introduced through the pipe S', and flow over the flaring edge of the cone B and drop into the distributers G, and are directed by the latter to the concentrators L, 80 down which said pulp flows, the canvas or corrugated bottom of said concentrators catching and retaining the remaining particles of metal, which latter can be readily removed.

It will of course be understood that the 85 cones B and C may be other than conical shape and the same may be assembled in any suitable manner.

Having thus described my invention, what I claim as new, and desire to secure by Letters 90 Patent, is—

1. An amalgamator having inner and outer vessels with separating-plates forming pulp-compartments open at the top, a pulp-supply 95 pipe leading into the base of said compartments, distributers extending radially from said outer vessel and receiving the overflow of said compartments and radially-extending concentrators secured to said outer vessel and receiving the discharge of said distributers, in combination with a pipe leading 100 from the lower portion of the outer vessel, said pipe being provided with a receptacle for the purpose named.

2. In an amalgamator, inner and outer cones provided with radial separating-plates, forming pulp-passage compartments, a pulp-supply pipe leading into the base of said compartments, distributors receiving the overflow of said compartments, a force-pipe connecting with said supply-pipe, and a pipe leading from the lower end of said outer cone, said outer cone having an upper flaring edge.
3. An amalgamator having inner and outer vessels with radial upright separating-plates forming pulp-compartments open at the top and having flaring top edges on their outer walls, a pulp-supply pipe leading into the base of said compartments, means connected with said pipe for forcing the pulp-supply upwardly in the said pipe, and a pipe leading from the base of said compartments and provided at its outer end with a receptacle for the purpose set forth.
4. In an amalgamator, inner and outer vessels having upright separating-plates located therebetween, thereby forming pulp-passage compartments, a pulp-supply pipe leading into the base of said compartments, a force-pipe connecting with said supply-pipe, a pipe leading from the lower portion of said outer vessel, a receptacle with which said pipe communicates, distributors receiving the overflow of said compartments, and a series of concentrators for said distributors, said concentrators having a bottom of canvas or analogous material.
5. An amalgamator, consisting of inner and outer vessels, having separating-plates located therebetween, whereby pulp-receiving compartments are formed, a pulp-supply pipe leading into the lower portion of said compartments, and a force-pipe connecting with said supply-pipe, in combination with a pipe leading from the lower portion of said outer vessel, said last-mentioned pipe being provided with a receptacle for the purposes named.
- JULIO HARTFORD RAE.
- Witnesses:
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