

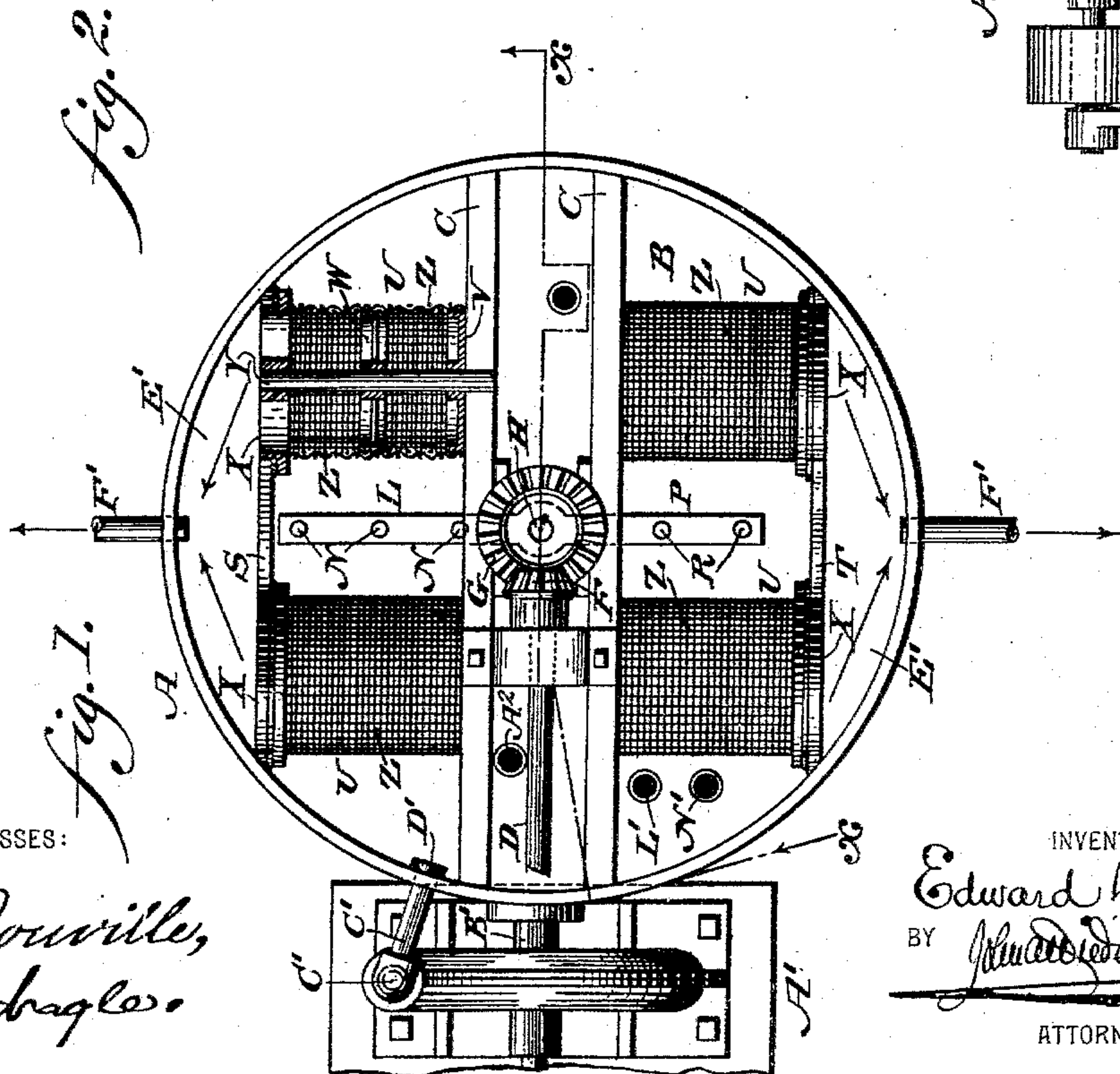
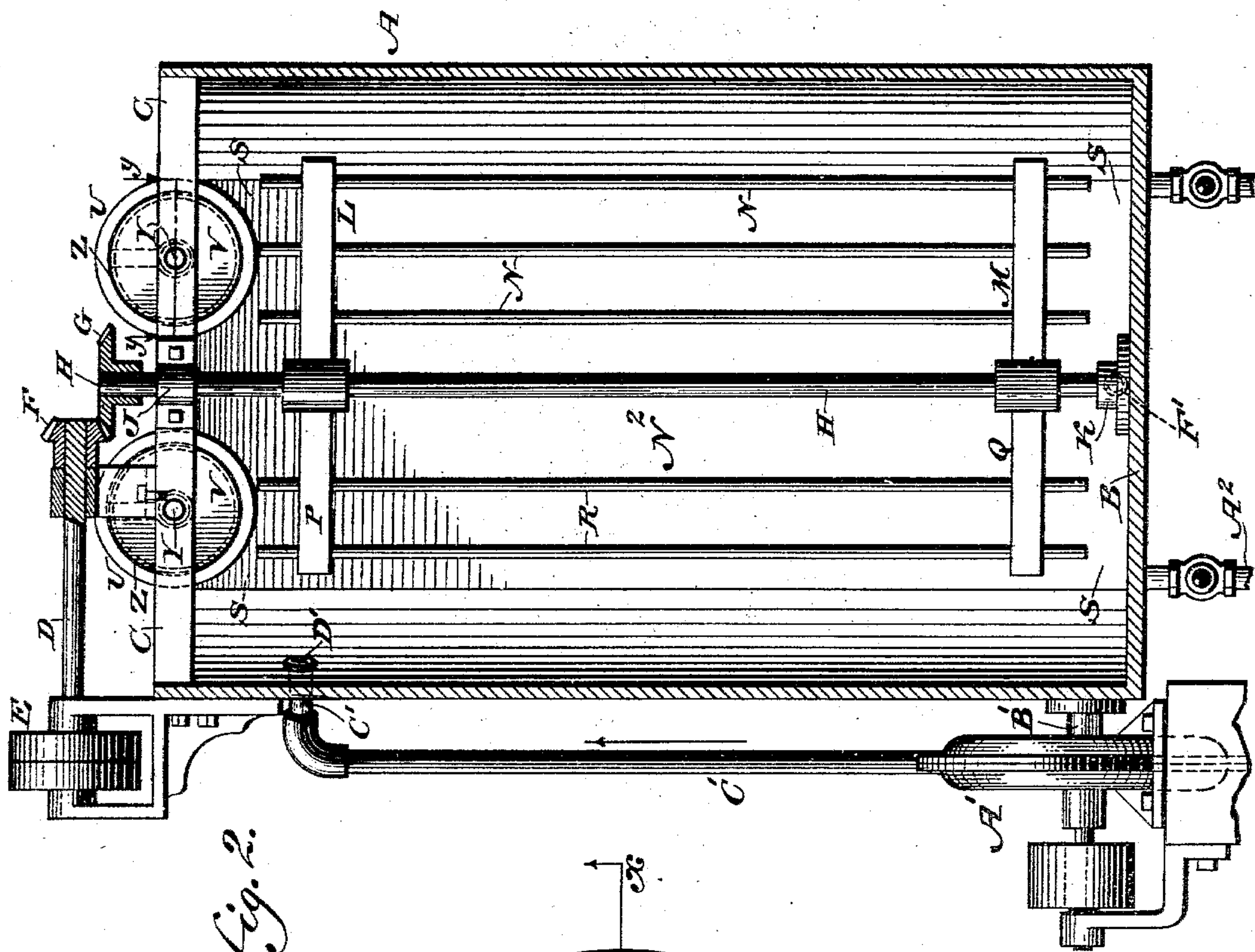
(No Model.)

E. D. SPEER.

APPARATUS FOR BEATING AND CLEANING WOOD PULP.

No. 597,752.

Patented Jan. 25, 1898.



WITNESSES:

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APPARATUS FOR BEATING AND CLEANING WOOD-PULP.

SPECIFICATION forming part of Letters Patent No. 597,752, dated January 25, 1898.

Application filed December 24, 1896. Serial No. 616,939. (No model.)

To all whom it may concern:

Be it known that I, EDWARD D. SPEER, a citizen of the United States, residing at Providence, in the county of Cecil, State of Maryland, have invented a new and useful Improvement in Apparatus for Beating and Cleaning Wood-Pulp, &c., which improvement is fully set forth in the following specification and accompanying drawings.

10 My invention consists of an improved construction of apparatus for beating and cleaning wood-pulp; and it consists, primarily, in a novel construction of tank into which the pulp is introduced and means for thoroughly
15 beating or whipping the pulp, for causing a proper circulation to be imparted to the same, and for cleaning said pulp.

It further consists of novel details of construction, all as will be hereinafter set forth, and specifically pointed out in the claims.

20 Figure 1 represents a plan view, partly in section, on line *y y*, Fig. 2, of a tank into which the pulp is first conducted, the same being provided with devices for whipping or
25 beating and for cleaning the same. Fig. 2 represents a section on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

30 Referring to the drawings, A designates a tank into which the pulp is first conducted for the purpose of beating or cleaning the same, said tank having a bottom B and an open top, near which are located the beams C.

35 D designates a shaft which is mounted in suitable bearings located in the present instance near the top of the tank A, said shaft being actuated by means of power applied to the pulleys E.

40 F designates a bevel-gear mounted on the shaft D, said gear being in mesh with the bevel-gear G, which is mounted on the upright shaft H, said shaft rotating in bearings J and K, located in the upper and lower portions, respectively, of the tank A.

45 L and M designate arms projecting laterally from the upper and lower portions of the shaft H, respectively, said arms having the rods N extending between the same, it being noted that said rods are in the present in-
50 stance three in number.

P and Q designate arms extending laterally

from the shaft H in an opposite direction to the arms L and M, it being noted that said arms P and Q are shorter in length than the arms L and M, the former arms being provided with the rods R, extending therebetween, it being noted that said rods are two in number, from which it will be seen that as the beating device N², mounted on the shaft H, revolves the pulp contained in the tank A will be thoroughly disintegrated and commingled, since the rods R and M in their rotation will revolve in different planes from each other, the rods R cutting the spaces between the rods N.

65 S and T designate upright partitions located within the tank A, preferably substantially parallel to each other, whereby overflow-chambers E' are formed intermediate said partitions and the outer wall of said tank, the contents of said chambers E' being discharged through the pipes F'.

70 U designates cylinder straining devices located in the upper portion of the tank A, the same consisting of the closed heads V, the intermediate brace W, and the open head X, said head and brace or ring being supported upon a shaft Y and said heads having the wire-gauze or similar material Z surrounding them, it being noted that said cylinders U are four in number, their relative location being apparent from Figs. 1 and 2, and it being apparent that although I have shown said cylinders as supported upon the beams C and partitions S and T they may be supported by
85 other means.

A' designates a pumping device located adjacent the lower portion of the tank A, said pumping device having a suction-pipe B' communicating with the interior of the tank A near its bottom and discharging through the outlet-pipe C' at the point D' into the upper portion of the tank A, whereby it will be seen that during the operation of the pump A' and the beater N² the pulp contained in the tank will be thoroughly commingled and whipped, and by the introduction of water into the pipe or pipes A² the pulp will be thoroughly cleansed, the water being permitted to rise up through the gauze cylinders U into the overflow-chambers E' and being discharged therefrom into the pipes F', above mentioned.

The pulp is forced into the tank by any suitable means from a source of supply through the pipe L', as shown in Fig. 1, and power having been applied to the shaft D the beating device N² will be rotated, and the pump A' being started it will be apparent that the pulp will be thoroughly and effectively beaten or forced through the pipes B' and C' into the upper portion of the tank, water being introduced into said tank by the pipe A². The contents of the tank having been thoroughly commingled, beaten, and whipped and afterward cleansed in the manner described can be conveyed by any suitable means to any desired point.

It will be apparent that the apparatus may be used for treating wood-pulp or any other fibrous material. It will of course be understood that changes may be made by those skilled in the art which will come within the scope of my invention, and I therefore reserve to myself the right to make all such changes as will come within the spirit thereof.

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

1. In an apparatus for the purpose set forth, a tank having partitions forming overflow-chambers on the opposite sides of a main chamber, a water-inlet pipe for said main chamber, a beating device in said main cham-

ber, strainers above said beating device having respectively closed and open ends, and discharge-pipes for said overflow-chambers.

2. A tank having a main chamber and side overflow-chambers, a beating device in said main chamber, a series of strainers in said tank above said beating device having closed inner and open outer ends, a pump with a suction-pipe leading from the lower portion of said main chamber and provided with a discharge-pipe emptying into the upper portion of said main chamber, a water-inlet pipe for said main chamber and discharge-pipe for said overflow-chambers.

3. In an apparatus for the purpose set forth, a tank having partitions forming overflow-chambers on opposite sides of a main chamber, an inlet-pipe for the latter, a beating device in said main chamber, said device consisting of a shaft having laterally-projecting arms at its upper and lower portions, each pair of arms being connected by rods, which latter are adapted to be rotated in different planes, strainers above said beating device having respectively open and closed ends and a discharge-outlet for said overflow-chambers.

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Witnesses:

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