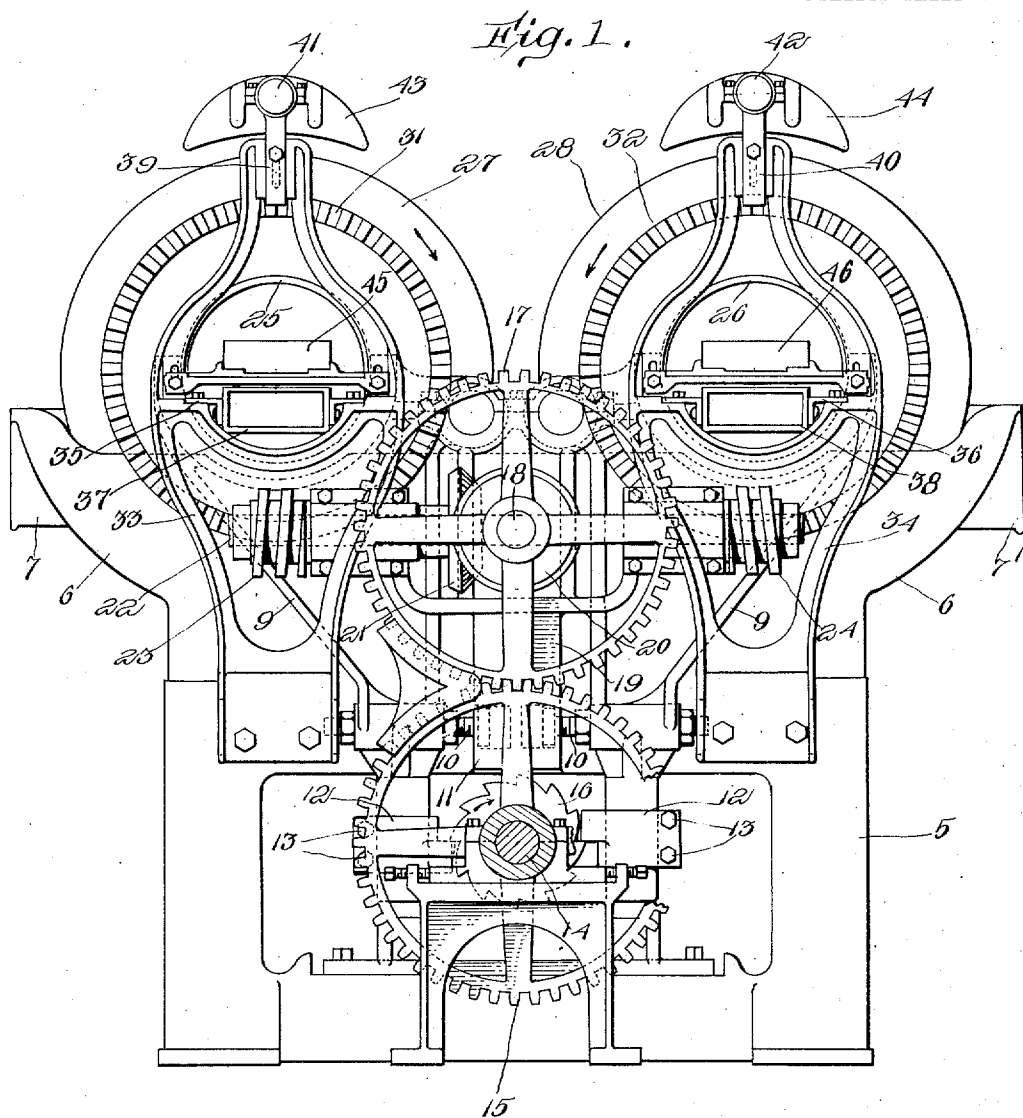


O. WANDEL.
PAPER PULP SCREEN.
APPLICATION FILED DEC. 13, 1909.

955,025.

Patented Apr. 12, 1910.

3 SHEETS—SHEET 1.



Witnesses:

L. B. Wymouth.
E. K. Kinder.

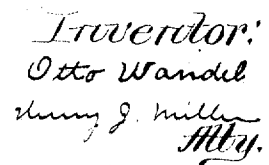
Inventor:

Otto Wandel

by

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3 SHEETS—SHEET 2.

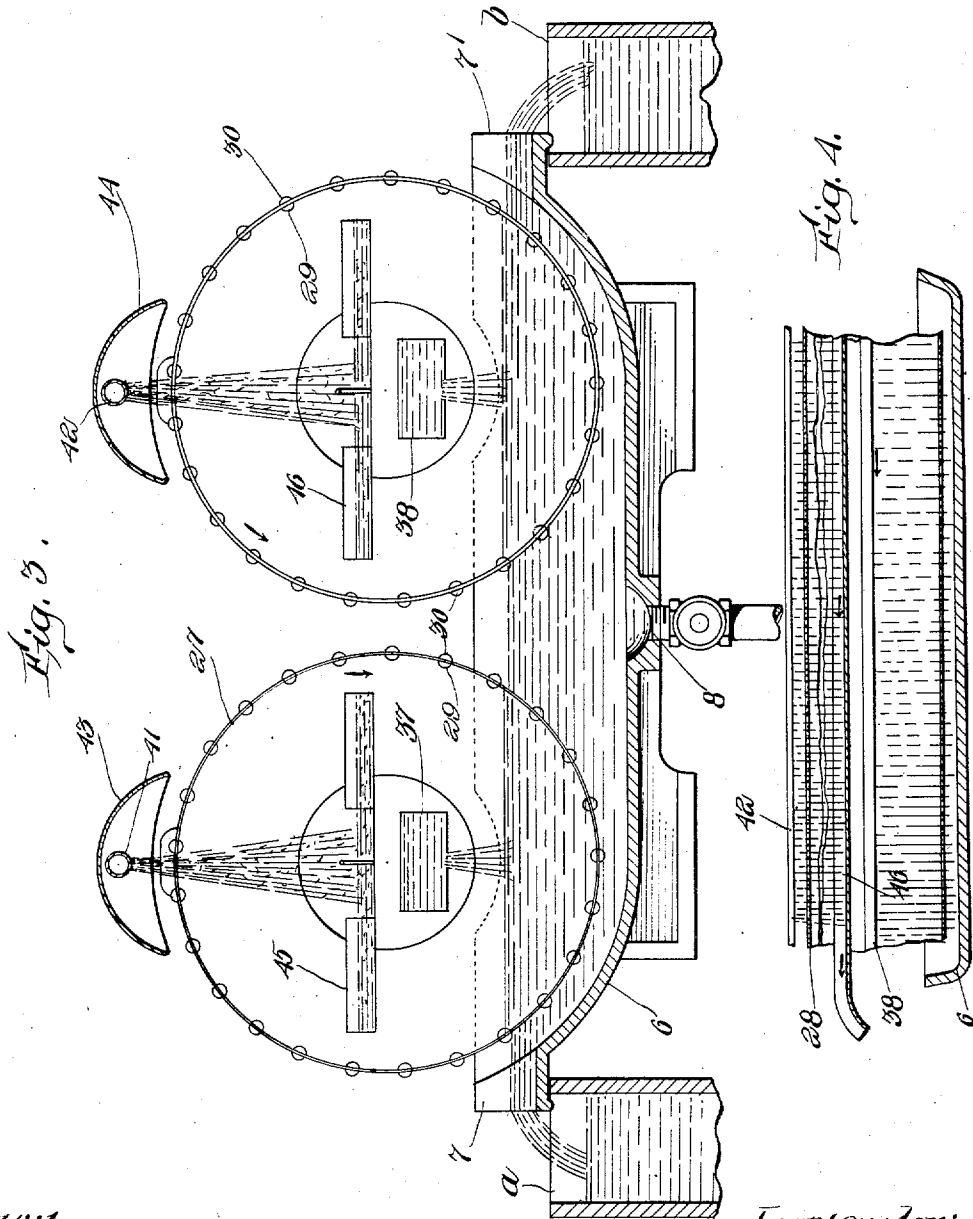


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3 SHEETS—SHEET 3.



Witnesses:

L. B. Weymouth.
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UNITED STATES PATENT OFFICE.

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PAPER-PULP SCREEN.

955,025.

Specification of Letters Patent.

Patented Apr. 12, 1910.

Application filed December 13, 1909. Serial No. 532,812.

To all whom it may concern:

Be it known that I, OTTO WANDEL, of Walpole, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Paper-Pulp Screens, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

This invention has reference to improvements in machines for screening or straining fibrous material, usually delivered to the machine as pulp, and any similar material from which it is desired to remove impurities and, comparatively, large pieces of the material.

The object of the invention is to so construct a machine of this nature, provided with rotating screens, that said screens may be positively driven in opposite directions and positively vibrated with reference to the directions of rotation.

Another object of the invention is to so construct a machine of this nature, having two rotatable screens and means for rotating said screens in opposite directions that the finer and more useful material, delivered from said screens may flow into different receptacles.

Other objects of the invention will appear from the following description.

The invention consists in such peculiar features of construction and combination of parts as shall hereinafter be described and pointed out in the claim.

Figure 1, represents an end view of the improved machine partly in section as on line 1—1 Fig. 2. Fig. 2, represents a side elevation of parts of the same. Fig. 3, represents a cross sectional view taken on line 3—3 Fig. 2, and showing receptacles for the finer pulp. Fig. 4, represents a diagrammatic view showing the manner of conducting pulp to and from the machine.

Similar characters of reference designate corresponding parts throughout.

As shown in the drawings the main frame 5 of the machine supports the vat 6, concave in cross section and having the outlets 7, 7' located at its outer edges, and the centrally located outlet pipe 8. Pivottally mounted at both ends of the machine are pairs of rocker arms as 9, 9 having the buffer members 10, 10 cooperating with the buffer member 11 of the main frame to limit the swing of said rocker arms 9, 9 in one direction, while the

lower ends of said rocker arms are furnished with cam faced blocks 12, 12 slidable on said arms and adapted to be secured in the adjusted position by the bolts 13, 13.

Journalled in bearings in the main frame 60 is the drive shaft 14 furnished with the gear 15 and having throw cams as 16, acting intermittently against the cam faces of the blocks 12, 12 to effect the movement of the rocker arms 9, 9. Gear 15 engages gear 17, 65 mounted on shaft 18, which latter is journalled in bearings carried by the bracket 19 extending from the main frame, and said shaft 18 is also furnished with the bevel gear 20 which engages and drives the similar gear 70 21 of the transverse shaft 22, journalled in bearings of said bracket 19, having the worms 23, 24.

In bearings, at the upper ends of the rocker arms 9, 9 are rotatably mounted the sleeves 25, 26 of the cylindrical screens 27, 75 28. These screens have slots formed in their walls, in any manner, to permit the passage therethrough of the finer pulp and are furnished with longitudinally extending 80 strengthening rods 29, 30 secured to the screens. Rotation of said screens, in opposite directions, is effected by means of the annular gears 31, 32 mounted on the sleeves 25, 26, of said screens, and engaged with the 85 worms 23, 24.

Extending upward from end frames 5 are the frame members 33, 34 having openings opposite the sleeves 25, 26 of the respective screens in which openings are supported, by 90 the cross bars 35 and 36, pulp conduits 37 and 38 having openings in their bottoms through which pulp is supplied within said screens 27 and 28. The upper ends of said frame members 33, 34 extend above the 95 screens 27, 28 and to these ends are secured the supporting members 39, 40 of the perforated pipes 41, 42 which are adapted to deliver water to the upper surfaces of the respective screens 27, 28, and are provided 100 with hoods 43, 44. Within said screens 27, 28 are located the waste receiving trays 45, 46, positioned above the pulp supply conduits 37, 38 and adapted to receive the waste material and dirt washed from the 105 screens 27, 28 as such material is carried beneath the jets of water passing downward from the pipes 41, 42. The coarse material, carried around within the screens also being thus washed into said trays 45, 46 and pass- 110

ing out through the ends of said trays which extend beyond the length of said screens.

When the shaft 14 is driven, motion will be transmitted therefrom through gears 15 and 17, to shaft 18 and gear 20, to rotate gear 21 and its shaft furnished with the worms 23, 24 whereby the screens 27, 28 will be rotated in opposite directions, as indicated by arrows in Fig. 3 of the drawings; at the same time the throws of cam 16 will act intermittently against blocks 12, 12, carried by the rocker arms 9, 9 to effect the vibration of said arms, the inward movement of which is limited by the cooperating buffer members 10 and 11, so that the screens 27, 28, supported on said rocker arms, are constantly vibrated during their said rotative movement in opposite directions.

Paper pulp, carried in solution with water, passes into the screens 27, 28 through the troughs 37 and 38 and is delivered, through the openings in the bottoms of said troughs, to the lower portions of said screens whence the water, with the finer parts of the pulp, passes through the slots in said screens and enters the vat 6. Those portions of the screens which are immersed act, by reason of the rotation of said screens in opposite directions, to effect circulation of the water, which carries the finer material toward the oppositely disposed outlets 7 and 7' from which said finer pulp is delivered respectively to vessels (a) and (b). The coarser material, which cannot pass through the slots in screens 27, 28, and a large proportion of the scum and dirt contained within the screens settles or is collected, between the bars 29, 29 and is carried upward, by the

rotation of the screens, until it is brought beneath the jets of water from pipes 41, 42 and is then washed from the screens into the trays 45, 46 and passes out of the machine.

By the use of this machine the finer material passing from the screens 27, 28 in opposite directions does not mix with any sediment which may collect between the screens, above the outlet 8, as would be the case if the vat 6 had but one outlet and both screens were rotated in the same direction.

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

A paper pulp screen comprising a vat, a pair of rocker arms pivotally mounted on said vat and having depending members furnished with adjustable cam blocks and buffer members, a buffer member fixed with relation to said buffer members of the rocker arms, cylindrical screens journaled in bearings of said rocker arms and rotating within said vat, said screens having annular gears, a drive shaft journaled in bearings of the machine and having a cam adapted to act on the cam blocks of said rocker arms, a gear on said shaft, an intermediate shaft journaled in bearings and having a gear engaged with the gear of said drive shaft and a bevel gear, driven from the bevel gear of the intermediate shaft, and a pair of worms engaged with the gears of said screens, substantially as described.

OTTO WANDEL.

Witnesses:

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