R. E. WAGNER.

PULP VAT AND THE LIKE.

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1,385,341. Patented July 19, 1921.

Fig. 1.

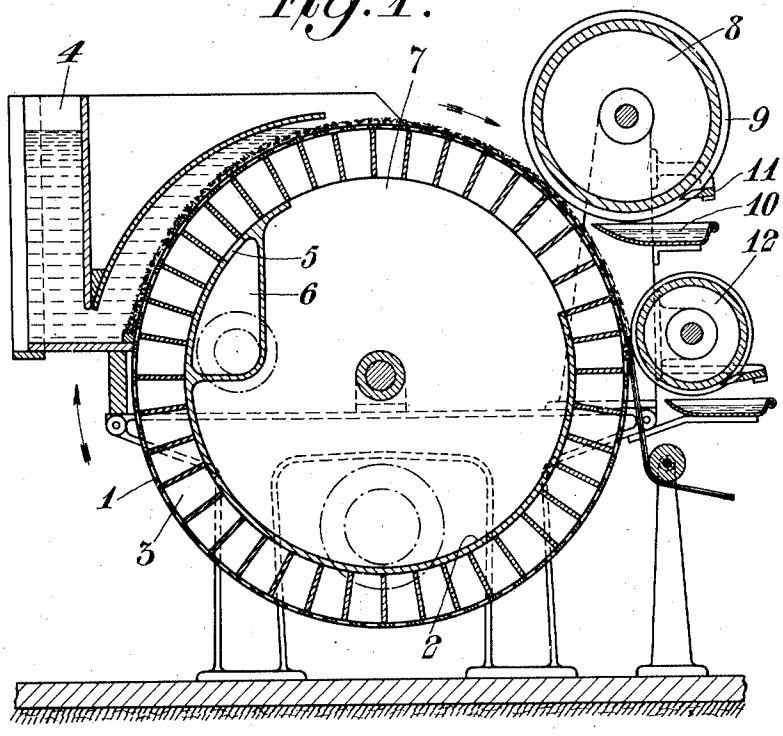
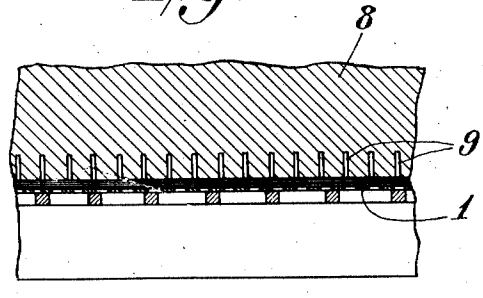


Fig. 2.



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UNITED STATES PATENT OFFICE.

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PULP-VAT AND THE LIKE.

1,385,341. Specification of Letters Patent. Patented July 19, 1921.

Application filed August 9, 1920. Serial No. 402,377.

To all whom it may concern:

Be it known that I, RUDOLF ERNST WAGNER, a subject of the King of Sweden, residing at Karlstad, in the Kingdom of Sweden, have invented a new and useful Improvement in Pulp-Vats and the like, for which I have filed applications in Sweden Mar. 18, 1919, 1267/19; Norway June 22, 1920, #20,648; Finland June 22, 1920; Germany June 25, 1920; Austria June 26, 1920, and of which the following is a specification.

Vats for gathering cellulose, wood-pulp, and the like are previously known in which the pulp is gathered by means of a strainer cylinder rotating in the pulp, and on the surface of which the pulp settles while the water strains or filters through the cylinder, aided by suction, if desired. It has also been proposed in such vats to use a press or couch roll bearing against the strainer cylinder for removing the web of material gathered or collected on the strainer cylinder.

The present invention consists in this that one or more press rolls is or are combined with the strainer cylinder and bearing against the same, said press rolls being provided with peripheral grooves, notches, deep slots, or the like. In this manner an increased extraction of the water from the web of material is attained, as no collection of water will be formed at the pressing place in front of the press rolls, but the water will be absorbed in and removed by the slots in the rolls. As a result a higher pressure may be used without risk of crushing the web of material.

In the accompanying drawing, Figure 1 shows diagrammatically a section of an embodiment of the invention. Fig. 2 shows a portion of a longitudinal section through the strainer cylinder and the press roll at the pressing place.

In the embodiment illustrated, 1 denotes the strainer cylinder, which rotates around a stationary suction box 2. The surface of the strainer cylinder consists of course of strainer or filter cloth, and the cylinder is divided between its surface and the suction box into cells 3. The strainer cylinder rotates in the direction indicated by the arrows, so that thus its cells enter and move upward in the pulp container 4. Meanwhile the pulp fibers settle on the surface of the strainer cylinder, the water filtering through the strainer cloth into the cells. When the cells have been moved a certain distance upward in the pulp container, the water collected in the cells will be drained off through the opening 5 of the outlet chamber 6. When the cells have moved a further distance upward in the pulp container they are subjected to suction from the suction box 2 through its opening 7, said suction continuing while the cells are moved out of the pulp container during the rotation of the strainer cylinder. The fiber layer gathered on the strainer cylinder is still subjected to suction and during this period it arrives to the press roll 8 pressing against the strainer cylinder. Said press roll is provided with peripheral deep slots 9, as shown in Fig. 2. The water pressed out from the fiber layer at the pressing place or region between the strainer cylinder 1 and the press roll 8, may thus partly be sucked through the strainer cloth of the strainer cylinder into the cells, and partly it may flow from the outer surface of the fiber layer into the slots 9 in which it will be brought along during the rotation of the roll 8, until finally it may flow off from the under side of said roll down into the drain trough 10. Scrapers 11 project into the slots 9 in the surface of the roll and cleanse said slots from water and from particles of pulp which may have penetrated into the same. The water pressed out thus being able to flow off from both sides of the pulp web at the pressing place, there will be formed no collection of water in front of the press roll, a result which will of course in itself entail a better pressing out of the water, and also enables a higher pressure to be used than that possible with a smooth roll, without danger of the fiber web being crushed. In the embodiment illustrated there is a second press roll 12 arranged and operating in the same manner as the press roll 8.

I claim:

In a pulp-vat and the like, the combination of a rotary strainer cylinder for gathering the pulp, and a press roller bearing against said cylinder and provided with peripheral grooves, notches, deep slots, or the like, for the purpose of rendering possible an increased pressing out of the pulp sheet gathered on the strainer cylinder.

RUDOLF ERNST WAGNER.