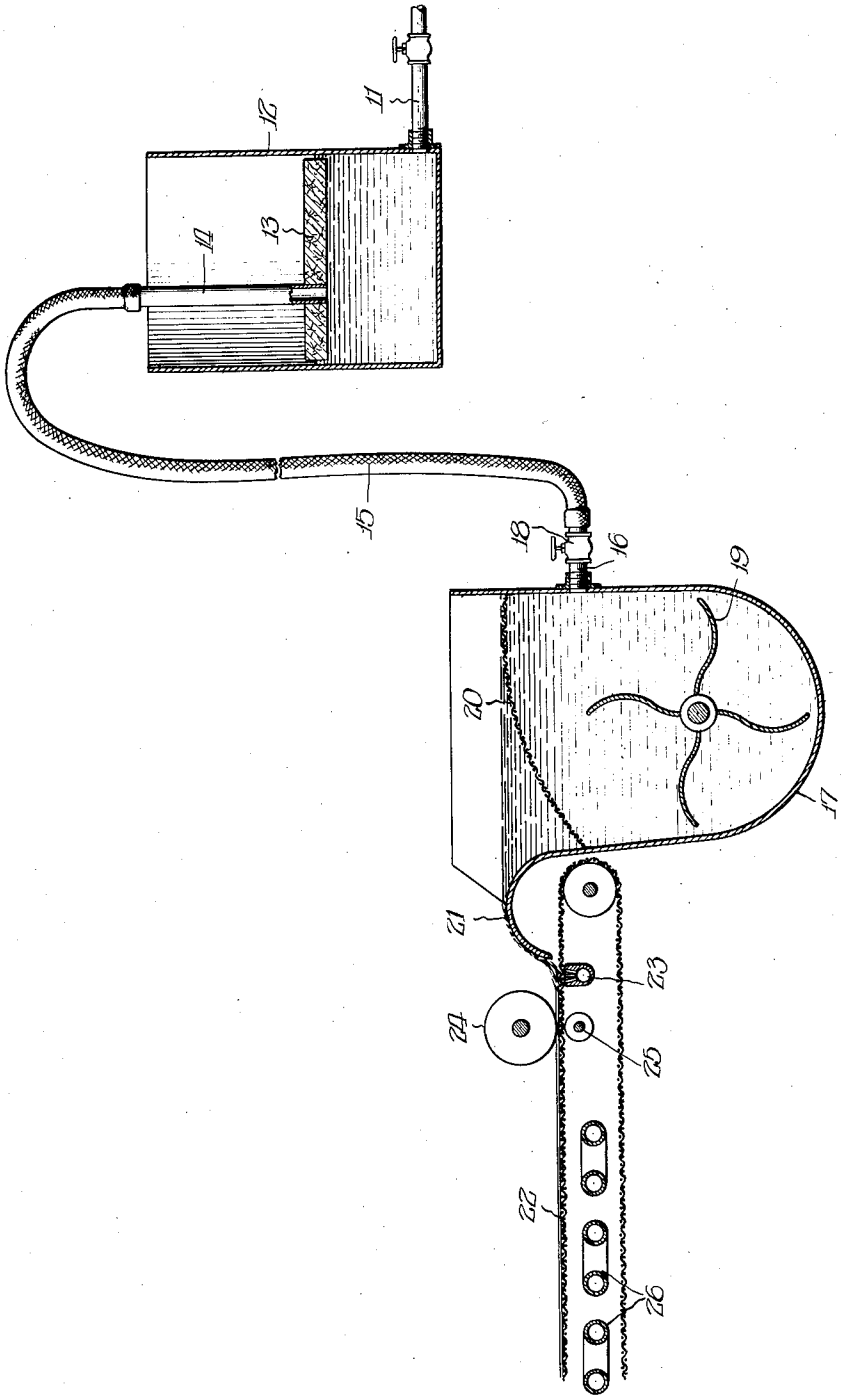
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H. R. WILLIAMS

PAPER MAKING MACHINE

Filed March 24, 1926



Inventor:
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UNITED STATES PATENT OFFICE.

HARRISON R. WILLIAMS, OF CHICAGO, ILLINOIS.

PAPER-MAKING MACHINE.

Application filed March 24, 1926. Serial No. 96,912.

My invention aims to provide or supply novel and effective means of simple construction for the production of paper and the like, for instance, blotting-paper and its equivalent.

The new appliance comprises a tank or receptacle for containing the pulp-charged liquid, and the latter overflows from the container on to a traveling screen, whereby a layer or stratum of the pulp is deposited thereon, and that when dried constitutes the sheet of paper or blotting-paper referred to.

Such tank is desirably fitted with an agitator or stirrer operated mechanically to maintain the pulp uniformly distributed throughout the liquid and throughout the extent of the tank, and means are also employed to assure an even and smooth delivery flow of the liquid on to the screen-conveyor and in such a manner as not to be detrimentally influenced by the action of the agitator.

Thus, the conditions under which the sheet of paper is made remain substantially constant, and a uniform product is the result.

To enable those skilled in this art to have a full and complete understanding of this invention, both from structural and functional standpoints, in the accompanying drawing, forming a part of this specification, I have illustrated, more or less diagrammatically, a present desirable and preferred embodiment of such invention.

In the single figure of the drawing, the improved machine is illustrated, somewhat fragmentarily, in vertical section.

Referring to this drawing, it will be perceived that the pulp-charged liquid is delivered through a valve-equipped, supply pipe 11 to a supply tank 12, and the feeding of such liquid thereto may be substantially uniform or intermittent, as may be convenient or desirable.

This tank 12 is equipped with a cork or other float riding or floating on the top of such liquid, the member 13 having an upright pipe 14 extended therethrough, so that the liquid may be withdrawn through it by siphonic action.

The pipe 14 is connected to a flexible tube or pipe 15, and the latter is associated with a pipe 16 delivering into the second or lower tank or receptacle 17, pipe 16 having a control valve 18 governing the flow of liquid from the one tank to the other.

Obviously, after such liquid siphonic flow has been once initiated or established through such suitable connections from the upper tank to the lower one, it will continue automatically so long as the supply of liquid lasts, and as this is replenished continuously or at sufficiently frequent intervals, the operation of making the paper proceeds without interruption.

The receptacle or tank 17 has inside of it a rotary agitator or stirrer 19, of any usual or convenient form, and power-driven from a source not shown, whereby the liquid in such tank is maintained in a proper disturbed or stirred condition to insure uniformity throughout.

Above the rotating blades or arms of such agitator, the tank or stirring chamber is fitted with a fine-mesh screen 20, the latter being preferably, but not necessarily, curved as illustrated.

Above this screen the tank or receptacle, along one side, is supplied with a curved rim or lip 21, over which the pulp-charged liquid continuously overflows in a uniform stream of unvarying depth or thickness, such stream delivering on to the upper surface of a constantly-traveling, endless screen 22 operated by power means not shown because its construction is well understood.

Below such part of the screen, and near the point where the pulp is delivered on to it, the appliance includes an apertured suction-pipe 23 extended crosswise the full width of the screen, whereby the liquid which does not immediately drain through the screen is drawn down through such pipe, leaving a partially-dried layer or stratum of pulp on the screen.

The pulp thus resting on the advancing screen travels under a marking roller 24 positioned or located above a screen-supporting, idle roller 25, so that any desired mark or design may be applied to the product by such upper roller.

As the layer of pulp proceeds on its forward travel, it passes over a series of steam-heated coils or pipes 26, thus resulting in the production of a continuous dry sheet of paper or the like, the thickness of which may be easily controlled by regulating the amount of liquid permitted to pass through valve 18, this in turn determining the amount of overflow from the tank 17 to the conveyor-screen.

If liquid flowed or passed through a pipe connecting the lower part of compartment 12 with the receptacle 17, then the very heavy particles settling down to the bottom of the

compartment would be passed to tank 17 where they would be a possible source of trouble by clogging up the screen 20. By virtue of the arrangement described, however, this difficulty is avoided.

This invention is not limited and restricted to the precise and exact details of structure illustrated and described, and these may be changed or modified within comparatively wide limits without departure from the heart and essence of the invention as defined by the appended claims, and without the sacrifice of any of its substantial or material benefits and advantages.

I claim:

1. In a paper-making machine and the like, the combination of a movable reticulated conveyor, means to actuate said conveyor, a tank having a marginal curved lip over which the liquid in the tank may overflow on to said conveyor, an agitator in said tank, and a screen in said tank between said agitator and said lip.

2. In a paper-making machine and the like, the combination of a movable reticulated conveyor, means to actuate said conveyor, a tank having a delivery overflow on to said conveyor, a supply tank, means to admit liquid to said supply tank, a float in said supply tank, and a siphon connection between said float and said first tank to secure the discharge of the liquid in said supply tank to said first tank.

3. In a paper-making machine and the like, the combination of a movable reticulated conveyor, means to actuate said conveyor, a tank having a marginal lip over which the liquid in the tank may overflow on to said conveyor, an agitator in said tank, means to prevent the action of said agitator influencing substantially the liquid at said lip, a supply tank, means to admit liquid to said supply tank, a float in said supply tank, and a siphon connection between said float and said first tank to secure the discharge of the liquid in said supply tank into said first tank.

4. In a paper-making machine and the like, the combination of a movable reticulated conveyor, means to actuate said conveyor, a tank having a marginal curved lip over which the liquid in the tank may overflow on to said conveyor, an agitator in said tank, and a screen in said tank between said agitator and said lip, said screen being curved so as to be substantially normal to the direction of flow of liquid from the agitator.

In witness whereof I have hereunto set my hand.

HARRISON R. WILLIAMS.