

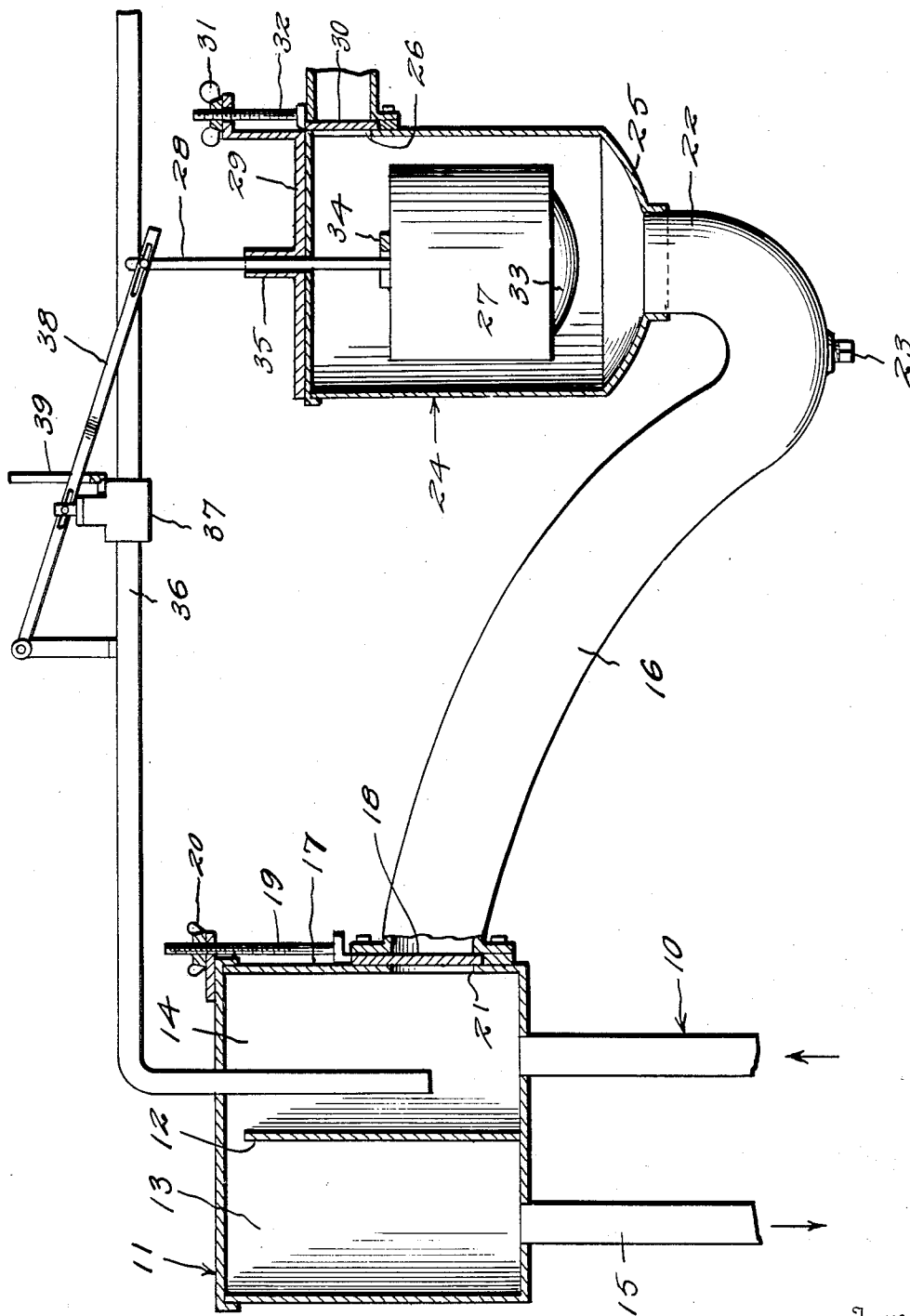
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AUTOMATIC PAPER PULP REGULATOR

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AUTOMATIC PAPER PULP REGULATOR

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4 Claims. (Cl. 92—46)

This invention relates to paper making machines and systems connected to the paper making machine, and has for an important object thereof the provision of a means inserted in the system connected to the paper making machine for controlling the quality of the pulp as it passes through the system.

Another object of this invention is to provide a means in the system of the paper making machine for regulating the moisture content of the pulp so that the moisture content will be at the right degree when the pulp reaches the paper machine, thereby permitting the pulp to be spread evenly in the machine and insuring paper of an even thickness.

The above and various other objects and advantages of this invention will in part be described and in part be understood from the following detailed description of the present preferred embodiment, the same being illustrated in the accompanying drawing wherein the figure is a view partly in elevation and partly in vertical section of the pulp controlling device embodying the present invention.

Referring to the drawing wherein like numerals of reference designate corresponding parts throughout the view the numeral 10 designates generally a pipe which is connected at one end to a source of pulp supply and which has interposed intermediate its length a pump (not shown) for the purpose of forcing the paper pulp through the pipe 10.

A stock tank or container 11 is connected to the pipe 10 and preferably, the pipe 10 connects to the bottom of the stock tank or reservoir 11, and a partition 12 divides the reservoir or stock tank 11 into two pulp receiving chambers 13 and 14. The chamber 13 is an overflow chamber and preferably the top of the partition 12 is disposed below the top of the tank or reservoir 11 so that the overflow of stock will pass over the upper edge of the partition 12 and will then pass downwardly through an overflow pipe 15, which is connected to a suitable suction means and the pulp is then passed into the system again.

A pipe 16 is connected at one end to the side wall 17 of the reservoir 11 and a gate or valve member 18 is carried by the side wall 17 and is provided with a threaded shaft or stem 19 engaged by a thumb screw or nut 20, so that the discharge opening 21 of the tank or reservoir 11 can be regulated at will. The valve member 18 is in the form of a plate slidable vertically and suitable guide means may be pro-

vided on the inside of the end wall 17 to slidably hold the plate or valve member 18 in position against the end 17.

The pipe 16 is provided with a bent or gooseneck portion 22 adjacent the opposite end thereof, and a plug 23 is threadably disposed in the lower portion of this bent portion 22 so that water or pulp may be drained out of the trap or returned portion of the pipe 16.

A container or tank 24 has the bottom thereof connected to the opposite end of the pipe 16, and the container 24 is provided with an outlet port 26 at a point in the side wall thereof adjacent the upper edge. A float or hollow member 27 is loosely disposed within the tank or container 24 and is provided with a stem or shaft 28, which slides through and extends above the top 29 of the tank or container 24. A gate valve 30 is disposed across the outlet port 26 and is movable into open or closed position by a thumb nut or manually operable member 31, which engages a threaded stem 32 carried by the plate or valve member 30. The float 27 is provided at the bottom thereof with a weight 33 and also has a second or upper weight 34 on the top thereof. These weights 33 and 34 act to automatically force the float 27 downwardly against the valve seat or bottom 25. The float 27 is of such a diameter that when it moves into open position, the pulp being forced through the pipe 16 will pass thereabout and outwardly through the outlet port 26. A guide member 35 is carried by the top 29 and engages the stem 28 of the float 27. A water pipe 36, which is connected at one end to a source of water supply discharges at the opposite end into the pulp receiving compartment 14, and this end of the pipe 36 is open. As will be noted from the drawing, the bottom 25 of the cylindrical tank 24 is tapered or reduced so as to prevent trapping of the material in the lower portion of the tank.

A valve member 37 is interposed in the pipe 36 intermediate the tank or reservoir 11 and the source of water supply, and a lever 38 is connected to the valve stem of the valve 37, and is also connected to the float stem 28 so that the valve 37 will be moved into open position when the float 27 rises under the action of relatively heavy or thick pulp and is lowered into substantially closed position when the pulp is relatively thin, the float 27 being lowered by reason of the weights 33 and 34. A guide member 39 is carried by the pipe 36 and engages the lever 38.

In the use and operation of the device herein disclosed, the stock or pulp receiving chamber 14 is adapted to receive the pulp under the pressure of the pump and the valve 18 may be moved into the desired open position depending on the quantity of pulp which it is desired to pass or force through the pipe 16. When the pulp passes out of the discharge opening 21 of the tank 11, it will flow through the pipe 16 and into the regulating container 24. The weights 33 and 34 are of such a character that when the pulp has the desired moisture content and is of the desired degree of thickness, the float 27 will be disposed adjacent the bottom 25 of the tank 24. However, when the pulp gets thicker, the pulp in the controlling tank or member 24 will force the float 27 upwardly and thereby open the water valve 37 and permit water to enter the stock chamber 14 until the pulp reaches the desired quality, whereupon the float 27 will be lowered under the action of the weights 33 and 34. If desired, the upper weight 34 may be made a removable weight so that it may be varied to suit the desires of the user of this device in obtaining a satisfactory moisture content in the paper pulp.

It will be apparent from the foregoing that this device herein disclosed will automatically maintain an even degree in the quality of the paper pulp passing from the pulp making machine to the paper making machine so that the pulp may be spread evenly and so that the pulp will flow at an even rate to the paper machine.

It is, of course, understood that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:—

1. An automatic regulator for paper making machines comprising a reservoir, means for connecting the reservoir to a source of paper pulp supply, a tank, means for connecting the tank to the reservoir, a water pipe connected at one end to a source of water supply and having the other end discharging into said reservoir, a valve in said pipe, and means disposed in said tank and operatively connected to said valve to open or close the valve dependent on the thickness of the pulp in the tank.

2. An automatic regulator for paper making machines comprising a reservoir, means for connecting the reservoir to a source of paper pulp supply, means disposed in the reservoir for returning the excess paper pulp, a tank, means for connecting the tank to the reservoir, means for regulating the quantity of pulp passing through the connecting means to the tank, means for discharging water into the reservoir, a valve in said water discharging means, a float in said tank, means for connecting the float with said valve to open or close the valve on movement of the float, and weights carried by said float to move said float downwardly for closing of said valve.

3. An automatic regulator for paper making machines comprising a reservoir adapted to be connected to a source of paper pulp supply, a partition in said reservoir, a return pipe carried by said reservoir to return the excess pulp discharged into the reservoir, a tank, a pipe connecting the tank with the reservoir, a valve carried by said reservoir to control the quantity of pulp passing through the pipe into the tank, a water pipe discharging into the reservoir, a valve in said water pipe, a float member in said tank, means for balancing the float member in the tank, and a lever connected to said float and said valve to open or close the valve on movement of the float.

4. An automatic regulator for paper making machines comprising a paper pulp reservoir, means for connecting the reservoir to a source of pulp supply, means for returning the excess pulp discharged into the reservoir to the source of supply, a tank, means for connecting the tank to the reservoir, a valve carried by the reservoir for controlling the passage of pulp to the tank, a water pipe discharging into the reservoir, a valve in said water pipe, a vertically movable float in said tank, a stem secured to said float and extending upwardly through the tank, guide means for said stem, balancing means carried by the float to hold the float in a substantially fixed position within the tank when the paper pulp has the desired thickness, and means connecting the stem with the valve to open or close the valve on movement of the float.

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