

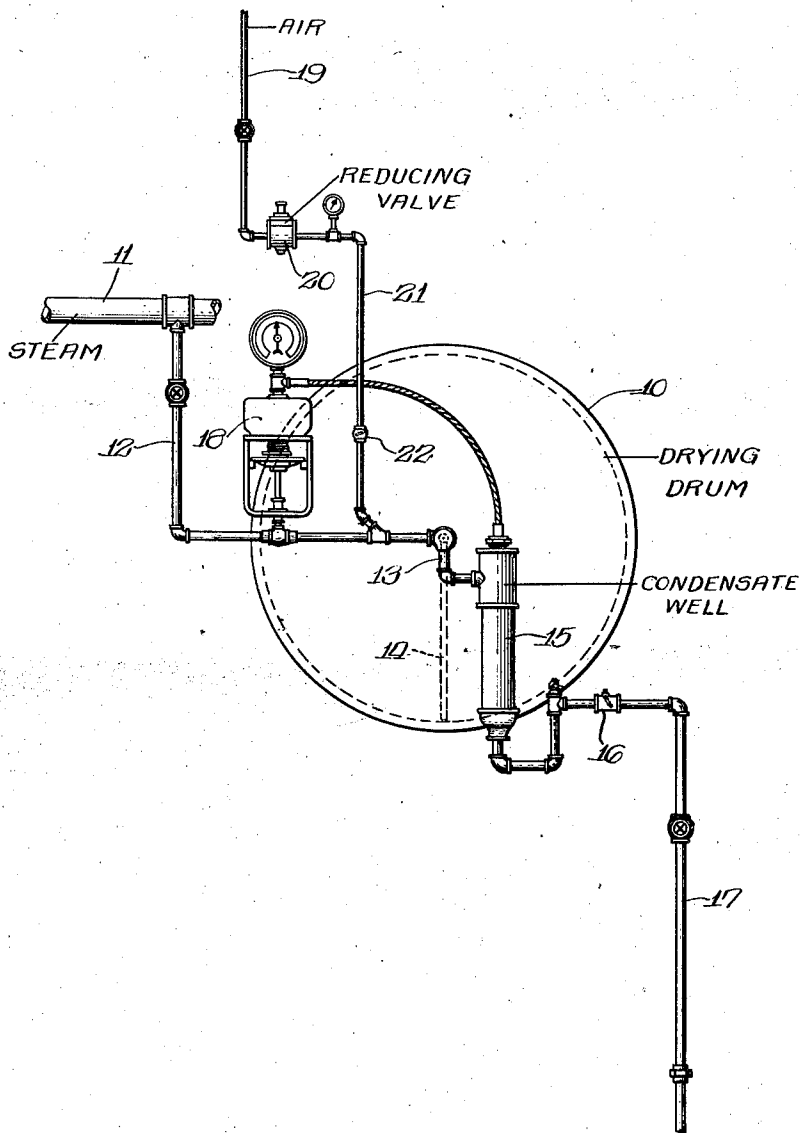
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APPARATUS FOR DISCHARGING CONDENSATE FROM DRYING DRUMS

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APPARATUS FOR DISCHARGING CONDENSATE FROM DRYING DRUMS

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2 Claims. (Cl. 34-4)

My invention relates to an apparatus such as described in the title and particularly to the adaptation of simple means to the apparatus commonly in use for accomplishing the described purpose.

5 Difficulty is experienced in disposing of the condensate that accumulates in steam heated drying drums or cylinders, particularly when low temperature drying is necessary. This occurs in the operation of slasher cylinders and particularly in the drying drums used in the production of rayon. Where low temperature drying is necessary, the steam pressure within the drum is necessarily low and frequently is insufficient to displace the condensate. Since the water to be discharged will collect in the lower portion of the drum and as it must be discharged through the journal, which is several feet higher than the low point within the drum, several pounds of pressure are required to elevate the water to that extent. 10 Where low temperature drying is carried out, the steam pressure is frequently less than one pound and is insufficient to displace the water.

By my method and apparatus, I maintain a constant air pressure within the drum whereby there 15 is maintained at all times a pressure at least equal to that necessary to discharge the condensed steam. The result is accomplished by merely connecting an air pipe through a suitable reducing valve to the steam line between the thermostatically controlled steam valve and the drum. 20

A diagrammatic illustration of apparatus suitable for the described purpose is shown in the single figure of the drawing.

In the drawing, a conventional installation is 25 shown, a slasher cylinder 10 being indicated, steam being supplied thereto from the main 11 through the pipe 12, extending through the journal of the cylinder. A second pipe 13 is entered through the journal in the usual manner, its inner end 14 being downturned to terminate near the lowest point in the cylinder, its outer end terminating in a condensate well 15. The discharge from the well is through the check valve 16 and pipe 17 to the sewer or elsewhere. 30

40 A thermostatically controlled steam valve is indicated at 18, the controlling bulb for which is mounted in the condensate well, the temperature of the discharged water being, in this case, used as the regulation medium.

Air under pressure is supplied through a pipe 19, reducing valve 20, pipe 21 and check valve 22 to the steam supply pipe 12, the reducing valve being set to supply a constant pressure of two pounds or more, depending on the pressure 5 necessary to evacuate the drum. The supply of air does not interfere in any way with the maintenance of the required temperature by the thermostat, but there is maintained in the drum a predetermined pressure according to the setting of the reducing valve, this being accomplished without the addition of any heat units to the drum. 10

Of course, the air may be delivered to the drum in some other manner than that shown in the drawing, the illustrated manner being preferred because of its simplicity. 15

Throughout the specification I have made reference to the use of the described improvement in drying drums or cylinders. It will be 20 understood, however, that it may be used to advantage in various situations not involving the use of a rotating member, but in which the water of condensation must be raised from a low point to a discharge outlet at a higher point. This 25 should be understood in construing the attached claims.

I claim:

1. Apparatus for disposing of condensate in drying drums comprising the combination with 30 the drum, of a steam supply pipe, a thermostatically controlled valve in said pipe, a pipe for delivering air under pressure to said drum, a condensate discharge pipe, and a reducing valve in said air pipe for maintaining a constant predetermined pressure in said drum sufficient to discharge the condensate therein through said discharge pipe. 35

2. In combination, a slasher cylinder, a pipe for delivering steam thereto, a thermostatically 40 controlled valve in said pipe, a pipe connected to said steam pipe between the steam valve and the cylinder, said pipe delivering air under pressure to the steam pipe, a condensate discharge pipe and a reducing valve in said air pipe 45 for maintaining a constant predetermined pressure of air delivered.

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