

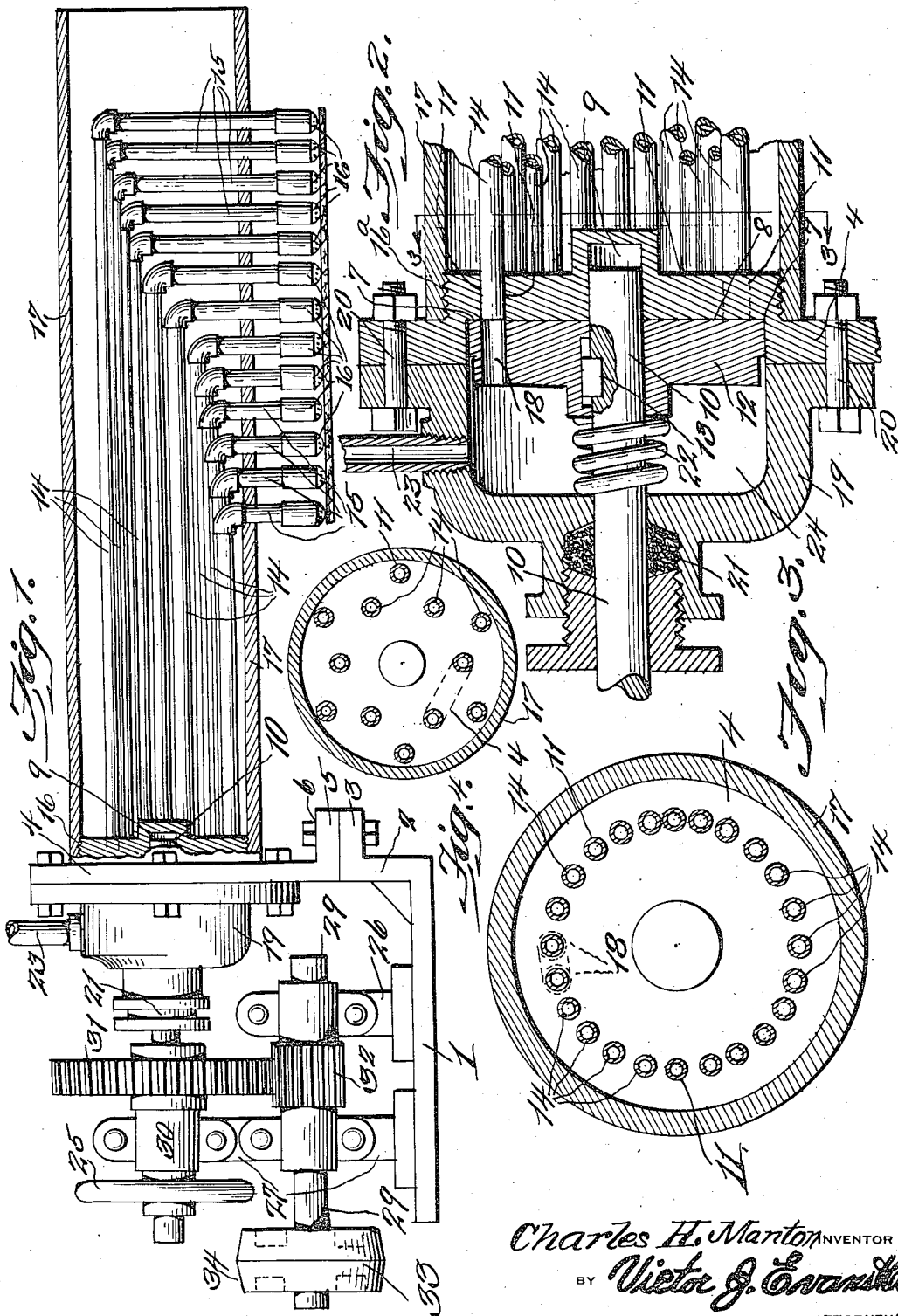
March 17, 1936.

C. H. MANTON

2,033,990

FELT CONDITIONING MACHINE

Filed Feb. 25, 1935



Charles H. Manton INVENTOR
BY Victor J. Cronin
ATTORNEY

UNITED STATES PATENT OFFICE

2,033,990

FELT CONDITIONING MACHINE

Charles H. Manton, Philadelphia, Pa.

Application February 25, 1935, Serial No. 8,143

2 Claims. (Cl. 92—50)

The present invention relates to an improved machine for conditioning felt and similar material, the machine including a distributing valve for distributing or feeding hot water at high pressure through numerous nozzles spaced at equal distances apart and a uniform distance from the surface of the moving felt on the wet end of a paper making machine, thus cleaning and conditioning the felt for continuous use without removing it from the machine.

The invention has for its essential purpose to provide a housing for the numerous feed pipes extending from the valve to various nozzles, which terminate at a uniform distance from the surface of the felt, the hot water passing over the felt at all times, because the ports in the disc valve proper are so arranged that one port in the seat is always open while another is opening and another closing, which construction eliminates the use of a shaft with a thread as well as a reversing machine, which features are common in most paper making machines, and also doing away with dragging the hose back and forth over the machine and hence save on repairs.

Another purpose is to provide a rotating disc valve for controlling the ports in the valve seat, the tensioning means for the valve proper and the pressure of water in the valve casing combining to retain the valve at all times securely closed against the valve seat while the valve proper is rotating.

In a machine of this kind it is possible to stop the valve substantially at any particular point that may be desired to allow the stream to be directed substantially at one place.

It is to be understood that the particulars herein given are in no way limitative, and that while still keeping within the scope of the invention, any desired modification of details and proportions may be made in the construction of the appliance according to circumstances.

The invention comprises further features and combination of parts to be hereinafter set forth, shown in the drawing and claimed.

In the drawing:—

Figure 1 is a view in elevation, with the housing for the water conducting tubes from the valve seat to the nozzles in section.

Figure 2 is an enlarged detail sectional view through the valve and its casing, showing a stuffing box, as well as the water supply pipe to the valve casing.

Figure 3 is a sectional view on line 3—3 of Figure 2.

Figure 4 is a sectional view illustrating a modified structure in which two rows of pipes are employed.

Referring to the drawing 1 identifies a base having an upstanding portion 2 at one end terminating in a horizontal ledge 3. A plate 4 has a horizontal foot 5, which is fastened at 6 to the ledge 3, thereby supporting the plate 4 in a vertical position. The plate 4 above the foot 5 is of circular formation, and centrally of the plate it is dished at 7 to cause a countersink valve seat 8 to be formed. The center of the dished portion 7 of said plate has a bearing 9 for a shaft 10. Also the dished portion 7 of the plate is provided with a plurality of openings 11 arranged in circular formation. The valve 12 in the form of a disc is seated in the dished portion of the plate and is held tight against the valve seat. This valve 12 may be constructed of any suitable metal, preferably monel, while the dished plate may also be constructed of any suitable metal preferably bronze. The valve 12 is keyed or otherwise fixed at 13 to the shaft 10, and the numerous openings 11 in the dished portion 7 of the plate have fixed therein a plurality of water conducting tubes 14. These tubes 14 have right angle extending portions 15, which terminate in spray nozzles 16. The right angle extending portions 15 protrude downwardly, though not necessarily.

Constituting a part of the dished portion 7 of the plate 4 is a shoulder 16a which is threaded and to which a tubular housing 17 is connected enclosing the numerous water conducting tubes 14. In addition to enclosing the tubes 14, the tubular housing acts to hold the various tubes and their portions 15 substantially rigid.

The valve 12 is provided with a pair of openings 18, which are so spaced as to register with two openings 11 at one time.

A valve bonnet 19 is bolted at 20 to the plate and is provided with a stuffing box 21, through which the shaft 10 passes, there being a compression coil spring 22 surrounding the shaft 10 and interposed between the wall of the bonnet and the valve 12, retaining the valve in water tight contact with its seat. A water inlet pipe 23 is threaded through the wall of the bonnet for conducting water into the valve chamber 24 of the bonnet. As the valve 12 rotates, the openings 18 registering with any two of the openings 11 water is permitted to leave the chamber 24 and pass through any two of the pipes 14 in consecutive order, the water discharging from the spray nozzles and on the felt (not shown) as it

passes under the nozzles. However by stopping the shaft it is possible by rotating the graduated hand wheel 25 (which is mounted fixedly on the shaft 10) the valve may be set to register the two openings 18 in register with any two of the pipes 14, for the purpose of directing a continuous spray at any one point on the felt.

Mounted on the base 1 are uprights 26 and 27, in bearings 28 mounted thereon a shaft 29 is arranged. The upright 27 extends higher than the upright 26, and carried by this extended portion of said upright 27 is a bearing 30, in which the end portion of the shaft 10 is mounted. The shaft 10 carries a gear 31, which meshes with a pinion 32 on the shaft 29, which in turn carries a pulley 33, and to which pulley 33 a belt 34 shown in dotted lines may be connected.

It is obvious that the belt 34 may receive power from any suitable source (not shown) transmitting it to the pulley, thereby driving the shaft 29 and hence transmitting power to the shaft 10 through the gear 31 and the pinion 32, in which event the valve 12 may be rotated with relatively low speed, the ports 11 opening in consecutive order, so that water sprays may discharge from the nozzles and upon the felt.

The invention having been set forth, what is claimed is:

1. In a washing apparatus for cleansing a moving band of felt, the combination with a valve casing having a valve seat provided with a plurality of openings in circular formation, of a plurality of water conducting tubes fixed at one

end in said openings and having nozzles at their opposite ends, said nozzles being serially arranged transversely across the felt and adapted to serially discharge against said felt for washing the same, a housing for said tubes, a rotary valve in said casing engaging the valve seat and provided with a pair of openings adapted to register with the tubes two at a time, a water inlet pipe connected to the valve casing, tensioning means for the valve to hold it against the seat, and means operatively connected to and continuously rotating the disc valve.

2. In a washing apparatus for cleansing a moving band of felt, the combination with a valve casing having a valve seat provided with a plurality of openings in circular formation, of a plurality of water conducting tubes fixed at one end in said openings and having nozzles at their opposite ends, a housing for said tubes, said nozzles being serially arranged transversely across the felt and adapted to serially discharge against said felt for washing the same, a rotary valve in said casing engaging the valve seat and provided with a pair of openings adapted to register with the tubes two at a time, a water inlet pipe connected to the valve casing, tensioning means for the valve to hold it against the seat, and means operatively connected to and continuously rotating said valve, said housing being so arranged as to envelope said tubes along the greater part of their length to prevent their disarrangement, said nozzles protruding exteriorly of the housing.

CHARLES H. MANTON.