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SPINNING APPARATUS FOR CELLULOSE SOLUTIONS

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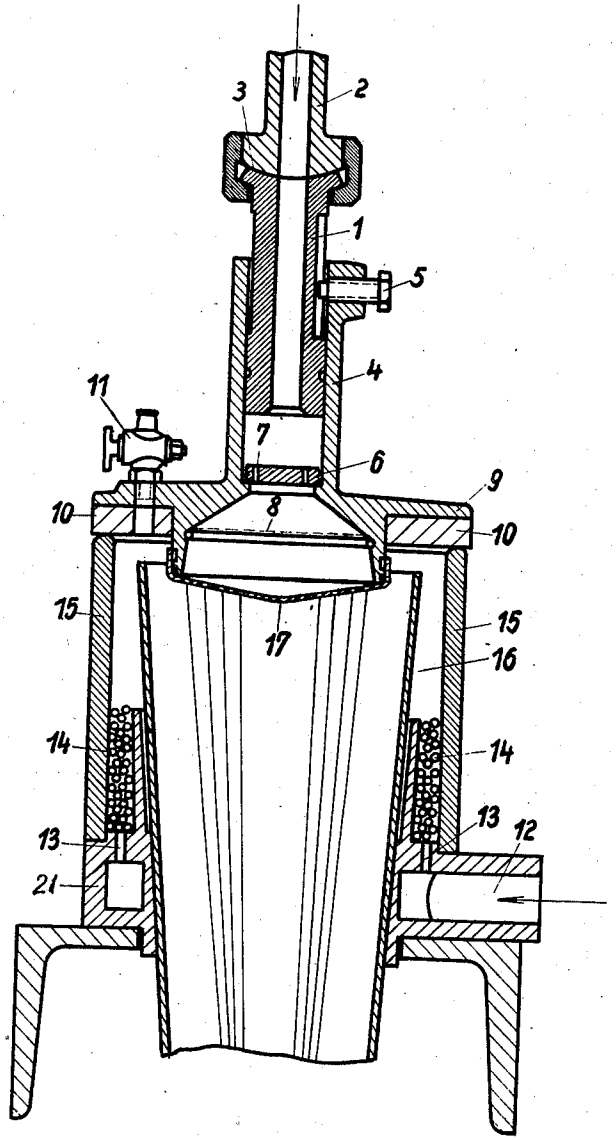

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SPINNING APPARATUS FOR CELLULOSE SOLUTIONS

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4 Claims. (Cl. 18—8)

This invention relates to apparatus for spinning cellulose solutions whether by the viscose, cuprammonium or any other method.

An object of the invention is to enable rapid replacement and quick locking of the parts of the spinning apparatus to be effected.

Spinning apparatus in accordance with the invention essentially comprises a spinning cylinder and a separate spinning jet head adapted to close one end of the cylinder, and is characterized by the provision of means whereby, during the spinning operation, the pressure of the incoming spinning solution is utilised automatically to press the head to tight sealing position against the cylinder.

Preferably a perforated plate is disposed in the spinning jet head to offer such resistance to the incoming spinning solution that, under the pressure to which the plate is thereby subjected, it urges the head into fluid-tight engagement with the cylinder.

Preferably also the spinning jet head is so connected with the supply pipe for the spinning solution that it has limited universal movement ensuring correct seating of the head against the cylinder end. To ensure the required universal movement the head may be slidably mounted on a tubular piece, coupled to the supply pipe, the mating ends of the two being constructed after the manner of a ball joint.

If desired, a filter may be disposed directly in advance of the jet or rose carried by the head. Moreover, the seating and sealing flange of the latter may be equipped with a yielding gasket of rubber or the like.

To ensure quiet and uniform admission of the precipitating liquid to the spinning chamber there is provided a distributor ring having a lateral inlet and a series of distributing ports opening into the spinning cylinder, balls of glass or the like being heaped over the said ports to trap undesirable floating particles and to serve as quieting means for the precipitating liquid. The cylinder is or may be furnished internally with a conical funnel constituting the spinning chamber, the precipitating liquid after rising through the balls overflowing into the funnel.

Further, the spinning jet head may have a valve or cock to serve as an air-relief valve, and if desired as an additional precipitating liquid admission valve.

An embodiment of the invention is illustrated by way of example on the accompanying drawing.

15 denotes the spinning cylinder, and 4 the spinning jet head which, by means of its flange 9 and a rubber gasket 10, is adapted to seal the upper end of the cylinder.

The jet head 4 is slidably mounted in fluid-tight manner on a tubular piece 1 connected to the supply pipe 2 for the spinning solution, the mating ends 3 of these members being spherical so that the piece 1 and accordingly the head 4 are capable of being rocked in various directions. At the upper end of the jet head 4 a fixing screw 5 is provided, so that the members 1 and 4 may be locked in relative positions.

A pressure plate 6 is fixedly or loosely disposed within the jet head 4 and has a number of ports 7 for the passage of the spinning solution. Without departing from the scope of the invention the pressure plate 6 may also comprise a pressure ring with a single port.

A filter 8 is disposed in the widened jet space beyond the plate 6 and in advance of the spinning jet or rose 17.

The jet head is provided with a cock 11, which may serve the purpose of air evacuation or for the admission of additional precipitating liquid.

The main supply for precipitating liquid is indicated as being at 12 in a distributor ring 21 closing the lower end of the cylinder 15 and having an annular series of distributor ports 13 above which balls 14 are heaped. 16 denotes a spinning funnel seated in the ring 21 and into which the precipitating liquid rising above the balls 14 overflows.

In the operation of the described apparatus the jet head 4 with its flange 9 is firmly pressed on to the spinning cylinder 15 by the pressure plate 6, whereby a rapid, automatic and fluid-tight seal is provided. The spinning solution passing under pressure through the supply pipe 2 and tubular piece 1 reaches the pressure plate 6, which offers a resistance in that the spinning solution can only pass through the restricted openings 7 of the pressure plate. Consequently, this plate and the jet head are subjected to downward pressure derived from the pressure of the spinning solution and the flange 9 is accordingly firmly pressed on to the spinning cylinder which is thus automatically sealed in fluid-tight manner.

To start the spinning operation the supply of spinning solution is opened first, whereupon the precipitating liquid is admitted, which carries with it the extruding filaments. To interrupt the spinning process the conduit for the precipitating liquid is closed first, whereupon the supply pipe for the spinning solution is closed. The jet head 4 may then be immediately removed to give access to the spinning cylinder 15 and funnel 16. Manifestly, the invention permits rapid dismantling,

cleaning or replacing of the various parts of the spinning apparatus.

I claim:

1. Spinning apparatus for cellulose solutions, comprising a supply pipe for spinning solution, a tubular piece coupled to the supply pipe for rocking movement in various directions, a spinning cylinder open at one end to afford access to its interior, a spinning jet head slidably mounted on the tubular piece and adapted to bear on and close said open end of the cylinder, and a perforated plate disposed in the head to offer resistance to the passage of spinning solution admitted to the head and thereby automatically press the head to sealing position against the cylinder.

2. A spinning jet head comprising a tubular member having a cylinder sealing flange, a perforated plate seated in said tubular member, a jet rose at the inner end of said member, and a tubular coupling piece slidably engaging said member.

3. A spinning jet head comprising a tubular member having a cylinder sealing flange, a perforated plate seated in said tubular member, a jet rose at the inner end of said member, a filter disposed between said perforated plate and said rose, and a tubular coupling piece slidably engaging said member.

4. A spinning jet head comprising a tubular member having a cylinder sealing flange, a perforated plate seated in said tubular member, a jet rose at the inner end of said member, a filter disposed between said perforated plate and said rose, a valve fitted to the flange of said member, and a tubular coupling piece slidably engaging said tubular member.

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