

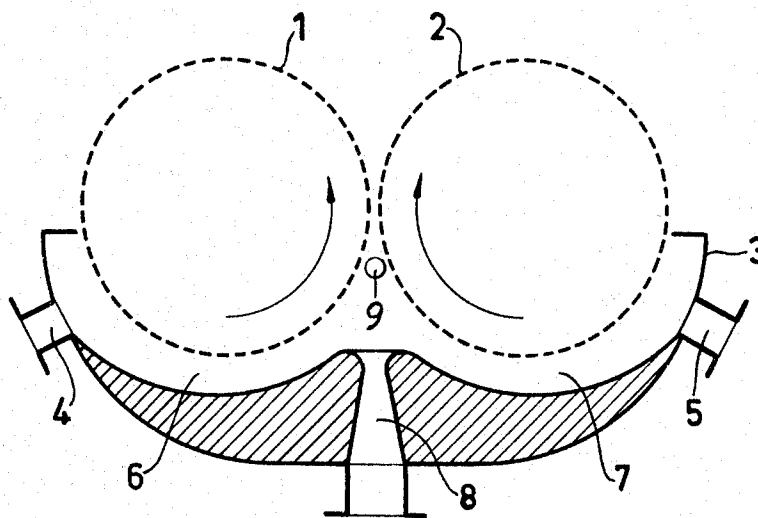
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APPARATUS FOR DEWATERING PULP

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APPARATUS FOR DEWATERING PULP

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2 Claims. (Cl. 100—71)

When treating fibrous pulp in dewatering presses of the kind comprising two roll-like press members which are provided with perforations or the like and which are adapted to rotate in a trough or the like for receiving a pulp suspension, the conditions of flow within the trough are highly unsatisfactory because of the fact that a more or less immovable plug of pulp of a substantially higher concentration than that of the supplied pulp suspension is formed in that zone of the trough located just below the so-called press nip. Parts of such plug get loose and are pulled into the pressure nip, where they cause an uneven press on the press members. As a result an overpressed pulp and a too hard pressure on the press members will result. This will cause deterioration of the quality of the pulp and a shortened life of the press members.

According to the invention, the purpose of which is to eliminate the aforesaid drawbacks in connection with dewatering presses of the kind described, the pulp suspension is supplied to the trough at two, or more, opposite sides thereof and is caused to flow within the trough towards that zone of the trough which is located just below the so-called press nip, where the so-called plug of pulp has a tendency to form. One preferred way of carrying out the method consists in supplying the pulp suspension at a dry content of only 0.5–1.5%, preferably of about 1% or somewhat less. Hereby the formation of a plug of pulp at that zone of the trough which is located just below the press nip will be prevented or counteracted. The dry content of the pulp suspension may also be higher than 1.5% but then there will not be obtained the same effect as that obtained with the lower dry content. The invention also includes means for carrying out the method described.

In the accompanying drawing the method is illustrated in connection with a diagrammatically shown apparatus.

The apparatus comprises two cooperating, substantially horizontal sheet metal cylinders 1, 2, which are provided with perforations or the like. The sheet metal cylinders are adapted to rotate in a closed press trough 3 and their lower portions are adapted to move in a pulp suspension, which is supplied to the trough in such a manner that the suspension will be under a certain pressure within the trough. Upon rotation of the cylinders 1, 2 in the directions of the arrows each of the cylinders will take up a layer of pulp (not shown in the drawing), which during its upward movement is, by means of the cylinders, pressed together with the other layer of pulp to form one single web of pulp. The liquid, which is then squeezed away, can flow through the perforations into the interior of each cylinder, from where it is led away at one or both ends of the cylinder.

At two, or more, opposite sides the trough 3 is provided with inlets 4, 5 for the pulp suspension, which is supplied at a dry content of only about 1%, or somewhat lower, if desired, in order to counteract the formation of an inconvenient plug below the press nip. Moreover, the lower portion of the trough is shaped in such a manner that the entering pulp suspension will, from each inlet, be directed towards the zone located just below the press nip and move the shortest way possible from said inlets to said zone, because between the cylinders 1, 2 and the lower portion of the trough there are provided two passages 6,

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7, leading from the inlets to the zone located below the press nip. The cross sectional area of said passages decreases successively towards said zone, where the trough 3 is provided with an unobstructed outlet 8 for leading away a partial flow of the pulp suspension, such partial flow carrying away lumps of pulp which are of a higher dry content than that of the rest of the suspension and which get detached from the cylinders 1, 2. The trough 3 may also be provided with a pipe line 9 for supplying air, or some other gas, at the zone located just below the press nip in order to further counteract inconvenient lump formations and to provide for a tighter and more uniform web of pulp having a lower water content already prior to the web of pulp entering the press nip.

The described method with the combined effect of the low dry content, the lateral inlets for the pulp suspension, the bottom outlet for a partial flow of the pulp suspension and the supply of air at the zone located below the press nip provide for an extraordinarily even web of pulp. It is possible, therefore, to use the apparatus in question as a wet machine, the web of pulp formed between the cylinders being either rolled or also pressed to bales. In the latter case the web of material may either be cut or folded before being pressed to bales. It is possible also to use the apparatus in question for the manufacture of fiber board.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. Apparatus for dewatering fibrous pulp comprising a trough having a bottom and side walls, two parallel, substantially horizontally disposed, contiguous, roll-like, perforated press members mounted to rotate with at least their lower portions within said trough but spaced from the bottom and sides thereof, means in said side walls of said trough for supplying pulp thereto in quantity sufficient to maintain a body thereof in said trough with its upper surface in contact with said members and an outlet in the bottom of said trough positioned vertically below the nip of said members and unobstructed relative to the nip of said members with respect to large-size pulp plugs and particles.

2. Apparatus for dewatering fibrous pulp comprising a trough having a bottom and side walls, two parallel, substantially horizontally disposed contiguous, roll-like perforated press members mounted to rotate with at least their lower portions within said trough but spaced from the bottom and sides thereof, means in said side walls of said trough for supplying pulp thereto in quantity sufficient to maintain a body thereof in said trough with its upper surface in contact with said members, an outlet in the bottom of said trough positioned vertically below and unobstructed relative to the nip of said members, and means for introducing a stream of gas into said trough at a location just below said nip.

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