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CIRCULATION SYSTEMS OF PULP DIGESTERS

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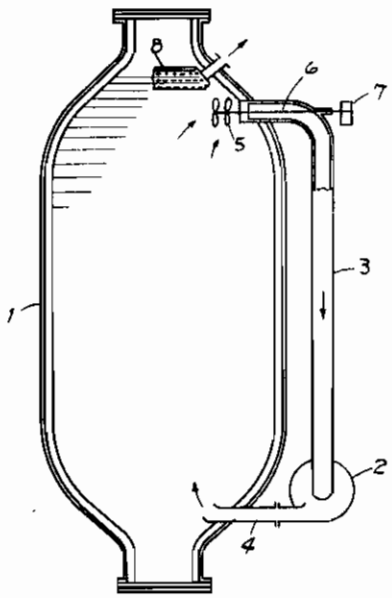

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CIRCULATION SYSTEMS OF PULP DIGESTERS

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This invention refers to an improvement in circulation systems of pulp digesters at which a forced circulation of the mixture of pulp and liquid in the digester is obtained by means of a pump, placed in a pipe line connecting the lower and the upper parts of the digester, and at which a strainer for drawing off surplus liquid, and thereby keeping the liquid level constant, is arranged at the upper part of the digester.

The invention consists in arranging one or more rotary or oscillating bodies, such as propellers or similar devices, at the inlet of the suction part of the stated pipe line and close to the drawing-off strainer for the purpose of obtaining a uniform flow into the piping, and preventing the piping and the pump as well as the drawing-off strainer from being clogged and choked by the chips or the pulp.

The object of the invention is to make it possible to use forced circulation systems when cooking certain raw materials which have such a consistency that circulation by hitherto known arrangements is impossible. One such raw material is, for instance, bagasse. Such raw materials have a tendency to pack hard in the digester, and to form more or less large lumps which are liable to choke the circulation piping and cause the circulation to stop. They may also accumulate on the draw-off strainer so that it becomes impossible to draw off the surplus liquid. The present invention aims at removing operating difficulties of this kind.

The invention is illustrated in the attached drawing, in which 1 indicates the digester, 2 the circulation pump, 3 the suction pipe to the pump 2, 4 the pressure pipe from pump 2, 5 the rotary or oscillating body which is mounted on the shaft 6, and driven, for instance by the pulley 7 or in some other known way, 8 is the drawing-off strainer.

The mixture of pulp and cooking liquid is drawn by the pump 2 via the rotary body 5 into the suction pipe 3 in the upper part of the digester, and after passing the pump 2 is returned by way of the pressure pipe 4 into the lower part of the digester. The rotating body 5 breaks up any agglomerations of chips or pulp so that the flow into the suction piping becomes smooth and unobstructed. At the same time the rotary body 5 prevents any chips or pulp from settling on the drawing-off strainer 8.

The attached drawing shows only one way of applying the invention. It is however possible also to apply the invention at such circulation systems where the circulating cooking liquid is separated from the pulp by means of a strainer placed before the suction pipe to the pump, and at which the practically fibre-free liquid only enters the circulation piping and the pump. At such circulating systems the strainer might gradually become choked with chips and pulp, but by using the rotary or oscillating body as described above the strainer can be kept clean, so that the circulation will work smoothly.

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