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Means for dispersing paper, cardboard and pulp.

57 A means for dispersing paper, cardboard and pulp, comprising a basin (1) open on top, into which the raw material to be dispersed is fed e.g. from a paper machine located thereabove, and wherefrom it is removed when dispersed with the aid of a pump, and one or several dispersing units (3) placed on the wall (6) of the basin (1), preferably a rotor/rotors. A problem with this kind of apparatus known in the art is that the pulp-circulation effect of the dispersing rotors is poor, whereby the material to be dispersed cannot enter the effective range of the rotors well enough. With the aid of the invention, the problem is solved in that one or several members (7) feeding pulp are provided in the basin its shaft (8) connecting with the shaft (5) of the rotor (3) and parallelling it.

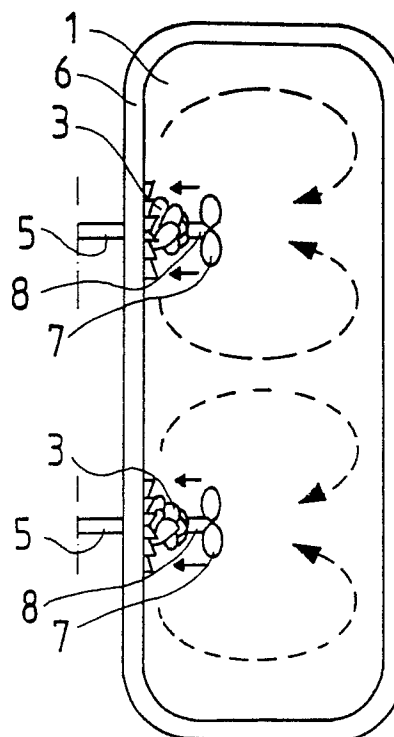


Fig. 3

Means for dispersing paper, cardboard and pulp

The present invention concerns a means for dispersing paper, cardboard and pulp, said means comprising a basin open on top into which the raw material to be dissolved is fed e.g. from a paper machine located thereabove, and wherefrom it is removed with a pump after being dispersed, and one or several dispersing units, preferably a rotating rotor/rotors, placed on a wall of the basin.

This kind of means (a pulper) is primarily used underneath big paper machines for dispersing paper and cardboard. Fluted guide members are provided above the means which guide the paper and cardboard to be dispersed, coming from the paper machine to a basin open on top. On one wall of the basin are placed dispersing units, these being rotors. Most often there are two rotors, each being provided with a drive motor of its own. The rotors are usually placed side by side at the same height from the basin bottom, and their shafts are as a rule parallel. Outside the basin, between the rotor shafts, is usually placed a removal pump for the dispersed pulp.

The greatest drawback embarrassing the apparatus known in the art is that the pump circulating effect of the rotors is poor, whereby the paper or cardboard to be dispersed does not efficiently enter the effective region of the rotors. At the same time, sizing and various fillers have developed, and the production quantities and requirements of machines have increased.

The object of the present invention is to improve the circulation of pulp, so that the entrance of pulp in to effective range of the rotors is enhanced. The aim is achieved with the means of the invention which is characterized in that one or several pulp feeding members are provided in the basin the shaft thereof being coupled to the shaft of the rotor and parallel therewith.

An advantageous embodiment of the invention is characterized in that the member feeding pulp is a propeller.

Another advantageous embodiment of the invention is characterized in that the member feeding pulp is a screw.

A further advantageous embodiment of the invention is characterized in that the distance of the member feeding pulp from the rear surface of the rotor on the side towards the motor is less than or equal to 4000 mm.

As one of the most remarkable advantages of the invention may be mentioned saving of energy which is based on the fact that the dispersing rotors are started only in the event of web break and that the rotor receives a filling in axial direction which corresponds to the radial output of the dis-

persing rotor, whereby the paper entering the means will pass efficiently with the liquid flow to the dispersing rotor.

In the following is presented the invention in detail by referring to the drawings attached, in which -

Fig. 1 presents in elevational view, and partly sectioned, a means of prior art for dispersing paper, cardboard and pulp.

Fig. 2 presents the means of prior art in top view and simplified.

Fig. 3 presents the means of an embodiment of the invention in top view and simplified.

Fig. 4 presents the means of another embodiment of the invention in top view and simplified.

In Fig. 1 is presented a means for dispersing paper, cardboard and pulp. The means is most advantageously placed below a large paper machine, whereby the feeding of material to be dispersed into the basin 1 is through the open top part of the basin. For said purpose, above the basin are provided oblique guides 2, visible only in Fig. 1. Dispersing paper, cardboard and pulp in the basin 1 takes place by means of dispersing units 3, which most advantageously are rotating rotors. In the embodiment examples presented in the present application, there are two rotors, these being located at the same height and on the same wall 6 of the basin. The drive motors 4 of the rotors 3 are placed outside the basin.

In Fig. 2 is presented a dispersing means likewise of prior art, and the mutual location of the rotors in relation to each other is shown therein. In apparatus of prior art, the pulp circulation inside the basin 1 is not efficient enough.

In Fig. 3 is presented the means of an embodiment of the invention, considerably simplified, for dispersing paper, cardboard and pulp. Therein, the shafts of the dispersing rotors 3 coincide each with a shaft 8 of a member feeding pulp to the rotors, a propeller 7 in the present instance, and parallel with it. The propeller 7 may rotate either at the same speed as the rotor 3 or at a different speed. The distance of the propeller 7 from the rear face of the dispersing rotor 3 on the the motor side is less than or equal to 4000 mm. Arrows in Fig. 3 indicate the flow directions of pulp, and one may learn from them that pulp feeding to the rotors 3 has become more efficient than before. In Fig. 4, the member feeding pulp is a screw 9 or equivalent, which in other respects is similarly mounted as the propeller 7 described above.

It is obvious to a person skilled in the art that

the invention is not confined the embodiment examples presented above, and that they may vary within the scope of the claims stated below.

Claims

1. A means for dispersing paper, cardboard and pulp, comprising a basin (1) open on top, into which the raw material to be dispersed is fed e.g. from a paper machine located thereabove and wherefrom it is removed in dispersed state with the aid of a pump, and one or several dispersing units (3) placed on the wall (6) of the basin, preferably a rotating rotor rotors, characterized in that in the basin is provided one or several pulp-feeding members (7,9), its shaft (8) being parallel with the shaft (5) of the rotor (3).

2. Means according to claim 1, characterized in that the member feeding pulp is a propeller (7).

3. Means according to claim 1, characterized in that the member feeding pulp is a screw (9).

4. Means according to any one of claims 1 to 3, characterized in that the distance of the means (7,9) feeding pulp is less than or equal to 4000 mm from the rear face of the rotor (3) on the side of the motor (4) is less than or equal to 4000 mm.

5. Means according to any one of claims 1 to 4, characterized in that the speeds of rotation of the member (7,9) feeding pulp and of the rotor (3) are equal.

6. Means according to any one of claims 1 to 4, characterized in that the speeds of rotation of the member (7,9) feeding pulp and of the rotor (3) are different.

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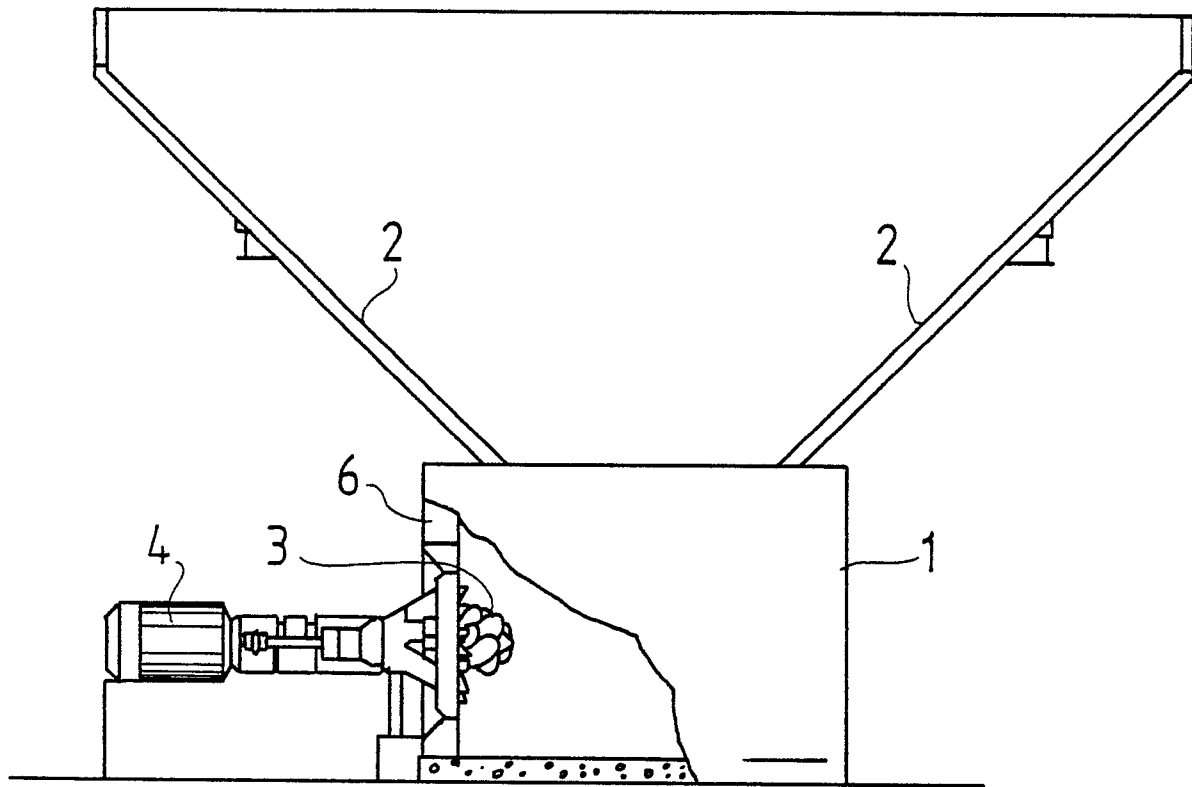


Fig. 1

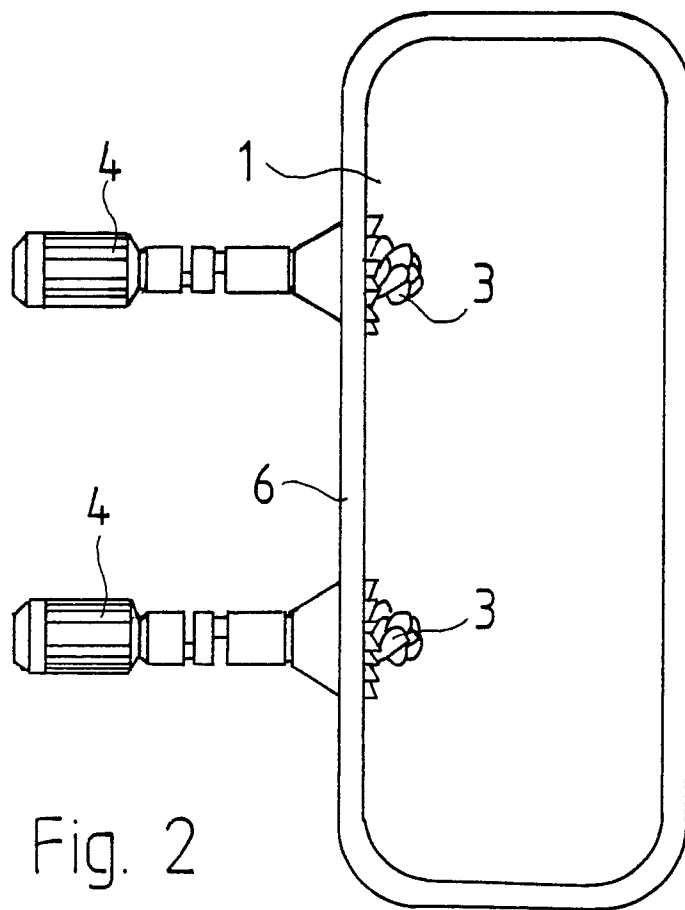


Fig. 2

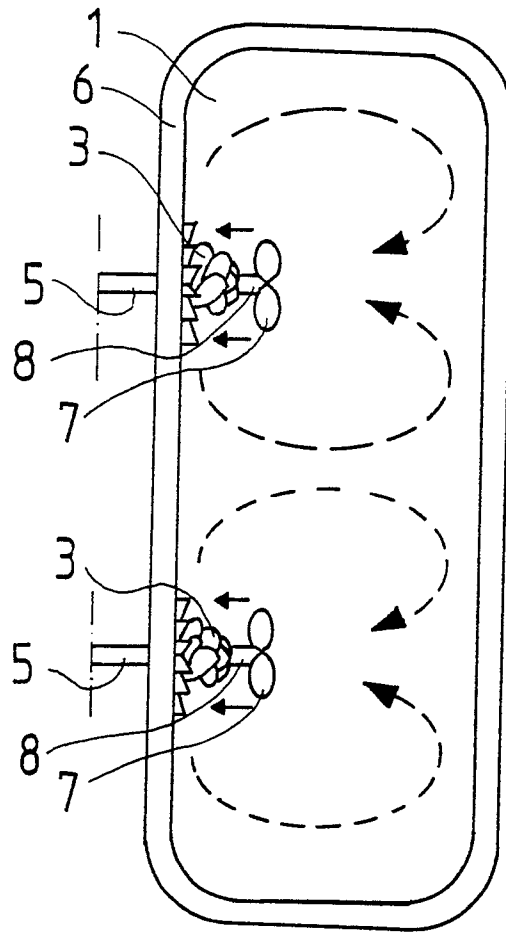


Fig. 3

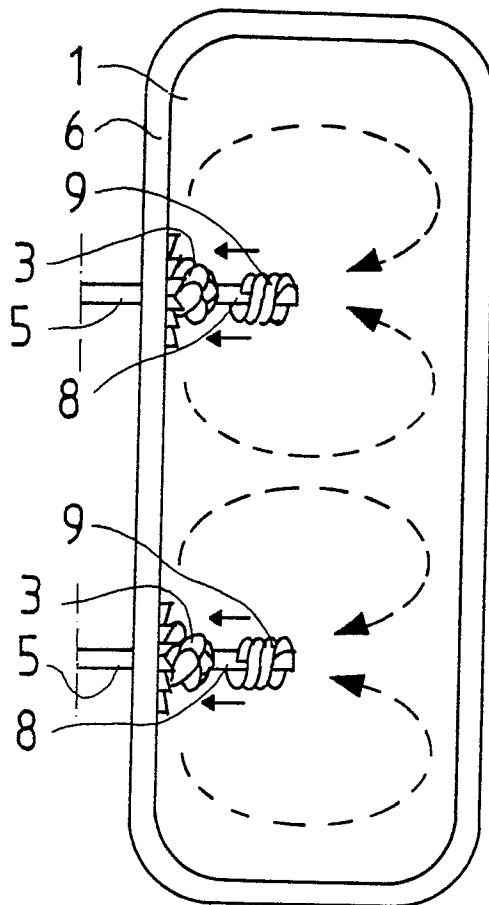


Fig. 4



EP 87 85 0355

DOCUMENTS CONSIDERED TO BE RELEVANT															
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)												
X	FR-A-1 032 588 (VOITH) * Whole document * ---	1,2,5	D 21 B 1/34												
X	US-A-3 417 933 (BUCK et al.) * Whole document * ---	1,2,5													
X	EP-A-0 124 431 (LAMORT) * Whole document * ---	1,3-5													
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X	GB-A- 10 154 (MILNE) (A.D. 1914) * Whole document * ---	1,2,4,5													
X	US-A-2 796 006 (CHAPLIN) * Whole document * -----	1,3,6													
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)												
			D 21 B D 21 D												
The present search report has been drawn up for all claims															
Place of search THE HAGUE		Date of completion of the search 25-03-1988	Examiner DE RIJCK F.												
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