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(54) **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 mechanical or flow-technological apparatus (7) providing pulp flow for the rotors is mounted on the wall (5) of the basin (1) opposite to the rotors (3).

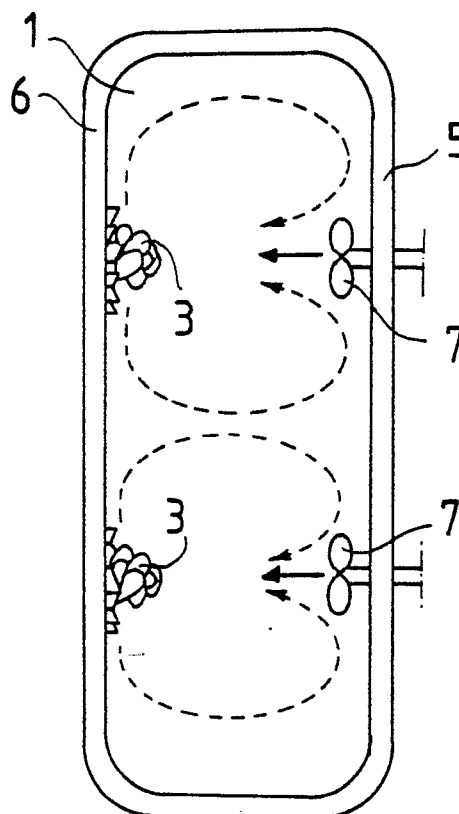


Fig. 3

Means for dispersing paper, cardboard and pulp

This 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 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 pulp 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 into the 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 mechanical or flow technical devices generating pulp flow in the rotors are mounted on the wall opposite to the rotors.

An advantageous embodiment of the invention is characterized in that the mechanical means producing pulp flow is an axial propeller.

Another advantageous embodiment of the invention is characterized in that the mechanical means producing pulp flow is a screw.

A third advantageous embodiment of the invention is characterized in that the flow-technical means providing pulp flow is liquid flow provided through a pipe with the aid of a pump.

One more advantageous embodiment of the invention is characterized in that the mechanical or flow-technological apparatus provided on the wall of the basin opposite to the rotors are located on a conceivable continuation of the shafts of the rotors.

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 dispersing 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 for dispersing paper, cardboard and pulp.

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

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

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

Fig. 5 presents one more 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. Dispensing 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 1. 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 wall 5 of the basin 1 opposite to the rotor wall 6 is provided with two axial propellers 7 which generate the pulp flow indicated by arrows when the means is operating. As it is observed, the axial propellers are placed to be essentially coaxially with the dispersing rotors.

In Fig. 4 is presented likewise considerably simplified another embodiment of the invention in which for the mechanical means generating pulp flow are used screws 8. The screws are placed essentially in the same way as the propellers 7

described in the foregoing.

In Fig. 5 is furthermore presented considerably simplified one more embodiment of the invention in which the pulp flow is provided by a flow-technological means. Therein, liquid is pumped into the basin 1 through pipes 9 disposed in the wall 5. In this way is provided again the pulp flow indicated by the arrows. 5

It is obvious to a person skilled in the art that the invention is not confined to the embodiment examples presented above, and that they may vary within the scope of the claims stated below. Therefore, apparatus generating pulp flow mechanically or flow-technologically may be established an arbitrary number, and their position may vary as need be. 10 15

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 (1), preferably a rotating rotor/rotors, characterized in that in the basin is provided one or several mechanical or flow-technological means (7,8,9) providing pulp flow for the rotors. 20 25 30

2. Means according to claim 1, characterized in that the mechanical means providing pulp flow is an axial propeller (7).

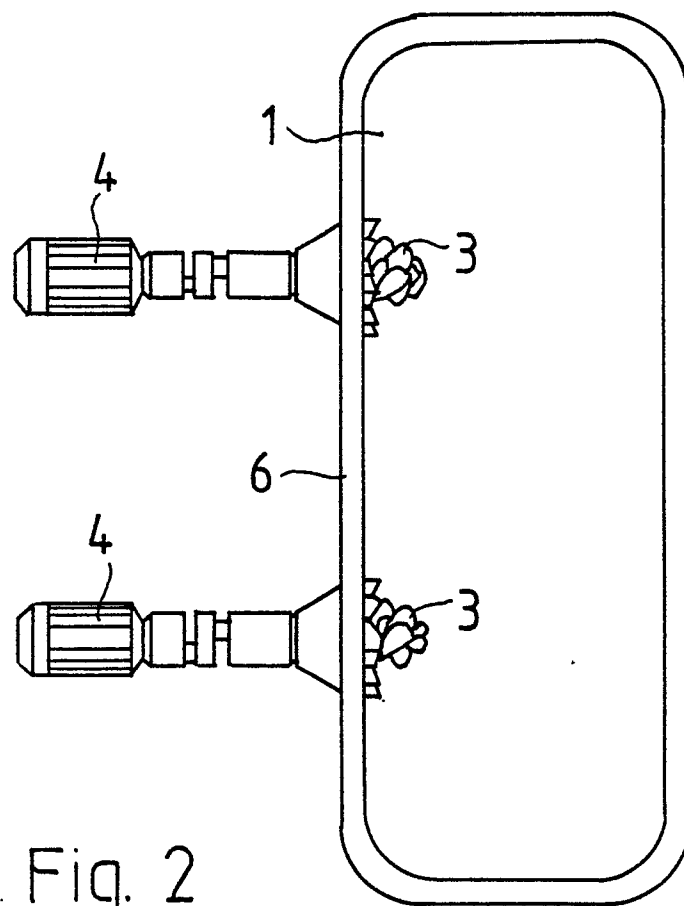
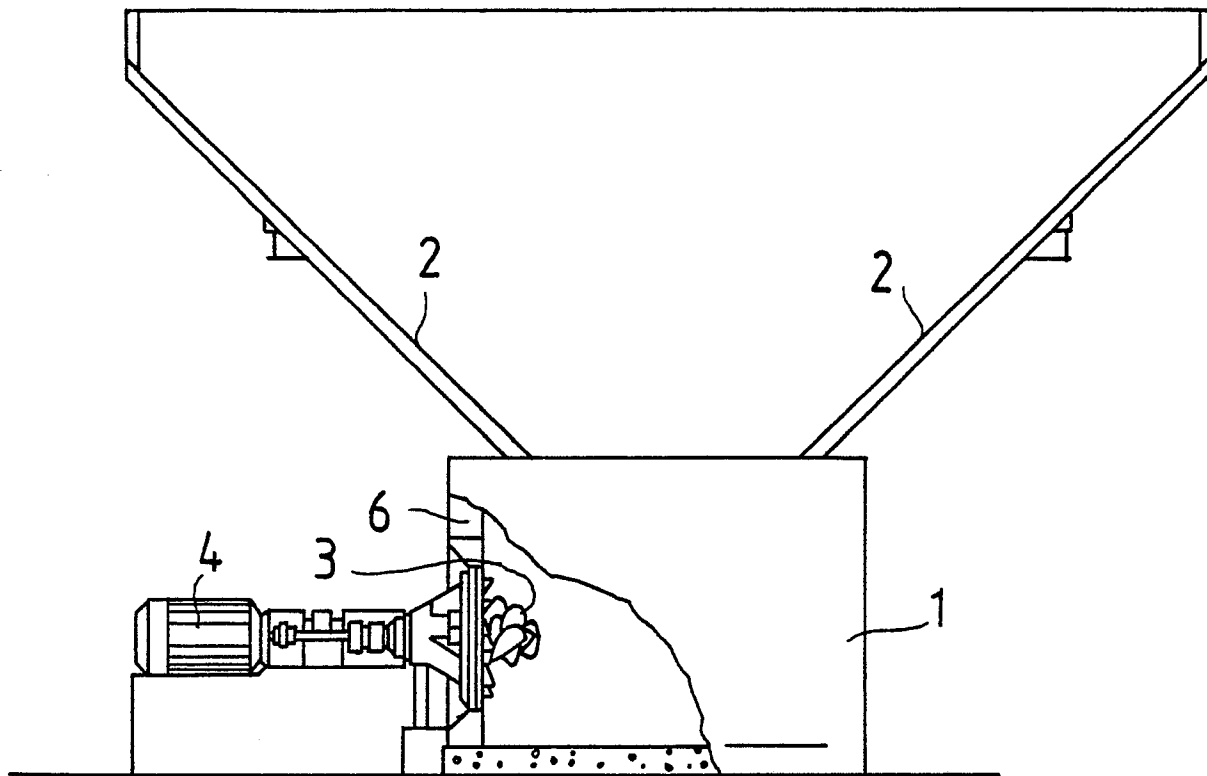
3. Means according to claim 1, characterized in that the mechanical means providing pulp flow is a screw (9). 35

4. Means according to claims 1, characterized in that the flow-technological means providing pulp flow is a liquid flow produced with a pump through a pipe (9). 40

5. Means according to any one of claims 1 to 4, characterized in that the mechanical or flow-technological apparatus provided on the wall (5) opposite to the basin (1) with reference to the rotors (3) are located on a conceivable continuation of the rotor shafts. 45

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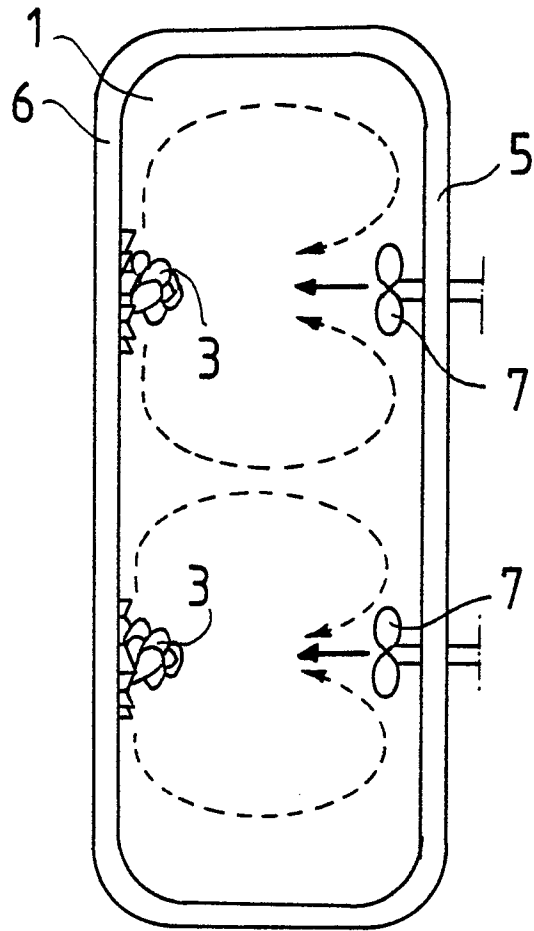


Fig. 3

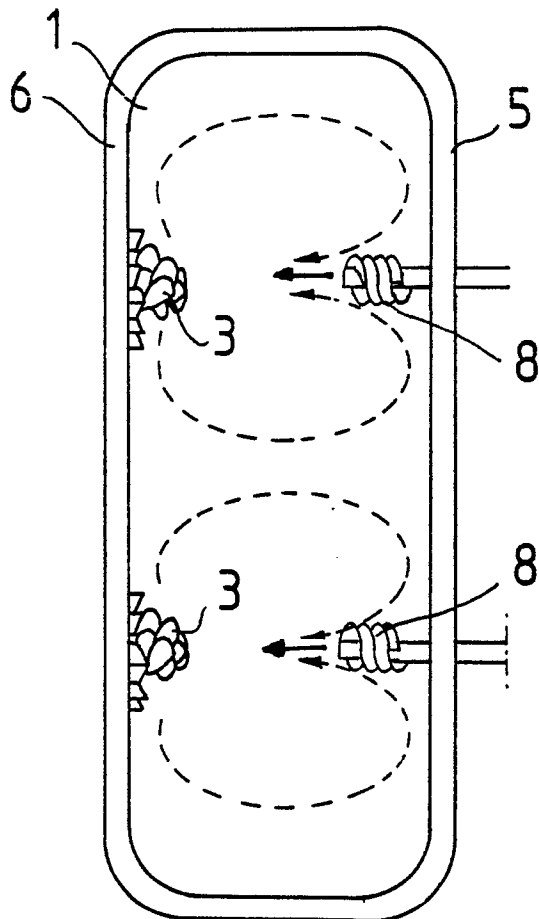


Fig. 4

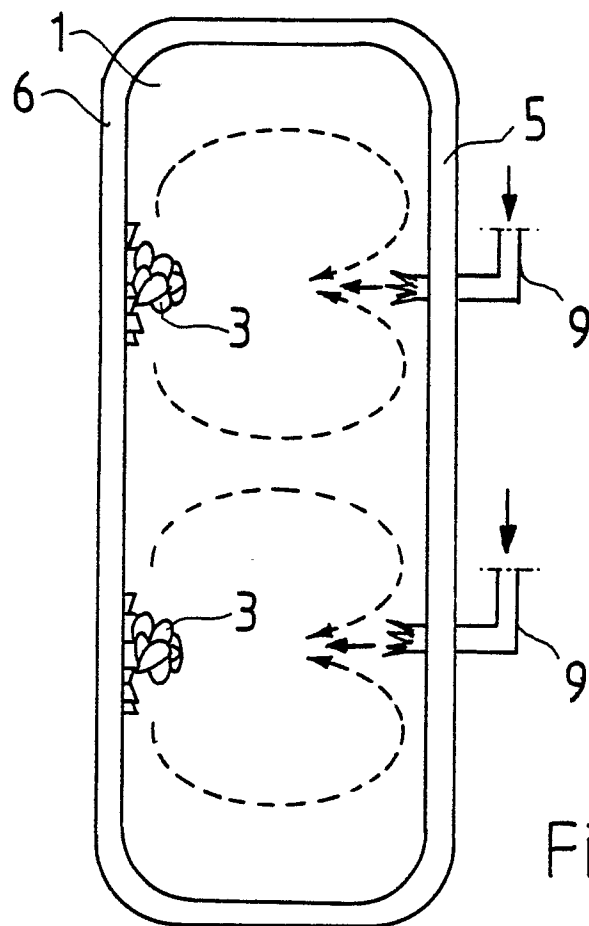


Fig. 5



EP 87 85 0356

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	CH-A- 284 805 (VOITH) * Whole document *	1,2	D 21 B 1/34
X	US-A-3 417 933 (BUCK et al.) * Whole document *	1,2	
X	US-A-2 796 006 (CHAPLIN) * Whole document *	1,3,5	
X	EP-A-0 124 431 (LAMORT) * Whole document *	1,3	
A	GB-A-2 058 597 (VYSOKA SKOLA CHEMICKO-TECHNOLOGICKA)		
			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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