

[54] **SHAFT FOR DEPOSITING FIBER FLOCKS**

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[51] **Int. Cl.** **B65g 53/40**

[58] **Field of Search** 19/105; 55/319; 302/28, 302/59

[56] **References Cited**

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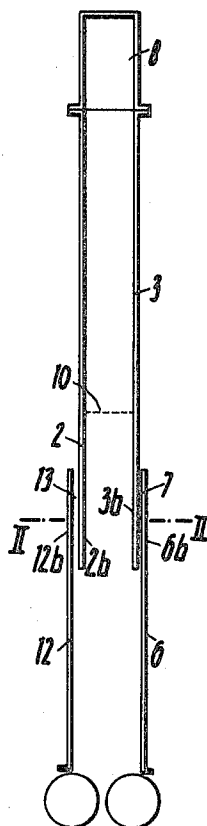
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[57] **ABSTRACT**

A vertical shaft for depositing fiber flocks which may be used for feeding a card is adapted to be connected to a pipe which feeds pneumatically fibre flocks into its upper end and has an aperture for the escape of the air with which the fibre flocks are fed. Said aperture consisting in a slit which is formed between a vertical side wall of the upper part of the shaft and a vertical side wall of the lower part of the shaft which has a greater distance from the opposite vertical side wall of the shaft, the upper end of which ends above the lower end of said side wall of the upper part of the shaft.

3 Claims, 4 Drawing Figures



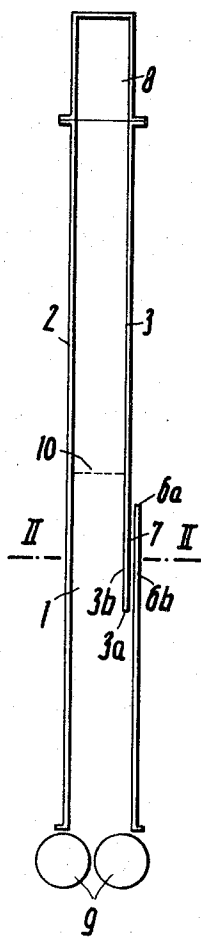


Fig. 1

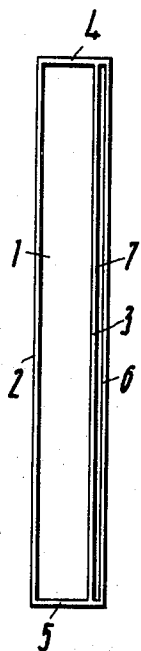


Fig. 2

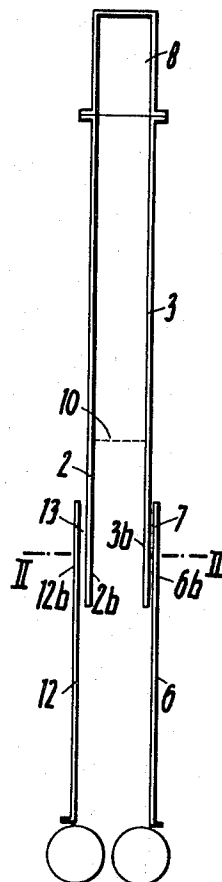


Fig. 3

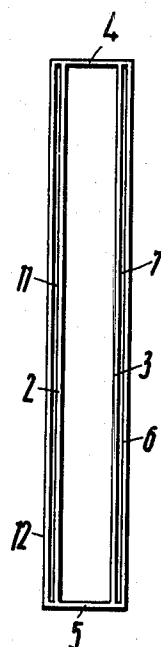


Fig. 4

SHAFT FOR DEPOSITING FIBER FLOCKS

BACKGROUND OF THE INVENTION

The invention relates to a shaft for depositing of fiber flocks which are fed into it at the upper end by pneumatic means. Shafts of this kind are used for instance to conduct fibrous material to a carding machine. Such a vertical shaft is connected, at its top end, to a pipe which feeds fiber flocks pneumatically to it, whilst at its lower end a device is arranged which extracts the fibers mechanically. Shafts of this type are known which have, in one of the vertical side walls, an aperture through which the air with which the fibre flocks are conducted into the shaft can escape. The invention relates to this type of shafts.

With shafts of this kind it is known to provide several horizontal rows of round air outlet apertures in one of the vertical side walls of the shaft above the bottom end of said shaft, said apertures being so small in diameter that the air which passes out of them does not take any fiber flock with it. The disadvantage of air outlet apertures of this kind is that they can become somewhat clogged by flocks after a certain time.

The object of the invention is to provide a shaft of the above mentioned type with an air outlet aperture which does not become clogged.

SUMMARY OF THE INVENTION

According to the invention a shaft of the kind specified comprises upper and lower parts and the lower end of a vertical side wall of the upper part of the shaft lies in a position which is below the upper end of a vertical side wall of the lower part of the shaft, which is outside said side wall of the upper part of the shaft and which is spaced from it, so that the parts of said side walls of the shaft which overlap one another form a slit which opens into the lower part of the shaft.

The distance between said overlapping parts of said walls and the width of said slit is only a few millimeters. This distance and this width may be variable.

The widening of the lower part of the shaft which is produced with this arrangement has the added advantage that the air expands when flowing through the duct downwards and because of this the pressure is reduced at the place where the air passes out of the shaft.

DESCRIPTION OF EMBODIMENTS

The drawings show embodiments of the invention. In the drawings:

FIG. 1, shows a longitudinal section through a shaft according to the invention,

FIG. 2, shows a cross section along the line II—II of FIG. 1,

FIG. 3, shows a longitudinal section through another embodiment of the invention,

FIG. 4, shows a cross-section along the line IV—IV of FIG. 3.

The shaft 1 shown in the drawing is part of a device for supplying, pneumatically, several parallel shafts of this kind by means of a common feed pipe 8. The shaft 1 has an upper part having four vertical walls 2, 3, 4 and 5 arranged at right angles to each other in such a way that an elongated rectangular cross section is produced. A lower part of the shaft is below the normal filling level 10 of the shaft has vertical walls 2, 4, 5 and 6 which are also arranged at right angles to each other.

A mechanical fiber extraction device 9 is arranged at the bottom end of the shaft 1.

The longitudinal wall 6 of the lower part of the shaft is spaced at a distance from the opposite longitudinal wall 2 which is several millimeters greater than the distance of the longitudinal wall 3 of the upper part of the shaft from the continuous longitudinal wall 2. The lower end 3a of the longitudinal wall 3 ends several centimeters below the upper end 6a of the longitudinal wall 6 so that between the lower end part 3b of the longitudinal wall 6, said part 6b being parallel to said wall 3, there is formed a slit 7. This slit has a vertical length of several centimeters, e.g. 6 to 20 centimeters, extends over the whole width of the shaft 1, and is only a few millimeters, e.g. 2 to 6 millimeters, wide. The slit 7 opens out at the bottom into the lower part of the shaft and at the top into the open air or into a channel (not shown) which is connected to a pneumatic air extraction device.

In the shaft shown in FIGS. 3 and 4 the lower part of the shaft is widened on both longitudinal sides. Therefore not only do the parallel end parts 3b and 6b form a vertical slit 7 but also the wall 2 of the upper part of the shaft and the corresponding wall 12 of the lower part of the shaft are spaced several millimeters apart so that their lower end parts 2b and 12b form a vertical slit 13.

What I claim is:

1. In an apparatus for conveying fiber flocks comprising means for conveying said fiber flocks pneumatically into an elongated vertical shaft, said means disposed at the upper end of said shaft and means at the lower end of said shaft for extracting mechanically a wad consisting of fiber flocks deposited in the shaft, the improvement for permitting escape of air from said shaft wherein said shaft is defined by four rectangular vertical air impermeable walls extending between said means for conveying said fiber flocks pneumatically and said means for extracting said fiber flocks, said walls disposed to define a shaft which in cross-section has a rectangular shape, one of said vertical walls consisting of two parts, the first of said parts reaching upwards to said means for conveying fiber flocks pneumatically and having its lower end at a distance remote from said extracting means, the upper end of the second of said parts terminating upwards of the lower end of said first part and being disposed exteriorly and in overlapping relationship outside of said first part to define a vertical channel between said both parts, said walls of said parts running substantially parallel to one another vertically, the width of said channel between said parts being 2 to 6 mm.

2. An apparatus according to claim 1 wherein a wall opposed to said vertical wall consisting of two parts also consist of two parts, the first part of which reaches upward to said means for conveying fiber flocks and has its lower end at a distance remote from said extracting means, the upper end of the second of said parts of which also terminates upward of the lower end of the first part thereof and is also disposed exteriorly and in overlying relationship with its corresponding first part to define another vertical channel therebetween, the width of the channel so defined also being 2 to 6 mm.

3. An apparatus according to claim 1 wherein one of said vertical walls opposed to the wall having two parts is continuous from said conveying means to said extracting means.

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