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PAPER PULP STRAINING MACHINE, PAPER AND RAG DUSTER, AND THE LIKE

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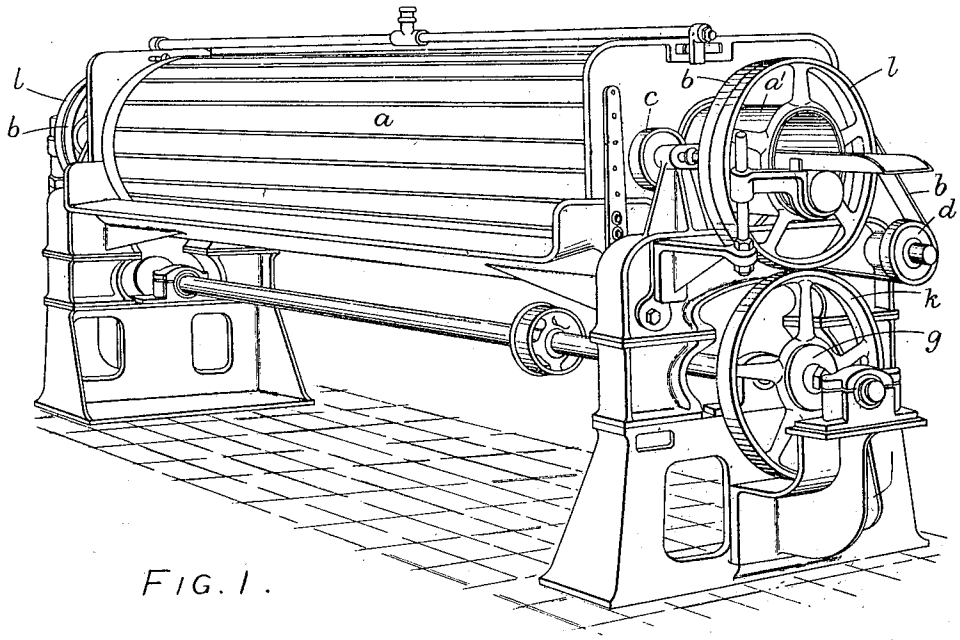

FIG. 1.

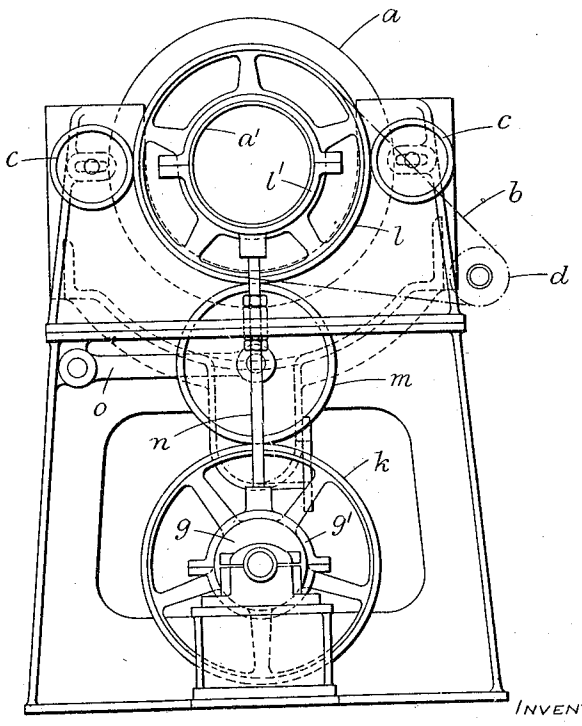

FIG. 2.

INVENTOR.

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PAPER-PULP-STRAINING MACHINE, PAPER AND RAG DUSTER, AND THE LIKE.

Application filed December 10, 1921. Serial No. 521,520.

To all whom it may concern:

Be it known that I, JOHN PARAMOR, a subject of the King of Great Britain and Ireland, residing at 6 Kingsfield Road, Watford, in the county of Herts, England, have invented new and useful Improvements in Paper-Pulp-Straining Machines, Paper and Rag Dusters, and the like, of which the following is a specification.

This invention relates to paper-pulp straining machines, paper and rag-dusters and the like, of the rotating drum type; the pulp under treatment flowing either inwardly or outwardly in relation to the drum.

In drum straining machines of either of the types referred to, it is usual to impart to the drum a slow rotative motion, and at the same time to subject it to vibration, in order to facilitate the passage of the pulp through the straining medium. My present invention consists in improved means for imparting to the drum a vibratory motion of a positive character in conjunction with improved means for effecting its rotation; the means whereby these respective movements are generated being independent of one another and capable of separate adjustment.

In the accompanying drawings are illustrated means for carrying my invention into effect: Fig. 1 being a perspective view of an outward-flow strainer in which the straining drum is mounted direct on an eccentrically mounted dithering drum, and Fig. 2 an end elevation of an inward-flow strainer wherein the straining drum is mounted in a similar manner, but according to a modified design.

According to the method of construction illustrated in Fig. 1, I mount the drum-trunks, wherewith the opposite ends of the drum *a* are provided, direct upon the eccentrics *g*; and in order to maintain the drum in position thereon, I provide each of the trunks with a pair of idle rollers *c*, *c*, arranged against its opposite sides and at about the level of the drum-axis. The drum-trunks are moreover respectively provided with pulleys *l* and driving belts *b* which serve to impart to the drum a slow rotative motion; this rotative motion being independent of the vibratory motion derived from the eccentrics.

In view of the fact that the rotative speed of the eccentrics is high, whilst that of the drum is very low, each of the wheels *k* is mounted loose on the eccentric *g*; these wheels being in direct contact with the fixed pulleys *l* on the drum-trunks a^1. To the latter wheels, the rotative driving bands *b* are applied. Owing to frictional contact with the wheels *k*, the wheels *l* slowly revolve about the eccentrics *g*, but nevertheless communicate to the drum the dither derived from the eccentrics one at each end of the machine.

According to the modified method of construction illustrated in Fig. 2, instead of the wheel *l* being arranged in direct contact with the wheel *k*, an idle wheel *m* is interposed between the wheels *k*, *l*, and serves both to support the drum-trunk and to communicate thereto the dither derived from the eccentric *g*. As my improved method of mounting and working is in this instance shown as applied to an inward-flow strainer and as with strainers of this type there is, owing to the buoyancy of the drum, a tendency for it to rise in the pulp-vat, the eccentric strap g^1 is rigidly connected, by means of a rod *n*, with as trap l^1 which embraces the drum-trunk a^1, but is free thereon. The wheel *l*, however, is fast on the said trunk. The wheel *k* is in like manner mounted free upon the eccentric *g* or upon the hub of the eccentric strap g^1. In order to maintain the idle wheel in position, it is mounted on a vibratory link *o* pivoted to the frame of the machine.

Although the band *b* has, in the foregoing description, been referred to as a "driving belt," I desire to point out that its functions are not confined to rotating the straining drum. Under the influence of the vibrations to which the drum is subjected, there is a tendency for it to rotate automatically; sometimes at even a greater speed than commensurate with the travel of the band. It is, however, essential that the drum should revolve at a constant speed in order to ensure perfect regularity in the delivery of the pulp. In the event therefore of the rotative speed of the drum tending to exceed that corresponding with the travel of the band, the latter acts as a retarding rather than as a driving agent, and serves to maintain a constant speed of rotation, regardless of any inherent tendency in the drum to rotate.

One of the advantages resulting from the direct, or in effect direct, application of the dithering eccentrics to the drum is that the vibratory action is of a more positive character, and is more easily regulated to that desired by adjusting the throw of the eccentrics.

I claim:

1. A paper-pulp straining machine of the rotative drum type wherein the drum-trunks are supported upon and vertically above eccentrics which operate to impart a rapid dither to the drum, wherein the drum is guided in its vertical movement by means of idle rollers arranged on opposite sides thereof, and wherein independent means are provided for imparting to the drum a slow but constant rotative movement.

2. In a paper-pulp straining machine of the type wherein the straining drum is carried by means of terminal trunks, the combination with a drum-trunk of a wheel fast thereon and to which a slow rotative movement is imparted, a rapidly revolving eccentric, and a loose wheel arranged about the eccentric and serving both to support the drum-trunk-wheel and to impart to the drum the dither generated by the rapidly revolving eccentric.

3. In a paper-pulp straining machine of the type wherein the straining drum is carried by means of terminal trunks, the combination, with a drum-trunk, of a wheel fast thereon and to which a slow rotative movement is imparted, a rapidly revolving eccentric, a loose wheel about the eccentric, an idle wheel interposed between the trunk-wheel and the eccentric-wheel, and a rod connecting the strap of the eccentric with a strap arranged about the drum-trunk.

JOHN PARAMOR.