

W. W. BEAUMONT.
MACHINE FOR STRAINING PAPER PULP.
APPLICATION FILED JAN. 4, 1916.

1,237,280.

Patented Aug. 21, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

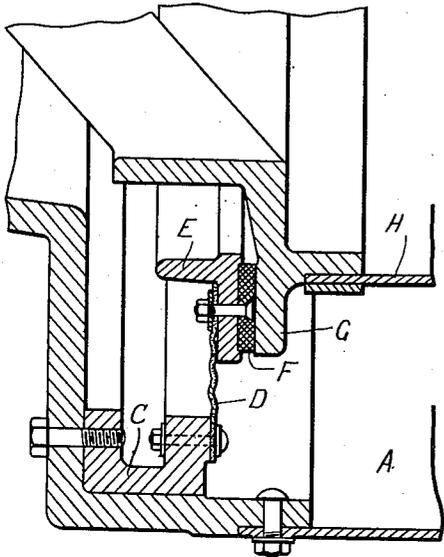


Fig. 2.

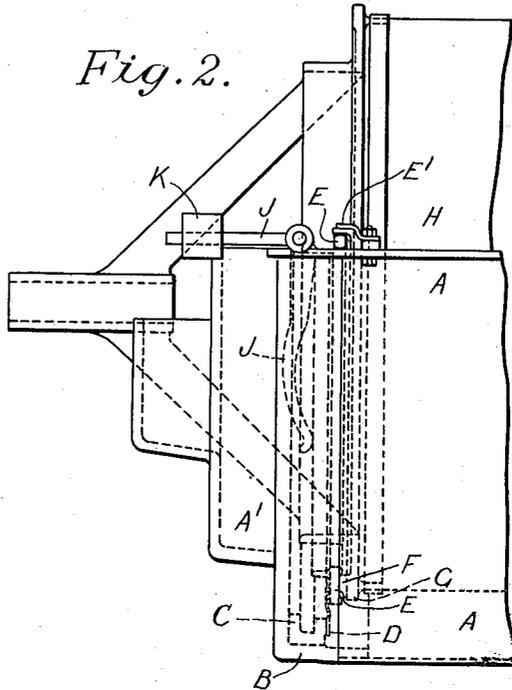


Fig. 4.

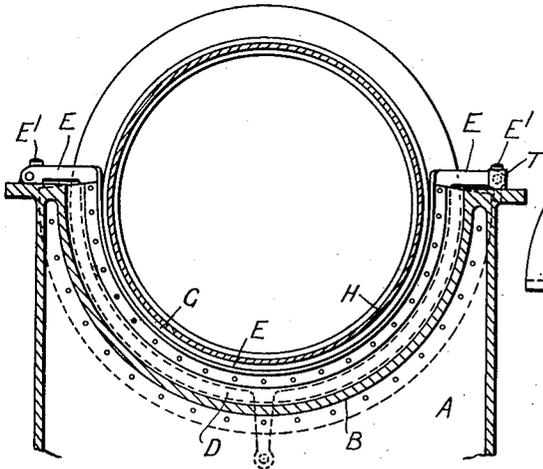
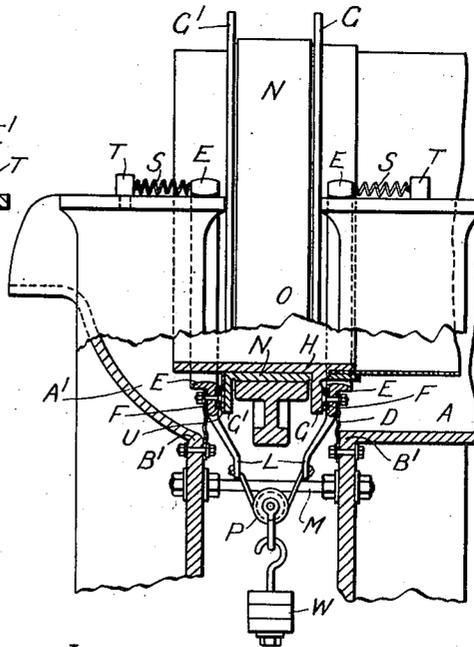


Fig. 3.



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Fig. 5.

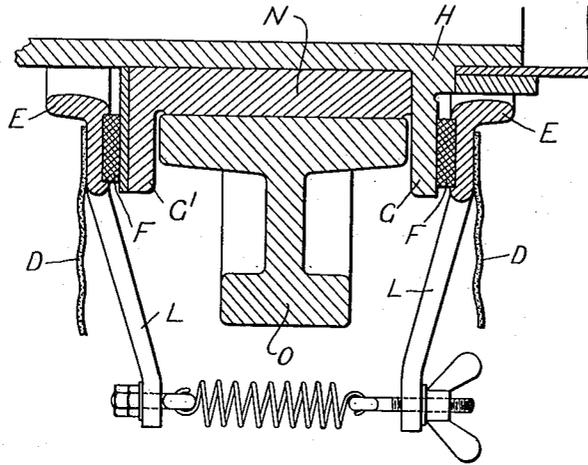
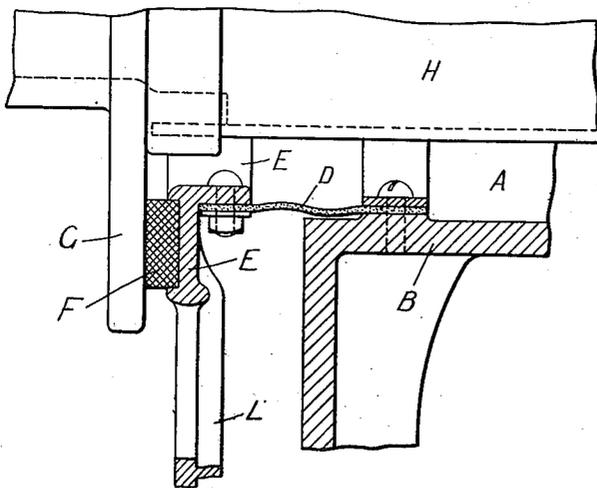


Fig. 6.



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UNITED STATES PATENT OFFICE

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MACHINE FOR STRAINING PAPER-PULP.

1,237,280.

Specification of Letters Patent.

Patented Aug. 21, 1917.

Application filed January 4, 1916. Serial No. 70,167.

To all whom it may concern:

Be it known that I, WILLIAM WORBY BEAUMONT, a subject of the King of Great Britain and Ireland, residing at The Outer Temple, 222 Strand, in the city of Westminster, London, England, have invented new and useful Improvements in Machines for Straining Paper-Pulp, of which the following is a specification.

This invention relates to paper-pulp straining machines of the rotating drum type, such as described in the specification to the United States patent granted to me and dated January 4th, 1916 No. 1,166,882 and has particular reference to the formation of the joints between the strainer-drum trunk-ends and the pulp-vat; these joints being of such a character as to admit of the drum partaking of vibratory and rotative movements without permitting leakage of water or pulp from the pulp-vat to the strained pulp delivery outlets.

In the specification to my aforesaid Letters Patent No. 1,166,882 are described various modes in which a face joint may be formed between the stationary and moving parts before referred to; my present invention consists in certain improvements in detail in the construction and mounting of the parts constituting such joints upon plane as distinguished from cylindrical surfaces.

In the accompanying drawings, Figure 1 is a sectional view of a portion of a strainer-drum of the vibratory and rotative type, showing the joint between the drum and the vat wherein the said drum is mounted. Fig. 2 is a side elevation of one end of the vat-contained drum. Fig. 3 is partly a side elevation of the strainer drum-end, and partly a longitudinal section showing one of the cradle arms, wherein the drum is mounted; the drum being furnished with two face joints respectively arranged in front of and behind the cradle arm. Fig. 4 is a transverse section and Fig. 5 a side elevation, partly in section, illustrating certain details hereinafter referred to; and Fig. 6 is a longitudinal section illustrating a modified construction wherein the septum hereinafter referred to is arranged horizontally.

According to the construction illustrated in Fig. 1, I arrange within the strainer vat A, toward one of its extremities, B, a semi-

circular or horse-shoe-shaped member C, internally flanged and having attached thereto by its outer edges a flexible rubber or other pliant and elastic septum D. To the inner edge of the septum D is attached an inner horse-shoe-shaped or approximately semi-circular member E carrying a joint-making piece F, formed of metal or other suitable material. The joint-making piece F bears against the face of the flange G of the drum H in such a manner as to form a water-tight joint without interfering with either the rotation, the vibration or the oscillation, of the drum. Moreover, the mounting of the joint-making piece F upon the member or carrier E and the attachment of the latter to the pliant and elastic septum D permits of the working faces of the joint remaining in contact, although small changes may occur, in a longitudinal direction, in the position of the drum, or in the angular position presented by the face of the flange G.

The upper ends or the horns of the horse-shoe-shaped member E are carried by any suitable means, at or near the upper edges of the vat; such means being adapted to permit of the face F being maintained, by means of springs or their equivalents, in close contact with the face of the flange G. The horse-shoe-shaped members E are held against vertical displacement by means of keeps E', as shown in Figs. 2 and 4.

In Fig. 2 is illustrated a method of applying pressure to the member or carrier E. The upper end of one horn of the horse-shoe-shaped member E is seen where it is formed with a horizontally projecting lug resting on the upper edge of the vat, and the piece C is brought up above the vat-edge. Pivoted thereto is a bell-crank lever J, whereof the horizontal arm carries an adjustable weight K, while the lower part of the vertical arm presses against the member E; a weighted lever of this character being attached at each side of the strainer. It will be obvious that springs or equivalent means may be employed instead of the weighted lever J.

In Fig. 3 is shown the same form of joint-making device employed where the terminal portion H of the drum is nearly as large as the remaining portion of the latter. In this

construction, the vat A is separated from its outflow-end A'; the two parts being connected by stay-bolts M or the like. The drum-end flange G is, as in the construction 5 illustrated in Fig. 1, cast integral with the drum-end; the flange G' being similarly formed on the ring N as shown, whereon the drum rests in the cradle-arms O; the latter occupying the space between the vat A and the outflow A'. The flange G' is preferably 10 furnished with a facing U. On the horse-shoe-member E are formed arms L, L, the lower ends of which are connected together by means of an adjustable tension spring as shown in Fig. 5. Or, as shown in Fig. 3, a 15 weight W may be suspended from the two arms L, L, with the effect that the faces of the joint are maintained in mutual contact.

The upper extremities of the members E 20 are bent over in the manner shown in Fig. 4 and are supported on the top of the vat or upon the outflow-end, as also shown in Fig. 3. At a suitable distance therefrom is a lug or stop T and between the latter and the member E is a spring S of dimensions suited 25 to the pressure which it is desired to exert upon the member E in the direction of the drum flange face. In Fig. 6 is illustrated a modified construction wherein the pliant and 30 elastic septum D is arranged horizontally.

Although, for the purpose of illustration, I have described my improved method of jointing as applied to a strainer-drum which 35 is rotated and is also subjected to vibratory movements, it will be apparent that my present invention is equally applicable to strainer-drums which are rotated without being vibrated, independent means being 40 employed for agitating the paper-pulp under treatment.

I claim:—

1. In a paper-pulp straining machine of the type comprising a rotating drum partly 45 immersed in the pulp contained in the pulp-vat and supported in cradle-arms to which a vibratory motion is imparted, a face-joint, between the pulp-vat and the outlet for the strained material, consisting of a flange 50 formed on the drum, a rubbing-piece arranged against the face of the said flange, and a semi-circular or horse-shoe-shaped carrier to which the rubbing piece is attached; the said face joint being supplemented by a 55 pliant and elastic septum which extends between the carrier and the pulp-vat, and in-

tercepts the communication between the latter and the outlet for the strained material substantially as set forth.

2. In a paper-pulp straining machine of the type comprising a rotating drum partly 60 immersed in the pulp contained in the pulp-vat and supported in cradle arms to which a vibratory motion is imparted, the combination with a semi-circular or horse-shoe-shaped face-joint, between the pulp-vat and 65 the outlet for the strained material, of a pliant and elastic septum extending between the pulp-vat and one of the rubbing surfaces of the said face joint and intercepting communication between the pulp-vat and the 70 outlet for the strained material, substantially as set forth.

3. In a paper pulp straining machine, a drum, a pulp-vat beneath said drum, a face- 75 joint between the pulp-vat and the outlet for the strained material comprising a rubbing-piece held against said drum, a carrier for said rubbing-piece and a pliant, elastic septum extending between said carrier and the 80 pulp-vat and intercepting the communication between the latter and the outlet for the strained material.

4. In a paper pulp straining machine, a drum, a pulp-vat beneath said drum, a face- 85 joint between the pulp-vat and the outlet for the strained material comprising a flange on said drum, a rubbing-piece held against said flange, a carrier for said rubbing-piece and a 90 pliant, elastic septum extending between said carrier and the pulp-vat and intercepting the communication between the latter and the outlet for the strained material.

5. In a paper pulp straining machine of the type comprising a rotary drum partly 95 immersed in the pulp contained in the pulp-vat and subject to a vibratory motion, a face-joint between the pulp-vat and the outlet for the strained material comprising a flange on said rotary drum, a rubbing-piece held 100 against the face of said flange, a carrier for said rubbing-piece and a pliant, elastic septum extending between said carrier and the pulp-vat and intercepting the communication between the latter and the outlet for the strained material.

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Witnesses:

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