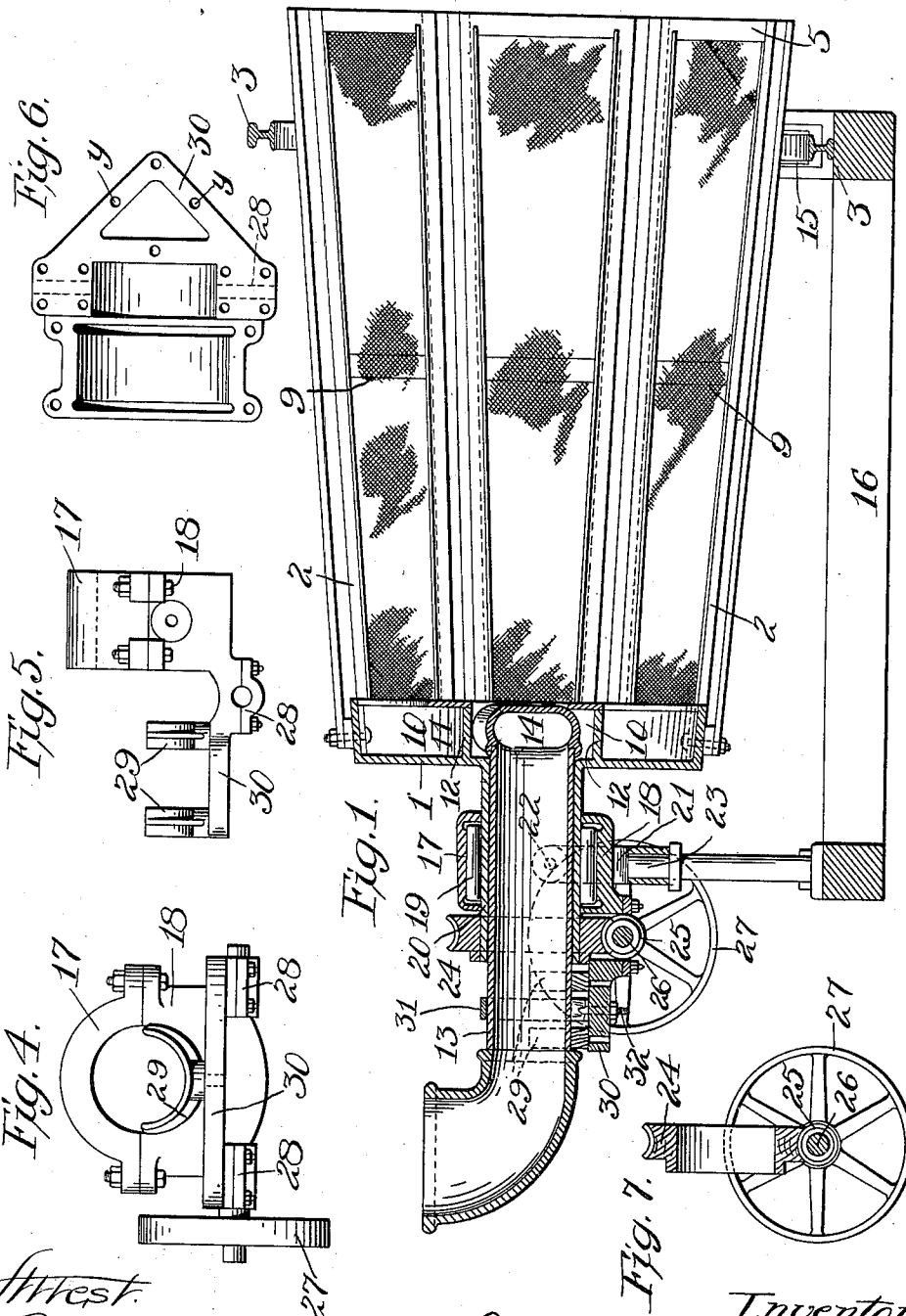


B. GRANVILLE.
 APPARATUS FOR SCREENING OR WASHING FIBROUS MATERIAL AND THE LIKE.
 APPLICATION FILED AUG. 31, 1911.

1,029,990.

Patented June 18, 1912.

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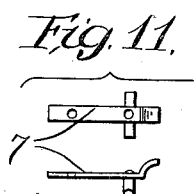
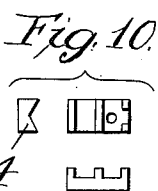
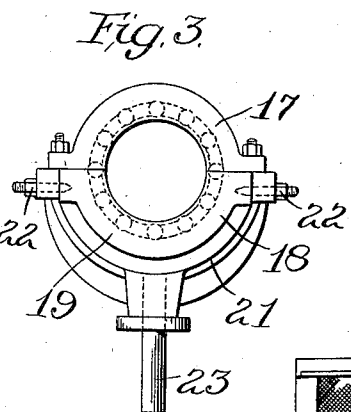
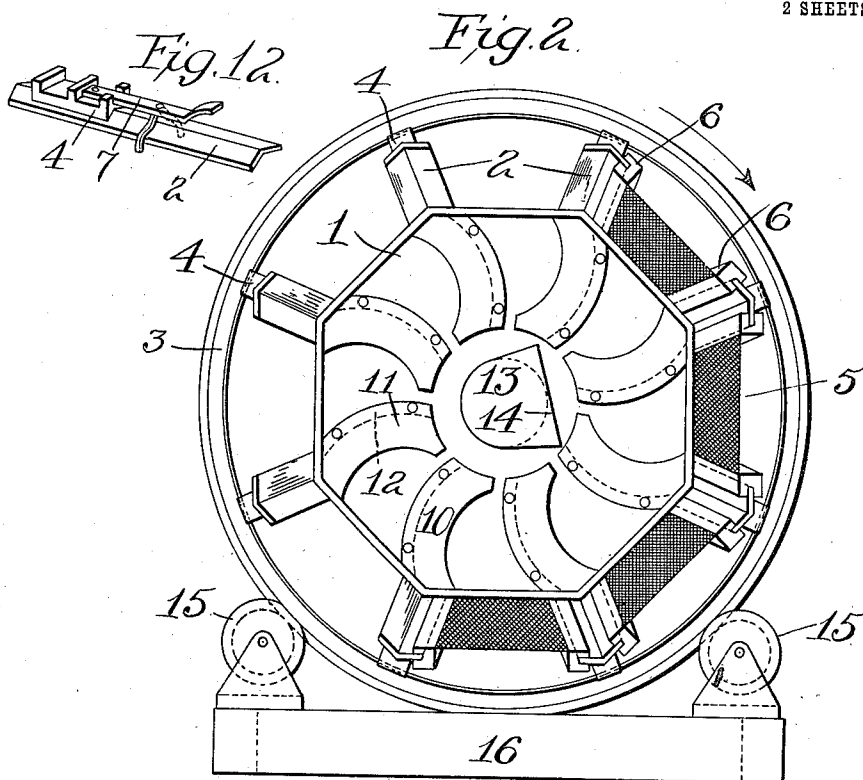
Inventor,
 Bernard Granville.
 By Spear, Middleton, Davidson & Spear
 Attys.

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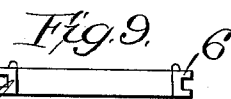
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2 SHEETS-SHEET 2.



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 Attys.

UNITED STATES PATENT OFFICE.

BERNARD GRANVILLE, OF NEW YORK, N. Y., ASSIGNOR TO NATIONAL FIBRE PRODUCTS COMPANY, A CORPORATION OF DELAWARE.

APPARATUS FOR SCREENING OR WASHING FIBROUS MATERIAL AND THE LIKE.

1,029,990.

Specification of Letters Patent.

Patented June 18, 1912.

Application filed August 31, 1911. Serial No. 647,113.

To all whom it may concern:

Be it known that I, BERNARD GRANVILLE, a citizen of the United States, residing at New York, N. Y., have invented certain new and useful Improvements in Apparatus for Screening or Washing Fibrous Material and the Like, of which the following is a specification.

My invention relates to apparatus for screening or washing fibrous material or performing like action, and it consists in the features and combination and arrangement of parts hereinafter described and particularly pointed out in the claims.

One object of my invention is to provide an apparatus of inexpensive construction which shall be capable of operating with little or no power.

The invention is shown in the accompanying drawings in which:—

Figure 1 is a longitudinal section through the apparatus. Fig. 2 is an end view looking to the right of Fig. 1. Fig. 3 is a view of one of the anti-friction bearings. Figs. 4, 5 and 6 are detail views relating to the supporting parts. Fig. 7 is a view of driving or governing mechanism. Figs. 8 and 9 are views relating to a screen frame. Figs. 10, 11 and 12 are views of details.

The apparatus comprises a drum having a head 1 at one end with ribs or bars 2 extending therefrom and diverging from each other, these ribs or bars at the large end of the drum being encircled by a rail 3, to which the said divergent bars may be secured in any suitable manner as by the interposed blocks 4. The bars are adapted to receive between them screen frames 5 composed of side bars 6 grooved longitudinally on their outer faces to engage the edges of the drum, ribs or bars 2, as shown in Fig. 2, the screen cloth being secured to the grooved bars 6 and extending from a point adjacent the head or casting 1 to the large end of the drum as shown in Fig. 1. These screen frames are removable individually and may be secured in place by any suitable form of detachable holding means as by the spring members 7 engaging notches 8 of the screen carrying bars. The screen frames are strengthened by cross pieces 9. Within the head or casting 1 radial buckets 10 are provided, of curved form, shown in Fig. 2, and these may be of any suitable construction. I prefer to make them by employing plates

of curved form shown at 11, said plates being secured in any suitable manner to ribs 12 cast with the head 1, the said plates therefore forming the inner wall of the buckets. The material to be screened, washed or otherwise treated, is introduced into the drum through a pipe 13, having a discharge spout or enlargement 14, which is directed laterally within the head or casting 1 so as to discharge the material into the buckets, and as a result of this action the drum is rotated in the direction of the arrow Fig. 2. The large end of the drum is sustained by anti-friction rollers 15, journaled in brackets supported on the base 16, these rollers being of grooved form and engaged by the circular track 3. The smaller end of the drum is supported in an anti-friction bearing Figs. 1 and 3, comprising housing 17 and 18 bolted together and carrying anti-friction rollers 19 which support the journal or extension 20 cast with or attached to the head or casting 1. This housing is in turn supported by a yoke 21, the connection between the housing and the yoke being a pivotal one and said pivots being horizontally disposed at 22 Figs. 1 and 3, so that the vertical oscillation of the drum about this pivot will be permitted to compensate for any irregularities in construction as the drum rotates. The yoke 21 is supported by a stem 23, so as to have rotary movement horizontally, this movement being provided to allow the drum to adjust itself horizontally to compensate for any inaccuracies in construction of the parts, one object, as before stated being to provide a construction in which nicety of fitting or accuracy in machine work will not be necessary and yet ease and accuracy of operation secured, and from the construction described it will be seen that the drum is supported by a three-point anti-friction bearing structure which may be roughly made but which will secure ease of operation with expenditure of little power.

For controlling the drum through a positive drive I provide a worm wheel 24 fixed on the extension or journal 20 and engaged by a worm 25 on a shaft 26, which has thereon a belt pulley 27. The shaft 26 is mounted in a bearing 28, of which a housing 18 forms a part. The inlet pipe 13 is supported in yokes 29 which are in turn held by a bracket 30, forming a part of the hous-

ing, and a strap 31 is employed passing over the inlet pipe with its ends held by bolts screwed on its stems 32, which stems pass through openings *y* in the bracket.

5 This inlet pipe may be turned so as to direct the discharge of the material from its laterally extending mouth to different elevations within the head of the drum to cause the inflowing material to act upon the

10 buckets to a greater or less extent for rotating the drum at different rates of speed. A spray may be used either on the interior or exterior of the drum to clear the screen and wash the material. The water with

15 the material enters through the central pipe and after acting upon the buckets to rotate the drum the water passes through the screens and the solid material passes along the screens and is discharged at the open

20 end of the drum over the edge thereof. The main frame 16 rests upon a suitable flooring and this may have a drain to carry off the water. The screen it will be noticed may be removed for repairs and replacing.

25 I claim as my invention:

1. In apparatus of the class described, a rotary drum carrying screen material, a pair of anti-friction rollers at opposite sides of one end of the drum for supporting the

30 same, a journal at the other end of the drum, a bearing in which said journal rotates, said bearing having movement about

a horizontal and also about a vertical axis to allow the drum to oscillate, substantially as described.

2. In combination with a screen drum, a pair of anti-friction rollers at opposite sides of one end of the drum, a journal at the other end of the drum, a housing having roller bearings through which the journal extends, a yoke in which the housing is pivotally mounted to have movement about a horizontal axis, said yoke having movement about a vertical axis, substantially as described.

3. In combination, a screen drum, anti-friction rollers for supporting one end of the drum, a substantially universal joint bearing arranged axially at the other end of the drum, a journal in said bearing connected with the drum, an inlet pipe extending through the journal and having a laterally directed discharge mouth, buckets within the drum to receive the material from said discharge mouth, driving means connected with the journal, and means for adjustably holding the inlet pipe independent of the journal, substantially as described.

In testimony whereof, I affix my signature in presence of two witnesses.

BERNARD GRANVILLE.

Witnesses:

H. B. HITCHINGS,
D. J. STROHMEYER.