

S. STEELE.
PULP SEPARATOR.
APPLICATION FILED NOV. 2, 1911.

1,054,323.

Patented Feb. 25, 1913.

2 SHEETS—SHEET 1.

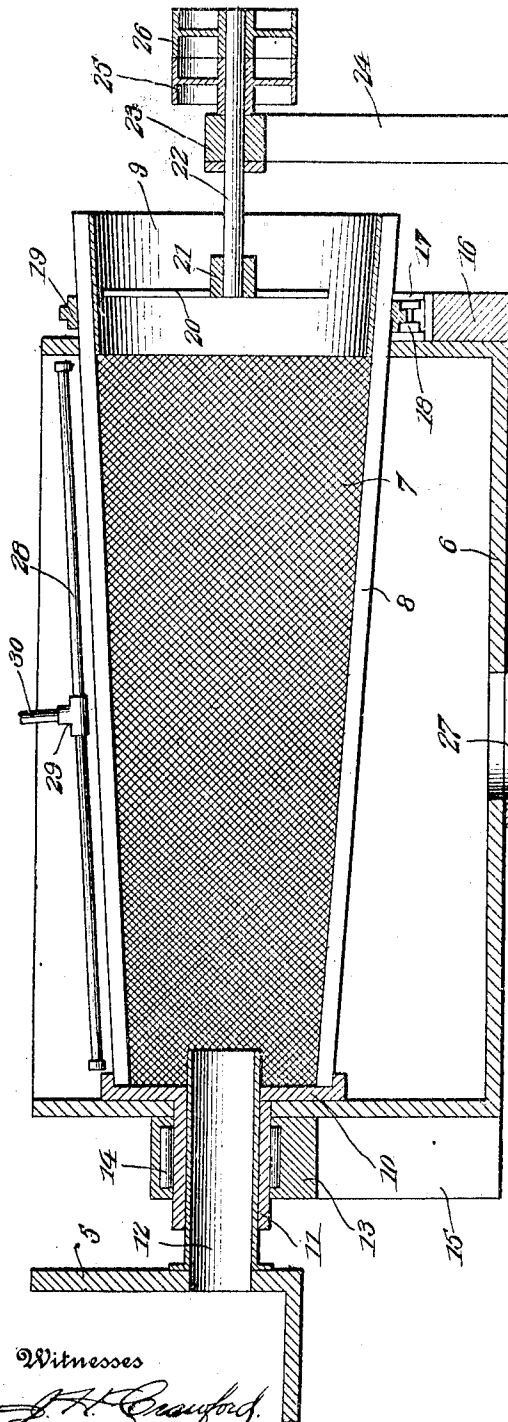


Fig. 1

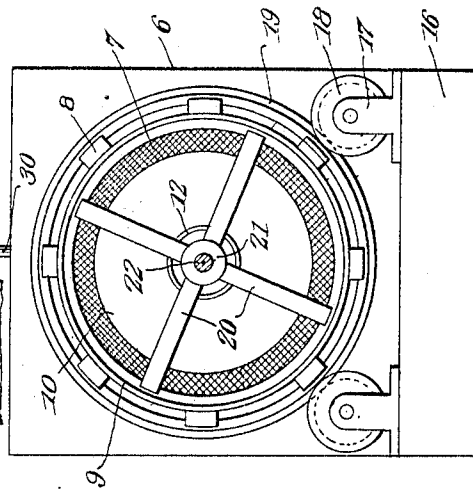


Fig. 3

Witnesses

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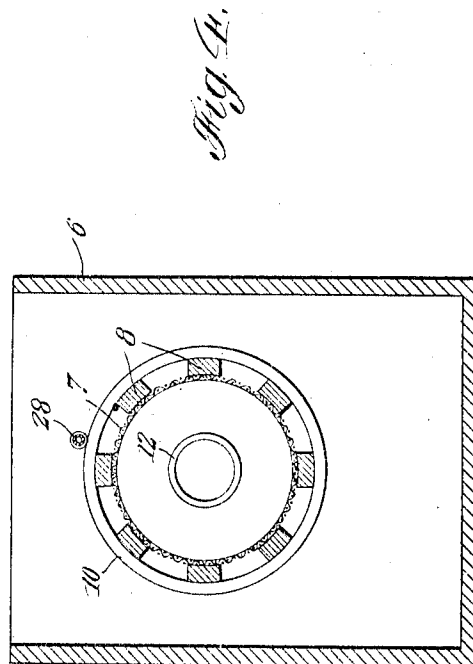
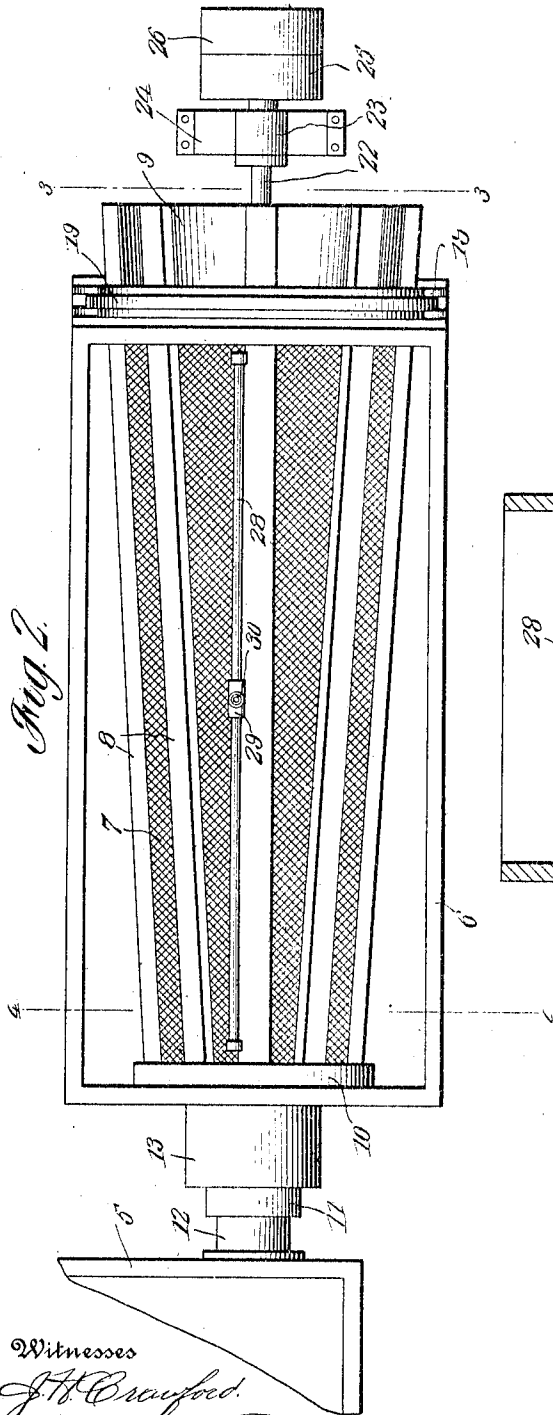
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UNITED STATES PATENT OFFICE.

SUMNER STEELE, OF ANTIOCH, CALIFORNIA.

PULP-SEPARATOR.

1,054,323.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SUMNER STEELE, a citizen of the United States, residing at Antioch, in the county of Contra Costa and State of California, have invented new and useful Improvements in Pulp-Separators, of which the following is a specification.

The invention relates to separators, and more particularly to the class of pulp separators for use with paper making machines.

The primary object of the invention is the provision of a separator of this character in which foreign matter will be separated from the pulp material, so as to prevent the passage of such foreign matter with the pulp into the pulp working or refining machine, which may be of the Jordan type, or any other ordinary well-known construction.

Another object of the invention is the provision of a separator of this character in which the pulp for the pulp working or refining engine is separated from all foreign matter, so that the latter will be discharged from one end of the separator, while the pulp, free of foreign matter, will be discharged through the separator into the refining or pulp working machine, thus obviating the possibility of the foreign matter gaining access to the refining or pulp working machine to cause damage or breakage thereto.

A further object of the invention is the provision of a pulp separator of this character which is simple in construction, thoroughly reliable and efficient in operation, and inexpensive in manufacture.

With these and other objects in view, the invention consists in the construction, combination and arrangement of parts, as will be hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the claims hereunto appended.

In the drawings: Figure 1 is a vertical longitudinal sectional view through the separator constructed in accordance with the invention. Fig. 2 is a top plan view thereof. Fig. 3 is a sectional view on the line 3—3 of Fig. 2. Fig. 4 is a sectional view on the line 4—4 of Fig. 2.

Similar reference characters indicate corresponding parts throughout the several views of the drawings.

Referring to the drawings by numerals, 5 designates a pulp feed trough, and 6 the separator box, in which is rotatably ar-

anged a separator, comprising a conical shaped foraminous or reticulated screen body 7, preferably made from wire mesh cloth, and has secured exteriorly thereto spaced longitudinally disposed reinforcing bars 8 which are secured to a discharging ring 9 at one end of the separator and in a head 10 at the opposite end, the said head being formed with a cylindrical sleeve 11 loosely fitted upon a delivery pipe or tube 12 fixed in and projecting from one wall of the trough 5, so as to extend a distance interiorly of the said separator.

Located exteriorly of the separator box 6, at one end thereof, is a bearing 13, in which is journaled the sleeve 11, said bearing being provided with bearing rollers 14 arranged circumferentially about the sleeve 11, so as to reduce friction within the bearing during the rotation of the sleeve therein. The bearing 13 is formed on the upper end of a supporting post 15 fixed to one end wall of the pulp box 6, exteriorly thereof, while on the opposite end wall of the said box and fixed thereto is a cross supporting beam 16, on the upper edge of which are fixed forked bearings 17, in which are journaled peripherally journaled rollers 18, the same being disposed at opposite sides of the separator, and the grooves therein receive an annular track 19 fixed exteriorly to the discharge ring 9 of the separator, so that the latter will revolve upon the rollers 18 without possibility of longitudinal displacement in the pulp box 6.

Arranged in the discharge ring 9 and fixed thereto in any suitable manner are the arms of a spider 20, the same being formed with a central sleeve or hub 21, in which is fixed a driving shaft 22, the latter journaled in a bearing 23 formed at the upper end of a supporting stand 24, the driving shaft 22 being provided with the usual fixed and loose pulleys 25 and 26, respectively, over which is adapted to be trained the ordinary driving belt (not shown), it being understood of course that the belt is shifted from the loose pulley 26 to the fixed pulley 25, whereby the separator may be operated, and when it is desired to stop the separator, the said belt is shifted onto the loose pulley 26, as usual.

Leading from the bottom of the separator box and communicating therewith is a pulp conveyer pipe 27 which is adapted to be in communication with a pulp working ma-

chine or refining engine, preferably of the Jordan type, (not shown), although the same may be of any other well-known construction.

- 5 Extending into the open top of the separator box is a perforated water sprinkling tube or pipe 28 provided with a medial union 29 connecting it to a water supply pipe 30, and through this pipe 28 is delivered water
- 10 to the pulp material delivered into the separator, for the washing of the foraminous body 7 thereof, so as to wash away any obstructions which may close the orifices therein.
- 15 In the operation of the separator, the pulp material is delivered from the trough 5 through the pipe or tube 12 to the interior of the foraminous body 7 of the separator, it being understood of course that the same is
- 20 driven so as to revolve in the separator box 6. The pulp contained within the body of the separator is acted upon, so as to become strained by the foraminous body 7, thereby causing the fine pulp material to be screened
- 25 through the foraminous body and discharged into the separator box 6, while any foreign matter present in the pulp delivered into the foraminous body is separated from the fine pulp and is caused to gravitate to the larger
- 30 end of the separator, whence it is discharged through the discharge ring 9 into any suitable receptacle. In this manner the pulp passed through the screen is delivered in a fine condition free of foreign matter into the
- 35 separator box 6, whence it is delivered through the delivery pipe 27 to the pulp working machine or refining engine. Thus, in this manner the work on the refining engine will not be interfered with, as there
- 40 will not be present in the pulp delivered thereto any foreign matter which would

damage or break the refining engine when treating the pulp delivered thereto.

It is of course understood that changes, variations and modifications in the invention may be resorted to, without departing from the spirit or sacrificing any of the advantages of the same, and as come properly within the scope of the appended claims.

What is claimed is:

1. A machine of the class described comprising a separator box having a conveyer outlet leading from its bottom, a pulp feeding trough located adjacent one end of said box, a foraminous frusto-conical shaped sieve rotatably journaled in said box, a delivery pipe leading from said trough into one end of said sieve, a discharge ring mounted interiorly of said sieve at the other end thereof and extending a distance thereinto, and means connected with said ring for rotating said sieve.

2. A machine of the class described comprising a separator box having a conveyer outlet leading from its bottom, a pulp feeding trough located adjacent one end of said box, a sieve rotatable in said box, a delivery pipe connected to said trough and projecting into said sieve, a head closing one end of said sieve and having a sleeve engaging said delivery pipe, an annular track carried by the other end of said sieve, a cross beam carried by said box, bearings carried by said beams and adapted to receive said track, and a plurality of spaced reinforcing bars connecting said head with said ring.

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

SUMNER STEELE.

Witnesses:

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R. H. WALL.