

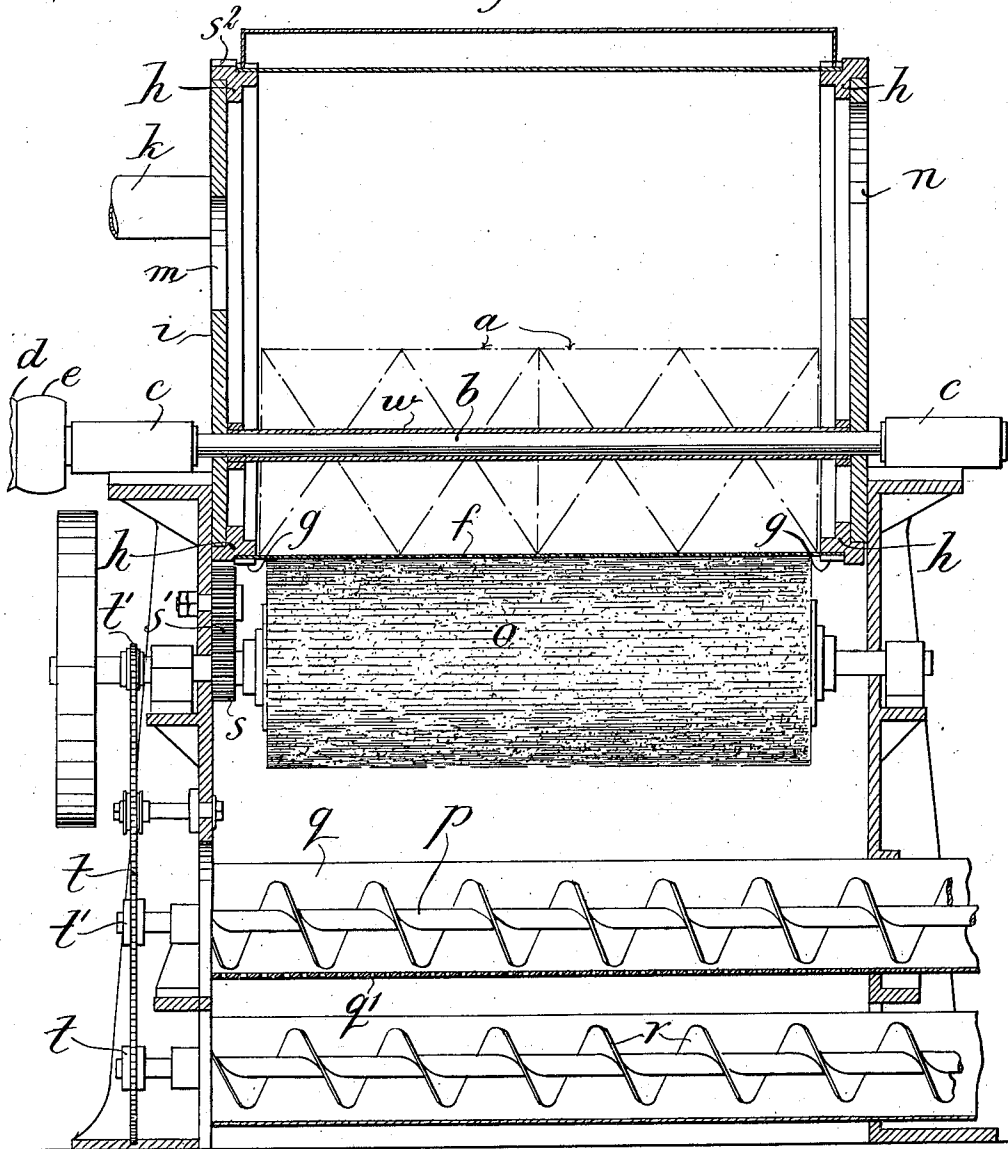
W. YOULTEN.
MATERIAL SEPARATING MACHINE.
APPLICATION FILED DEC. 27, 1910.

1,010,104.

Patented Nov. 28, 1911.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses.
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By A. S. Patterson, atty

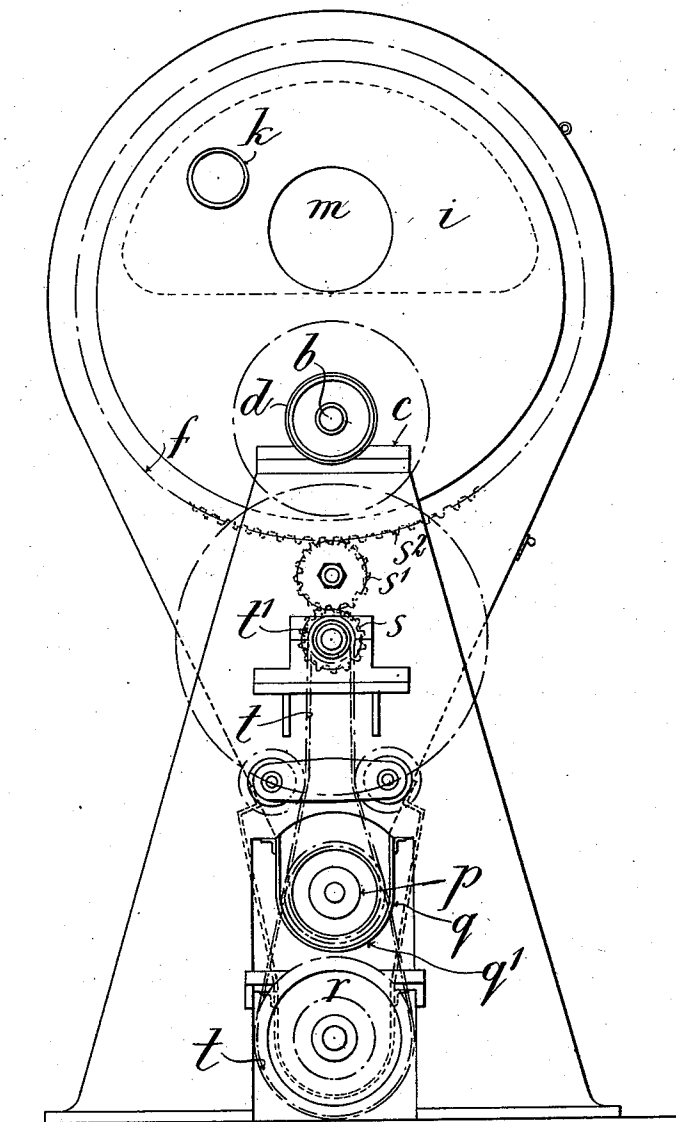
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3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 3.

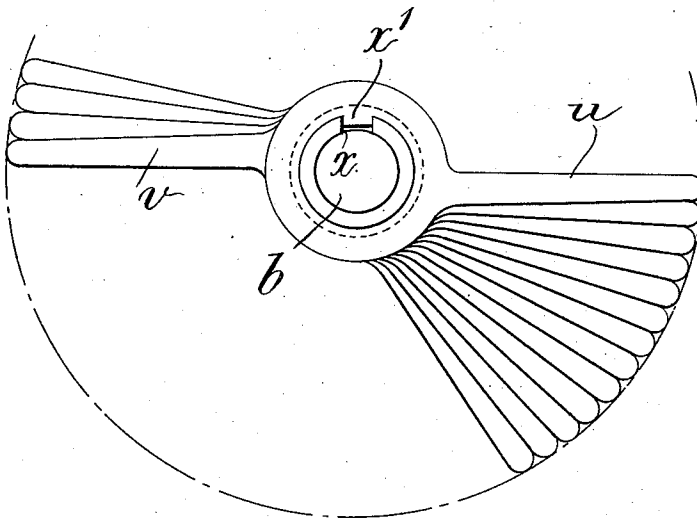
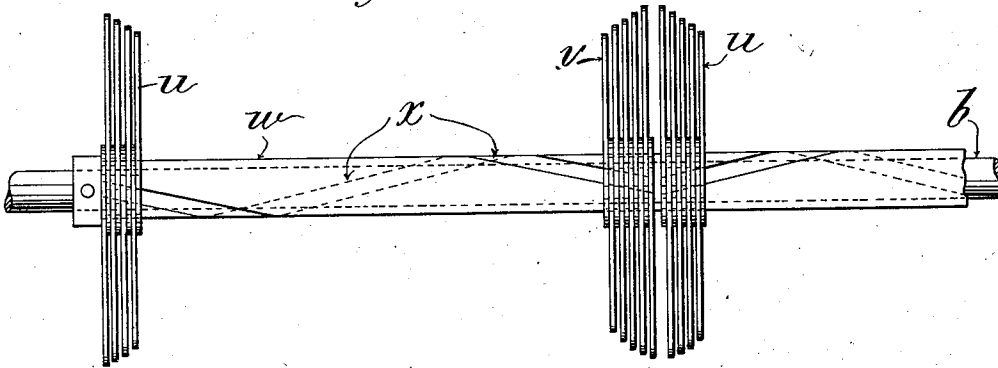


Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM YOULTEN, OF BRIGHTON, ENGLAND.

MATERIAL-SEPARATING MACHINE.

1,010,104.

Specification of Letters Patent.

Patented Nov. 28, 1911.

Application filed December 27, 1910. Serial No. 599,287.

To all whom it may concern:

Be it known that I, WILLIAM YOULTEN, a subject of the King of Great Britain and Ireland, residing at Brighton, in the county of Sussex, England, have invented Material-Separating Machines, of which the following is a specification.

The object of the present invention is to provide an improved machine for separating materials in general but particularly dirt and other extraneous matter from fibrous materials, the machine being of the type wherein a helically bladed device is arranged to rotate within a perforated drum that itself rotates in a reverse direction.

An important feature of the improved machine resides in causing the perforated drum to rotate about stationary end plates so that material can be introduced at one end and removed from the other while the axis of the rotary bladed device is eccentric to that of the drum, thus enabling the ends of the blades of the device to repeatedly approach and recede from the drum.

Another important feature consists in so arranging the blades of the rotary device, which in effect constitute a comb, that on the completion of one spiral another starts in a reverse direction.

To secure these and other features the invention consists in the several constructions and arrangements of parts hereinafter more particularly described and claimed.

The accompanying drawing illustrates, more or less diagrammatically, a machine according to the invention, Figure 1 being a longitudinal section and Fig. 2 an end elevation of the machine. Fig. 3 is a fragmentary elevation and Fig. 4 an end view of the main roller or comb of the machine.

As there shown and marked on Figs. 1 and 2 *a* is the main roller or comb, *b* its shaft mounted on pedestals *c* and provided with a fast and a loose pulley *d e*.

f is the perforated cylindrical wall of the drum, being fixed by clip rings *g* to hoops *h*, rotatable upon circular end plates *i, j*, the plate *i* having an inlet blower opening *k* and an opening *m* to receive the feed, while the plate *j* has an outlet *n* for exhaust. Both plates *i, j*, are further formed with openings to permit the shaft *b* to pass there-through.

o is a rotary brush engaging the cylindrical grid *f* and *p* a conveyer for removing

certain of the material that passes through the drum or grid.

q is an inclosing casing having a perforated part *q*¹ in which works the conveyer *p*, and *r* is a second conveyer for removing the final residue. The brush *o* which is independently driven has a pinion *s* in gear through a loose pinion *s*¹ with a toothed ring *s*² on one of the hoops *h*; and the conveyers *p r* are driven from the brush *o* by a chain *t* and sprocket wheels *t*¹. As will be obvious the brush *o* may be omitted, as may also one or other or both of the conveyers *p r*.

The roller or comb *a* as shown more particularly in part in Figs. 3 and 4 may comprise single bladed sheet metal stampings *u v* arranged alternately and in opposite directions, upon a tube *w* formed with two spiral grooves *x* proceeding from opposite ends toward the center of the shaft *b* so as to divide the roller or comb into two uninterrupted reversely acting sets of strikers. Fig. 4 shows the progression of the stampings *u, v*, which are arranged continuously the full length of the axle *b*; *x*¹ being a tongue on the stampings arranged to enter the groove *x* in the tube *w* and prevent them rotating around the tube *w*.

What I claim is:—

1. A separating machine comprising an open ended perforated drum, stationary end plates about which the said drum is adapted to rotate and a comb device comprising helically arranged blades that are shorter in length than the radius of the drum supported eccentrically within the drum by the end plates whereby the ends of the blades are caused to repeatedly approach and recede from the interior surface of the drum.

2. A separating machine, comprising a pair of stationary and circular end plates, a pair of hoops rotatable upon said end plates, perforated material arranged to form a cylinder upon the exterior of the hoops, and a helically bladed comb device supported eccentrically of the hoops and within the space inclosed by the perforated material, by the end plates.

3. A separating machine, comprising a stationary circular end plate having a pair of inlet openings therein and an eccentrically arranged spindle opening, a similar stationary end plate having a single outlet opening and an eccentrically arranged spindle opening, a pair of hoops rotatable respec-

tively upon the end plates, perforated material arranged to form a cylinder upon the exterior of the hoops, a helically bladed comb device, a spindle carrying said device and revoluble in the bearings in the end plates aforesaid, means for rotating said spindle, and independent gearing for rotating the cylinder of perforated material by one of the supporting hoops.

4. A separating machine, comprising a revoluble perforated drum, and an oppositely rotating comb device comprising flat blades shorter in length than the radius of the drum, arranged helically in oppositely handed sets, about an eccentric axis within the drum.

5. A separating machine, comprising a revoluble drum, a rotary comb device arranged eccentrically within the drum, a rotary brush engaging the exterior of the drum, a conveyer beneath the said brush, a perforated floor beneath the said conveyer and a second conveyer beneath the said floor, means for rotating the comb and independent gearing adapted to rotate the drum, brush and conveyers in a direction opposite to that of the comb.

6. A separating machine, comprising a revoluble perforated drum, a rotary comb device arranged eccentrically within the drum, a rotary brush engaging the exterior of the drum, a conveyer beneath the said

brush, a perforated floor beneath the said conveyer and a second conveyer beneath the said floor, means for rotating the comb, independent gearing adapted to rotate the drum, brush, and conveyers in a direction opposite to that of the comb, and a casing inclosing the drum, brush and conveyers.

7. In a separating machine of the kind described, a comb comprising a tube having a helical groove formed therein and a set of single bladed strikers adapted to be threaded on the tube and each having a tongue adapted to enter the helical groove aforesaid.

8. In a separating machine of the kind described, a comb comprising a tube having a helical groove proceeding from one end to a point intermediate of its length, and a reversely handed helical groove proceeding from the other end to another point intermediate of its length, and a set of single bladed strikers adapted to be threaded on the tube in sets from opposite ends thereof and each having a tongue adapted to enter the helical grooves to properly position the strikers.

Signed at London England this sixteenth day of December 1910.

WILLIAM YOULTEN.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."