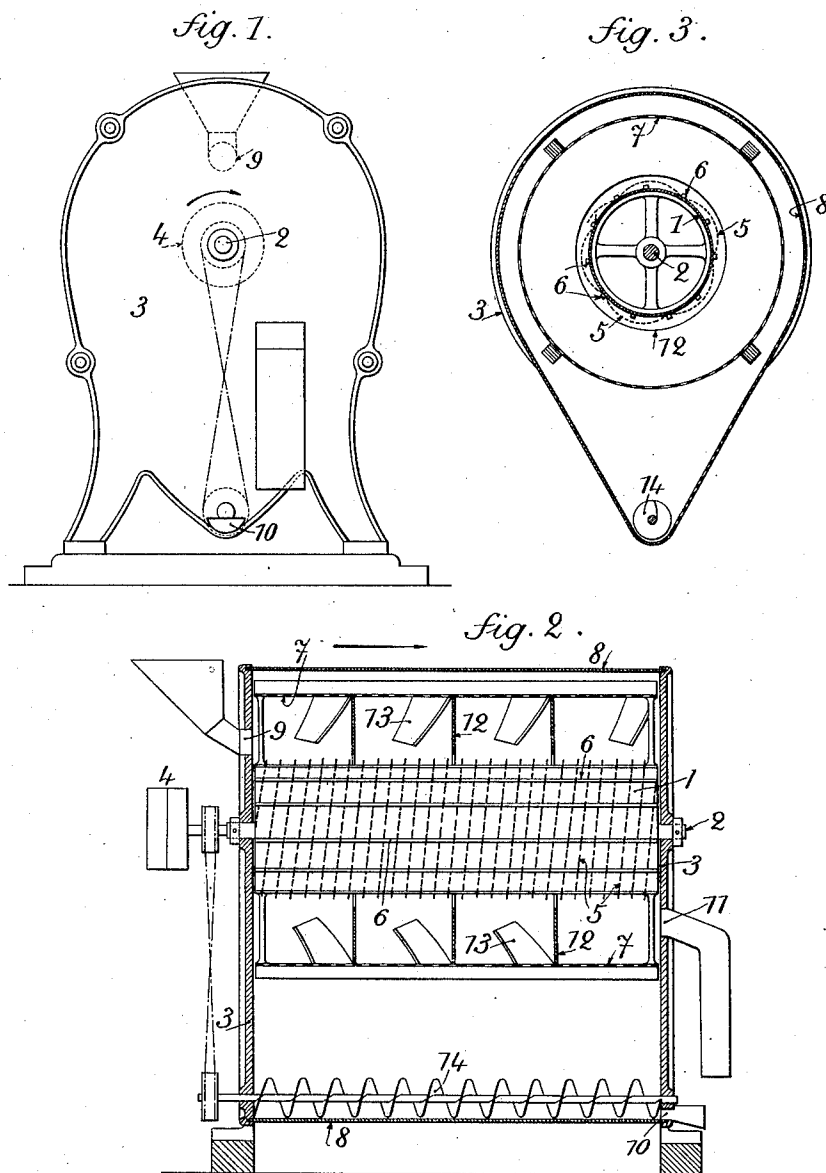


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CHAIN CONVERTER OF FLOUR.
APPLICATION FILED JULY 14, 1911.

1,043,754.

Patented Nov. 5, 1912.

2 SHEETS—SHEET 1.



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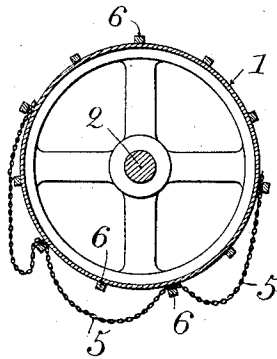
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Fig. 4.



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RAOUL BRIFFAUX, OF DIENVILLE, AND EUGÈNE BRISSON-DAUTHEL AND AMEDÉE
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CHAIN CONVERTER OF FLOUR.

1,043,754.

Specification of Letters Patent.

Patented Nov. 5, 1912.

Application filed July 14, 1911. Serial No. 638,527.

To all whom it may concern:

Be it known that we, RAOUL BRIFFAUX, EUGÈNE BRISSON-DAUTHEL, and AMEDÉE GILLOT, citizens of the Republic of France, residing the first at Dienville, Department of Aube, the second at Brienne-le-Chateau, Boulevard Napoleon, Department of Aube, and the third at Brienne-le-Chateau, Department of Aube, Rue de Bauffrémont, in the Republic of France, millers, have invented certain new and useful Improvements in Chain Converters of Flour, of which the following is a specification.

This invention relates to a flour converter having chains as grinding or reducing members. In the machines of this character the chains are usually suspended in the interior of a revolving drum in such a manner that the lower part of such chains rest on the inner wall of the drum, which inner wall slides underneath with the material to be reduced. According to this invention, the action of the said members is more efficient in that they are fixed, at distances apart, on a revolving drum, in forming slack handles between the fastening points, so that, on account of the rotation, such parts are moved alternatively away and brought back onto the wall of the drum and onto the adjacent chains, which increases the friction action on the material treated and adds the actions of shocks which disengage the material from the meshes and increase the efficiency of the said members.

The chains may be fixed in the interior either of a revolving drum which is inclosed in a fixed or movable drum of greater diameter, or of a revolving drum which surrounds a fixed or movable cylinder of smaller diameter.

One of the drums or cylinders is made of sifting fabric, in a well known manner, in order to allow of the escape of the ground material.

While with the arrangements now in use the freely hanging chains are not enabled to serve for the purpose of advancing the material along the horizontal drum, with the novel arrangement, one can, by arranging the chains obliquely with respect to the axis of the drum, obtain a continuous advance of such material. It is true that the employment of obliquely arranged blades in a drum to displace the material is already known, but such blades act in pushing the

material aside like a conveyer, while the chains act differently, in the manner, so to speak, of conveyer buckets, so that for one determined direction of rotation, the inclination of the chains must be opposite to that of the smooth blades in producing the advancement in the well known manner. As the pitch of the screw according to which the chains are wound can hardly be smaller than the thickness of the latter, it may happen that the advance of the material thus produced may be too quick for the degree of grinding to be obtained. In such case, the forward movement of the material is reduced by arranging in the annular space in which the latter lies annular partitions having apertures vertical in cross-section according to requirements.

One embodiment of this invention is shown in the accompanying drawings, in which:—

Figure 1 is a side view, Fig. 2 a longitudinal section, Fig. 3 a cross-section of the converter and Fig. 4 is a cross section of the drum according to the invention.

The sheet metal drum 1 is fixed on a shaft 2 journaled in bearings carried in two cheeks 3 and which receives motion from a belt and pulley or other suitable gearing. At the periphery of the drum 1 are placed chains 5 according to a screw of narrow pitch; such chains are fixed at distances apart on the drum, for instance, by means of longitudinal beads 6, between the said chains which are slack and are enabled to stir under the influence of their weight.

A silk or other suitable sifting fabric 7 of cylindrical or polygonal shape, is placed around the drum 1; such fabric is surrounded itself by a casing 8. The drum, the sifting fabric, and the covering extend from one end to the other of the machine between the cheeks 3, in forming concentric annular chambers. In the cheeks are provided inlet openings 9 for the supply of the products to be treated, outlet openings 10 for the finished products which pass through the sifting fabric and outlet openings 11 for the waste products. The sifting fabric may be fixed, but it is advantageous to give the same a rotary motion either with or independent of that of the drum.

In the interior of the annular chamber comprised between the drum and the sifting fabric are located the annular partitions

12, serving to retain for a sufficient time the material to be treated on the drum in spite of the advancing effect due to the helicoidal arrangement of the chains.

5 In the embodiment shown in the drawings, the inner diameter of the partitions 12 is a little greater than the outer diameter of the drum and the material passes from a compartment to the following one by the
10 annular play thus provided; however, without modifying the invention, the communications between the successive compartments may be arranged either near the sifting fabric, or at any points of the partitions 12, and the communication openings
15 may be provided with valves, or any other suitable regulating members which permit of regulating the delivery. For the purpose of further retarding the passage of the material, there may be also arranged in the
20 interior of the compartments fixed paddles 13 so inclined as to interfere with the flow of the material, as shown in the drawing; or any other suitable obstacles may be made
25 use of.

During the rotation of the drum, the ground products supplied at 9 between such drum and the sifting fabric will gradually advance toward the opposite end of the
30 machine in being subjected a considerable number of times to the friction and brushing actions produced by the agitation of the chains. The fine flour will escape as the material moves on in passing through the sifting fabric and in falling to the bottom
35 of the casing 6, whence it is conveyed by a screw 14 to the outlet opening 10. The waste from the sifting fabric passes through the outlet 11.

40 It will be understood that the length of the machine and the number of the compartments may be varied; likewise, the chains may be mounted on any other support than a cylindrical drum, without departing from the spirit of this invention.
45 Claims.

1. A flour converter comprising a drum and chains which serve as reducing members such chains being fixed at distances
50 apart on the drum or other support in such a manner as to form on the exterior of the drum slack loops between the fastening points, means for rotating the drum to alter-

nately cause the loops to move away and be brought back onto the drum or other support.

2. A flour converter comprising a drum and chains which serve as reducing members, such chains being fixed at distances apart on the drum in such a manner as to form on the exterior of the drum slack loops between the fastening points, the latter being substantially helically arranged around the drum or other support.

3. A flour converter comprising two concentric drums, means whereby to supply the flour between such drums, means for revolving one of the said drums, and chains serving as reducing members and which are fixed at distances apart on the said
70 drum last named in such a manner as to form on the exterior of the drum slack loops between the fastening points.

4. A flour converter comprising two concentric drums, means whereby to supply the flour between such drums, means for revolving one of the said drums, chains serving as reducing members and which are fixed at distances apart on the said revolving drum in such a manner as to form slack
80 loops between the fastening points, which points are helically arranged around the drum, and annular partitions between the said drums, such partitions being adapted to retard and diminish the forward movement of the flour in the longitudinal direction of the drums.

5. A flour converter comprising two concentric drums, the outer drum having a sifting fabric wall, means whereby to deliver the flour between the two drums, means for revolving both the drums, and chains fixed at distances apart around the inner drum in such a manner as to form slack loops between the fastening points.

In testimony, that we claim the foregoing as our invention, we have signed our names in presence of two subscribing witnesses.

RAOUL BRIFFAUX.
EUGÈNE BRISSON-DAUTHEL.
AMÉDÉE GILLOT.

Witnesses:

MAURICE ROUX,
HANSON C. COXE.