

(No Model.)

2 Sheets—Sheet 1.

M. W. LEONHARDT.
DISINTEGRATOR.

No. 500,916.

Patented July 4, 1893.

Fig. I.

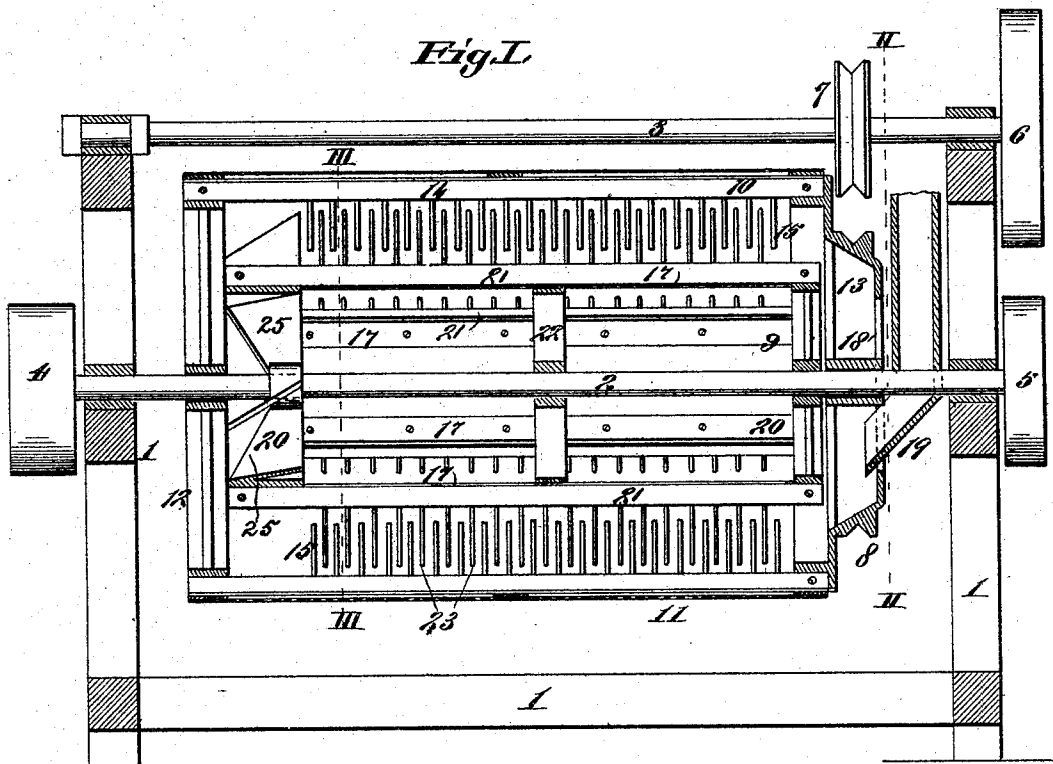


Fig. II.

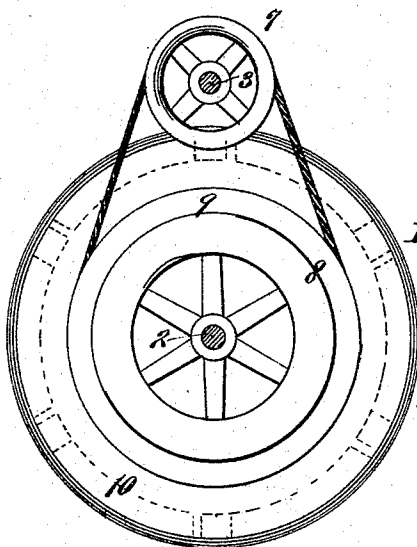


Fig. III.

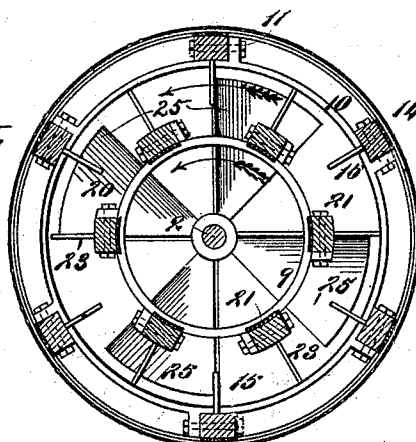
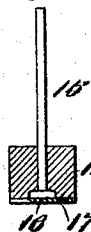


Fig. IV.



Fig. V.



Attest,
Albert M. Eberole
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M. W. Leonhardt
By Knight Bros Attys

(No Model.)

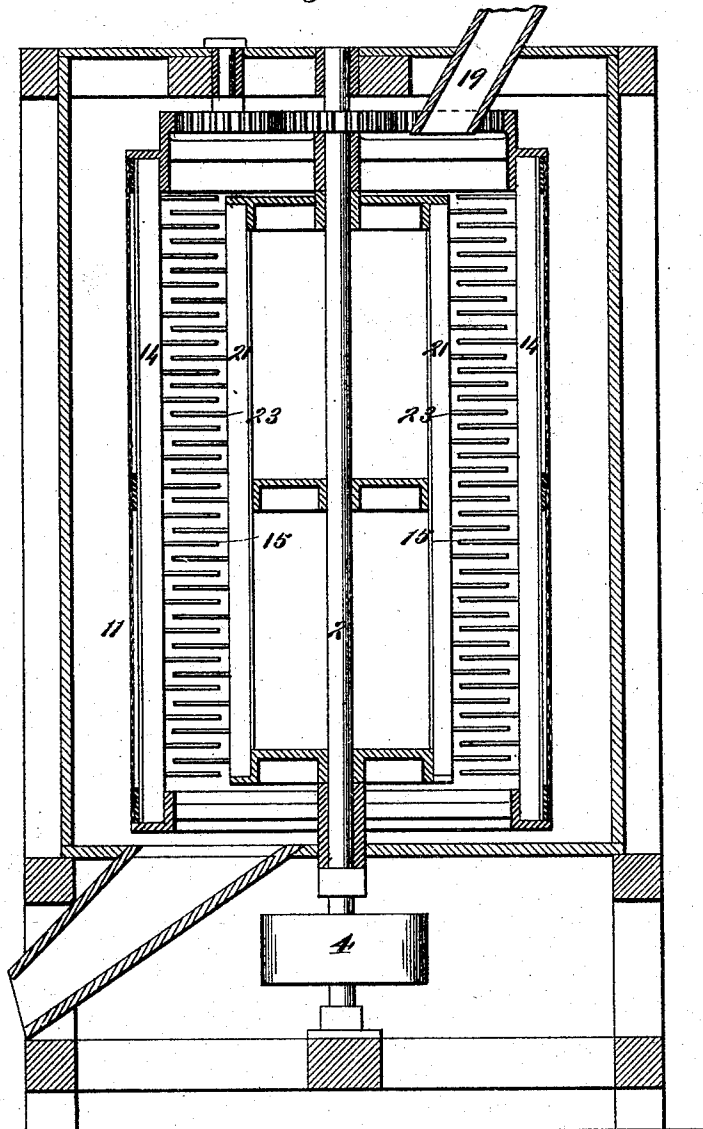
2 Sheets—Sheet 2.

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Fig. VI.



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UNITED STATES PATENT OFFICE.

MARTIN W. LEONHARDT, OF ST. LOUIS, MISSOURI.

DISINTEGRATOR.

SPECIFICATION forming part of Letters Patent No. 500,916, dated July 4, 1893.

Application filed February 8, 1893. Serial No. 461,448. (No model.)

To all whom it may concern:

Be it known that I, MARTIN W. LEONHARDT, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Disintegrators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to certain improvements in disintegrators for treating lumps of pulverulent and granular materials or the products of any reduction machines; and my invention consists in features of novelty hereinafter fully described and pointed out in the claims.

Figure I is a vertical, longitudinal section of my improved disintegrator. Fig. II is an end view, the shafts being shown in section on line II—II, Fig. I. Fig. III is a vertical, transverse section, taken on line III—III, Fig. I. Fig. IV is an enlarged, transverse section of one of the pin supporting bars. Fig. V is a similar view, showing one of the pins in place. Fig. VI is a vertical, longitudinal section, showing the machine in an upright or vertical position.

Referring to the drawings, 1 represents the frame work of the machine, which supports the main shaft 2, and a counter-shaft 3. The reel of the machine is mounted on the main shaft, which is provided with a driving pulley 4 at one end, and at the other end with a pulley 5 to receive a belt which also passes over a pulley 6 on the counter-shaft. The counter shaft is further provided with a pulley 7, to receive a belt which passes over a pulley 8 on the outer member of the reel. The pulleys 7 and 8 are preferably grooved pulleys, as shown in Fig. I.

The reel is composed of an inner section or member 9, and an outer section or member 10; the inner section or member of the reel is rigidly mounted on the shaft 2, so as to be turned thereby, while the outer section or member is loosely mounted on the shaft 2, so as to be driven entirely from the counter-shaft 3, through means of the belt and pulley connection referred to. The bolting cloth 11 is secured to the outer section or member of the reel. This outer section or member of the reel is composed of a spider 12 at one end and a head 13 at the other end; the spider and

head being connected through means of bars 14 from which extend inwardly projecting pins or fingers 15. There may be any desired number of bars 14; I have shown six, (see Fig. III.) The pins I prefer to secure in place, as shown in Fig. V, that is by forming perforations in the bars 14 which receive the pins that have heads 16 to prevent their inward movement, and the outward movement of the pins is prevented by straps 17 extending lengthwise of the bars 14, and secured thereto as shown in Fig. IV. The head 13 of the outer section or member of the reel is provided with an opening 18 to receive the lower end of the feed chute 19, which discharges the stock or material into the machine. The inner section or member of the reel consists of a spider 20, at each end, which are joined by bars 21 extending lengthwise of the reel, and I prefer to also use a central spider 22.

Secured to the bars 21 are outwardly projecting fingers or pins 23; these pins being preferably secured to the bars in the same manner as the pins 15 are secured to the bars 14. The pins 23 "break joints" with, or are located between the spaces of the pins 15, as shown in Fig. I.

The arrangement of the pulleys and belts referred to is such that the two sections of the reel will be turned in the same direction, as indicated by the arrows in Fig. III, but will be turned at a different rate of speed, so as to cause a rubbing action upon the material as it passes through between the fingers.

The spider 20 at the delivery end of the reel is provided with inclined blades 25, so that any material which reaches the tail end of the reel and falls onto these blades will be discharged from the machine.

By thus constructing a disintegrator, the stock, as it passes through the machine, is thoroughly and uniformly acted upon, and the best results are obtained.

In Fig. VI, I have shown the machine in a vertical position, while in Fig. I it is in substantially a horizontal position, being inclined very slightly to insure the passage of the material through it.

Instead of employing the pulleys and belts shown in Figs. I, II and III, gearing may be used, as shown in Fig. VI.

I claim as my invention—

1. In a disintegrator, the combination of an inner section, consisting of spiders and connecting bars having outwardly extending pins, an outer section consisting of a head and spider and connecting bars having inwardly projecting pins, a bolting cloth secured to the outer section, and driving mechanism arranged to move the sections at different rates of speed; substantially as, and for the purpose set forth.

2. In a disintegrator, the combination of the main shaft, an outer section having a bolt-

ing-cloth, an inner section consisting of spiders, and connecting bars having outwardly extending pins, inclined blades carried by the spider of the inner section, and mechanism for turning the sections at different rates of speed, substantially as and for the purpose set forth.

MARTIN W. LEONHARDT.

In presence of—

ALBERT M. EBERSOLE,
E. S. KNIGHT.