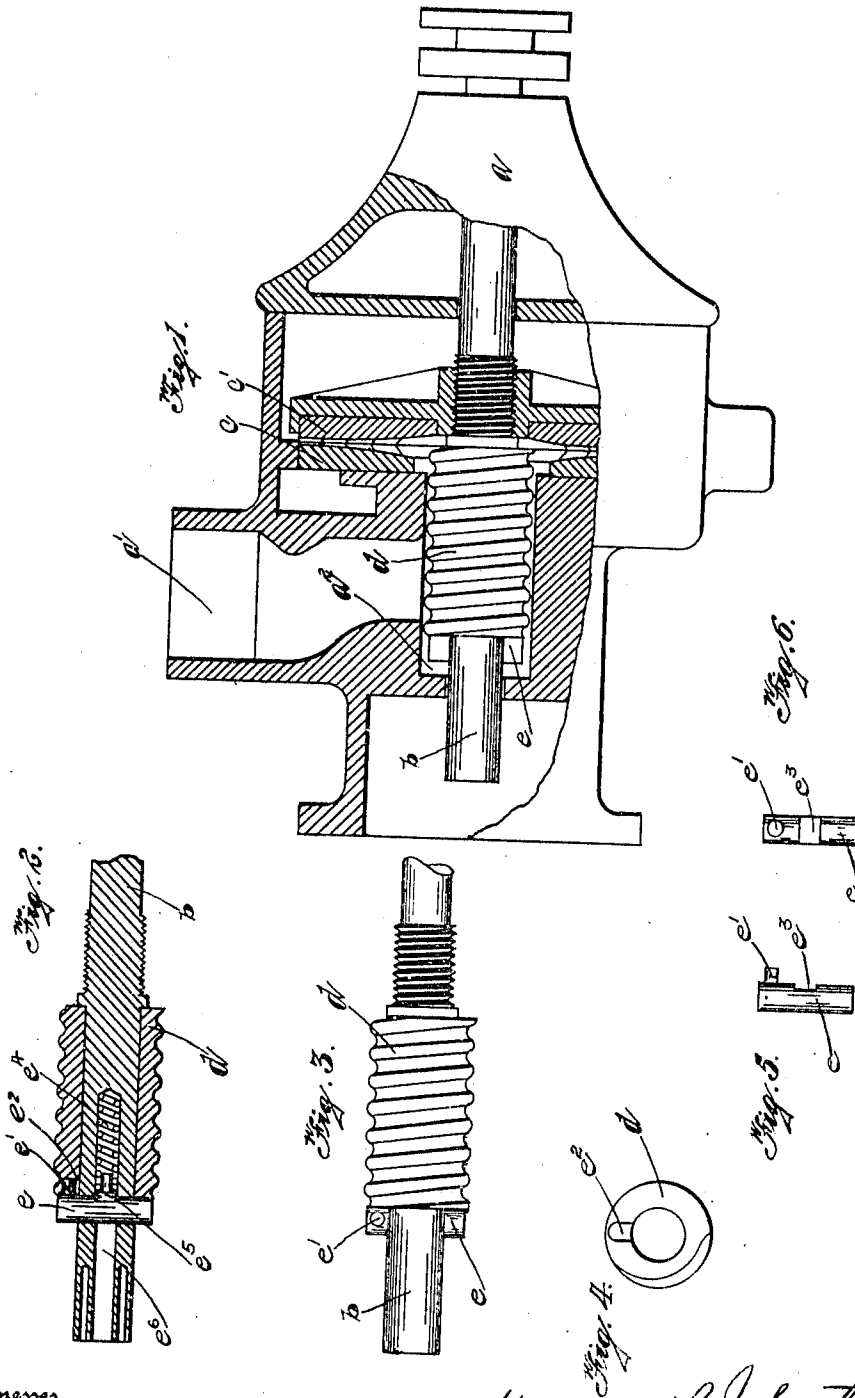


H. L. JOHNSTON.
DRIVING MECHANISM.
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950,635.

Patented Mar. 1, 1910.



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UNITED STATES PATENT OFFICE.

HERBERT L. JOHNSTON, OF TROY, OHIO, ASSIGNOR TO THE HOBART ELECTRIC MANUFACTURING COMPANY, OF TROY, OHIO, A CORPORATION OF OHIO.

DRIVING MECHANISM.

950,635.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HERBERT L. JOHNSTON, a citizen of the United States, residing at Troy, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Driving Mechanism, of which the following is a specification.

This invention relates to improvements in driving mechanism especially adapted to grinding mills, but it may be employed in connection with other classes of machinery.

The object of the invention is to provide simple and effective means by which the driving mechanism of the machine may be automatically disconnected from the driven parts in case any foreign substance which would be liable to injure the parts should be fed into the machine.

The invention consists in the constructions and combinations of parts hereinafter described and set forth in the claims.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a grinding mill embodying my invention. Fig. 2 is a longitudinal sectional view of the driving shaft and conveyer showing the connection between the same. Fig. 3 is a side view of the same parts. Fig. 4 is a detail of the end of the conveyer. Figs. 5 and 6 are details of a part of the driving connection.

Like parts are represented by similar characters of reference in the several views.

In the present case I have shown my improvement applied to a coffee mill.

a represents the outer casing, having in the upper part thereof the usual hopper, *a*¹, which casing may be constructed in any usual and suitable manner.

b is the driving shaft, which is connected to any suitable source of power, preferably by a slip connection so that the shaft may be adjusted longitudinally by any suitable means so as to vary the relation of the grinding burs with respect to each other.

c represents the stationary grinding bur, which is secured to the casing in any suitable way, and *c*¹ represents the movable grinding bur, screw-threaded on the driving shaft, as shown.

In the present type of machine there is employed a conveyer, *d*, loose on the driving shaft and located in a chamber, *a*², in the casing, which chamber leads from the bottom of the hopper to the grinding burs, so that the contents of the hopper will be fed to the

burs by the conveyer. This conveyer is normally connected to the shaft by a pin, *e*, located in a transverse opening through the shaft, and having a lateral projection, *e*¹, which engages in a recess, *e*², in the end of the conveyer. This pin has a flat face, *e*³, midway its length and in line with the projection *e*¹. Normally spring-pressed into engagement with this face, by a spring, *e*⁴, is a head *e*⁵; the spring and head being located in a chamber, *e*⁶, in the shaft, through which chamber the pin, *e*, extends. The engagement of the head with the pin prevents the pin from rotating in the shaft under ordinary conditions, so that the engagement of the pin with the conveyer will be maintained to cause the parts to rotate together, the tension of the spring being sufficient to maintain this engagement under the ordinary strain of the grinding operation. In case any foreign substance, such as a piece of metal, is fed to the conveyer, the resistance will be such as to permit the pin to turn in the shaft by forcing the head from its face against the tension of the spring, and thus disconnect the conveyer from the shaft. It will be understood that the recess, *e*², in the end of the conveyer will be of such size as to permit the projection to pass freely therefrom when the pin turns.

Having thus described my invention, I claim:

1. In a device of the character described, a shaft, a rotatable part loose thereon, a rotatable device extending through said shaft and normally detachably connected with said rotatable part, and a spring normally holding said device from rotating in said shaft, substantially as specified.

2. In a device of the character described, a shaft, a rotatable part loosely mounted on said shaft, a pin extending loosely through said shaft, a lateral projection on said pin extending into a recess in said rotatable part, and spring-pressed means for holding said pin from rotation, substantially as specified.

3. In a device of the character described, a shaft, a rotatable part loosely mounted thereon, a rotatable pin extending loosely through said shaft, a lateral projection on said pin extending into a recess in said rotatable part, a flat face on said pin, and a head spring-pressed against said face, substantially as specified.

4. In a device of the character described,
a shaft, a rotatable part loosely mounted
thereon, a rotatable pin extending through
said shaft, a detachable connection between
5 said shaft and rotatable part, a flat face on
said pin, and a head spring-pressed against
said face, substantially as specified.

5. In a device of the character described,
a shaft, a rotatable part loose thereon, a
10 rotatable pin extending through said shaft,
a detachable driving connection between

said pin and rotatable part, a chamber in
said shaft, a flat face on said pin in said
chamber, and a head located in said chamber
spring-pressed against said face, substan- 15
tially as specified.

In testimony whereof, I have hereunto
set my hand this 2nd day of April, 1909.

HERBERT L. JOHNSTON.

Witnesses:

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