

No. 839,491.

PATENTED DEC. 25, 1906.

H. LÖHNERT.
BALL MILL.
APPLICATION FILED JUNE 14, 1904.

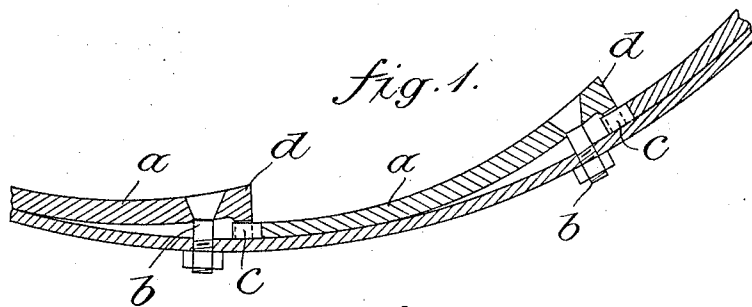


fig. 2.

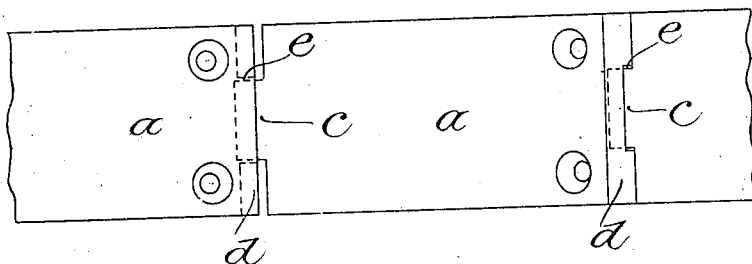
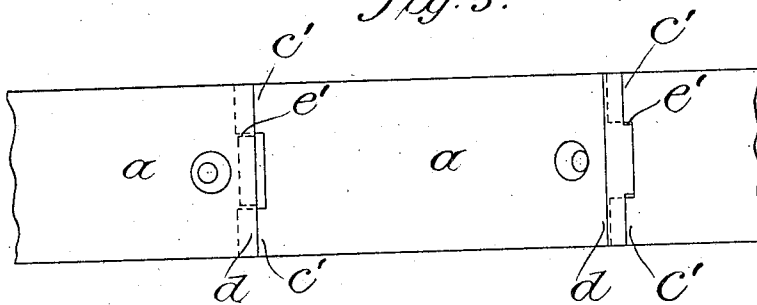


fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

HERMAN LÖHNERT, OF BROMBERG, GERMANY.

BALL-MILL.

No. 839,491.

Specification of Letters Patent.

Patented Dec. 25, 1906.

Application filed June 14, 1904. Serial No. 212,587.

To all whom it may concern:

Be it known that I, HERMAN LÖHNERT, manufacturer, a subject of the King of Prussia, German Emperor, residing at No. 4 Bahnhofstrasse, Bromberg, in the German Empire, have invented new and useful Improvements in Ball-Mills, of which the following is a specification.

In ball-mills the plates employed for lining the drum have according to prior practice been secured thereto at both ends by means of one or more screws with countersunk heads. Experience shows, however, that the screws very soon fracture or break, and the reason of this is frequently attributed to the inferior material of which the screws are made. The real reason, however, is that the balls, owing to their continually falling upon the lining-plates, cause lengthening of the latter, particularly of the fibers of the surface turned toward the inside of the mill, so that the plate becomes more or less buckled or bulged out. In this way the screws are subjected to very great strain, and consequently break in the course of time.

According to my invention the lining-plates are secured by means of screws only at one end, while the other end slides below fillets or the like, which may be presented by the adjacent end of the succeeding plate.

My invention is shown in the accompanying drawings, in which—

Figure 1 is a sectional view illustrating the junction of adjacent lining-plates. Fig. 2 is a plan of the plates. Fig. 3 is a plan of a modified arrangement, showing similar lining-plates each secured by means only of a single screw.

The lining-plates *a* are bent eccentrically

to the axis of rotation of the drum of the mill, so that they ascend at one end, which elevated or head end *d* is held by strong screws *b*. The other, or tail end, lies below the head end *d* of the next following plate, or, as shown in Fig. 2, a tongue *c*, formed on the tail end, enters a recess *e* in the flanged end *d* in such manner that on extension of the plate *a* the free tail end slides farther below the head end *d* of the succeeding plate. In this way no injurious tension can arise, so that the screws are not subjected to any strain.

In Fig. 3 the tail ends of the plates are shown as having two tongues *c'*, the flange of the head end *d* of the next plate being correspondingly cut away at *e'* to receive them.

This arrangement of plates with sliding tail ends presents the further advantage that not more than half the number of screws is necessary.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a device of the class described the combination with the casing, of the lining-plates each having a slotted flange on one end thereof and a tongue on the other end adapted to enter the slot of the flange of the succeeding plate so as to allow of longitudinal movement of the end carrying the tongue and means for securing one end of the plates to the casing.

In witness whereof I have hereunto signed my name, this 27th day of June, 1904, in the presence of two subscribing witnesses.

HERMAN LÖHNERT.

Witnesses:

WOLDEMAR HAUPT,
HENRY HASPER.