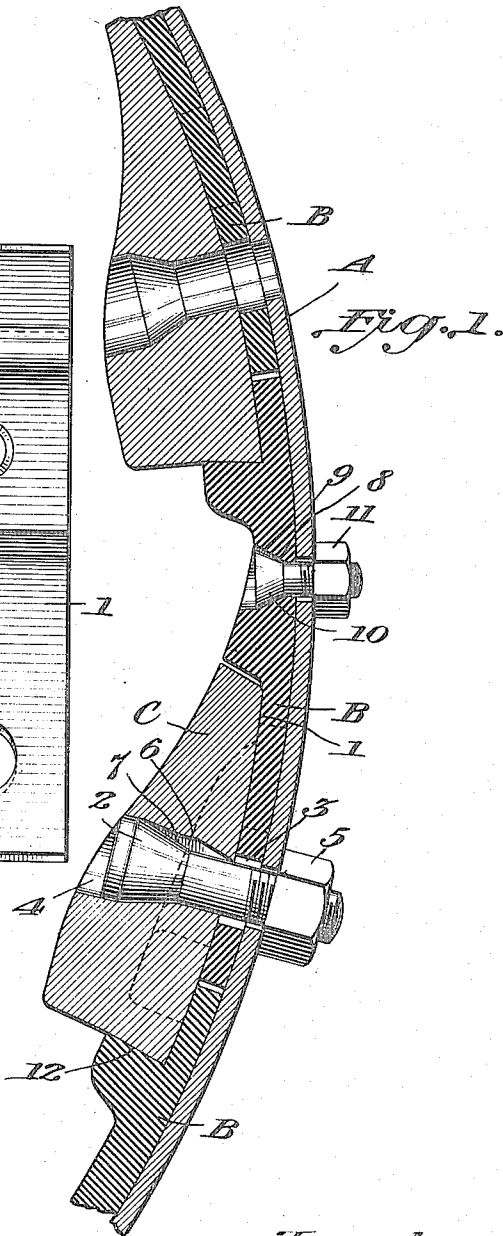
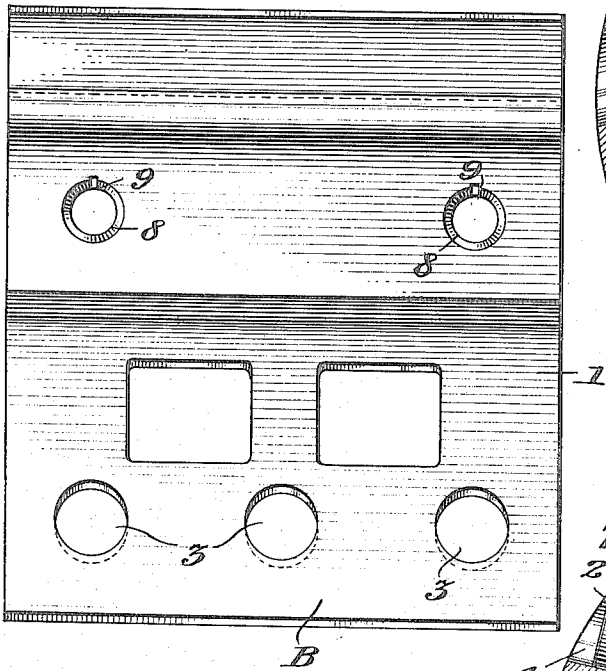


E. POSSELT.  
 GRINDING OR LINING PLATES.  
 APPLICATION FILED FEB. 21, 1914.

1,128,901.

Patented Feb. 16, 1915.  
 2 SHEETS—SHEET 1.

*Fig. 2.*



*Witnesses:*  
 Ruth B. King  
 A. Hammond

*Inventor:*  
 E. Possett  
 By Vernon E. Stodge  
 his Atty.

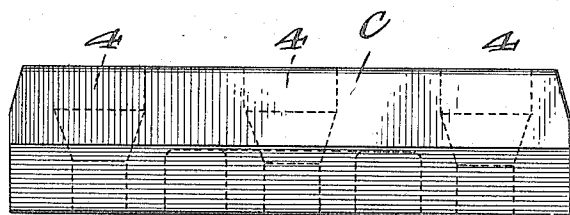
E. POSSELT.  
GRINDING OR LINING PLATES.  
APPLICATION FILED FEB. 21, 1914.

1,128,901.

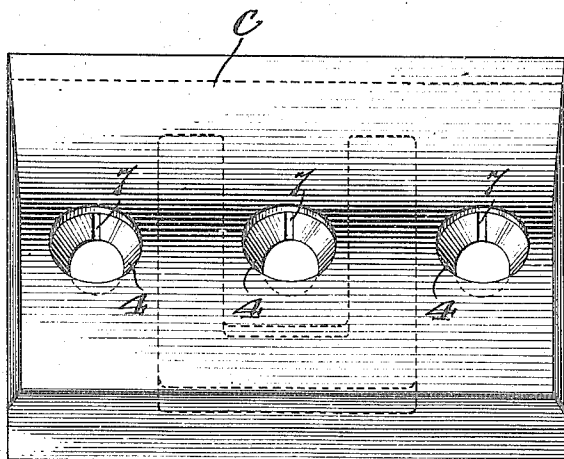
Patented Feb. 16, 1915.

2 SHEETS—SHEET 2.

*Fig. 4.*



*Fig. 5.*



*Witnesses:*

*Ruth B. King  
Alb Hammond*

*Inventor:  
Ejnar Posselt  
By Vernon C. Hodges  
his Atty.*

# UNITED STATES PATENT OFFICE.

EJNAR POSSELT, OF DENVER, COLORADO.

## GRINDING OR LINING PLATES.

1,128,901.

Specification of Letters Patent.

Patented Feb. 16, 1915.

Application filed February 21, 1914. Serial No. 920,237.

*To all whom it may concern:*

Be it known that I, EJNAR POSSELT, a subject of the King of Denmark, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Grinding or Lining Plates, of which the following is a specification.

This invention relates to an improvement in grinding or lining plates, to be used in connection with grinding machines known as ball mills or comminuters, and the object is to cause the heavy or enlarged end to overlap the small or thin end of the adjacent plate.

A further object is in making the plates in two pieces, one of which engages the mill shell, and is of such size that sufficiently large contacting surface is provided which will cause the said piece to be held in a fixed position on the shell, thereby overcoming an objection to the grinding plate which has been in use. This piece or member has another member mounted thereon, which is preferably of a harder metal, and the two pieces are connected together by means of bolts which fasten the said members to the mill shell so that they are securely fastened together and secured to the mill shell for preventing any possibility of the member which engages the mill shell moving.

Another object is in having the upper member removable so that it can be removed at any time, thereby decreasing the cost of the upkeep of the grinding plates. The upper member relieves the wear and strain imparted to the member which engages the mill shell by the constant action of the balls which are under the present construction received almost entirely upon the upper member. Furthermore, this upper member causes a more even distribution of the strain by the constant action of the balls, and does not distort the shape of the grinding surface.

In the accompanying drawings: Figure 1 is a longitudinal vertical sectional view showing the plates applied to the shell or casing of a mill; Fig. 2 is a top plan view of the plate; Fig. 3 is a top plan view of the block; and Fig. 4 is an end view of the block.

A, represents the mill casing or shell, and B represents the plates mounted upon the shell, which may be constructed of ordinary soft steel. An anvil block C is received in a recess 1 formed in the upper surface of the plate B. A plurality of holes 3 are formed in the plate B, and a plurality of holes 4

are formed in the block C which are adapted to be brought into registry with the holes 3 of the plate B. Bolts 2 are received in the holes 4 and 3 of the block and plate, and pass through the casing or shell A. The heads of the bolt are countersunk in countersinks formed in the holes 4. Nuts 5 are screwed upon the ends of the bolts for locking the block and plate to the casing or shell A. The bolts 2 are provided with webs 6 which fit into slots 7 in the walls of the holes 4 which prevent the bolts from turning. These bolts prevent any lateral movement of the blocks due to the action on the same of the load in the mill.

Near the heel of each plate B, holes 8 are formed having slots 9 in the wall thereof. Bolts 10 are received in the holes 8 and are countersunk therein in countersinks formed in the holes. The bolts pass through the casing A and are provided with nuts 11 which fasten the plates to the casing. These bolts 10 are provided with webs which enter the slots 9 for locking the bolts against movement. A shoulder 12 is formed at the heel of each plate and the face of the shoulder is tapered downwardly. The anvil block C has an end thereof overlapping the heel of the adjacent plate B. The outer surface or face of the block is beveled to conform to the tapering face of the shoulder 12, so that a true fit is formed between the heel of the plate and the toe of the anvil block, thereby locking the heel of the adjacent plate to the anvil block and preventing movement of the plate.

From the foregoing it will be seen that the anvil block is mounted upon one end of a plate B, and is fastened thereto by means of bolts 2 passing through the block, plate, and casing, whereby the plate is fastened against movement and the heel portion of the adjacent plate is locked against movement by the block overlapping the end or heel of the adjacent plate, and the toe of the block engaging the shoulder 12 on the heel of the adjacent plate forming a true fit, which locks the heel of the adjacent plate more firmly to the block and causes both plates which are engaged by the block to be more securely fastened to the casing or shell. This method of fastening the adjacent ends of plates to the casing or shell overcomes the objection and prevents the possibility of the plates moving, due to the constant wear and hard usage received by

the plates. Furthermore, by making the blocks of a harder material, such as manganese steel, the plates can be made of the ordinary soft steel, because the blocks will receive the greater part of the wear, and the blocks can be removed whenever necessary. By making the grinding plate in two parts, that is, providing the armor plate and the anvil block, the strain produced on the grinding plate by the constant action of the balls is more evenly distributed, and the action of the balls does not distort the shape of the grinding surface. The fact that the anvil block can be renewed whenever desired without renewing the armor plate materially decreases the cost of the upkeep of the grinding plates. Of course in some instances it may be found advisable to make the blocks and plates of a hard steel, such as manganese steel, or it might be made of a like metal, this being governed entirely by the character of work for which the mill is intended.

I claim:

- 25 1. The combination of two adjacent lining plates, each having heel and toe portions, an anvil block seated on the toe portion of one plate and on the heel portion of the other plate, and means for connecting said block and one of the lining plates together.
- 30 2. A lining plate formed of a heel and toe portion and having a recess in its upper side in combination with an anvil block detachably seated in said recess and projecting beyond the toe portion of the lining plate, said
- 35

block having a tapering outer face conforming to the tapering face of the anvil plate.

3. In combination two adjacent placed lining plates, each having a recess in its upper face at both its heel and toe portions, an anvil block seated in the recess of the toe portion of one plate and the recess of the other plate, and securing means for said block passing through openings therein and in the toe portion of one of said lining plates.

4. The combination with a shell, of a plurality of lining plates mounted thereon, each plate consisting of a base plate and an anvil block, means for locking said block and base plate to the shell, said block of each plate overlapping and having engagement with the adjacent plate for locking the heel and toe portion of the two adjacent plates to the shell.

5. The combination with a shell, of a plurality of lining plates mounted thereon, each plate consisting of a base plate and an anvil block, means for locking said block and base plate to the shell, said block of each plate overlapping and having frictional engagement with the adjacent plate for locking the heel and toe portion of the two adjacent plates to the shell.

In testimony whereof I affix my signature in the presence of two witnesses.

EJNAR POSSELT.

Witnesses:

D. EDGAR WILSON,  
CHARLES M. HALL.