E. POSSELT.

GRINDING PLATE.

APPLICATION FILED FEB. 21, 1914.

1,109,459. Patented Sept. 1 1914.

Fig. 2.

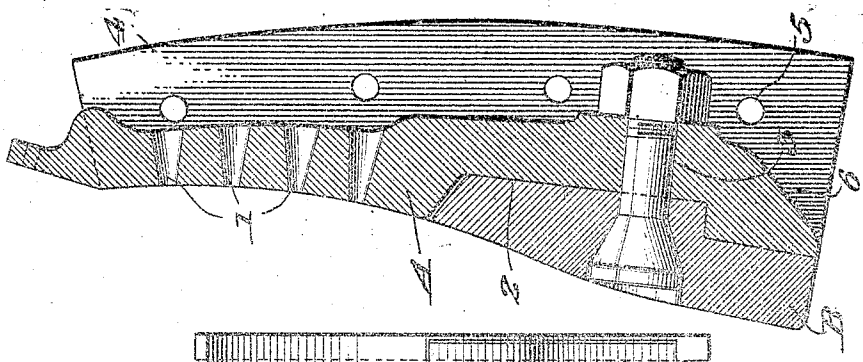
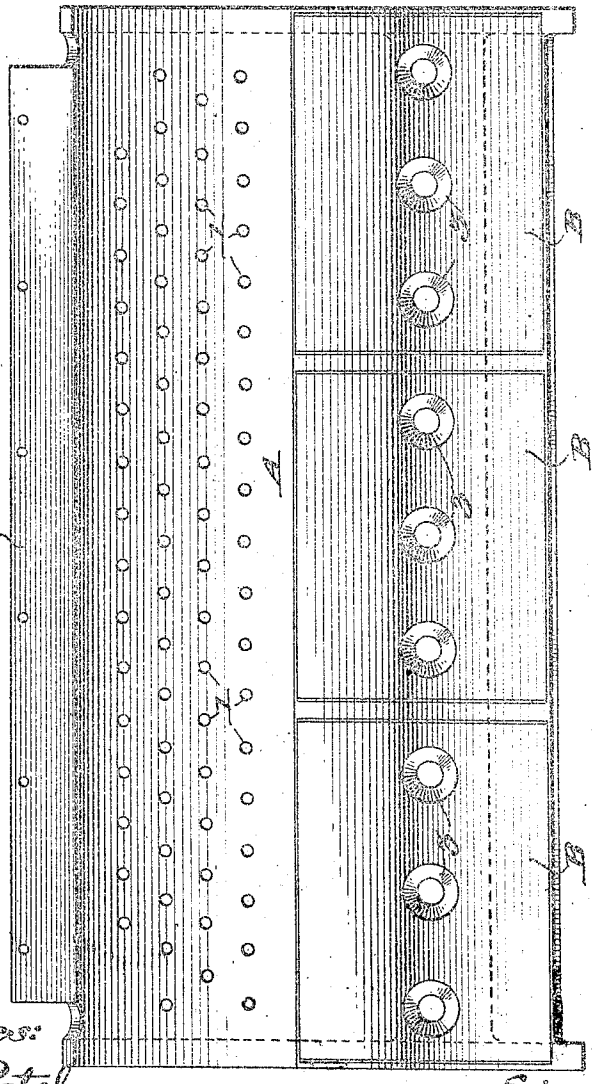


Fig. 1.



Witnesses:
Floyd W. Patch
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UNITED STATES PATENT OFFICE.

EJNAR POSSELT, OF DENVER, COLORADO.

GRINDING-PLATE.

1,109,459. Specification of Letters Patent. Patented Sept. 1, 1914.

Application filed February 21, 1914. Serial No. 820,236.

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-Plates, of which the following is a specification.

This invention relates to an improvement in grinding plates, and more particularly to the plates which are secured to the ends of a mill body, and the object is to provide a plate which is made of two members, the main member having a plurality of recesses formed longitudinally thereof, in which are received wearing members. These wearing members are removably connected to the main member, so that they can be renewed as they become worn, and in this way materially reduce the expense of the upkeep of the grinding plates. Heretofore it has been necessary with many of the grinding plates in general use to substitute entirely new plates, but with this invention, it is the intention to provide blocks of a harder metal which will receive the greatest amount of the wear imparted to the grinding plates, so that as the blocks become worn, they can be removed and new blocks substituted.

The invention relates to still other novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings: Figure 1 is a top plan view; and Fig. 2 is a transverse vertical sectional view.

A represents the plate, which is provided with a plurality of cone shaped openings or orifices 1, 1. The greatest diameter of the openings is on the outer side of the plate. Located along the other edge and longitudinally of the plate are a plurality of recesses 2, 2. Received in these recesses 2 are blocks B which are preferably constructed of manganese steel, while the plates A may be constructed of the ordinary soft steel, because the greatest amount of wear will be placed upon the blocks, by the action of the balls, and when the blocks become worn or useless, they can be removed and new blocks substituted. The blocks are connected to the plates A by means of bolts 3 and nuts 4, the heads of the bolts being countersunk in countersinks formed in the block B. The blocks B are so constructed that they extend to the edge of the plate A. At each end of the plate, flanges 4, 4, are formed, which are provided with holes 5, whereby the plates can be fastened to the ends of the drum or mill. These flanges project below the outer side of the plate some distance and at one end the plate curves upwardly, as at 6. Located at the toe portion of the plate is a downwardly extending lip 7, which is adapted to be received beneath the heel portion of an adjacent plate. The curved surface 6 affords provision whereby the lip can be inserted beneath the plate.

The fact that the plate is composed of several pieces so arranged as to utilize different materials in the different places, these materials to be of the most suitable kind for the services on them in the various positions, makes a distinct departure from the ordinary plate used.

The bolts which fasten the several members of the plates together are as nearly as practicable in the center of the block, so that they will be subjected to the blows of the balls, and thereby are under a uniform stress from the tension caused by the bulging of the block.

I claim:

1. In a ball mill, the combination with a plurality of stepped or overlapping grinding plates, each having a plurality of discharge openings formed therein, and blocks fastened to the plates in a position to receive the greatest amount of wear during the grinding operation.

2. The combination with a grinding mill having stepped grinding plates provided with a plurality of discharge orifices, said plates having recesses therein, a block received in each recess for relieving the strain and wear of the plate, and means for removably connecting the blocks to the plates.

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

EJNAR POSSELT.

Witnesses:
D. EDGAR WILSON,
CHARLES A. M. HALL.