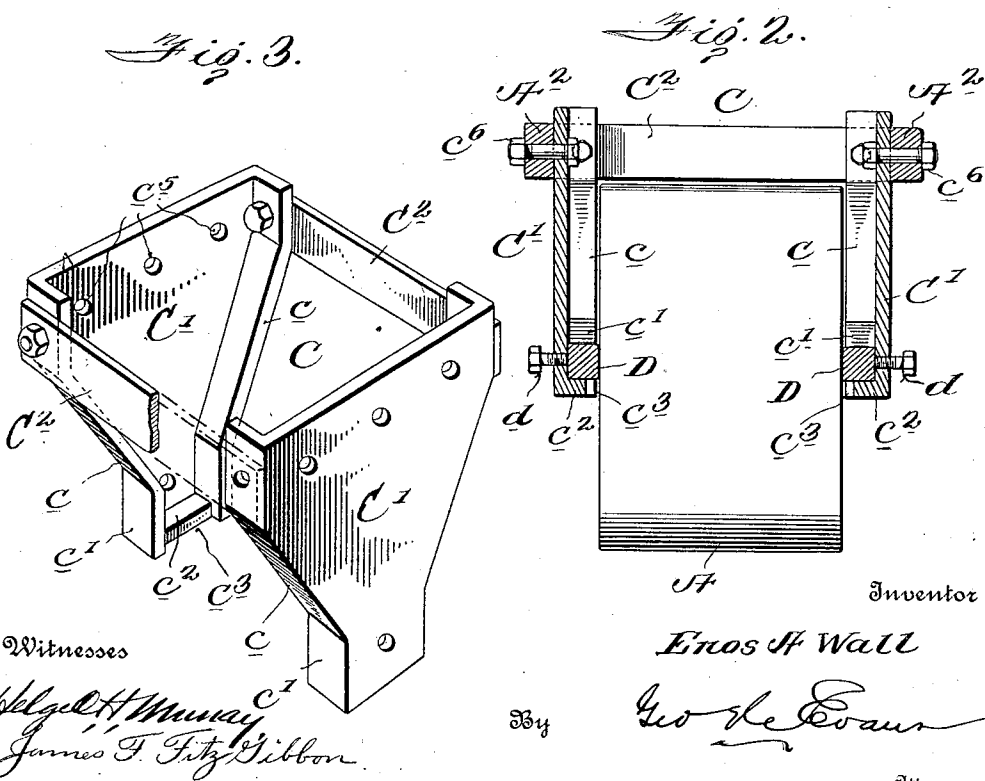
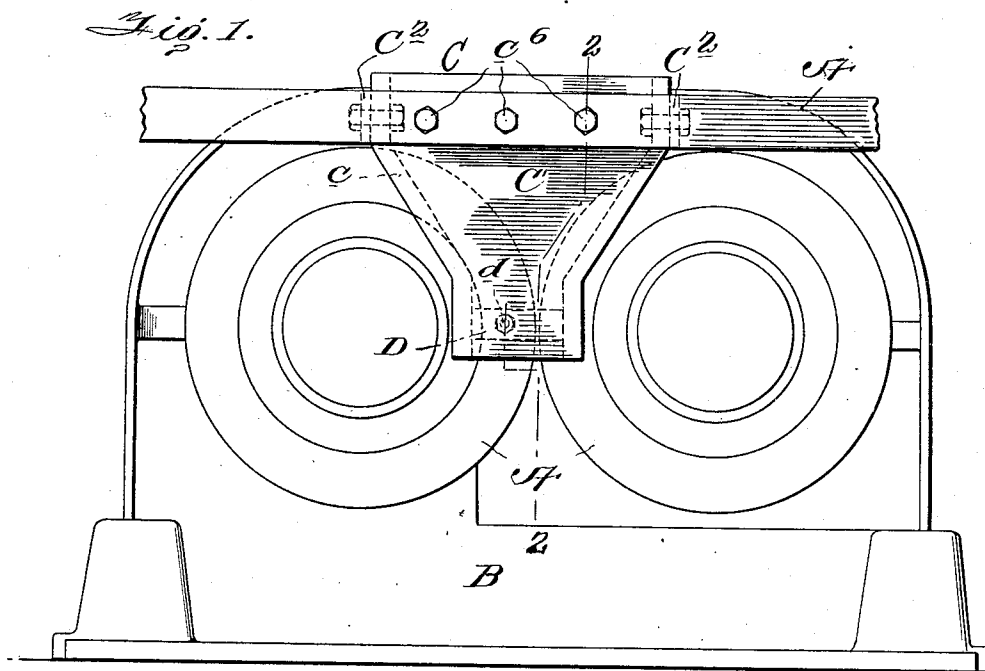


E. A. WALL.
HOPPER FOR CRUSHING AND GRINDING ROLLS.
APPLICATION FILED OCT. 22, 1912.

1,050,183.

Patented Jan. 14, 1913.



UNITED STATES PATENT OFFICE.

ENOS A. WALL, OF SALT LAKE CITY, UTAH.

HOPPER FOR CRUSHING AND GRINDING ROLLS.

1,050,183.

Specification of Letters Patent.

Patented Jan. 14, 1913.

Application filed October 22, 1912. Serial No. 727,205.

To all whom it may concern:

Be it known that I, ENOS A. WALL, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake and State of Utah, have invented certain new and useful Improvements in Hoppers for Crushing and Grinding Rolls, of which the following is a specification.

My invention relates to feed hoppers for crushing rolls.

The object of the invention is to provide a feed hopper for horizontally alined crushing or grinding rolls which will feed the material between the rolls for their full lengths.

Heretofore the end members of the hopper have been arranged as flat plates or disks lying close to the ends of the rolls and bridging the space between them above their axes. In such constructions the material is held away from the end extremities of the rolls so that as the rolls wear down raised rib-like rings or flanges are left at the roll ends, which rings or flanges prevent the adjustment of the rolls toward each other to take up the wear.

It is the object, therefore, of my invention to prevent this uneven wear of the rolls due to improper feeding.

A further object is to provide the bases of the end members of the hopper with readily replaceable wear pieces.

These objects I accomplish by the construction shown in the accompanying drawing, in which:

Figure 1 is an end elevation of a pair of crushing rolls and a hopper constructed according to my invention. Fig. 2 is a transverse vertical section on line 2—2 of Fig. 1. Fig. 3 is a perspective of the hopper detached.

A designates a pair of horizontally alined crushing rolls of any desired construction, and B is the frame on which the rolls are mounted in the manner common to such rolls. The rolls and frame form no part of my present invention and are illustrated to better show the hopper C, which I will now describe.

The hopper C is formed of two end plates C', C', which are duplicates of each other. Each end plate C' is formed with inwardly extending marginal flanges c along its sides and lower end. The flanges c, c converge from the upper edges of the plates C' toward the lower end and then extend down

parallel with each other to the lower end of the plate, as at c', c', where they are connected by a horizontal flange c² cut away, as at c³. The two end plates are connected by cross plates C² which form the sides of the hopper with their lower edges extending close to the upper portions of the rolls A. The end plates C' of the hopper extend downwardly at the ends of the rolls to points just below the horizontal axes thereof, as shown in Figs. 1 and 2. The flanges c c' c' c² extend close to the ends of the rolls and space the end plates C' away from the rolls. It will be seen, therefore, that pockets are formed at the ends of the rolls at their working points into which the material being crushed may pass and be acted upon by the extreme end edges of the rolls. Owing to the entire length of the rolls being thus supplied with the material to be acted upon, it will be apparent that the wear will extend to the extreme ends of the rolls, which is not the case where the end plates or disks lie flat up against the roll ends.

Within the lower ends of the pockets formed by said flanges are steel or other hard metal wear blocks D oblong in shape and resting on the cut-away flanges c² c³. These wear blocks D are about in line with the horizontal axes of the rolls A and their inner edges receive the wear of the ground or crushed material being carried downwardly by the rolls at these points. These blocks D may be set up toward the ends of the rolls as they become worn by means of transverse set-screws d extending through the end plates C'.

The end plates C' and their flanges may be cast integral with their pocket forming flanges c c'.

The end plates C' are provided with apertures c⁵ near their upper edges through which pass the attaching bolt c⁶ which secure the hopper C in position on bars A² A² or some other part of the roll-framing not shown.

It will be understood that by the term "pockets" I mean chambers or reservoirs of such size as to receive considerable portions of the material being crushed or ground; that is, pockets capable of performing a certain specified function and not mere guideways for the usual wear plates that lie close to the ends of the rolls. Such guideways would not constitute pockets in the sense that

I use the term, for in my construction the material in the pockets renders the use of wear plates at such points unnecessary and also allows the rolls to act their full lengths upon the material being treated.

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

1. The combination, with a pair of crushing rolls, of a feed hopper therefor provided with end members or plates at the ends of the rolls and ore or rock receiving pockets in the inner faces of the end plates extending down past the working portions of the roll ends to admit the material to the extremities of the rolls.

2. The combination, with a pair of crushing rolls, of a feed hopper therefor provided with end plates at the ends of the rolls formed with inwardly extending marginal ore or rock receiving pocket forming flanges extending down past the working portions of the roll ends to admit the material to the extremities of the rolls.

3. The combination, with a pair of crushing rolls, of a feed hopper therefor provided with end plates at the ends of the rolls formed with inwardly extending marginal ore or rock receiving pocket forming flanges

extending down past the working portions of the roll ends to admit the material to the extremities of the rolls, and a wear block resting in the lower end of the pocket formed by said flanges.

4. The combination, with a pair of crushing rolls, of a feed hopper therefor provided with end plates at the ends of the rolls formed with inwardly extending marginal ore or rock receiving pocket forming flanges extending down past the working portions of the roll ends to admit the material to the extremities of the rolls, and a wear block resting in the lower end of the pocket formed by said flanges and having means for adjusting it toward said roll ends.

5. A feed hopper for grinding and crushing rolls comprising two connected end plates or members, each having on its inner side a downwardly tapering ore or rock receiving pocket terminating in a lower squared portion, for the purpose described.

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

ENOS A. WALL.

Witnesses:

A. M. PARKING,

C. L. STURTEVANT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."