Dec. 22, 1936. G. E. KRIDER 2,065,471

CRUSHING ROLL CONSTRUCTION

Filed March 11, 1936 2 Sheets-Sheet 1

Fig. 1.

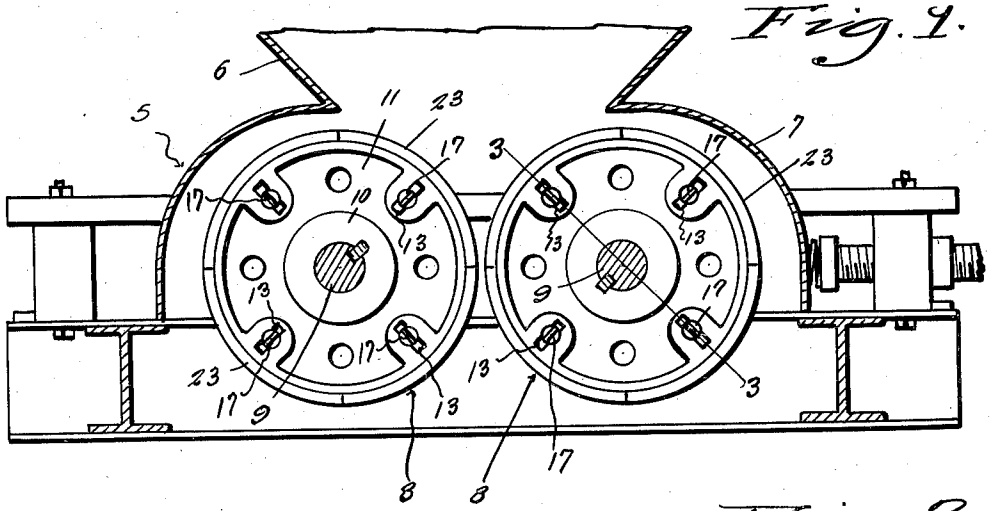


Fig. 2.

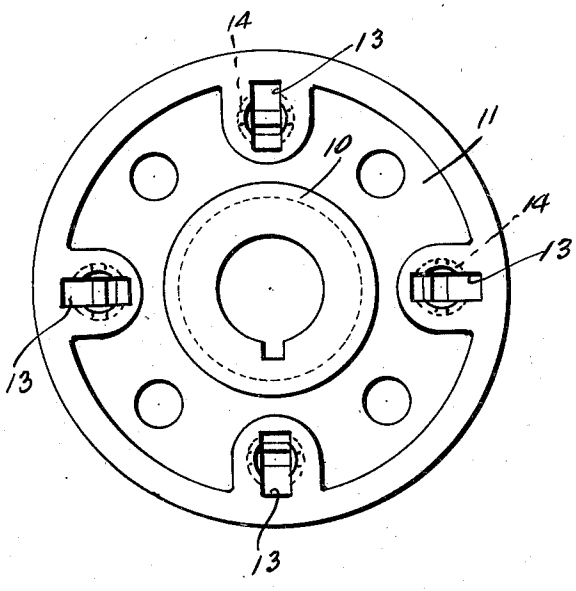


Fig. 3.

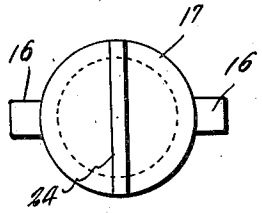
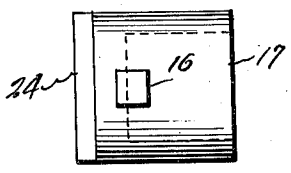


Fig. 4.



Inventor

George E. Krider

By Clarence A. O'Brien and Hyman Berman Attorneys

Dec. 22, 1936. G. E. KRIDER 2,065,471

CRUSHING ROLL CONSTRUCTION

Filed March 11, 1936 2 Sheets-Sheet 2

Fig. 3.

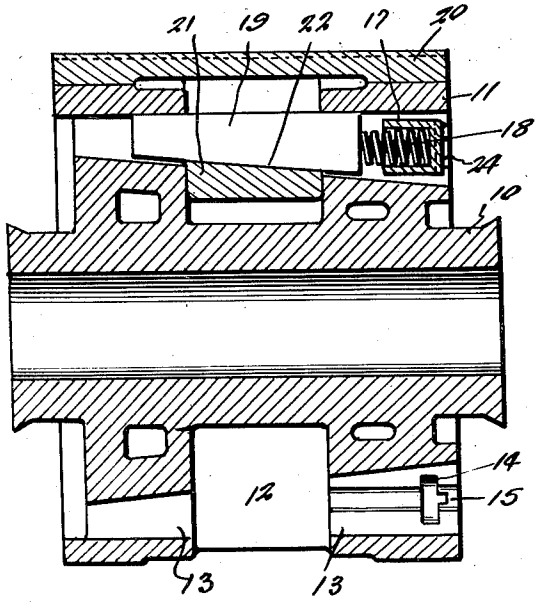


Fig. 4.

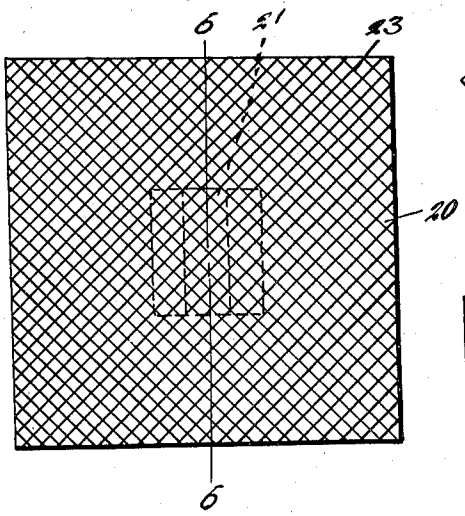


Fig. 5.

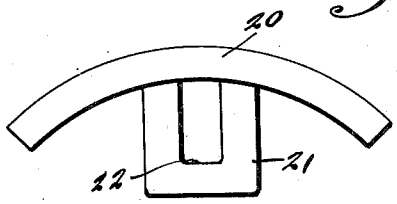
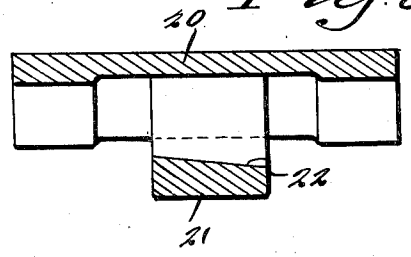


Fig. 6.



Inventor

George E. Krider

By Clarence O'Brien and Hyman Berman Attorneys

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UNITED STATES PATENT OFFICE

2,065,471

CRUSHING ROLL CONSTRUCTION

George E. Krider, Duncansville, Pa., assignor to McLanahan & Stone Corporation, Hollidaysburg, Pa.

Application March 11, 1936, Serial No. 68,335

1 Claim. (Cl. 83—12)

This invention appertains to new and useful improvements in crushing mills and more particularly to a novel crushing roll.

The principal object of the present invention is to provide a crushing roll whereby the crushing face thereof is divided into a plurality of replaceable segments connected to the roll proper by quick detachable means.

During the course of the following specification other important objects and advantages of the invention will become apparent to the reader.

In the drawings:

Figure 1 represents a fragmentary vertical sectional view through the mill equipped with the novel rolls.

Figure 2 represents an end elevational view of one of the roll hubs.

Figure 3 is a longitudinal sectional view through one of the complete rolls with one of the sections and its retaining means removed.

Figure 4 is a plan view of one of the segments.

Figure 5 is an end elevational view of one of the segments.

Figure 6 is a longitudinal sectional view of one of the segments.

Figure 7 is an end elevational view of one of the spring cups.

Figure 8 is a side elevational view of one of the spring cups.

Referring to the drawings wherein like numerals designate like parts, it can be seen in Figure 1, that numeral 5 generally refers to a conventional mill consisting of the hopper 6 and the casing 7 for the rolls generally referred to by numeral 8. These rolls are mounted on a shaft 9 and as each is of the same construction, a description of one will suffice for both. The roll consists of the hub construction consisting of the tubular body 10 having the circumferentially extending formation 11 provided at equal spaced intervals with recesses 12. Longitudinally extending and tapering openings 13 extend longitudinally through the portion 11 of the hub, merging with the pocket 12 as shown in Figure 3. In the large end of each of these openings which are narrow, is a circular grooveway 14 and longitudinally extending lateral grooveways 15 accommodate in each of these openings 13 the laterally disposed lugs 16 of the spring retaining cup 17. The cup is inserted and then rotated so that the lug 16 will ride in the circular grooveway 14 in offset relation to the grooves 15. Thus the spring 18, one end portion of which is held in the cup 17 is retained impinging against the elongated tapering wedge member 19 which extends in the opening 13 and across the pocket 12 in which, when the segment 20 is properly positioned is received the longitudinally apertured ear 21. The aperture in the ear 21 is provided with an inclined floor 22 against which the wedge 19 bears.

It can be seen, that with the wedge 19 constantly held against this inclined floor 22 of the ear 21 by the constant tension of the spring 18, the segment 20 and in fact the other segments held in like manner will be held in snug engagement against the outside of the hub body 11.

These segment plates 20 can be suitably corrugated or milled as at 23 on their outer face.

To permit turning of the cup 17 in the opening 13, a diametrical flange 24 is provided on the closed end of the cup. It is to be understood that the invention can be incorporated in crushers of either single, double or multiple roll construction.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and material may be resorted to without departing from the spirit or scope of the invention as claimed hereinafter.

Having thus described the invention, what is claimed as new is:

A crushing roll comprising a rotor structure provided with longitudinal extending tapered openings therein, said rotor being provided with pockets intersecting the said openings, segmental periphery plates for disposition around the rotor and provided with apertured ears for disposition into the pockets so that the apertures thereof will register with the opening, wedge members disposed in the tapered opening and through the said ears, the said rotor being provided in each of the tapered openings at the enlarged end thereof with longitudinally extending grooves, short circumferentially extending grooves intersecting the longitudinally extending grooves each of the said circumferentially extending grooves being provided with a longitudinally disposed notch, a cup-shaped member for disposition in each of the longitudinally extending grooves, a spring disposed in each of the cups and adapted to imprint against the adjacent end of the corresponding wedge, each of the said cups being provided with a pair of laterally disposed lugs engageable into the tapered openings and into the circumferential grooves and adapted to seat in the said notches.

GEORGE E. KRIDER.