

924,352.

A. E. HOGUE.
CRUSHING ROLLS.
APPLICATION FILED MAR. 25, 1908.

Patented June 8, 1909.

FIG. 1.

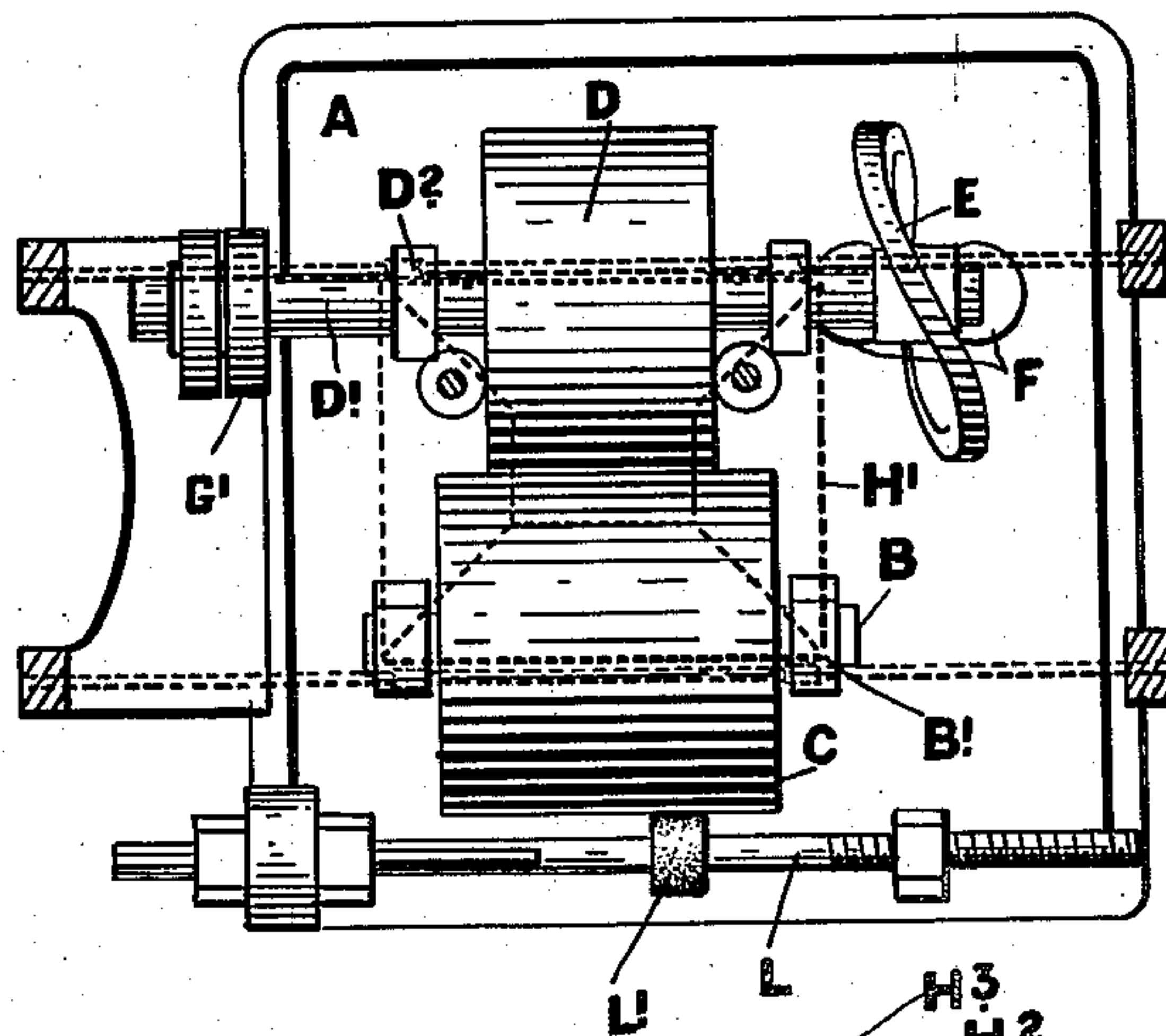


FIG. 2.

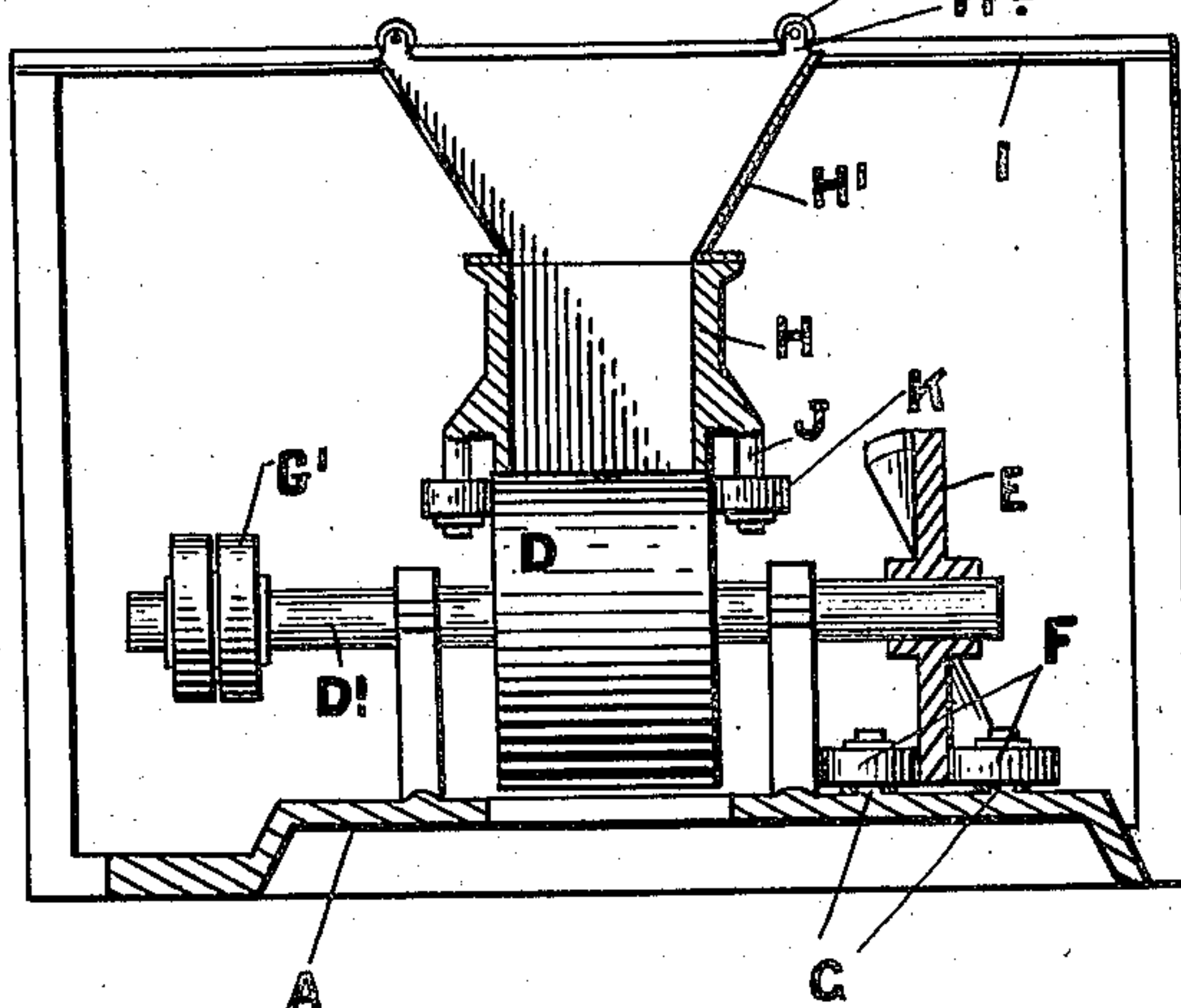


FIG. 3.

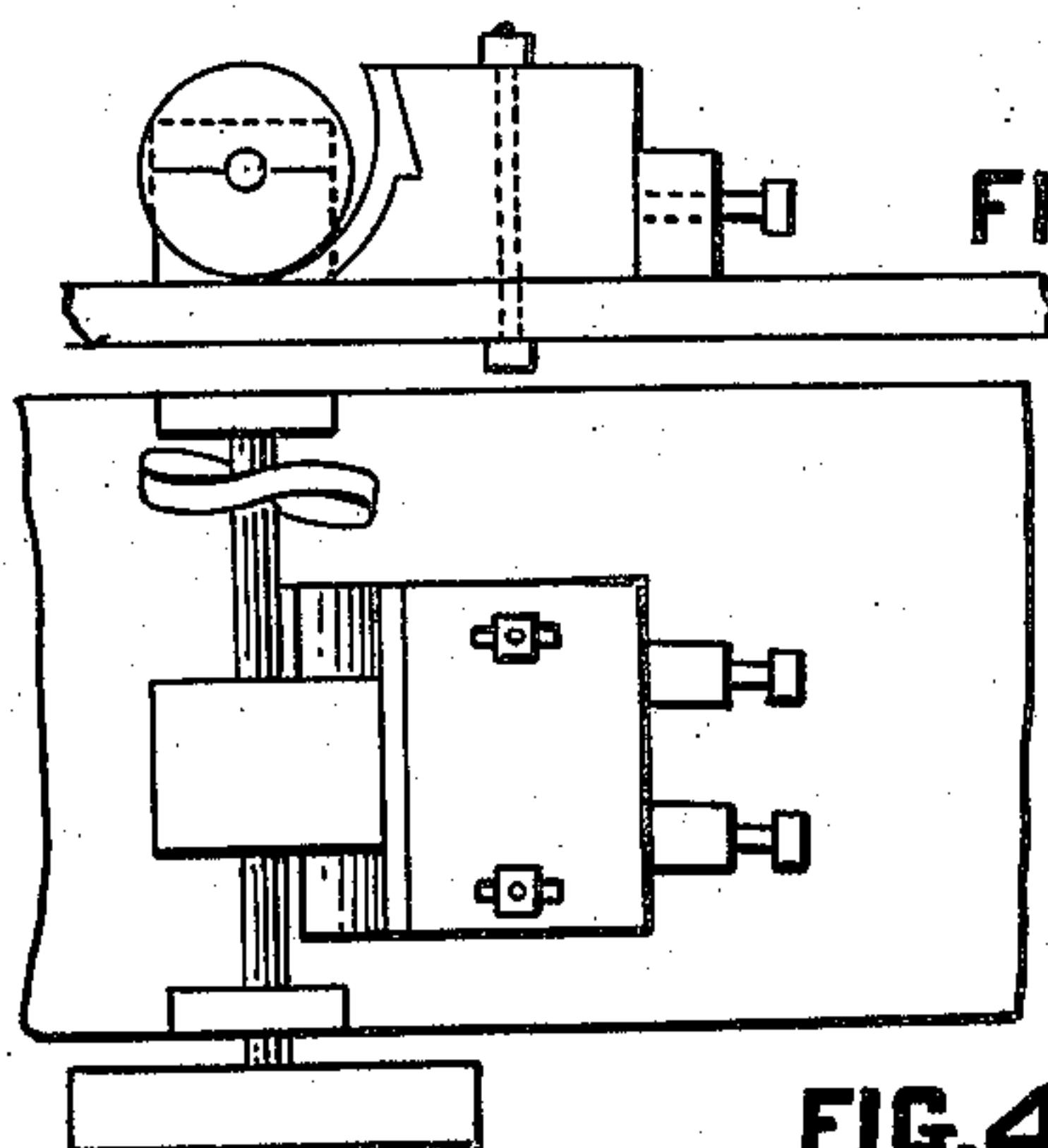


FIG. 4.

WITNESSES.

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ARTHUR EDWARD HOGUE, OF TORONTO, ONTARIO, CANADA.

CRUSHING-ROLLS.

No. 924,352.

Specification of Letters Patent.

Patented June 8, 1909.

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To all whom it may concern:

Be it known that I, ARTHUR EDWARD HOGUE, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Crushing-Rolls, of which the following is the specification.

My invention relates to improvements in crushing rolls particularly adapted for ores, and the object of the invention is to devise a simple, cheap and efficient machine of this class, which will effect an even wear on the rolls and consequently improve their crushing efficiency, and thereby effect an economy in time and reduce the wear and tear on the machine and it consists essentially of a major roll and a minor roll of less width secured on suitable shafts journaled in suitable bearings, a bed plate carrying the bearings, a cam wheel secured on the shaft, rollers journaled on the bed plate between which such cam wheel extends, a hopper supported at the top by rollers on suitable guide-ways and rollers journaled on pins depending from the bottom of the hopper and abutting the minor roll as hereinafter more particularly explained.

Figure 1, is a plan view partially in section showing the hopper in dotted lines. Fig. 2, is a sectional elevation. Fig. 3, is side view of a modification. Fig. 4 is a plan view of Fig. 3.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is the bed plate of the machine.

B is the shaft carrying the major roll C, such shaft being journaled in suitable bearings B' secured to the bed plate.

D is the minor roll, which is of less width than the major roll. The roll D is carried by a shaft D', which is journaled in suitable bearings D² secured to the bed plate.

E is a cam wheel, which is secured on one end of the shaft D' and has the faces thereof designed to engage with the friction rolls F journaled on the pins G held in the bed plate. The volute of the cam is such that upon the rotation of the shaft a longitudinal reciprocating movement is imparted to it, such shaft being driven by a suitable driving pulley G as indicated.

H is a chute connected to the hopper H'. The hopper is provided at the top with brackets H² in which are journaled the grooved rollers H³, which rest upon the guiding rods I. There are two rollers on

each side of the hopper as indicated by dotted lines in Fig. 1.

J are pins depending from the chute or lower portion of the hopper and having located thereon the friction rollers K.

L is a shaft provided with an emery wheel L', such emery wheel being designed to true the surface of the periphery of the roller C.

Having now described the principal parts involved in my invention I shall briefly describe its operation and utility. The rolls C and D are driven from a suitable source of power and as the shaft D' is caused to rotate the roll D has imparted to it a longitudinal reciprocating movement as well as a rotary one, thus serving as it passes crosswise of the major roll C to keep the surface thereof true as well as the surface of itself. In addition the rolls have a shearing action on the ore or material, which passes between the same, thus adding materially to the efficiency of the rolls. As the material is fed into the hopper H such hopper it will be seen has imparted to it a longitudinal reciprocating movement on the guide rods I by means of the rollers K, thus always keeping the chute of the hopper directly over the center of the rolls D, which is an important desideratum.

Although I show in Figs. 1 and 2 the minor roll co-acting with a major roll it will be understood that such minor roll may be with equal facility adapted to co-act with a stationary hollow arc-shaped trough-like block as indicated in Fig. 3. The block would be of greater length than the roll and would, of course, necessarily be stationary without departing from the spirit of my invention. This and other modifications might be made without departing from the spirit of my invention.

What I claim as my invention is:

1. In a machine of the class described, the combination with the major roll and the minor roll, shafts supporting said rolls, means for driving said shafts, the shaft of the minor roll extending beyond said roll at one side thereof, a cam on said extended end of the shaft, and a pair of rollers vertically journaled between which said cam extends and rotates.

2. In a machine of the class described, the combination with a major roll and a minor roll held on suitable shafts journaled in suitable bearings and suitably driven, of means for imparting a longitudinal movement to

one of the rolls during rotation and a hopper supported on suitable guide ways and means for imparting movement to the hopper to follow in unison the movement of the roll as
5 and for the purpose specified.

3. In a machine of the class described, the combination with a major roll and a minor roll held on suitable shafts journaled in suitable bearings and suitably driven, of means
10 for imparting a longitudinal movement to one of the rolls during rotation and a hopper supported on suitable guide ways, or guiding rods secured in the frame of the machine, rollers journaled on the top of the hopper and
15 supported on the rods and means for imparting a movement to the hopper to follow in unison the movement of the rolls as and for the purpose specified.

4. In a machine of the class described, the combination with a major roll and a minor roll held on suitable shafts journaled in suitable bearings and suitably driven, of means
20 for imparting a longitudinal movement to one of the rolls during rotation and a hopper supported on suitable guide-ways, or guiding rods secured in the frame of the machine, rollers journaled on the top of the hopper and supported on the rods, pins extending
25 downwardly from the hopper and rollers journaled on the pins and abutting one of the rolls as and for the purpose specified. 30

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Witnesses:

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