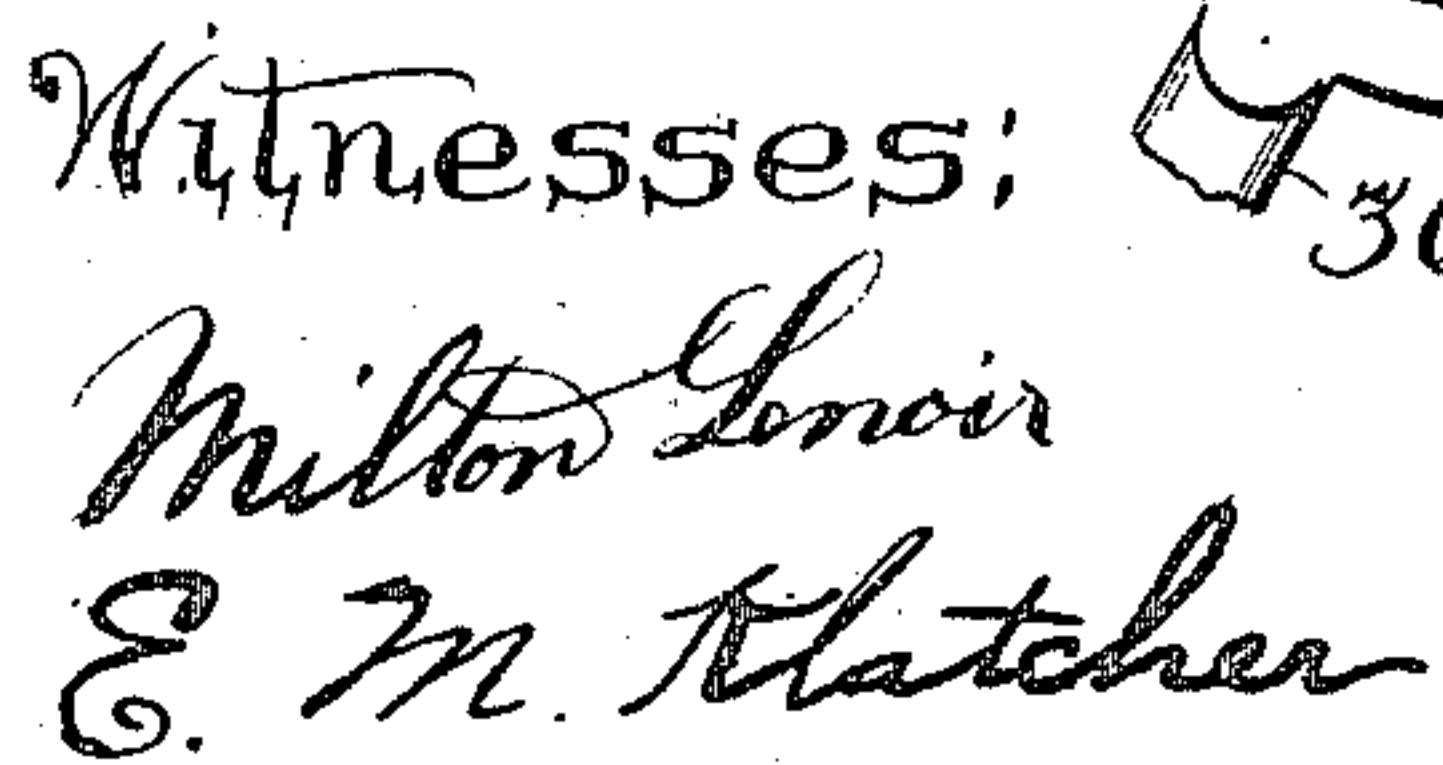


APPLICATION FILED APR. 8, 1909.

Patented July 12, 1910.

2 SHEETS—SHEET 1.



Inventor:  
De Witt C. Prescott  
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By Attorneys'



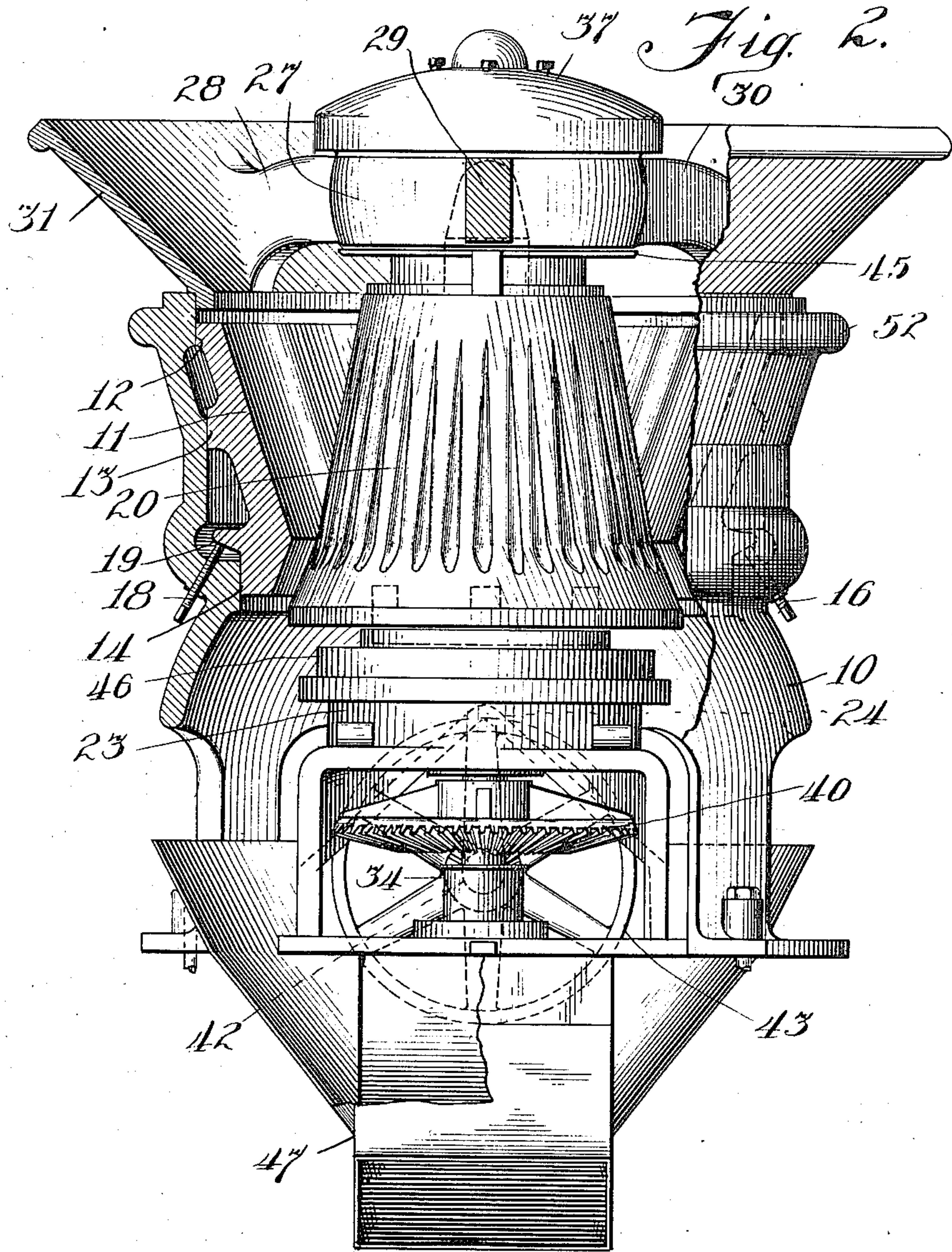
DE WITT C. PRESCOTT.  
ROCK CRUSHER.

APPLICATION FILED APR. 8, 1909.

964,183.

Patented July 12, 1910.

2 SHEETS—SHEET 2.



Witnesses:

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# UNITED STATES PATENT OFFICE.

DE WITT C. PRESCOTT, OF CHICAGO, ILLINOIS.

## ROCK-CRUSHER.

964,183.

Specification of Letters Patent.

Patented July 12, 1910.

Application filed April 8, 1909. Serial No. 488,715.

*To all whom it may concern:*

Be it known that I, DE WITT C. PRESCOTT, a citizen of the United States, and resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Rock-Crushers, of which the following is a specification and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to rock crushers of the gyratory type; its object being to generally improve devices of this character, and especially to obtain great strength with simplicity of action.

The invention is exemplified in the structure hereinafter described and illustrated in the accompanying drawings, in which—

Figure 1 is a central vertical section of the machine taken on the plane of the driving shaft; Fig. 2 is a central vertical section on a plane perpendicular to that of Fig. 1; Fig. 3 is a detail section on the line 3—3 of Fig. 1; and Fig. 4 is a detail section on the line 4—4 of Fig. 1.

The machine has an outer shell or casing 10 which provides a base adapted to be bolted to any suitable foundation, and a housing for the mortar 11, the driving mechanism and the crusher head.

The mortar 11 is of the usual inverted truncated conical form, and has a plurality of peripheral bearing faces, as 12, 13, and 14, which are parallel with its axis and engage similarly disposed bearing faces formed on the inner surface of the shell 10. The mortar is supported by a plurality of screw-bolts, as 15, 16, 17, 18, setting upwardly through the wall of the shell 10 and bearing against a shoulder 19 on the mortar. This arrangement permits of vertical adjustment of the mortar to regulate the size of the output of the mill.

The crusher head 20 takes the form of a truncated cone, and is carried by a hollow spindle 21. This spindle fits within an eccentric socket in an internal gear 22 which is journaled within a box 23 formed integral with an instanding horizontal partition 24 of the shell 10. The gear 22 has a peripheral flange 25 which rests upon the upper end of the box 23 and supports the weight of the crusher head.

An internal gear 26, having an eccentric socket which receives the upper end of the spindle 21, is journaled in a head 27, carried

by a spider whose arms are designated 28, 29 and 30, and rise from the walls of a hopper 31 which is seated upon the top of the shell 10. The gear 26 has at its upper end a radial flange 32, which bears upon the head 27.

A shaft 33 is journaled upon the axis of the shell, its lower end being fitted within a socket block 34 resting upon the base of the shell 10, and the weight of the shaft being supported by one or more wearing disks 35 at the bottom of the socket of the block. The upper end of the shaft 33 is journaled in a box 36 formed in a cap 37 resting upon and secured to the head 27. A pair of spur gears 38, 39, are fixed upon the shaft 33, cooperating, respectively, with the internal gears 22 and 26. A bevel gear 40, fixed upon the shaft 33 adjacent its lower end, meshes with a bevel gear 41 on a driving shaft 42 carrying a belt pulley 43, by means of which power may be transmitted to the mill. The pulley 43 is secured to the shaft 42 by means of frangible bolts 44, as is usual in this type of machines, thereby providing against serious accidents in case of clogging of the mill.

A dust shield 45 is secured to the upper end of the spindle 21 to protect the upper gears, and a dust shield 46 is secured to the flange 25 of the gear 22 and overhangs the box 23. A chute 47 carries the crushed rock from the mill. The hopper 33 and its appurtenances are secured in place by means of bolts, as 48, 49, setting through lugs 50, 51, on the hopper and a flange 52 adjacent the upper end of the shell 10.

The rotation of the shaft 33 turns the gears 22, 26, thereby causing the spindle 21 and crusher head 20 to travel in a circular orbit about the shaft as a center. The spindle is free to turn within the sockets of the gears, and under the influence of work the head will be caused to rotate as it revolves.

I claim as my invention—

1. In a rock crusher, in combination, a shell, a mortar within the shell, a driving shaft on the axis of the mortar, a pair of internal gears loosely encircling the shaft, one above and the other below the mortar, such gears having eccentric sockets in their contiguous faces, a hollow spindle having its ends seated in the eccentric sockets, a conical crusher head mounted on the spin-



dle, a pair of spur gears fixed on the shaft and meshing with the internal gears, and means for driving the shaft.

2. In a rock crusher, in combination, a shaft, an internal gear loosely encircling the shaft and having an eccentric socket, a spindle seated in the socket and carrying a crusher head, a spur gear fixed on the shaft and engaging the internal gear, and means for driving the shaft.

3. In a rock crusher, in combination, a shaft, an internal gear loosely encircling the shaft, a spindle having an eccentric bearing on the gear, a crusher head mounted on the spindle, a spur gear fixed on the shaft and engaging the internal gear, and means for driving the shaft.

4. In a rock crusher, in combination, a shell having a bearing collar concentric with its axis, an internal gear journaled within the bearing and having a flange resting on

its upper end and an eccentric socket, a head mounted on the shell and having an annular bearing concentric with the axis thereof, an internal gear journaled in such bearing and having a flange resting on its upper end and having an eccentric socket, a shaft on the axis of the shell and stepped in a socket block and journaled in a bearing carried by the head, such shaft extending loosely through the two internal gears, a pair of spur gears fixed in the shaft and engaging the two internal gears, a spindle fitting within the eccentric sockets of the internal gears, a crusher head mounted on the spindle, a mortar inclosing the crusher head, and means for driving the shaft.

DE WITT C. PRESCOTT.

Witnesses:

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