

Samuel Hughes.
Ore-Crushing Machine.

No. 120,972.

Patented Nov. 14, 1871.

Fig. 1

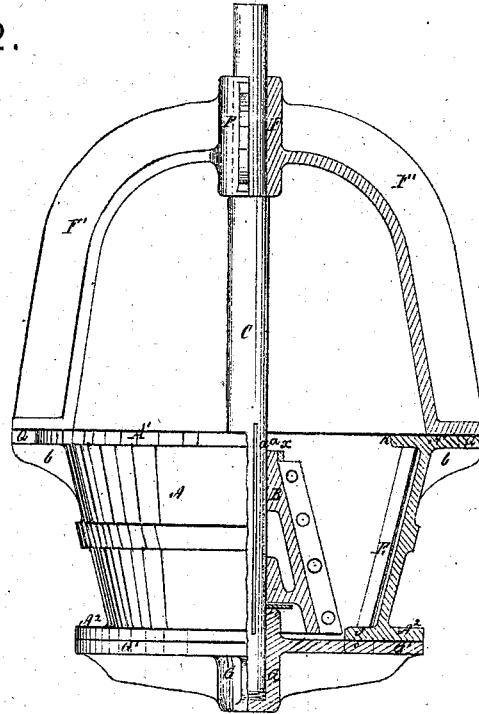
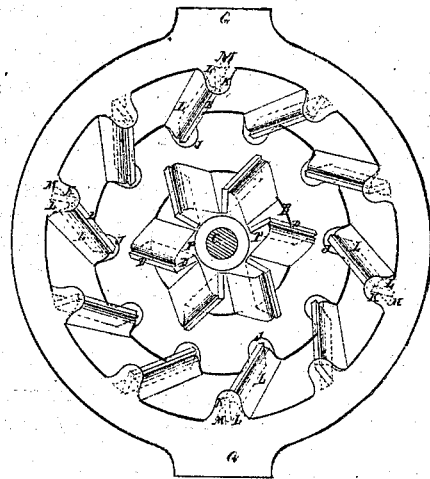


Fig. 2.



Witnesses:

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Scale 1 inch to 1 foot.

UNITED STATES PATENT OFFICE.

SAMUEL HUGHES, OF CHARLESTON, SOUTH CAROLINA, ASSIGNOR TO HIMSELF
AND JAMES J. GRACE, OF SAME PLACE.

IMPROVEMENT IN ORE-CRUSHING MACHINES.

Specification forming part of Letters Patent No. 120,972, dated November 14, 1871; antedated November 4, 1871.

To all whom it may concern:

Be it known that I, SAMUEL HUGHES, of Charleston, in the county of Charleston and State of South Carolina, have invented a new and Improved Ore-Crushing Machine; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a side elevation partially in section. Fig. 2 is a side elevation from another quarter.

This invention relates to a metal shell lined with crushing-ribs, and combined with an inclosed cone bearing similar crushing-ribs on its exterior, the object of the machine being to reduce phosphatic rock to a size suitable for a thorough washing of the same.

Referring to the drawing, A is the shell, having crushing-ribs E fastened to its inside. B is the cone keyed on the spindle C, and bearing crushing-ribs D inclined downward and outward toward the ribs E. F is the upper bearing for the spindle C, said bearing being supported by legs F', which are bolted to the upper rim A of the shell A. G is the lower bearing for the spindle C, said bearing having arms radiating to a rim, G', which is bolted to the lower rim A² of the shell A. H is a plate designed to exclude dust from the bearing G. Said lower bearing receives oil through a groove, a, in the spindle C. The upper part of the cone B is strengthened by a wrought-iron band, X, shrunk on. The crushing-ribs F are passed through lugs J located at the bottom of the shell A. Each rib is placed between flanges L M secured to the inside of the shell. The upper ends of the ribs enter recesses formed in lugs K located at the top of the shell.

The lugs J are secured to corresponding lugs O on the lower bearing G. The crushing-ribs D are bolted to flanges P secured to the outside of the cone B. The crushing-ribs are all set obliquely to the axis of the machine and at reverse angles the one to the other, thereby being caused to operate as shears during the process of crushing, and, at the same time, to force the material downward to the place of discharge. The projections Q at the top of the shell A receive the bottoms of the legs F' that support the upper bearing. Said projections are braced by brackets a extending from the outside of the shell A.

This machine may readily be adapted to the purpose of grinding and pulverizing rock, ores, bones, &c., by narrowing the crushing-ribs toward the bottom and contracting the outer shell.

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

1. The shell A and cone B, provided respectively with ribs F and D set obliquely to the axis of the machine, when constructed and arranged substantially as shown and described.
2. The inclined ribs F secured in place or to the shell A by the lugs J K and flanges L M, as specified.
3. The improved ore-crushing machine herein described, consisting essentially of the shell A, ribs F, cone B, ribs D, bearing G, and legs F', each of said parts being constructed and arranged as specified.

SAML. HUGHES.

Witnesses:

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