

ALMARIN B. PAUL.

SELF DISCHARGING PULVERIZING BARREL

102857

PATENTED MAY 10 1870

FIG. 1.

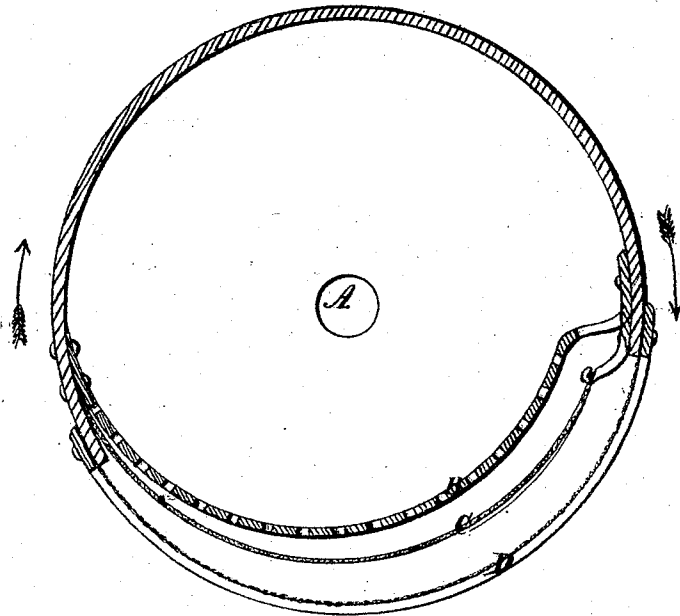


FIG. 2.



Witnesses:  
Jas. L. Currier  
W. B. Deming

Almarin B. Paul  
By Knight Bros  
Att. or

# United States Patent Office.

ALMARIN B. PAUL, OF SAN FRANCISCO, CALIFORNIA.

Letters Patent No. 102,857, dated May 10, 1870.

## IMPROVEMENT IN SELF-DISCHARGING PULVERIZING-BARREL.

The Schedule referred to in these Letters Patent and making part of the same.

I, ALMARIN B. PAUL, of the city and county of San Francisco, and State of California, have invented an Improved Pulverizing-Barrel, and do hereby describe the same.

### *Nature and Objects of the Invention.*

The subject of my invention is a "pulverizing-barrel," for reducing ores in mines and for other similar purposes, adapted to have the material fed continuously to it, and to automatically screen and discharge the same.

The improvements consist in the provision of the means whereby said objects or results are attained.

### *Description of Drawings.*

The accompanying drawings, making a part of this specification, represent a pulverizing-barrel embodying my improvements—

Figure 1 being a transverse section, and  
Figure 2 an interior perspective view of the same.

### *General Description.*

My improved pulverizing-barrel may be made of the usual or other suitable materials. It is preferably of the customary cylindrical form, and mounted on axial trunnions A, which, being made hollow, afford the necessary means for the introduction of the material, and enable its introduction continuously.

The barrel is provided in its "sides" with one or more openings covered by screens C D, (one or more,) for the discharge of the material as reduced.

Shields or guards B, of sufficient strength, and suitably perforated for the passage of the reduced material, protect the screens from the weight of the material and the pulverizing media, enabling them to be employed.

The screens may be of any suitable form, and when a plurality are employed may be of graduated size.

The shields and the intermediate screens C (when such are employed) are so constructed and arranged that their rear edges shall be sufficiently elevated to allow the discharge of any material which may remain on top of the screens beneath for further pulverizing.

The screens and their shields may extend the entire length of the barrel or any portion of it, being of proper relative area, and may be attached in any suitable manner.

The barrel is mounted in suitable bearings, and provided with a pulley, or its equivalent, for the application of motion to it, and supplied with loose heavy stones, pieces of iron, or quartz rock, or their equivalent, to perform the operation of pulverizing, as usual.

A tight case may inclose the barrel and confine the dust.

The hopper or hoppers for the supply of the material to be pulverized being elevated, and the conduits therefrom leading through the hollow trunnions of the barrel, the material may pass by gravity to the interior, and thus the apparatus be rendered entirely automatic.

### *Operation.*

The operation of the barrel is as follows:

Motion being imparted and the material to be pulverized supplied, the same is reduced by the crushing and pounding action of itself and the usual additional weights, the shields B forming a portion of the supporting or abutting surface.

As the material is pulverized, the particles sufficiently small pass through the openings in the shields while they are at the bottom, onto the upper screens, and in turn through the screens to the outside, the particles remaining on top of the screens being discharged into the mass again in the continued rotation of the barrel, for further treatment through the space at their elevated rear edges. The material being fed by gravity, as proposed, the operation may be continuous.

### *Claims.*

I claim as my invention—

1. The combination with a "pulverizing-barrel" of screens C D, (one or more,) arranged in its sides, and protected by shields B, constructed and arranged to operate in the manner substantially as described, and for the purposes set forth.

2. The pulverizing-barrel, provided with discharging-screens B C D, constructed and operating as here-in described, as constructed with hollow trunnions A for the introduction of material to be treated, as shown, for the purposes explained.

ALMARIN B. PAUL.

Witnesses:

T. B. WINGARD,  
WILLIAM H. BATE.