

R. ANDERSON.

Apparatus for Pulverizing Plumbago, &c.

No. 150,217.

Patented April 28, 1874.

Fig. 2.

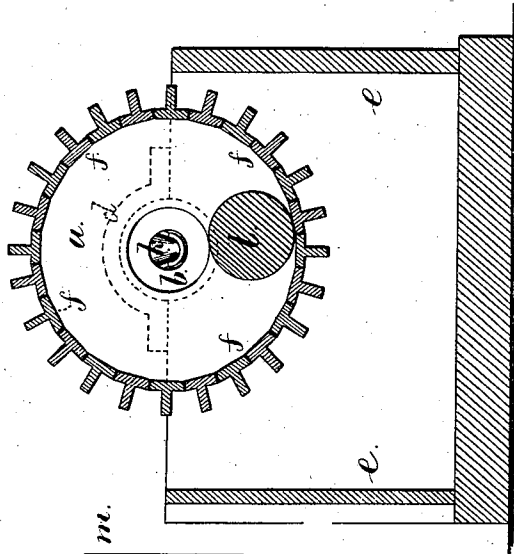


Fig. 1.

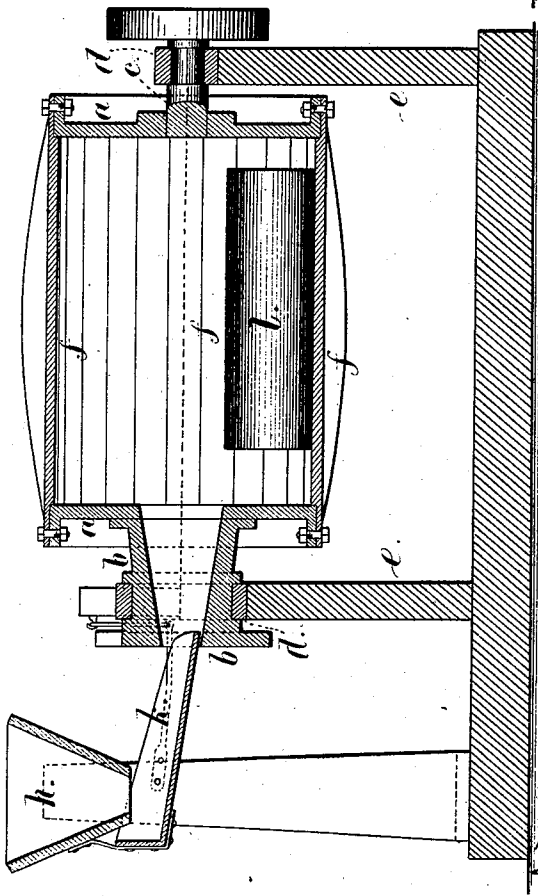


Fig. 3.



Witnesses,
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UNITED STATES PATENT OFFICE.

ROBERT ANDERSON, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN APPARATUS FOR PULVERIZING PLUMBAGO, &c.

Specification forming part of Letters Patent No. **150,217**, dated April 28, 1874; application filed February 12, 1874.

To all whom it may concern:

Be it known that I, ROBERT ANDERSON, of Jersey City, in the county of Hudson and State of New Jersey, have invented an Improvement in Pulverizers for Plumbago and other mineral substances, of which the following is a specification:

Machines have been made for pulverizing mineral substances by a revolving vessel containing balls or rollers; and revolving screens are also common. My invention is for pulverizing plumbago or other mineral substances by a continuous crushing and separating operation, so that the particles will be retained until sufficiently fine to escape; thereby the machine is rendered continuous and uniform in its operation, but little attention is required, and the machine only has to be fed gradually with the material to be treated.

I make use of a revolving cylinder or barrel, the staves of which are of metal, bolted firmly in place, and placed sufficiently close to allow the escape of the pulverized material through the joint only when the said material is reduced to the required fineness. The plumbago or other mineral is supplied, at one end, in a regulated quantity, and a cylinder or conoid within the barrel rolls upon its inner surface as the barrel is revolved, and in so doing pulverizes the mineral substance, and produces a concussion, as it rolls from one stave upon the next, sufficient to jar the parts, and cause the escape, through the joint between one stave and the next, of the material that is pulverized sufficiently.

In the drawing, Figure 1 is a longitudinal section, and Fig. 2 is a cross-section, of the said pulverizer; and Fig. 3 is a detached view of one stave and a conoid pulverizer.

The heads *a* are provided with the gudgeons *b* and *c*, set in bearings *d* at the ends of the receptacle *e*; and *f f* are the metal staves, connected to the heads *a a* firmly, and they are set more or less closely together, according to the fineness of the material that is required from the machine. One of the journals *b* is tubular, in order that the plumbago or other mineral substance may be fed into the barrel or cylinder with uniformity from the hopper *h* and shoe *k*, or other convenient means.

The staves may be straight, as in Fig. 1, or curved, as in Fig. 3; and the cylinder or conoid *l* within the barrel acts as a crushing and pulverizing roller, as the barrel is revolved by competent power applied to the pulley *m*, or otherwise. This roller *l* also jars the staves, as it rolls off one upon the next, and gives sufficient vibration to shake out the fine particles of ground mineral matter that pass through the crack or opening between one stave and the next.

The material to be ground should only be supplied as fast as it can be thoroughly pulverized, in order that the metal roller may press directly upon the inside of the cylinder.

I claim as my invention—

The pulverizing apparatus, made of two heads, united by metal staves, and a roller within, substantially as set forth, whereby the finely-ground material is passed away between the staves, as specified.

Signed by me this 7th day of February, A. D. 1874.

ROBERT ANDERSON.

Witnesses:

GEO. T. PINCKNEY,
CHAS. H. SMITH.