(No Model.)

S. M. BRIGGS.

ORE CRUSHING MILL.

No. 569,272. Patented Oct. 13, 1896.

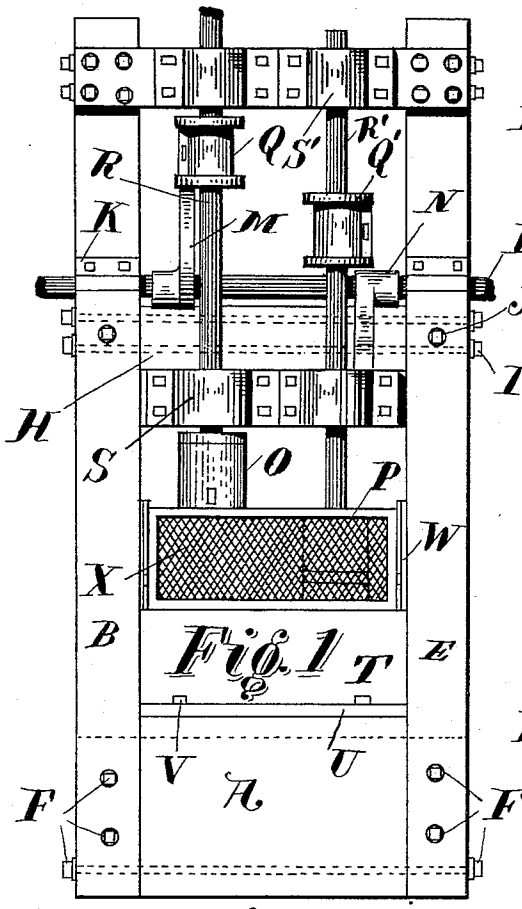

Fig. 1

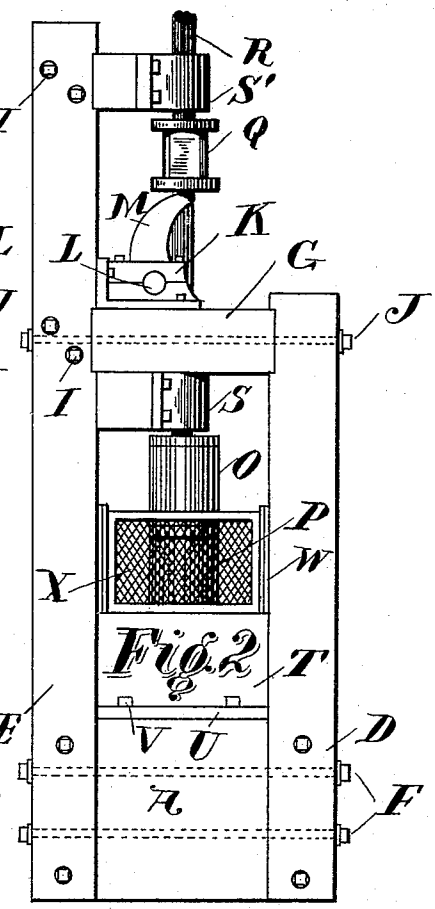

Fig. 2

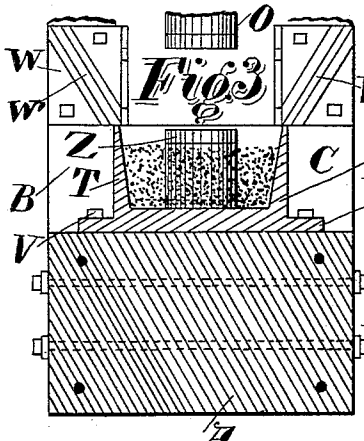

Fig. 3

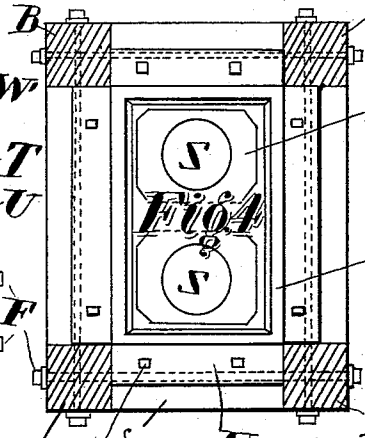

Fig. 4

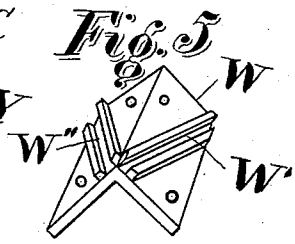

Fig. 5

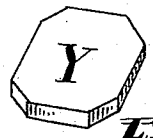

Fig. 6

Witnesses.
Ed. English
W. A. Stevens

Inventor.
Samuel M. Briggs
by his Attys. Kincaid & Co.

UNITED STATES PATENT OFFICE.

SAMUEL M. BRIGGS, OF SAN FRANCISCO, CALIFORNIA.

ORE-CRUSHING MILL.

SPECIFICATION forming part of Letters Patent No. 569,272, dated October 13, 1896.

Application filed July 3, 1895. Serial No. 554,904. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL M. BRIGGS, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented certain new and useful Improvements in Ore-Crushing Mills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to manufacture and use the same.

My present invention relates to stamp-mills for the crushing of ores preparatory to concentration, and more particularly to a novel construction of particular parts as well as their peculiar manner of assemblage, with the primary aim at general economy, portability, ready assemblage of parts, durability, and incidentally general efficiency.

Other objects and advantages of the invention will appear in the following specification, in which I have set forth clearly the manner of construction and operation of my invention, and in the appended claims have particularly specified the novel combinations of features thereof.

In the accompanying drawings, which form a part of this specification, I have employed like letters of reference to designate like parts in the several views.

Figure 1 is a front elevation of my complete mill. Fig. 2 is a side elevation of the mill. Fig. 3 is a section through the line $x\,x$, Fig. 1. Fig. 4 is a section through the line $y\,y$, Fig. 2. Fig. 5 is a perspective view of the casting for holding the sieves. Fig. 6 is a perspective view of the plate for adjusting the elevation of the dies.

I will now explain in detail the construction and operation of my invention, reference being had to the above views by letter.

A represents the mortar-block, whose vertical edges are cut away, as shown, to admit the vertical posts B C D E of the framework of the mill, and are bolted to the block A by means of the bolts F, which run entirely through the block in both directions, making a very rigid structure. Near the upper extremities of the posts B C D E are the mortised cross-braces G H, through which and the posts extend the bolts I J.

Held longitudinally on bearings K is the shaft L, to which are keyed the two single-armed cams M N, which are adapted to operate the shoes O P through the intervention of the tappets Q Q′ and stems R R′, the latter being guided in the bearings S S′.

Situated on the upper surface of the mortar-block A and covering the entire space between the inner corners of the posts B C D E is the cast-iron mortar T, which is formed with the flange U, the corners being cut away to correspond with the cut-away corners of the mortar-block. The mortar is secured to the block A by means of the bolts V.

Extending around and bolted to the two inner faces of each of the posts B C D E, at a point just above the mortar T, is a casting W, (shown in perspective in Fig. 5,) which is constructed with the slanting grooves W′ W″, the latter being to admit the four screens X.

As a means for elevating the dies Z as they become worn, I have provided a number of plates Y, (shown in perspective in Fig. 6,) which are adapted to be placed in the mortar under the dies. To facilitate their ready removal, I have chamfered their corners Y to admit a bar for the purpose of prying them from the bottom of the mortar.

The operation of the mill is similar to others of its class and needs no explanation, my invention lying in the peculiar construction and combination of particular parts.

It will be seen that by the employment of a mill such as shown the pulp is ground to a uniform fineness, the capacity is large, discharging from all four sides, the screen-surface has a maximum area, the mortar is low and so constructed as not to interfere with the discharge, the usual "jar" is greatly lessened by the frame being directly attached to the mortar-block, the parts are readily duplicated, capable of being easily taken apart for purposes of transportation and repair, and the cost of manufacture is greatly under that of the ordinary stationary stamp-mill.

It is also manifest that the cams, being relatively positioned as shown, cause the shoes to revolve in opposite directions, consequently distributing the pulp evenly and causing the loading of one die from the other.

I have constructed the guides S S′ of iron instead of wood, as usually employed, and

by so doing make it absolute that the shoes and dies exactly meet.

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

1. In an ore-crushing mill the combination with a shaft, cams, dies and shoes of the mortar-block cut away at the corners to admit the vertical posts of the framework, said posts being secured to said block by bolts passing entirely through said block, and a mortar secured to said block and having a flange with its corners cut away to correspond with the cut-away edges of said block, said posts being flush with the outer surface of said block, substantially as described and for the purpose set forth.

2. In an ore-crushing mill, the combination with a shaft, cams, dies, shoes and tappets of a mortar-block having its vertical edges cut away to admit the vertical posts of the framework, bolts passing entirely through said block and said posts and adapted to bind them together, a mortar formed with an outer flange having its corners cut away to admit said posts, and a casting extending about the two inner faces of each post and having inclined grooves for the reception of sieves, said posts being flush with the vertical surface of said block and arranged to not interfere with the discharge from all four sides of said mortar, substantially as and for the purpose set forth.

3. In an ore-crushing mill, the combination with a shaft, cams, dies, shoes and tappets, of a mortar-block having its corners cut away to admit the vertical posts of the framework, a mortar having vertical walls and a flange extending at right angles from the lower edge of said walls, the corners of said flange being cut away to admit the vertical posts of the framework of the mill, and one or more plates Y having their corners chamfered off and adapted to be placed between said shoes and the bottom of said mortar substantially as shown and for the purpose set forth.

In witness whereof I have hereto set my hand in presence of two witnesses.

SAMUEL M. BRIGGS.

Witnesses:
E. H. THARP,
J. W. PAYNE.