

CLARK, PORTER & SIMPSON.

Mill Spindle.

No. 17,421.

Patented June 2, 1857.

Fig. 1.

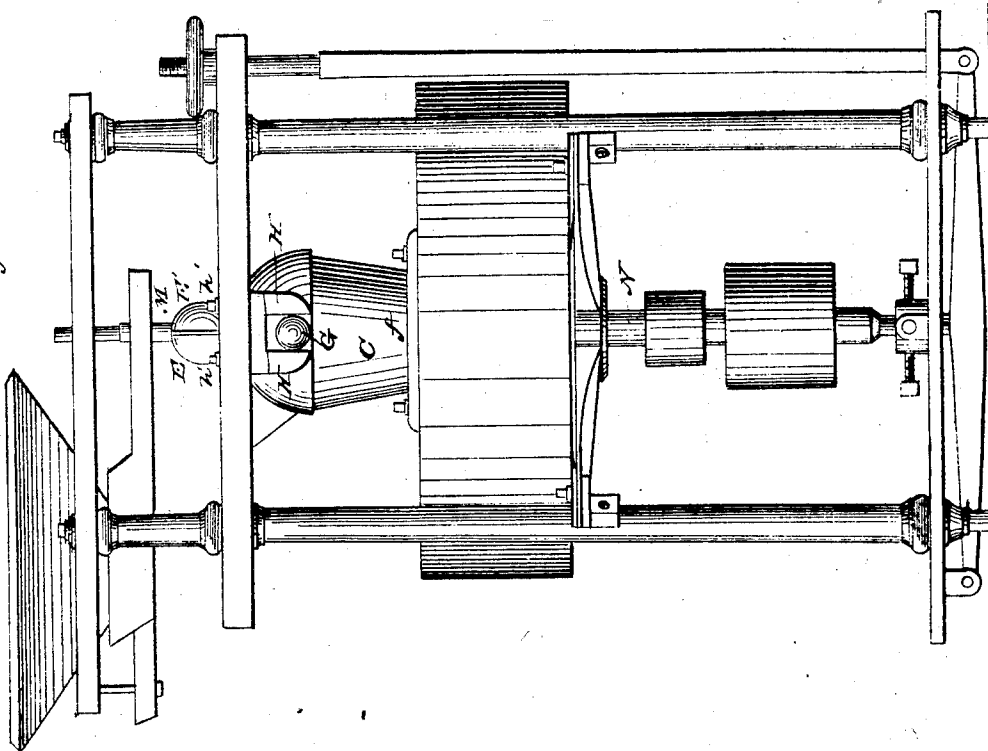
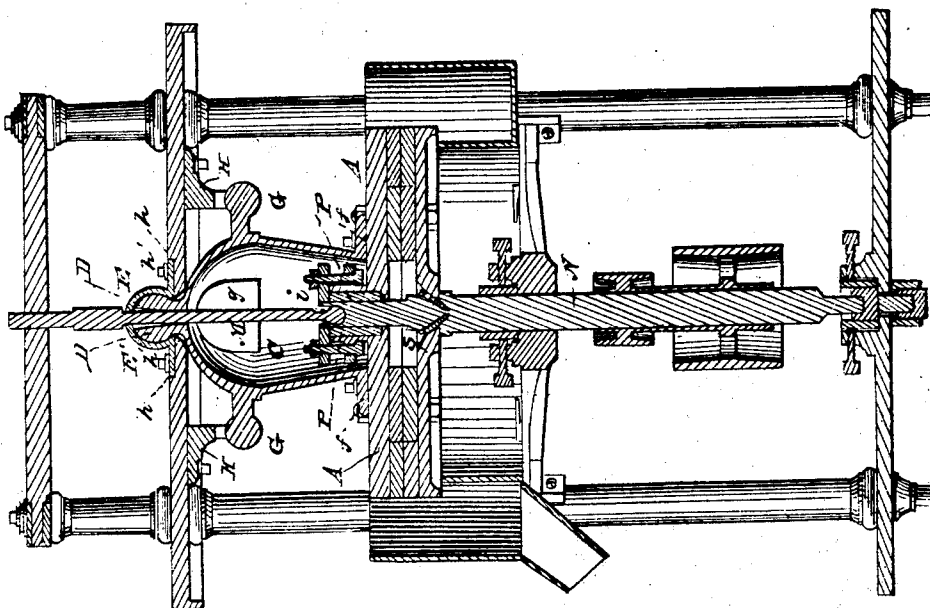


Fig. 2.



UNITED STATES PATENT OFFICE.

S. D. PORTER, W. A. CLARK, AND W. D. SIMPSON, OF ST. LOUIS, MISSOURI.

METHOD OF HANGING MILLSTONES.

Specification of Letters Patent No. 17,421, dated June 2, 1857.

To all whom it may concern:

Be it known that we, SAMUEL D. PORTER, WILLIAM A. CLARK, and WM. D. SIMPSON, of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Constructing and Hanging Millstones; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, Figure 1 being a side elevation of a grinding-mill constructed in our improved manner; Fig. 2, a central vertical section thereof; Fig. 3, a plan of the face of one of the millstones; Fig. 4, a section thereof in the line *xx*, Fig. 3.

Like letters designate corresponding parts in all the figures.

In grinding mills where the running stone is suspended by means of a bail to the top of the spindle, the grinding faces of the stones will be destroyed should they be allowed to run without anything between them for said stones to act upon, as will sometimes occur with careful attendance. And with those mills in which the running stone is rigidly secured to the spindle, and the bed-stone is rigidly secured in its position, serious accidents occur whenever a nail or pebble chances to get between the faces of the stones.

Our invention consists in suspending, by means of a ball and socket joint, the upper grinding stone to a portion of the frame of the mill when the eye of said stone loosely embraces the upper end of the spindle N, and is secured thereto by means of an elastic packing P which acts with sufficient force to retain the said stone in such a position as to keep its face perfectly parallel with the face of the running stone at those times when there may happen to be nothing between their faces to be acted upon; and while the said stones are performing their legitimate grinding functions, the packing in the eye of the said upper stone will yield to any desirable extent for the purpose of perfectly equalizing the work throughout the entire surfaces of the stones, and also for the purpose of preventing injury, in case a nail or other improper substance should happen to get between the grinding surfaces of the stones.

The runner S, and its spindle N, are arranged and adjusted in any ordinary way.

The upper stone A, is then put in its place over the runner, having been previously provided with a central eye, or hub with a stuffing box P, whereby the stone is closely packed around the upper end of the spindle N. This packing secures the upper stone in a central and level situation but yields sufficiently not to prevent said stone from vibrating as much as is necessary to adjust itself properly on the spindle N. A dome-shaped cap C, or its equivalent, is then firmly secured to the upper side of the upper stone, by screws, or bolts, passing through its base flanch *f*, or in any other convenient manner. The summit of the dome terminates in a ball D, as shown in Fig. 1. A firm platform L, is so situated that somewhat more than half, (say two thirds, or three fourths,) of the ball D, will project above its upper surface. Two half caps E, E, exactly fitting the projecting part of said ball, are then placed closely around the same, and secured there, by the flanches *h*, *h*, and screws *h'*, *h'*, which attach the caps to the platform L. The dome, and consequently the upper stone, are thus suspended by the ball D, and socket caps E, E, leaving the said stone to adjust its surface perfectly parallel with the surface of the runner, whenever the latter varies from its previous position. Two arms project horizontally from the dome C, and terminate in balls G, G, which are situated loosely between forks of brackets H, H, substantially as shown in Figs. 1 and 2. By this arrangement the upper stone is prevented from turning around, and at the same time, no impediment is offered to its freely adjusting itself.

A shaft M, passes down through the ball and dome of the upper stone; and terminates in a ball *c*, at the bottom, where it is received in a cap, or socket, *d*, in the top of the spindle N. A pin *i*, couples the staff to the spindle, in order that the staff may turn therewith, and thereby shake the hopper by means of any suitable contrivance. The grain passes from the hopper, in a spout, through an aperture *g*, in the side of the dome C, and then down through apertures in the upper stone.

What we claim as our invention and desire to secure by Letters Patent, is—

Suspending the upper stone from above, by means of a ball and socket-joint, (or

its equivalent,) when the eye of the said stone is made to embrace the upper portion of the spindle of the running stone, and is secured thereto with a sufficient degree of rigidity, by means of an elastic packing, substantially in the manner and for the purpose herein set forth.

The above specification of our improve-

ment in grinding mills, signed and witnessed this 14th day of July 1856.

SAMUEL D. PORTER.
WILLIAM A. CLARK.
WM. D. SIMPSON.

Witnesses:

GEO. W. SMITH,
J. S. CUDDY.