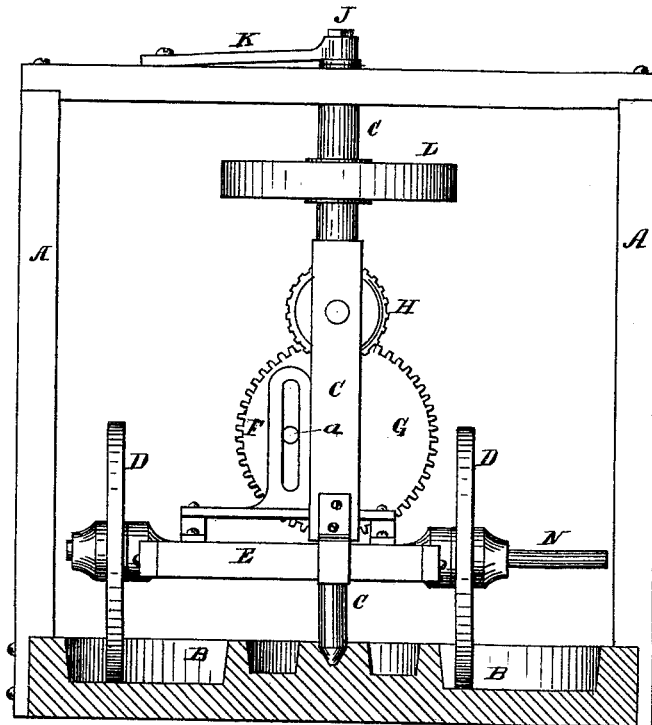


W. G. MERRILL.  
Clay-Mill.

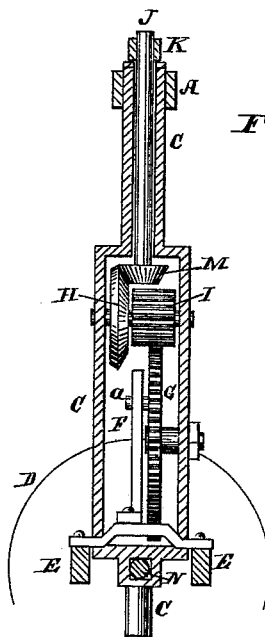
No. 218,760.

Patented Aug. 19, 1879.

*Fig. 1.*



*Fig. 2.*



*Witnesses:*

*Sumner Nash*

*L. O. Watters.*

*Inventor:*

*William G. Merrill,*

*by Humphrey & Stuart*

*Attys.*

# UNITED STATES PATENT OFFICE.

WILLIAM G. MERRILL, OF AKRON, OHIO.

## IMPROVEMENT IN CLAY-MILLS.

Specification forming part of Letters Patent No. **218,760**, dated August 19, 1879; application filed May 12, 1879.

*To all whom it may concern:*

Be it known that I, WILLIAM G. MERRILL, of Akron, in the county of Summit and State of Ohio, have invented a new and useful Improvement in Clay-Mills, of which the following is a specification.

My invention relates to that class of mills for grinding clay wherein one or more (generally two) wheels are caused to revolve upon their peripheries within a circular bed, and while so revolving approach and recede from the center of the bed. In such machines the grinding-wheels are usually mounted and revolve freely upon a horizontal shaft journaled in the center of the circular bed, and a horizontal frame connects and controls the longitudinal motion of the wheels upon their shaft, and by motion communicated to this frame the wheels are caused to slide along the horizontal shaft, alternately approaching and receding from the center about which they travel.

The object of my invention is to communicate to the grinding-wheels this longitudinal motion along the shaft upon which they are journaled, so as to cause them to traverse the circular bed as they revolve therein. This has heretofore been accomplished by chains wound upon pulleys operated by screws and worm-wheels, or by endless racks and pinions; as shown in Patent 145,373, of December 9, 1873; but these methods are objectionable, because they either involve intricate and complex mechanism or parts which wear rapidly, thereby requiring frequent repairs.

My invention consists in communicating a reciprocating motion to the frame and wheels by a pitman, slotted plate, or equivalent from a crank or wheel bearing a wrist-pin, journaled to or within a recess of the vertical shaft, revolving in a plane parallel to the horizontal shaft, and operated by the vertical driving-shaft.

In the accompanying drawings, in which similar letters indicate like parts, Figure 1 is an elevation of a clay-mill embodying my invention, and Fig. 2 a side view of the vertical shaft and connected parts.

The grinding-wheels D D, revolving in the circular bed B upon the horizontal shaft N, are connected and held in place by the frame E. The shaft N passes through an orifice in, and

is turned by, the vertical shaft C. This shaft is enlarged and recessed above the frame E, as shown in Fig. 2, and above the recess is hollowed to receive the shaft J. A gear-wheel, G, is journaled within this recess, and bears a wrist-pin, a, which moves in a slotted upright plate, F, attached to the frame E, and thereby communicates a reciprocating motion to the wheels D D along the shaft N.

The wheel G is connected, by intermediate gears H I, with the pinion M, keyed to the shaft J, and prevented from revolving by the bar K.

In operation, as the shaft C revolves the wheel H meshes in and revolves about the fixed pinion M, thereby communicating motion to the wheel G.

The wheel G may be connected directly with the pinion M. It may be placed at any angle with the shaft C; or a pitman or equivalent may be substituted for the slot F without departing from my invention, which is—

1. In a clay-mill, a crank or wheel bearing a wrist-pin, revolving in a plane parallel to the shaft of the grinding-wheels, operated by the main driving-shaft, and adapted, by a pitman or equivalent, to communicate a reciprocating motion to the grinding-wheels along their shaft, substantially as shown.

2. In a clay-mill, a wheel journaled to or within a recess of, and turning with, the vertical driving-shaft, and revolving in a plane parallel to the shaft of the grinding-wheels, engaging, either directly or by intermediate gears, with a fixed pinion, and adapted, by a pitman or equivalent, to communicate a reciprocating motion to the driving-wheels along their shaft, substantially as shown.

3. The herein-described device for giving a reciprocating motion to the grinding-wheels along their shaft, consisting of the fixed pinion M, gears H I, wheel G, and slotted plate F, arranged and operating substantially as shown.

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of May, A. D. 1879.

WILLIAM G. MERRILL.

Witnesses:

E. J. HOWARD,

C. P. HUMPHREY.