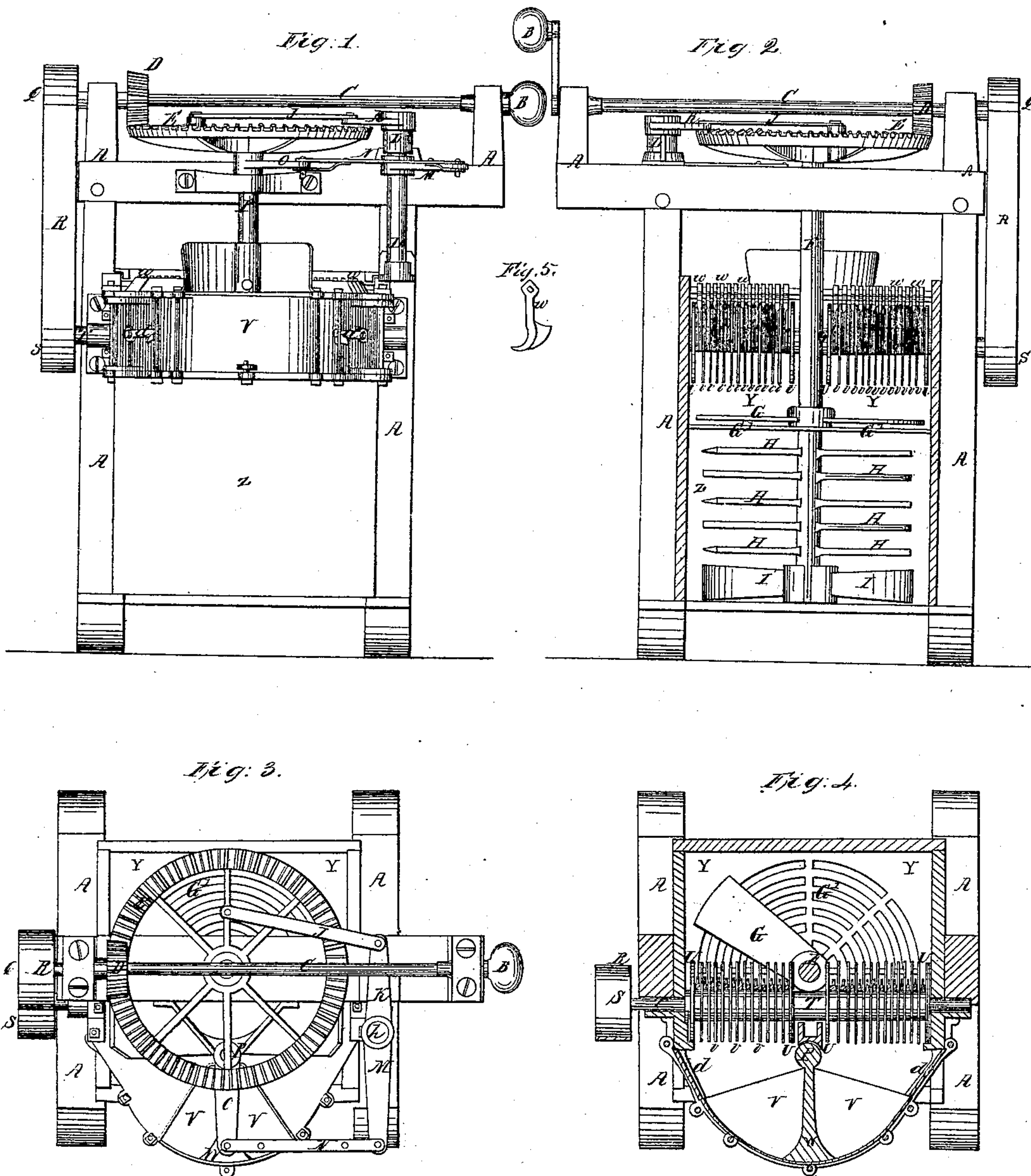


*G. F. Blake,
Pulverizing Clay.*

No 33,810.

Patented Nov. 26, 1861.



*Witnesses:
Osburne Marsh
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UNITED STATES PATENT OFFICE.

GEORGE F. BLAKE, OF MEDFORD, ASSIGNOR TO HIMSELF AND PETER HUBBELL, OF CHARLESTOWN, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR PULVERIZING AND CLEANING CLAY.

Specification forming part of Letters Patent No. 33,810, dated November 26, 1861.

To all whom it may concern:

Be it known that I, GEORGE F. BLAKE, of Medford, in the county of Middlesex and State of Massachusetts, have invented a new and useful Machine for Pulverizing and Cleaning Clay; and I do hereby declare the following to be a correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of the machine. Fig. 2 is a rear elevation of the same, the side of the box being removed to show the arrangement of machinery within. Fig. 3 is a top view or plan. Fig. 4 is a horizontal section through line *x x* of Figs. 1 and 2, and Fig. 5, a separate view of one of the stationary fingers.

The same part is indicated wherever it occurs by the same letter of reference.

The nature of my invention consists in the construction, combination, and arrangement of the reciprocating wipe, revolving screen, and stationary fingers, substantially in the manner and for the purposes hereinafter fully set forth.

To enable others to make and use my improved clay pulverizer and cleanser, I will proceed to describe its construction and operation, referring to the drawings, whereon—

A marks a stout frame-work, which supports the machinery and to which the sides of the clay box or receptacle are firmly attached.

B marks a crank, which indicates the point at which the moving power, of whatever character it may be, is applied to the horizontal shaft C. This shaft has on it a beveled pinion D, which engages the teeth of bevel-wheel E on the top of upright shaft F, which is the main shaft of the machine. To this shaft are attached inclined blades or sweeps G, (see Figs. 2 and 4,) which pass over the horizontal stationary grating G' and press the clay through said grating into the pug-ging-chamber Z below it. To the main shaft F are also attached horizontal knives or pug-ging-blades H, Fig. 2, and sweeps I, the former of which cut and pug the clay, and the latter force it out at a lateral aperture in the lower portion of the mill. The arrangement of knives and sweeps in the lower chamber Z is that used in ordinary pug-mills.

A flat connecting-rod J is pivoted at one end to a short upright on wheel E and at the other to arm K of vertical rock-shaft L. This shaft vibrates in suitable bearings on the frame of the machine. It has a second arm M, to which a connecting-rod N is pivoted at one end, the other end being similarly attached to arm O on the top of rock-shaft P. This shaft carries the reciprocating plunger or wipe W, which works in the upper chamber V.

On the end of horizontal shaft C opposite to that to which the power is applied is attached a pulley Q, which by means of a belt R drives pulley S on the end of horizontal grate-shaft T. This shaft carries four circular disks U and a number of circular knives *v v*, which form what I call a "revolving" grate, through which the clay is forced by the reciprocating wipe W into the middle chamber Y.

Fig. 5 represents one of a series of fingers *w*, of the peculiar shape shown, which are placed between the circular knives *v* of the revolving grate. They are supported on a square rod, which passes through an eye in their upper end, as shown in Fig. 2. Their office is to remove the clay from the circular knives and keep them clear. Doors *d* are placed in either side of upper chamber V, through which the stones, &c., which accumulate in front of the grate may be conveniently removed.

The operation of the machine is as follows: The clay to be cleaned and pulverized is fed into the top of the upper chamber V on either side of the reciprocating wipe W. By the operation of that wipe the clay is pressed against and through the revolving grate into the middle chamber Y, stones and other bulky impurities being detained by the grate in the upper chamber, whence they are removed through the side doors *d*. The clay is thoroughly divided by the knives *v* in its passage through the revolving grate. As those knives revolve they are cleared of adhering clay by the fingers *w*. From the middle chamber the clay is pressed down through a horizontal grate G' by the inclined sweeps G into the lowermost chamber or pug-mill Z, where it is subjected to the operation of blades of the ordinary form and mode of action and deliv.

ered from the machine by the sweeps I in proper condition for the manufacture of bricks.

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

1. In combination with a machine for cleaning and pulverizing clay, the reciprocating wipe or plunger W, constructed and operating substantially as described.

2. The revolving grate, constructed and operating as described.

3. The stationary fingers *w*, constructed, arranged, and operating as set forth.

The above specification signed and witnessed this 23d day of July, A. D. 1861.

GEO. F. BLAKE.

Witnesses:

JOSEPH P. HALL,
JOHN T. WHITE.