(No Model.)

J. & H. M. CREAGER.

CLAY PULVERIZER.

No. 380,245. Patented Mar. 27, 1888.

FIG. 1.

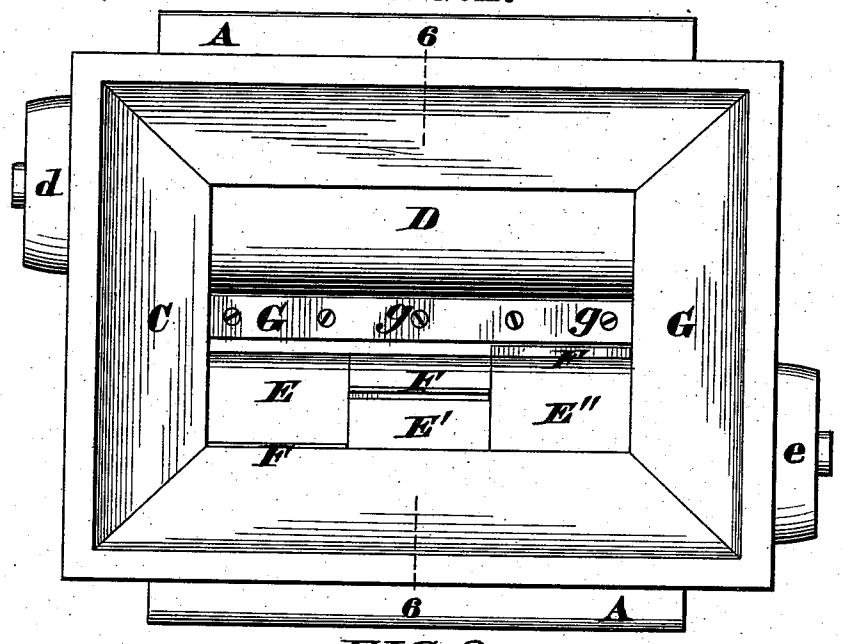


FIG. 2.

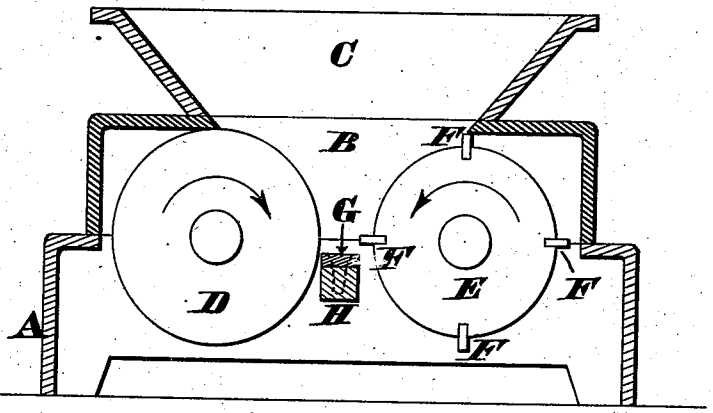


FIG. 3.

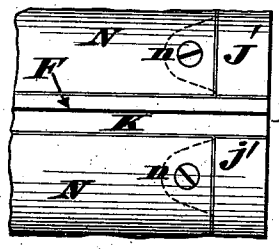


FIG. 4.

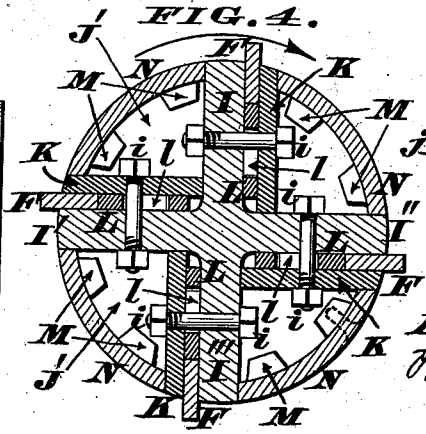
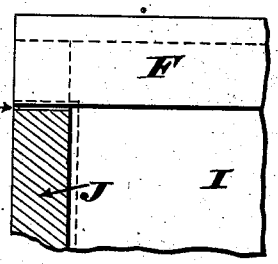


FIG. 5.



Attest.
S. S. Carpenter
Paul Carpenter

Inventors.
Jonathan Creager.
Harry M. Creager.
by James N. Layman,
Atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JONATHAN CREAGER AND HARRY M. CREAGER, OF CINCINNATI, OHIO.

CLAY-PULVERIZER.

SPECIFICATION forming part of Letters Patent No. 380,245, dated March 27, 1888.

Application filed August 30, 1887. Serial No. 248,299. (No model.)

To all whom it may concern:

Be it known that we, JONATHAN CREAGER and HARRY M. CREAGER, both citizens of the United States, residing at Cincinnati, in the county of Hamilton, State of Ohio, have invented certain new and useful Improvements in Clay-Pulverizers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to those machines which are employed for pulverizing dry clay preparatory to discharging it into a brick-machine; and the first part of our improvements comprises a novel combination of feed-roller, knife-cylinder, and fixed cutting-bar, as hereinafter more fully described.

The second part of our improvements comprises a novel combination of devices for securing the knives within the aforesaid cylinder and permitting their ready adjustment, as hereinafter more fully described.

In the annexed drawings, Figure 1 is a plan of our improved clay-pulverizer. Fig. 2 is a vertical section of the same, taken at the line 6 6 of Fig. 1, the feed-roller and knife-cylinder being seen in elevation. Fig. 3 is an enlarged plan of a portion of said cylinder. Fig. 4 is an enlarged transverse section thereof. Fig. 5 is an enlarged vertical section through one head of said cylinder, a knife being fitted therein, and the position of the clamp-plate being indicated by dotted lines.

A represents the lower frame, B the upper frame or housing, and C the hopper of our pulverizer, which frame A B has journaled in it the feed-roller D and knife-cylinder E, the latter being armed with a series of longitudinal blades, F, while the roller D usually has a perfectly-smooth periphery.

Interposed between the feed-roller D and knife-cylinder E is a horizontal cutting-bar, G, secured to a stout bearing, H, by bolts or screws *g*. The knife-cylinder is generally composed of three sections, E E′ E″, placed end to end; but the blades F of the same are not in line with each other, said blades being so located as to have a spiral action in cutting the clay.

d and *e* are the driving-pulleys for the roller D and knife-cylinder E. The method of securing the knives within this cylinder is immaterial; but we prefer the construction seen in Fig. 4, where said cylinder has four radial arms, I I′ I″ I‴, uniting the opposite heads J J′, which heads are seen in Figs. 3 and 5. Each arm is pierced to admit bolts *i*, which pass through clamp-plates K, and also through slots *l* of washers L, said washers being confined between said arms and plates. Heads J J′ are notched at *j j′* to admit the ends of the knives and clamp-plates.

M are lugs projecting inwardly from the heads J J′, which lugs receive screws *n*, wherewith segmental caps N are attached to the cylinder, the peripheries of said caps being of the same curvature as said cylinder.

The operation of our machine is as follows: The feed-roller D and knife-cylinder E are driven at a high velocity in the direction of the arrows seen in Fig. 2, the roller D serving to force the clay both down upon the bar G and over against the cylinder E, thus bringing the material in direct contact with the blades F. These blades or knives force the clay against the sharp edge of the bar G, thereby cutting the material into very fine particles, that drop down into the base of the machine, from which they are removed by any suitable appliance—as, for example, by an endless conveyer.

When the cylinder is constructed, as shown in Figs. 3, 4, and 5, the wear of the knives can be readily compensated for by first disengaging the screws *n* from the lugs M, so as to permit the removal of caps N, and thus afford access to the interior of said cylinder. The bolts *i* are then unslackened and the slotted washers L are shifted outwardly until the knives are advanced the proper distance, after which act said bolts are tightened and the caps are again secured in place, so as to prevent the clay entering the interior of the cylinder.

In some cases the roller D may be armed with blades or knives similar to those applied to the cylinder E, thereby providing a double-acting pulverizer.

We claim as our invention—

1. The combination, in a clay-pulverizer, of a fixed cutting-bar located between and in close proximity to a smooth-faced feed-roller and a cylinder armed with projecting blades, which roller and cylinder revolve in opposite direc-

tions, and thereby draw the clay down upon said bar, as herein described.

2. The combination, in a pulverizing-cylinder, of a series of arms, as I, bolts *i*, clamp-plates K, blades F, detachable caps N, and washers L, having slots *l*, for the purpose described.

3. A pulverizing-cylinder composed of a series of sections, as E E′ E″, placed end to end and armed with projecting blades F F F, arranged longitudinally of said sections, but in different planes, for the purpose described.

4. The combination, in a clay-pulverizer, of a fixed cutting-bar and a cylinder armed with blades, which cylinder revolves in such a direction as to cause its blades to draw the clay down upon said bar, as herein described.

In testimony whereof we affix our signatures in presence of two witnesses.

JONATHAN CREAGER.
HARRY M. CREAGER.

Witnesses:
JAMES H. LAYMAN,
SAML. S. CARPENTER.