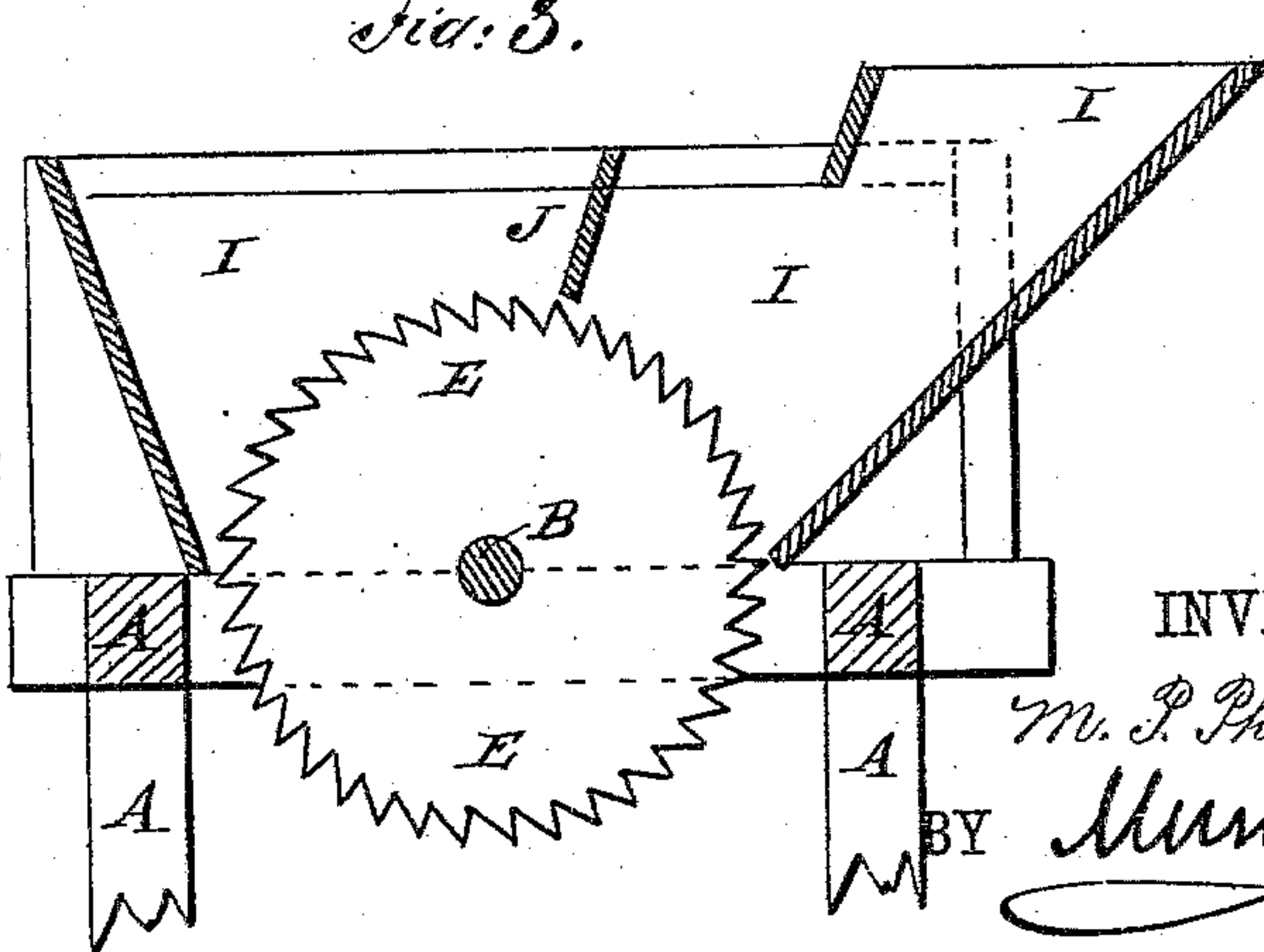
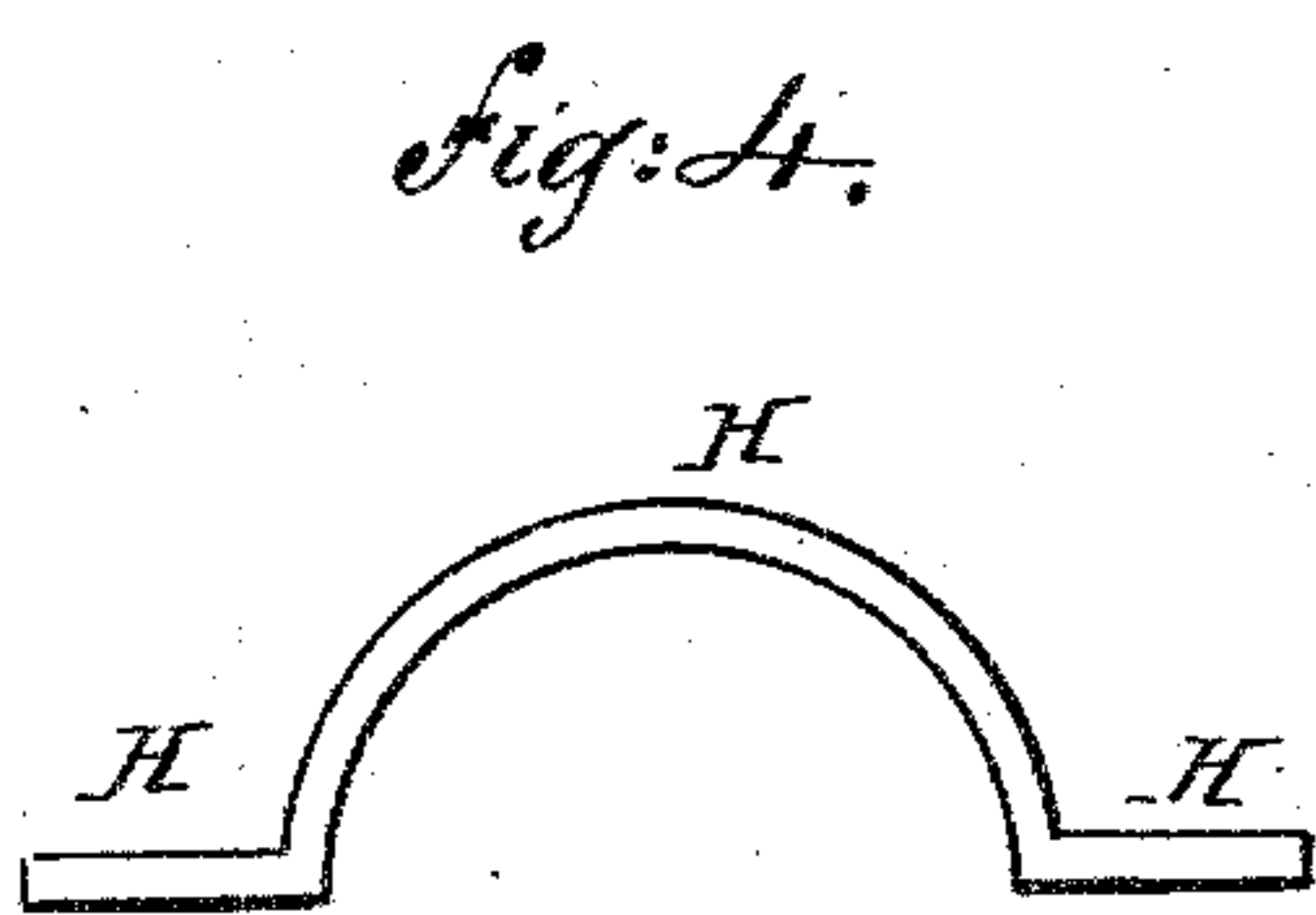
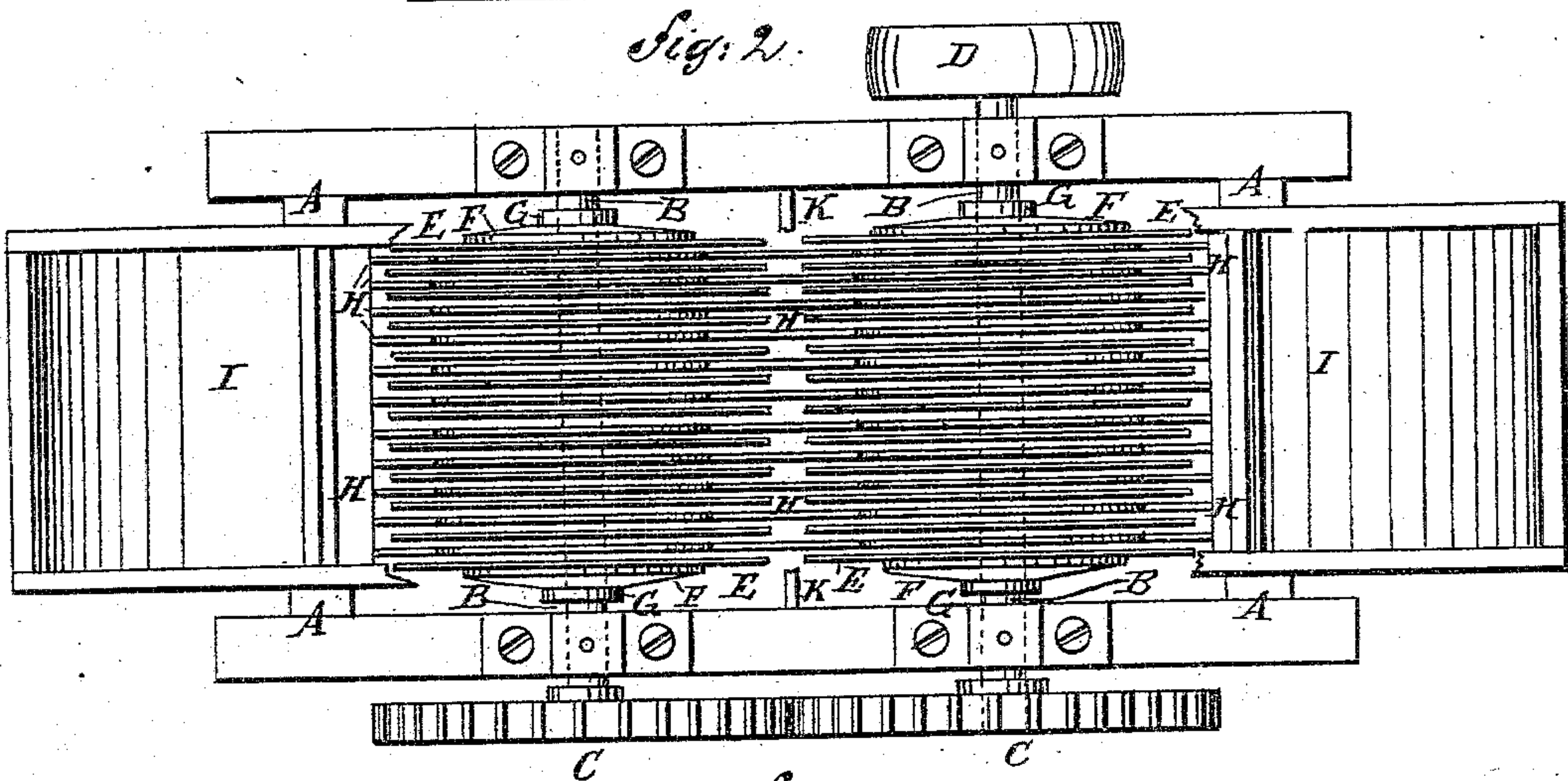
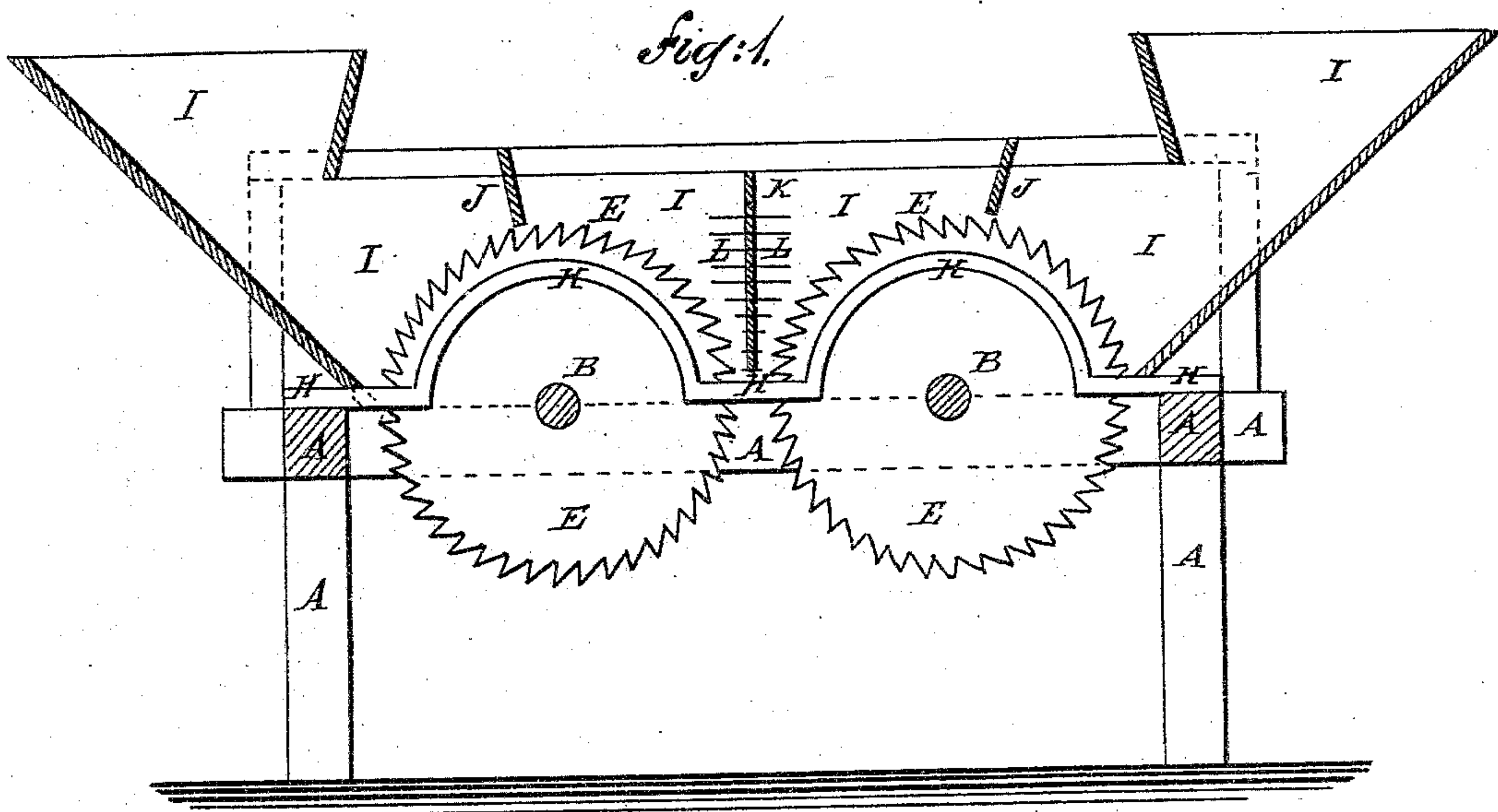


(No Model.)

M. P. PHILLIPS.
MACHINE FOR PULVERIZING CLAY.

No. 296,445.

Patented Apr. 8, 1884.



WITNESSES:

Chas. Nida
C. Sedgwick

INVENTOR:

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

MARSHALL POPE PHILLIPS, OF LAKE LAND, LOUISIANA.

MACHINE FOR PULVERIZING CLAY.

SPECIFICATION forming part of Letters Patent No. 296,445, dated April 8, 1884.

Application filed October 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, MARSHALL POPE PHILLIPS, of Lakeland, in the parish of Pointe Coupée and State of Louisiana, have invented
5 a new and useful Improvement in Machines for Pulverizing Clay and other Substances, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying
10 drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of a two-cylinder pulverizer. Fig. 2 is a plan
15 view of the same. Fig. 3 is a sectional side elevation of a single-cylinder pulverizer. Fig. 4 is a side elevation of one of the saw-separating bars.

The object of this invention is to facilitate
20 the pulverizing or cutting of clay and other substances to a uniform fineness.

The invention relates to a pulverizing-machine constructed with one or more shafts, one or more sets of saws attached to the said shafts,
25 and one or more feed-hoppers provided with stop-partitions, whereby the substance will be cut into powder while resting upon the said saws. Arched bars are interposed between the saws and secured to the frame, to reduce
30 the size of the discharge-spaces and secure a finer pulverization of the material. A partition is placed in the hoppers between the two sets of saws, to retard the escape of the material and secure a finer pulverization thereof,
35 and to the said partition are attached pins, to keep the material loose, so that it will be more readily taken out by the saws, as will be hereinafter more fully described.

A represents the frame of the machine. B
40 are the saw-shafts, which revolve in bearings attached to the side bars of the frame A, and which are connected at one end by pulleys and bands, or by gear-wheels C, meshing into each other, so that the said shafts will revolve toward each other. To the other end of one or
45 both the shafts B is attached a pulley, D, to receive a driving-belt, to which motion is given from any convenient power.

Upon each shaft B are placed a number of
50 saws, E, which are secured in place by washers F and nuts G, placed upon the shaft at the

sides of the outer saws. When the material is to be cut very fine, bars H are placed between the saws E, and are attached at their ends to the frame A. The parts of the bars H
55 between the saws E are curved upon the arc of a circle of such a length of radius that the convex surface of the said bars will be near the bases of the saw-teeth, as shown in Fig. 1. The middle parts of the double bars H are
60 horizontal and a little above the level of the centers of the saws E. The hoppers I inclose the upper parts of the saws E, and have an extension at the rear side of each set of saws, to receive the material to be pulverized or cut.
65 The hoppers I, at the upper parts of the saws E, are provided with cross-partitions J, to prevent any material from being carried over the saws, except the fine particles that can pass between the teeth of the said saws. In the
70 case of the two-cylinder machine, the two hoppers are separated by a partition, K, placed midway between the saws, and which extends down nearly to the centers of the bars H, and is made of such a thickness that the teeth of
75 the two sets of saws will nearly touch its opposite sides, so that no material can pass below the bars H, unless it be so fine as to be carried down by and between the teeth of the saws, or can pass between the sides of the said teeth
80 and the said bars H.

The partition K may be provided with pins L, projecting from its opposite sides, to keep the substance loose and detain it, except as it is carried down by the teeth of the saws.
85 The partition K may be stationary, or it may be vibrated longitudinally by a cam or eccentric from one of the shafts B, or by other suitable means.

The bars H are designed to be used when the
90 material is to be reduced very fine, and when the material is inclined to accumulate between the saws, the bars in the latter case acting as clearers to the saws.

The quality and fineness of the product and
95 the amount pulverized in a given time are regulated by the set and shape of the saw-teeth, the distance between the saws, the distance between the saws and bars, the position of the partitions in the hoppers above the saws, and
100 the speed at which the saws are run.

I am aware that it is not new to pulverize

clay with rotary saws arranged on a single shaft and within a hopper, or to use grate-bars extended between the saws and a little below the teeth to support the clay; but

5 What I do claim as new and of my invention is—

1. The combination, with two opposite sets of rotary saws in a hopper, of the intermediate partition, K, having pins L, as shown and
10 described.

2. The combination, with a set of rotary saws on the same shaft and within the same hopper, of the cross-partition J, arranged above the saws, as shown and described.

MARSHALL POPE PHILLIPS.

Witnesses:

T. A. BAKEWELL,
HUNTER C. LEAKE.