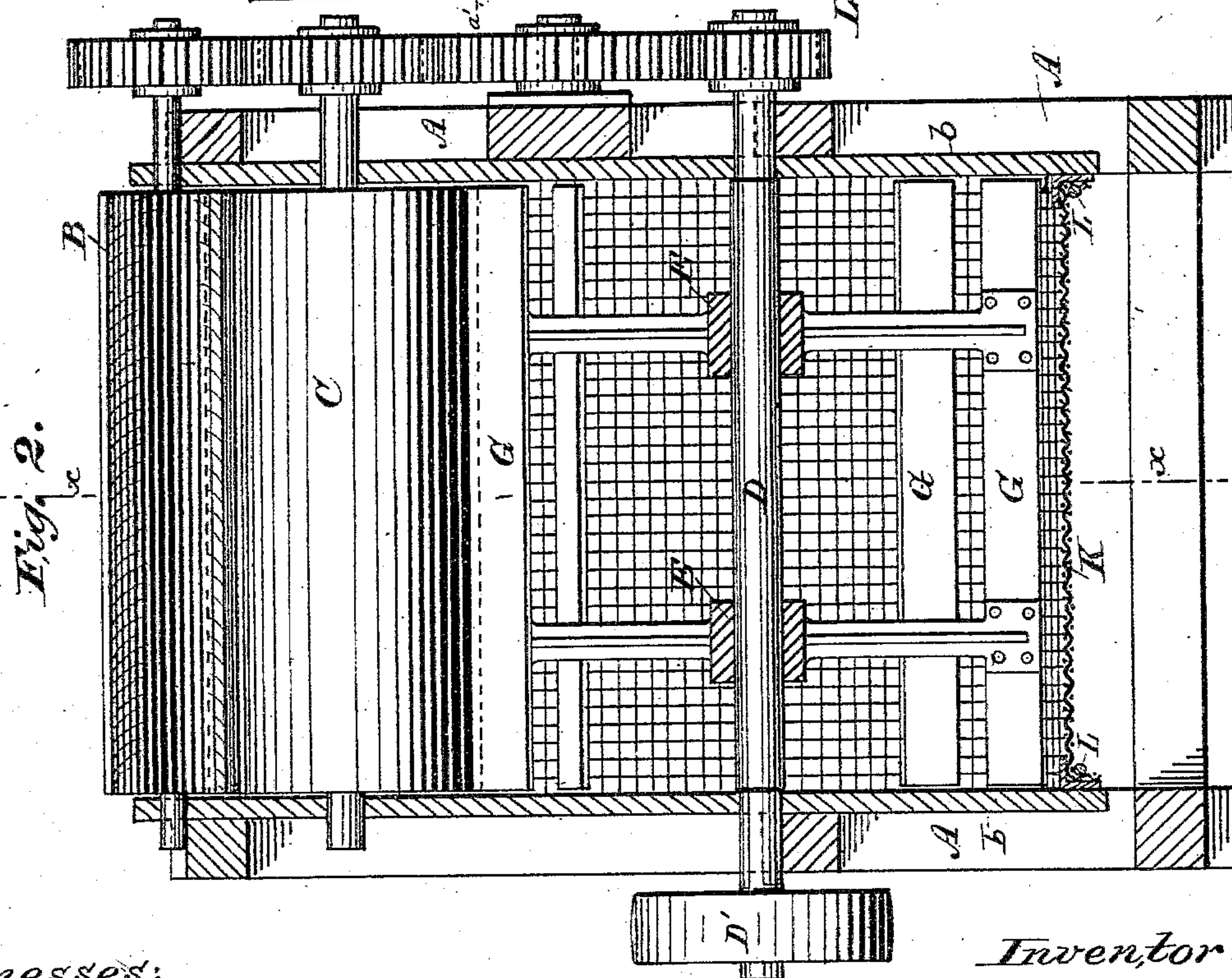
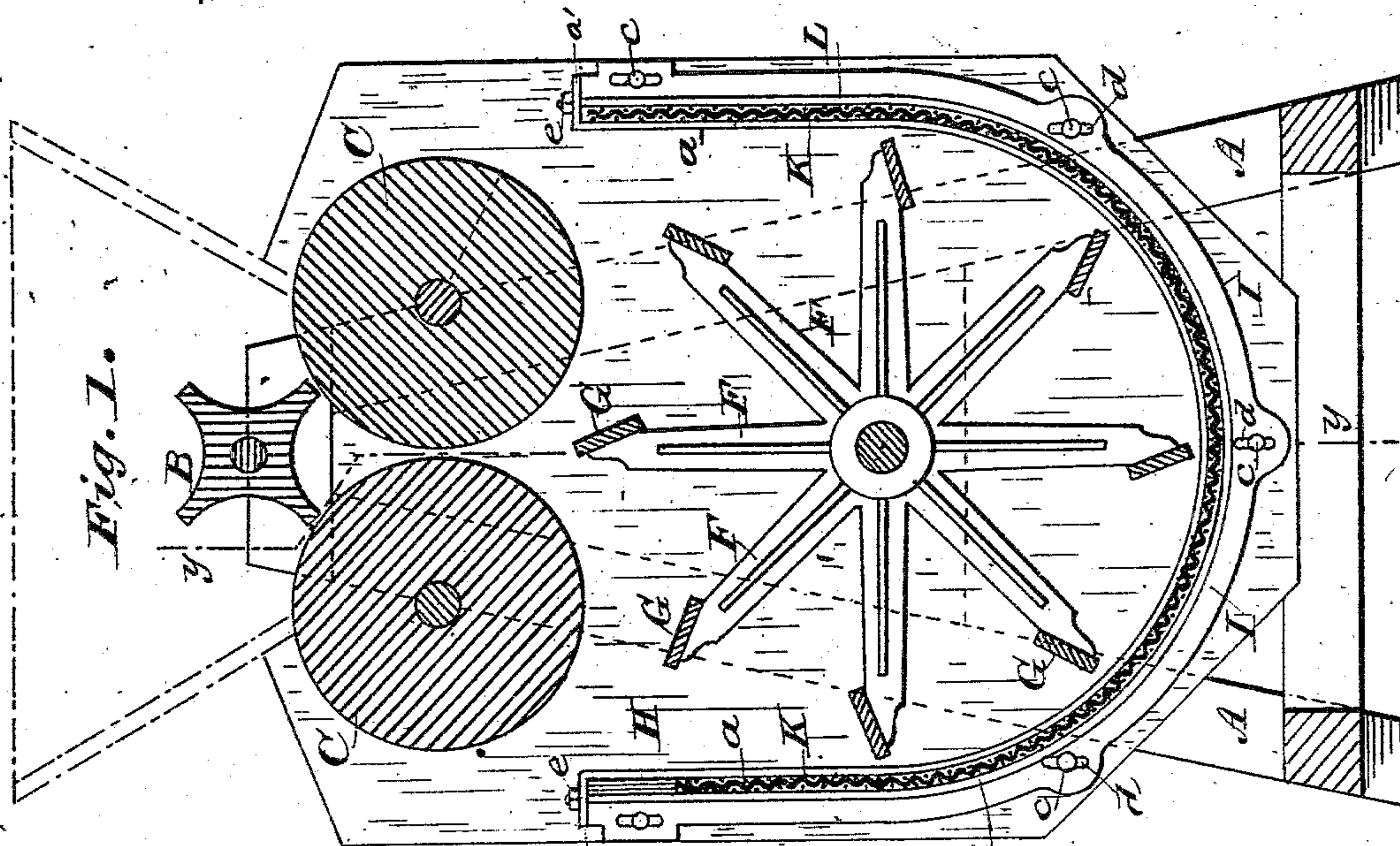


(No Model.)

W. ANDRUS.  
CLAY PULVERIZER.

No. 286,520.

Patented Oct. 9, 1883.



*Witnesses:*

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# UNITED STATES PATENT OFFICE.

WILLIAM ANDRUS, OF KEOKUK, IOWA.

## CLAY-PULVERIZER.

SPECIFICATION forming part of Letters Patent No. 286,520, dated October 9, 1883.

Application filed August 31, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM ANDRUS, a citizen of the United States, residing at Keokuk, in the county of Lee and State of Iowa, 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.

My invention relates to improvements in clay pulverizers and disintegrators for reducing clay to a fine-powdered condition, and at the same time freeing it of pebbles, small stones, roots, &c., preparatory to being pressed into bricks, tiles, or manipulated into other forms of clay objects or vessels, and is designed as an improvement on my pulverizer for which Letters Patent No. 276,147 were granted to me April 24, 1883.

The object of my invention is to produce a machine which will crush or mangle the clay or other material, and at one and the same operation sift or screen it in order to remove or separate therefrom stones, pebbles, roots, grass, weeds, or other objectionable matter.

My invention consists in mounting a feeding-roll, two crushing or reducing rolls, and a beater in bearings in a suitable frame and casing, and in partially surrounding the beater with a wire screen in such a manner that when the clay leaves the crushing-rolls it will be thrown forward through the screen by the action of the beaters, while the stones, sticks, &c., will be carried downward and to the rear of the machine, from whence they can be removed.

My invention consists, further, in certain devices for securing the wire screen in position, as will more fully hereinafter appear.

Referring to the drawings, Figure 1 is a vertical sectional view on the line *x x* of Fig. 1. Fig. 2 is a longitudinal vertical sectional view on the line *y y* of Fig. 1.

A is the frame-work of the machine, which may be of any suitable or desirable form or made from any suitable material.

In the top of the machine and mounted in suitable bearings are located the fluted feeding-roll B and crushing or reducing rolls C C. These are located within a suitable feed-hopper, and are essentially of the same construction as the feeding and crushing rolls in my patent heretofore referred to.

D is a shaft mounted in bearings in the frame

A, and to which is securely attached two or more cast or wrought iron spiders or hubs, E, having radial arms F, the outer ends of which are beveled off to receive the blades or cross-bars G. It will be observed that by beveling off the ends of the arms F to receive the blades G the blades are set at an angle to a line drawn through the center of the shaft D, so that the clay will be caught as it comes from the crushing or disintegrating rolls, and is readily thrown off of the blades against the screen. It will be noticed that as the clay or other material leaves the disintegrating or crushing rolls it is caught by the blades G and thrown forward with much force against and through the screen, while the pebbles, roots, &c., are carried down to the bottom of the screen or thrown out of the opening H in the rear of the machine by the action of the blades.

I will now proceed to describe the devices I employ for holding the wire screen in position and at a proper distance from the blades or beaters.

I are segmental plates, provided with inwardly-projecting flanges, *a*, secured to the inner ends of the casing *b* by means of bolts *c*, passing through the slots *d*, and by which means the plates and screen are rendered adjustable toward or from the bottom of the casing, to compensate for the wear of the blades or beaters.

K is the wire screen, and is held in position by means of bent rods L, which force the screen against the projecting flange *a* of the plate I, the ends of said bent rods being screw-threaded to receive the nuts *e*, which impinge on the upper side of the horizontal flange *a'* of the plate I, so that by tightening up the screws *e* the wire screen will be tightly clamped between the rod L and the flange *a*.

The beater-shaft and crushing and feeding rolls are connected together and driven by a series or chain of spur or pinion wheels of any suitable or convenient arrangement and connected to any suitable power by any of the well-known devices. In the drawings I have shown the power as applied to the beater-shaft D by means of a band-wheel, D', said shaft being connected or geared to the rolls C C B by pinion-wheels, as shown.

The operation of my machine is as follows: The clay or other material is fed into the hop-



per, (which is indicated by dotted lines in Fig. 1,) and is passed through the crushing-rolls. As soon as the clay emerges from the crushing-rolls it is caught by the blades or beaters 5 G and thrown forward against the screen with some considerable force, and the loose free clay is driven through the meshes of the screen, while the stones, pebbles, roots, grass, &c., are either thrown out through the aperture H or 10 removed from the bottom of the screen by hand.

Having thus described my invention, what I claim is—

15 1. The method herein described of reducing and screening clay, the same consisting in crushing the clay between rolling surfaces and then driving or forcing it violently against a perforated or screening surface by means of blades or beaters, as set forth.

20 2. A clay reducer or pulverizer consisting of the following elements: a pair of crushing-rolls, a rotary beater provided with blades located directly below the crushing-rolls, and a screen inclosing the lower portion of the casing in which the above-mentioned devices are 25 located.

3. The combination of the feeder-roll, the crushing-rolls, and the beater-blades with the screen, whereby the clay is reduced or crushed and thrown violently against the screen, as 30 set forth.

4. The hubs or spiders E, mounted on the shaft D and provided with radial arms F, said arms being beveled at their outer ends, to receive and hold the beater-blades G at an angle, as described, whereby the clay is more 35 readily thrown from the blades, as set forth.

5. The plates I, for holding the screen in position, provided with the flanges *a* and *a'* and adjusting-slots *d*, as and for the purpose set 40 forth.

6. The plates I, provided with the flanges *a* and *a'*, in combination with the screen K, rod L, and screw-nuts *e e*, whereby the screen is 45 held in position within the casing of the machine, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM ANDRUS.

Witnesses:

C. A. NEALE,  
J. C. WILDMAN.