(No Model.)

J. CORNELIUS & E. R. COLLINS.

STONE SEPARATOR.

No. 490,947. Patented Jan. 31, 1893.

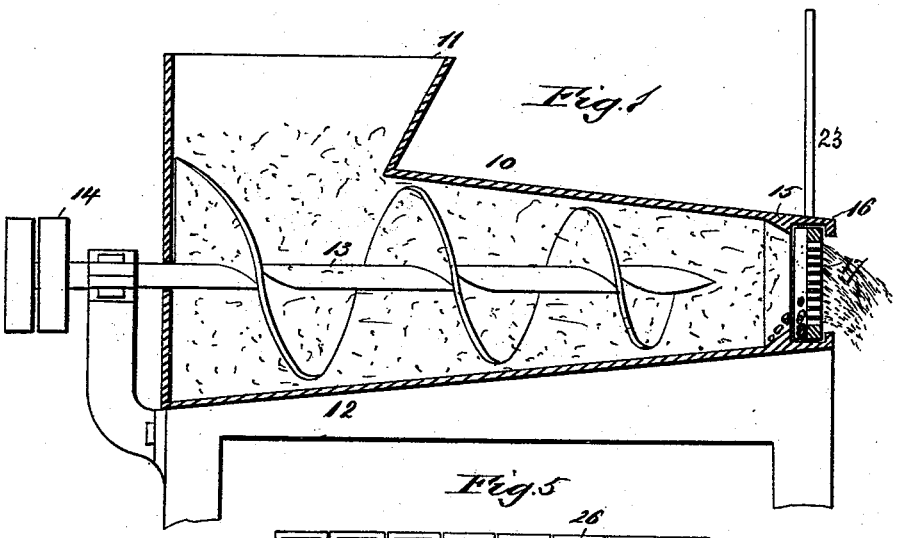

Fig. 1

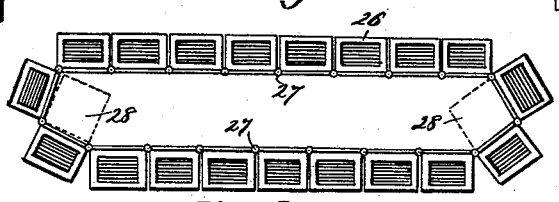

Fig. 5

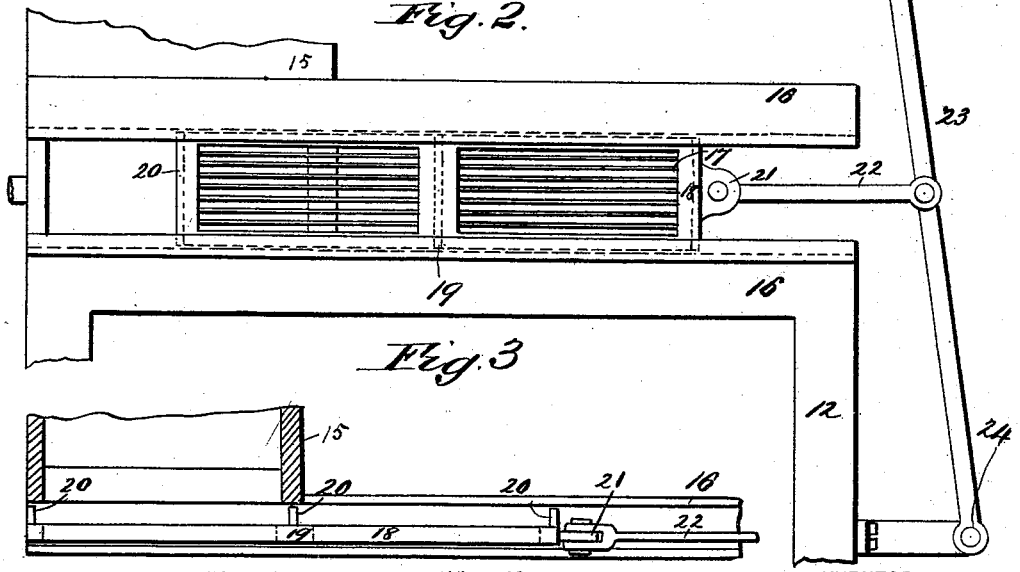

Fig. 2.

Fig. 3

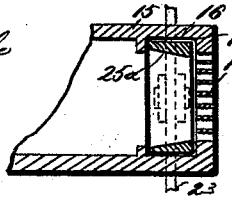

Fig. 4

WITNESSES:

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JAMES CORNELIUS AND EDMUND R. COLLINS, OF BROOKLYN, NEW YORK.

STONE-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 490,947, dated January 31, 1893.

Application filed March 21, 1892. Serial No. 425,743. (No model.)

To all whom it may concern:

Be it known that we, JAMES CORNELIUS and EDMUND R. COLLINS, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Stone-Extractor, of which the following is a full, clear, and exact description.

Our invention relates to improvements in machines for extracting stones from clay. The clay which is used for making porcelain, tiles or similar articles, has to be finely ground, and as the clay is usually filled with small stones, these being frequently impregnated with iron, it is an expensive and difficult job to grind it and moreover, the iron and other foreign matter are likely to discolor the clay and give to the manufactured material a bad appearance.

The object of our invention is to produce a simple apparatus by means of which the stone in the clay may be entirely removed, and consequently the clay may be cheaply and easily worked and will produce a fine article in the way of porcelain, tile and similar materials.

To this end our invention consists in certain features of construction, as will be hereinafter described and claimed.

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

Figure 1 is a broken longitudinal section of the machine embodying our invention; Fig. 2 is a broken rear end view of the same; Fig. 3 is a sectional plan of the screen attachment; Fig. 4 is a detail cross section of a modified form of extractor, in which the screen is stationary and a box moves opposite it; and Fig. 5 is a view of another modified form of our invention in which a series of connected screens are held to move over the nozzle of the clay feeding machine,

As shown in Fig. 1, the case 10, is provided at the top with a receiving hopper 11, and is supported upon a suitable frame 12, the case having longitudinally therein a revoluble screw 13, the shaft of which is journaled in suitable bearings and provided with driving pulleys 14. The case has also a reduced nozzle 15 at its rear end, and the above construction comprises the well-known auger machine, which forms no part of our invention.

At the nozzle end of the machine is a slideway 16, and a screen 17 extends across the nozzle, being held in the frame 18, which reciprocates horizontally in the slideway, the frame being divided in the middle, as shown at 19 in Fig. 2, thus forming a double screen, either end portion of which will close the nozzle 15. The frame 18 of the screen has inwardly extending flanges 20, at the ends and in the middle, as shown in Fig. 3, so that when either end portion of the screen is withdrawn from the nozzle, the projecting flange will scrape out the stones which have accumulated behind the screen.

One end of the frame 18 is provided with a lug 21, to which is pivoted a connecting rod 22, and this is pivoted to a swinging lever 23, which is fulcrumed at its bottom, as shown at 24, and is formed into a handle 25, at its upper end. It will thus be seen that by moving the lever back and forth, the screen may be moved in relation to the nozzle.

In Fig. 4, we have shown the screen held in a fixed position at the delivery end of the nozzle 15, and the box 25^a, is held to reciprocate in the slideway 16 behind the screen, and the box may be moved by the same lever mechanism which is shown connected with the screen in Fig. 2, the connecting rod 22 being secured to the box instead of to the screen.

In Fig. 5, we have shown a series of connected screens 26, carried by a belt 27, thus forming a chain of screens, and the belt is held to run over pulleys 28, which may be arranged on opposite sides of the nozzle 15 of the machine, so that the screens may be brought successively opposite the nozzle, and the machine when provided with this attachment will be automatic.

We have shown the several modifications to illustrate the fact that different devices may be used in connection with the clay feeding machine, to screen the clay and scrape the stones from behind the screen, but we claim all mechanism of this class as our invention, and while we have shown the screens

and extracting mechanism in connection with an auger machine, it will be understood that the screen attachment may be applied to any clay feeding machine.

Having thus described our invention, we claim as new and desire to secure by Letters Patent,—

1. The combination, with a clay feeding machine having a discharging nozzle, of screens held transversely in the nozzle and adapted to move across the same so that one screen will follow and replace another, substantially as described.

2. The combination, with a clay feeding machine having a discharge nozzle, of screens held to move transversely across the nozzle and replace one another in operative screening position, said screens having inwardly extending stone removing flanges, substantially as described.

3. The combination with a clay feeding machine having a discharging nozzle, of a reciprocating screen held to slide across the nozzle, and provided with inwardly-extending flanges, substantially as described.

4. The combination with a clay feeding machine having a discharging nozzle, of a reciprocating screen held to slide across the nozzle, and a lever mechanism for moving the screen, substantially as described.

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Witnesses:
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