(No Model.)

A. L. BREWER & H. HEESEN.

CLAY CRUSHER.

No. 315,897. Patented Apr. 14, 1885.

Fig. 4

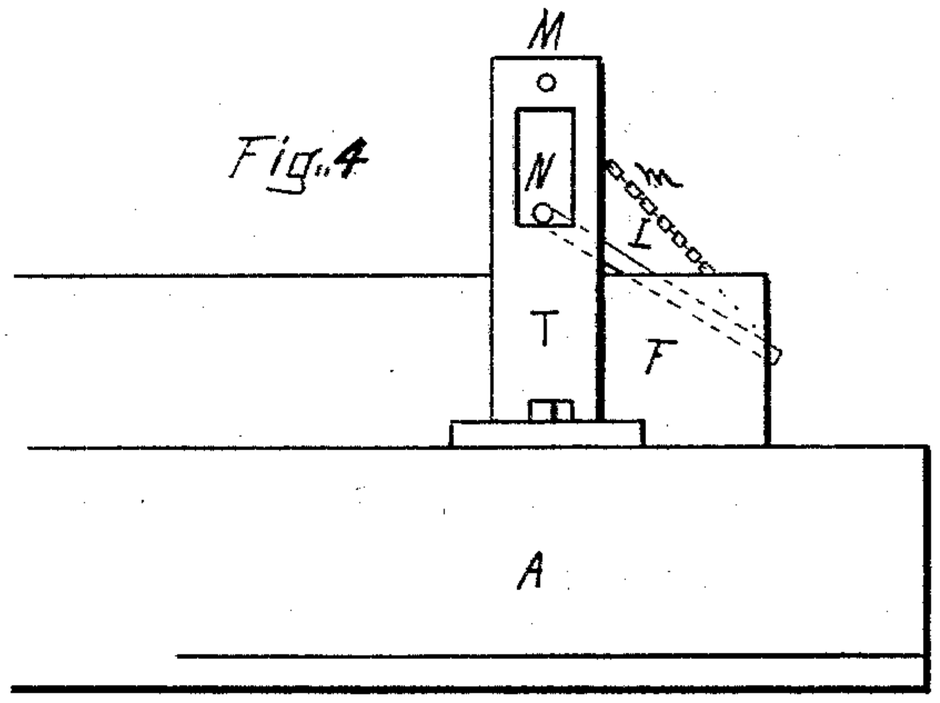


Fig. 3

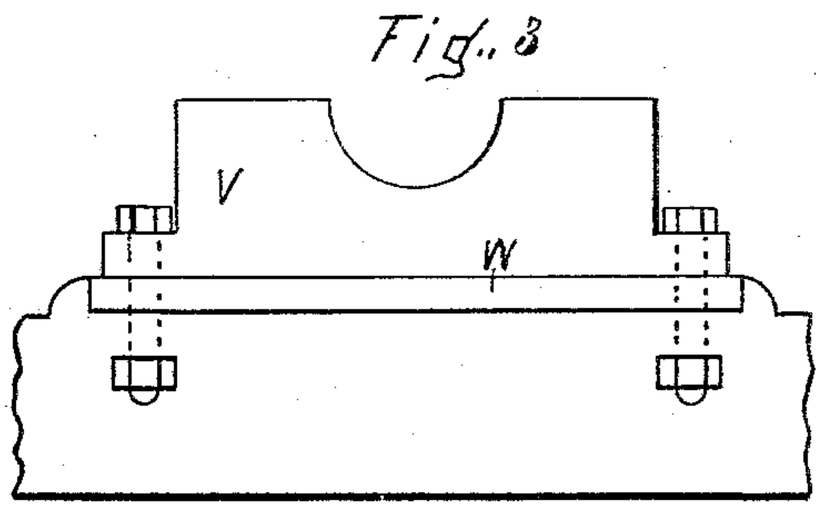
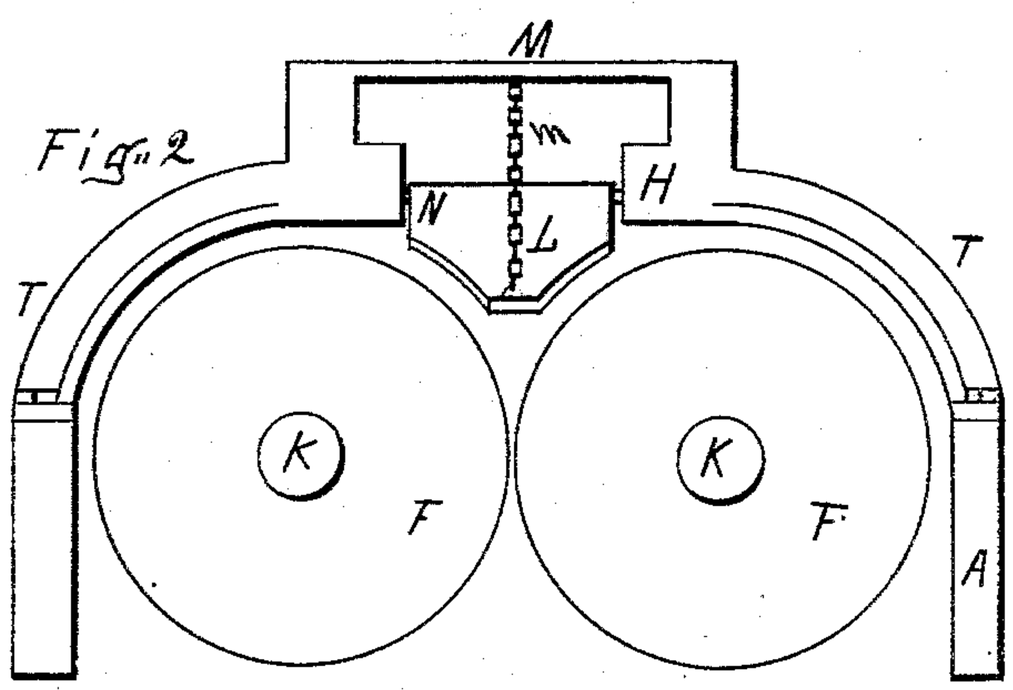


Fig. 2



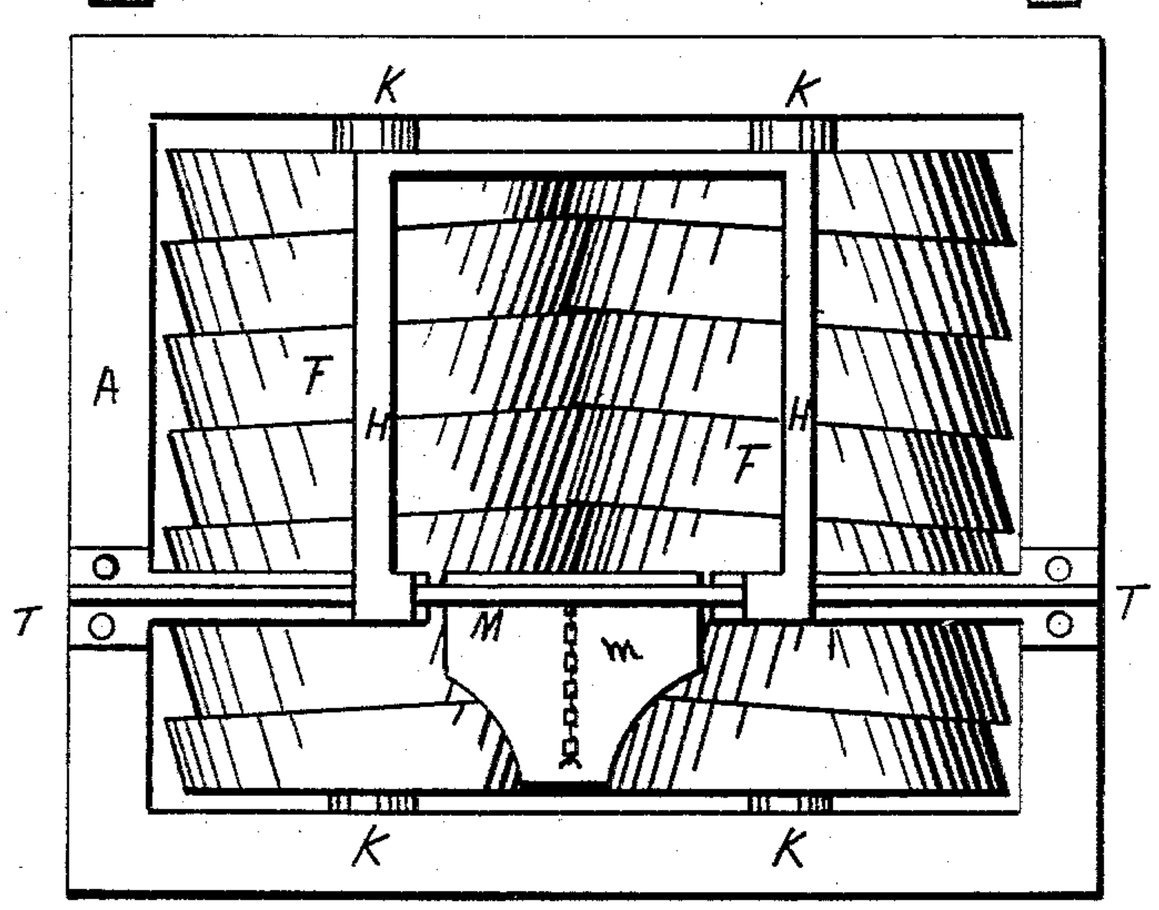


Fig. 1

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UNITED STATES PATENT OFFICE.

ALBERT L. BREWER AND HENDRICK HEESEN, OF TECUMSEH, MICHIGAN, ASSIGNORS TO THEMSELVES AND H. BREWER & CO., OF SAME PLACE.

CLAY-CRUSHER.

SPECIFICATION forming part of Letters Patent No. 315,897, dated April 14, 1885.

Application filed February 12, 1885. (No model.)

To all whom it may concern:

Be it known that we, ALBERT L. BREWER and HENDRICK HEESEN, of Tecumseh, in the county of Lenawee and State of Michigan, have invented a new and useful Improvement in Clay-Crushers, of which the following is a specification.

Our invention consists in certain improvements in the construction of clay-crushers, hereinafter fully pointed out in the claims.

Figure 1 is a plan view, the driving-mechanism being omitted. Fig. 2 is an end elevation. Fig. 3 is a detail showing the manner of fitting one of the adjustable boxes for the roll-shaft, and Fig. 4 is a side elevation of the supports for the breaker.

A represents the frame of the machine, and F F represent the crushing-rolls, which are shown in the drawings as being screw-threaded, but may be tapering with smooth surfaces, or of any other known form and construction which will enable the rolls to feed stones and lumps of clay too large to be drawn between the rolls to one end of said rolls, and there discharge them from the machine. K K represent the shafts on which said rolls revolve.

H represents a hopper lying above the rolls to retain the clay thrown upon said rolls, and is cut away at the side which is next the delivery end of the machine.

T T represent two supports secured to the frame and rising above the rolls, and having at their upper ends vertical extensions, slotted as shown in Fig. 4. We prefer to make these supports curve over the rolls, as shown, simply for appearances; but they may of course be straight.

N represents a shaft whose ends lie freely in the slots in T, so that said shaft can both rise and fall and turn freely therein.

L represents a breaker, made usually of cast-iron, secured to shaft N, and extending downward and backward therefrom toward the delivery end of the rolls. We usually make the end of breaker L, where it fastens to the shaft, about the width of the opening in the hopper, and bevel the breaker toward its end, as shown in Figs. 1 and 2, and in cross-section, as shown in Fig. 4.

M represents a cross-bar fastened to the upper ends of supports T T; and *m* represents a chain or cord, one end of which is fastened to bar M, the other end being fastened to a hook or staple in the breaker, by which the breaker can be held at any desired distance at its end above the rolls.

V represents a portion of one of the boxes in which one of the roll-shafts runs; and W represents a piece of wood interposed between said box and frame A, the box being bolted to the frame, as shown in Fig. 3.

The object of our invention is as follows: In operating a clay-crusher the same action of the rolls which feeds off at one end stones which are too large to pass between the rolls also feeds off lumps of clay which are too large and hard to be drawn between the rolls and crushed, and this clay must be broken up and put back into the machine, thus involving extra labor and expense. When such a lump of clay passes along the rolls, it meets the breaker L and is broken up and crushed by the rolls. When a stone comes in contact with the breaker, the breaker rises, either by rising bodily with shaft N, in case of a large stone, or by simply swinging with shaft N when the stone is small enough to pass under said shaft, so that the breaker effectually prevents the escape of clay from the machine while allowing free escape of stones.

In building clay-crushers it is necessary that the boxes which carry the shaft of one of the crushing-rolls should be capable of adjustment both to permit the proper adjustment of the rolls when first placed in position, and to permit the distance between them to be readjusted to compensate for wear. It is customary to cast the boxes for one shaft integral with the frame, and to fit the boxes for the other shaft to the frame, and secure them in position by bolting them to the frame. This necessitates fitting the under surface of the box to the upper surface of the frame. To avoid the expense of fitting these two metal surfaces together, we leave a depression on the frame where the box is to come, as shown in Fig. 3, and in this depression fit a piece of wood, W, to the surface of the frame, and

then fit the upper surface of the wood to the under side of the box, finally securing the box with bolts in the usual manner.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In a clay-crusher, the combination, with the crushing-rolls, of a breaker hung on a shaft supported in slotted guides and free to rise and fall therein, substantially as shown and described.

2. In a clay-crusher, the combination, with the crushing-rolls, of a swinging breaker hung over the opening between the rolls, near the delivery end thereof, substantially as shown and described.

3. In a clay-crusher, the combination, with the frame and crushing-rolls, of slotted supports, a shaft resting in said slots and free to rise and fall or turn therein, and a breaker secured to said shaft and extending toward the delivery end of the rolls, substantially as shown and described.

4. In combination with the frame A, the rolls F F, hopper H, slotted supports T T, shaft N, breaker L, cross-bar M, and chain *m*, substantially as shown and described.

5. In a clay-crusher, the combination, with the frame and the boxes which carry the shaft of one of the crushing-rolls, of a piece of wood interposed between each of said boxes and the frame, and fitted on each side, respectively, to the frame and the box, substantially as and for the purposes set forth.

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