

(No Model.)

2 Sheets—Sheet 1.

B. C. WHITE.
BRICK PRESS CHARGER.

No. 550,667.

Patented Dec. 3, 1895

Fig. 2.

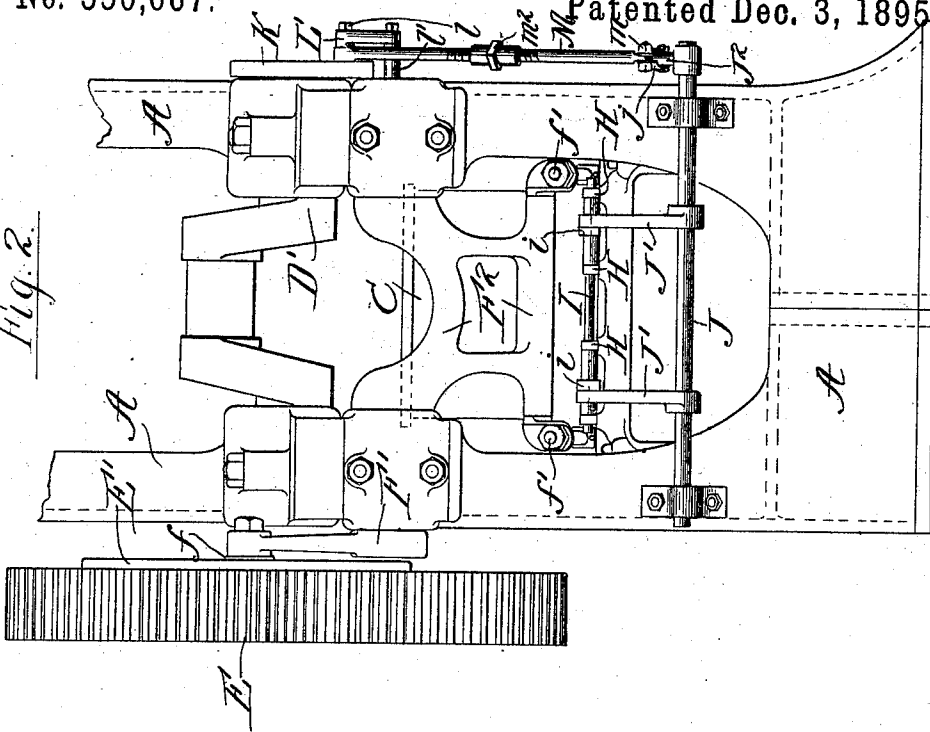
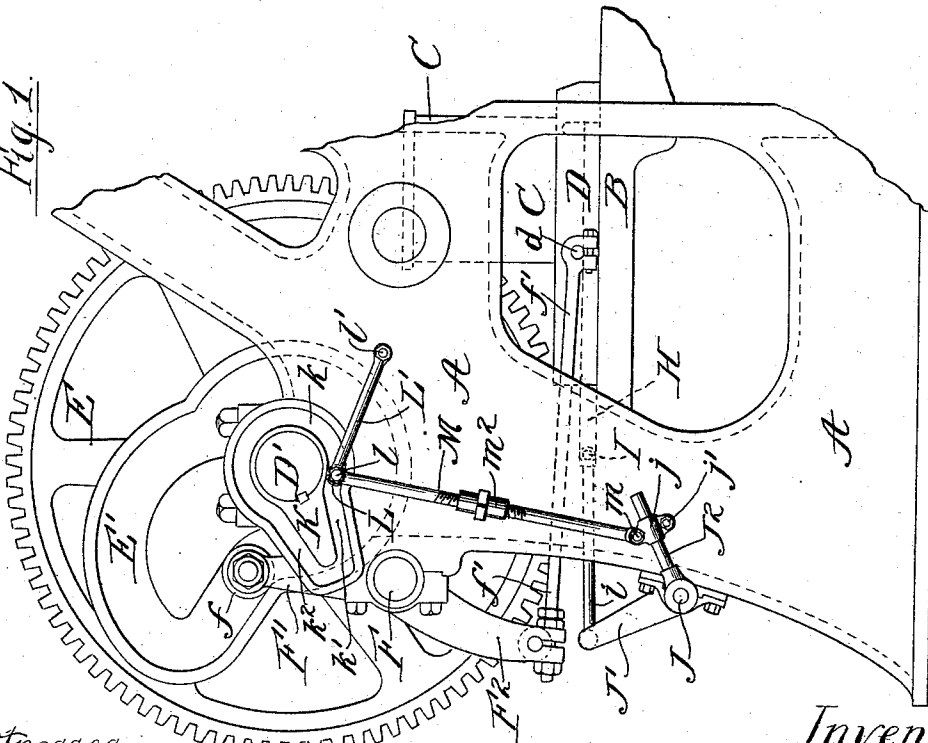


Fig. 1.



Witnesses

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John H. Adams.

Inventor

Bruce Clark White.

by: Dayton, Poole & Brown
his Attorneys

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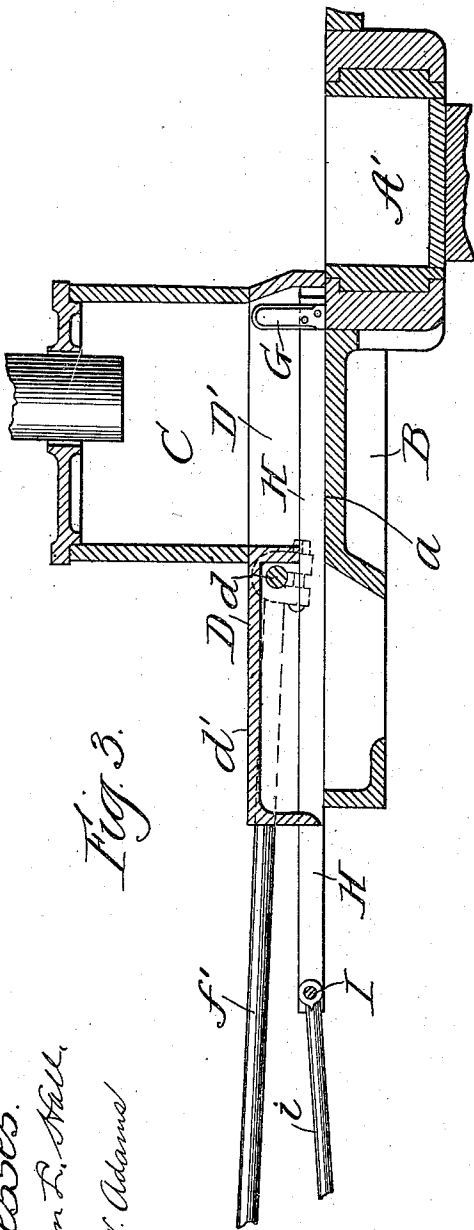


Fig. 3.

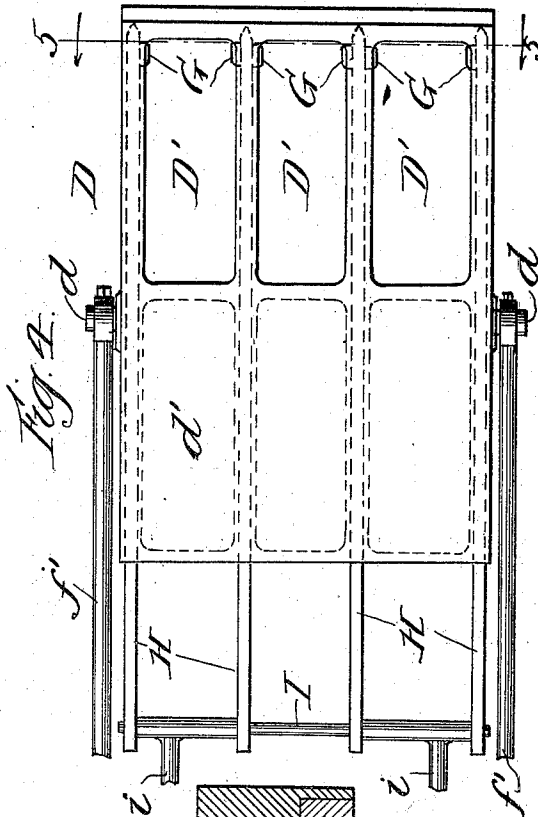


Fig. 4.

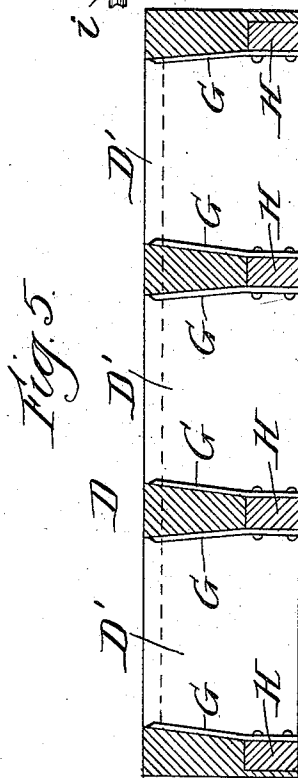


Fig. 5.

Inventor.

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William R. Hall,
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UNITED STATES PATENT OFFICE.

BRUCE CLARK WHITE, OF CHICAGO, ILLINOIS.

BRICK-PRESS CHARGER.

SPECIFICATION forming part of Letters Patent No. 550,667, dated December 3, 1895.

Application filed April 26, 1895. Serial No. 547,221. (No model.)

To all whom it may concern:

Be it known that I, BRUCE CLARK WHITE, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Brick-Press Chargers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in the reciprocating feed boxes or chargers used in brick-presses for delivering material to be made into bricks from the feed-hopper of the press to the molds thereof, and more especially to cleaning devices adapted for use in connection with such feed-boxes for scraping or removing from the side walls thereof material adhering thereto, and to otherwise facilitate the discharge of the contents of the feed-box into the mold.

The object of the invention is to provide a novel means for actuating the knives or scrapers of such a cleaning device; and it consists in the matters hereinafter described, and pointed out in the appended claims.

In the accompanying drawings, illustrating my invention, Figure 1 is a side view of parts of a brick-press, showing the mold-table, feed-box, and actuating device for the feed-box scraper. Fig. 2 is a rear elevation of the parts shown in Fig. 1. Fig. 3 is an enlarged vertical section of the mold-table, feed-hopper, and feed-box of the press. Fig. 4 is a plan view of the feed-box. Fig. 5 is a detail section thereof, taken on line 5 5 of Fig. 4.

As shown in said drawings, A A indicate the side frame-plates of the machine; B, the mold-table; C, the feed-hopper; and D the feed-box, by which the clay is carried from the hopper to the molds.

D' indicates the main driving-shaft of the machine, which is mounted in the frame-plates A above and at the rear of the mold-table.

E indicates a gear-wheel attached to the shaft, through which rotary motion is given to the same, and E' a face-cam attached to the said wheel and serving to give motion to the feed-box. Actuating devices for transmitting motion from the cam to the feed-box

embrace, as shown, a rock-shaft F, having an upwardly-extending arm F', which is provided with a roller f, which engages the groove of the face-cam, said shaft being also provided with two depending arms F², which are connected at their lower ends with the feed-box by means of two connecting-rods f' f', which engage pivot-pins or trunnions d on the sides of the feed-box.

Referring now more particularly to Figs. 3, 4, and 5, A' indicates the molds, which are formed in the forward part of the mold-table, which latter is provided at the rear of the mold and beneath the hopper with a horizontal surface a. The feed-box D is provided in the usual manner with compartments D' in its forward part corresponding in location with the molds and having at the rear of said compartments a horizontal top surface d', by which the descent of material from the hopper is cut off at the time the feed-box is advanced. Said feed-box acts in its reciprocatory motion to receive the charges of clay from the hopper and carry the same to the molds in a manner heretofore common and familiar to persons acquainted with the art.

Within the feed-box and at the sides of the compartment thereof are located knives or scrapers G, which rest in contact with the side walls of the feed-box and are adapted to move along the same, so as to scrape from the said side walls any material which may adhere thereto at the time of the delivery of the material to the molds. Said knives or scrapers are attached at their lower ends to actuating-bars H, arranged at the lower edges of the side walls of the feed-box. When the feed-box has several compartments, as is true of the one shown, the actuating-bars will preferably be located beneath the lower edges of the partitions separating the compartments and will be of equal thickness with the lower edges of said compartments, while those bars at the external side walls will rest and slide in rabbets formed therein, as clearly shown in the sectional view, Fig. 5. Said bars H extend at their rear ends beyond the rear end of the feed-box and are there connected with an actuating device by means of which the knives or scrapers are positively moved along the side walls of the feed-box in manner necessary for effectively cleaning the same at the

time of the discharge of the material therefrom to the molds.

The several bars H are rigidly connected at their rear ends with a transverse rod I, through which motion is transmitted to all of the bars. At the rear of the machine-frame is located a rock-shaft J, to which are attached two upwardly-extending crank-arms J'. Said crank-arms are connected with the rod I by means of connecting-rods *i i*. Attached to one end of the rock-shaft J is a rigid arm J², arranged approximately at right angles with the arms J' J'.

K is a cam attached to the shaft D and provided with a cam-groove *k*. Within said cam-groove is located a roller L, which is mounted on a stud *l*, secured in the end of a swinging arm L', which is arranged to oscillate in a vertical plane and is mounted on stud *l'*, secured in the frame-plate A of the machine. The swinging arm L', which is moved by the engagement of the stud thereon with the cam K, is connected with the arm J² of the rock-shaft by means of a connecting-rod M, which serves to transmit oscillatory movement from said arm L' to the arm J².

In the particular construction illustrated the rod M is connected with the arm L' by engagement with the stud *l*, on which the roller L is mounted. At its lower end the said rod M is shown as connected by a pivot-pin *m* with a clamping-block *j*, which is adapted to slide on the arm J² and which may be rigidly secured thereto by means of a clamping-screw *j'*. The adjustment of the said block *j* on the arm J² enables the angular movement of the said arm to be varied for the purpose of varying the stroke of the scraper-actuating bars H.

I prefer to make the rod M in two parts connected by a turnbuckle *m*², this construction affording adjustment of the length of the arm. By lengthening or shortening the said rod M the position of the knives or scrapers of the beginning and end of the stroke thereof may obviously be changed as desired.

The cam K in the construction described may be so shaped as to give movement to the knives or scrapers in a manner necessary for securing movement of scrapers along the sides of the feed-box during the time the feed-box is located adjacent to or over the molds or while the material is being delivered from the feed-box to the molds.

The cam illustrated is so shaped as to carry the scrapers forward with the feed-box and to retain them at the forward end of the feed-box during the forward movement of the latter and until it has reached the forward limit of its stroke, and to then move or draw backwardly the scrapers, so that they will reach the rear end of the feed-box before the latter begins its rearward movement or has moved backward to any considerable extent. Such movement of the scrapers is accomplished by the abrupt outwardly and inwardly deflected parts *k'* *k*² of the cam-groove *k*. The move-

ment of the scrapers in the manner described has the advantage of securing a proper distribution within the mold of the material which may remain in a solid mass within the feed-box instead of falling into the mold or may be left adhering to the sides of the feed-box after the latter has reached its position over the mold and the greater part of the material has dropped into the latter—that is to say, if when the feed-box reaches the forward limit of its movement the clay therein adheres to the sides of the feed-box, so that it does not fall therefrom, then the rearward movement of the scrapers along the full length of the feed-box while it stands over the mold will result in the material being scraped or detached from the sides of the feed-box and dropping into the mold, so as to fill the same with approximate uniformity.

The cutters obviously cannot complete their rearward movement before the feed-box begins to move backward because after the cutters have reached a point at the rear end of the mold they must be moved still farther backward, so as to prevent the contact of the front wall of the feed-box therewith as said feed-box approaches the extreme rearward limit of its movement. The cutters stand preferably at the forward end of the feed-box when the latter is fully retracted, as clearly seen in full lines in Fig. 3.

The cam-groove *k* is arranged in such relation to the cam K, by which the feed-box itself is actuated, that the rearward movement of the cutters will be relatively rapid, so that they will reach the rear end of the feed-box before the latter begins to move backward, and will then move more slowly until they reach their rearmost position, (shown by full lines in Fig. 1,) which will be before or at the time the feed-box completes its rearward movement.

While the movement of the cutters in the particular manner described is advantageous and desirable, yet such exact movement may not in all cases be found necessary to produce the desired result, and the shape of the cam K may be varied in practice as found convenient or desirable. As an instance of such variation in the movement given by the cam, the scrapers may advance with the feed-box until they reach a point over the rear of the mold and there remain until the feed-box has reached the forward limit of its movement, to the forward end of the feed-box and thereafter retracted with the feed-box. In this case the removal of the adhering clay from when the cutters may be quickly advanced the feed-box will occur on the forward stroke of the scrapers instead of on the backward stroke thereof. Furthermore, the cutters may be so moved that they will advance with the feed-box to a point over the rear end of the mold and may there remain until the feed-box reaches the forward limit of its movement, and the cutters may then be quickly advanced to the forward end of the feed-box and again quickly retracted to the rear end thereof, to

be thereafter moved back with the feed-box to the position shown in Fig. 3. In this latter case the scrapers will act, both in their forward and backward movement, to clean the sides of the feed-box.

While I have shown a cam as the means of giving the desired motion to the scrapers, yet as far as the broader features of my invention are concerned the same may be carried out by the use of other forms of actuating devices adapted to transmit motion from the moving or working parts of the machine to the scrapers, and I desire to claim, broadly, such actuating devices when constructed to move the scraper relatively to the feed-box in a manner to cause the scrapers to traverse the side walls of the same in the manner above described.

The particular mechanism illustrated for actuating the scrapers is, however, advantageous in point of simplicity, economy, and certainty of action, and it is therefore herein claimed as part of my invention.

I claim as my invention—

1. The combination with a mold and a reciprocating feed-box, of a cleaning knife or scraper, movable along a wall of the feed-box, and an actuating device for moving said scraper relatively to the feed-box, connected with the scraper independently of the feed-box, substantially as described.

2. The combination with a mold and reciprocating feed-box, of a cleaning knife or scraper, movable along the side wall of said feed-box, and an actuating device for moving the scraper comprising a revolving cam and actuating connections between said cam and the scraper, substantially as described.

3. The combination with a mold and reciprocating feed-box, of a knife or scraper which is movable along the side wall of said feed-box, and means for actuating the feed-box, comprising a revolving shaft provided with a cam, through the medium of which the feed-box is operated, and means for actuating the scraper, comprising a cam attached to the said shaft, and actuating connections between the said cam and said scraper, substantially as described.

4. The combination with a mold and reciprocating feed-box, of a knife or scraper which is movable along the side wall of the feed-box, supporting bars to which said knife or

scraper is attached, a revolving cam, and a rock-shaft actuated by the cam, and connected with said bars, substantially as described.

5. The combination with a mold and reciprocating feed-box, of a knife or scraper, which is movable along the side wall of the feed-box, supporting bars to which said knife or scraper is attached, a rock-shaft having rigid arms with which said bars are connected, a revolving cam, an oscillating arm, mounted on the machine frame and provided with a roller which engages the cam, and a connecting rod extending between said oscillating arm and the arm on the rock-shaft, substantially as described.

6. The combination with a mold and reciprocating feed-box, of a knife or scraper which is movable along the side wall of the feed-box, supporting bars to which said knife or scraper is attached, a rock-shaft having rigid arms with which said bars are connected, a revolving cam, an oscillating arm mounted on the machine frame and provided with a roller which engages the cam and a connecting rod extending between said oscillating arm and the arm on the rock-shaft; said connecting rod having longitudinally adjustable connection with the arm on the rock-shaft, whereby the stroke of the scraper may be changed, substantially as described.

7. The combination with a mold and reciprocating feed-box, of a knife or scraper which is movable along the side-wall of the feed-box, supporting bars to which said knife or scraper is attached, a rock-shaft having rigid arms with which said bars are connected, a revolving cam, an oscillating arm mounted on the machine frame and provided with a roller which engages the cam, and a connecting rod extending between said oscillating arm and the arm on the rock-shaft, said connecting rod being provided with a turn-buckle or equivalent means by which its length may be adjusted, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 10th day of April, A. D. 1895.

BRUCE CLARK WHITE.

Witnesses:

TAYLOR E. BROWN,
C. CLARENCE POOLE.