

M. HASSLACHER, 2 Sheets—Sheet 1  
Brick-Machine.

No. 196,752.

Patented Nov. 6, 1877.

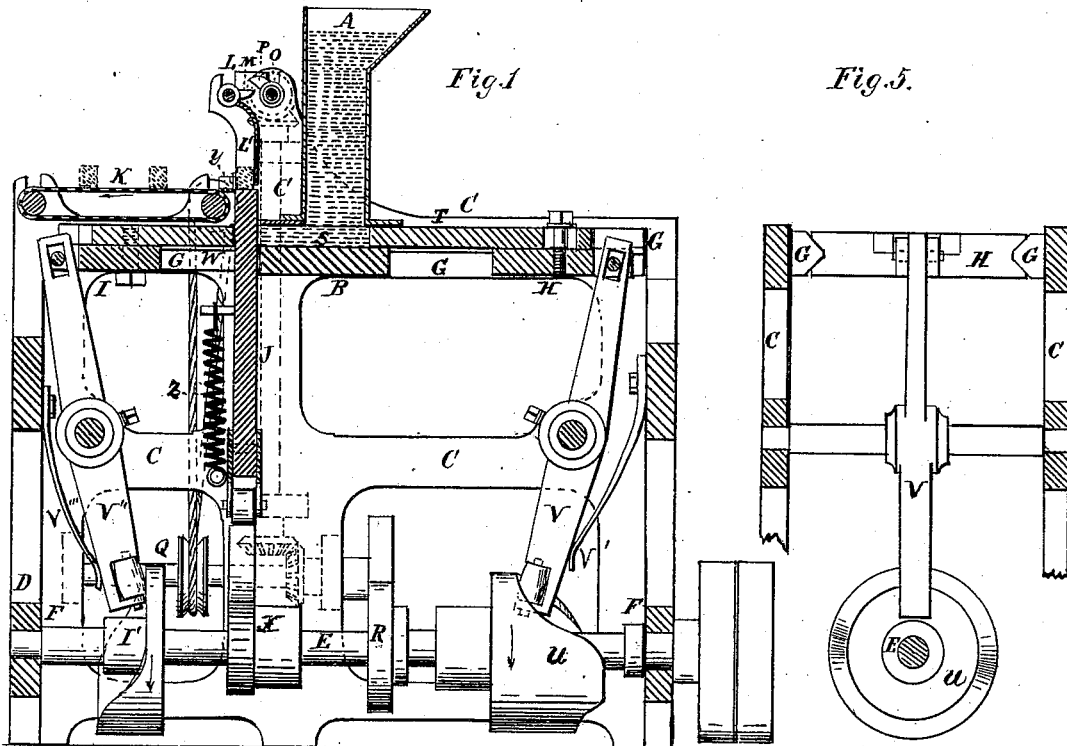
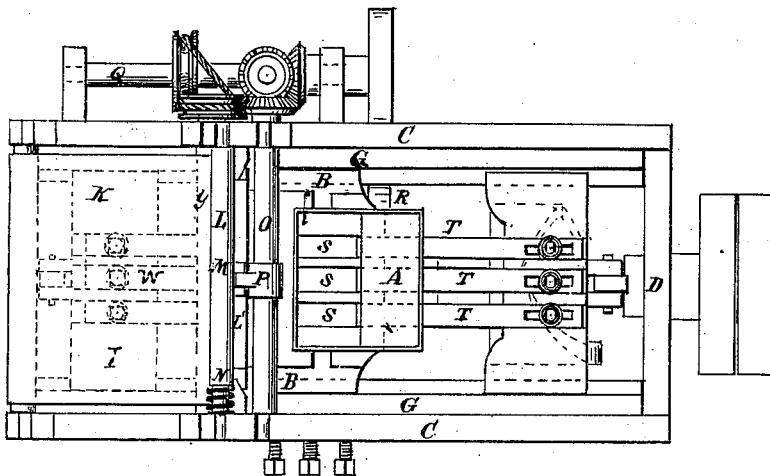


Fig. 2.



Witnesses.  
Reinhold Boekler  
John C. Henrys.

Inventor.  
Matthäus Hasslacher.

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Fig. 3.

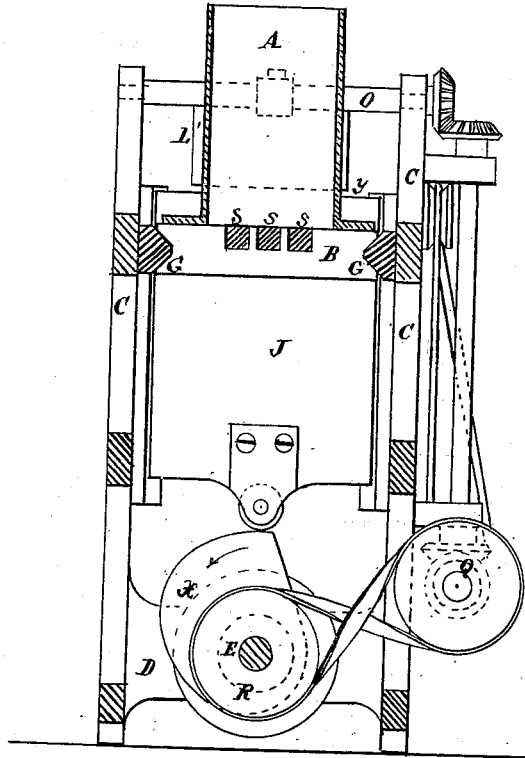
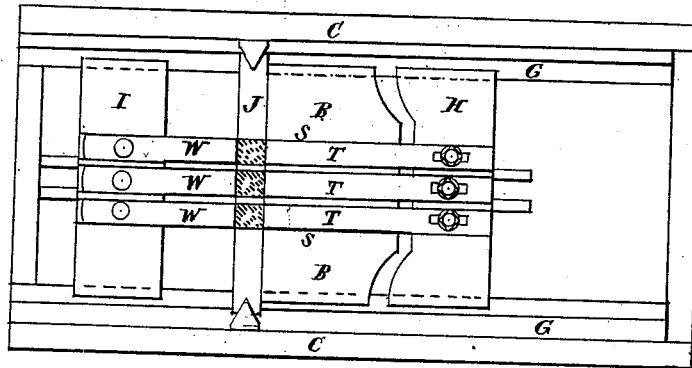


Fig. 4.



Witnesses.  
Reinhold Baeklen  
John C. Herjes

Inventor.  
Matthäus Hasslacher

# UNITED STATES PATENT OFFICE.

MATTHÄUS HASSLACHER, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. 196,752, dated November 6, 1877; application filed December 14, 1876.

*To all whom it may concern:*

Be it known that I, MATTHÄUS HASSLACHER, of the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Machines for Pressing Clay or Powdered Substances, and forming the same into cakes, blocks, or bricks, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

This invention consists in the employment, in a machine for pressing clay or powdered substances into cakes, blocks, or bricks, of a hopper to contain the material, a groove or grooves in which the substance is pressed, a plunger and counter-plunger to work therein and press the material into cakes, a slide to raise said cakes from the grooves, and an endless carrier to remove the cakes as fast as formed, the whole being combined with suitable mechanism to form an operative machine, in the manner hereinafter more fully set forth.

Figure 1 represents a central vertical longitudinal section of a machine embodying my improvements. Fig. 2 is a top view of the same. Fig. 3 is a vertical cross-section through the hopper. Fig. 4 is a detached top view of the plungers, counter-plungers, and slide, shown in position for the removal of the cakes from the grooves by the slides. Fig. 5 is a detached end view of the plungers, slide, and cam for moving the plunger, and a rear view of the operating-lever.

A represents the hopper of the machine resting upon a cross-plate, B, secured horizontally upon the frame of the machine, which consists of side pieces C C, connected by cross-pieces D D at each end, in which cross-pieces the main or driving shaft E has its bearings F F. On the inner sides of the upper portion of the frame are cast or secured V-shaped horizontal ways G G, on which is fixed a cross-piece, B, and on which slides H and I freely move. Close to the left of said cross-piece is a vertical slide, J, which works up and down upon suitable guides or ways on the inner sides of the frame. Over the slide I are arranged two rollers, which carry an endless band, K, one of which rollers is located close and parallel to the slide J, in suitable bearings on the upper part of the frame C C,

and the other in bearings on the end of said frame; but in most cases said second roller is arranged on a level with the other, in bearings at a considerable distance from the machine, to allow the finished cakes on the endless band to harden and dry sufficiently for handling before removal from the band. Near the slide J are two standards, attached to and forming part of the frame C, each of which has two bearings to receive the shafts L and O. Attached to said shaft is a flap, L', which extends down to the top surface of the band K, or nearly so, and an arm or projection, M. Around one end of this shaft is a spiral spring, N, one end of which is fastened to the shaft, and the other end to the frame C'. At the right of, and parallel to, the shaft L is the other shaft, O, which has upon it a wiper, P, to operate upon the arm M as it revolves, and thus give the flap L' a vibratory motion toward the apron or band K. After the wiper P has passed the arm M, the spiral spring N causes the flap to return to its original position beyond the slide J, and rest against a stop on the frame C.

To propel the shaft O and endless band K a separate counter-shaft, Q, is employed, arranged in suitable bearings on one side of the main frame, which shaft has a gear or pulley to receive motion from a gear or pulley, R, upon the main shaft E, a bevel-gear to transmit motion to the shaft O by means of a vertical shaft and bevel-gears, and a band-pulley to impart motion by means of a band to the roller carrying the endless band or carrier K. If preferred, the shaft O may be driven by band-pulleys, in the same way as the roller operating the band K.

In the cross-piece B are one or more grooves, S S S, corresponding in number and cross-section with the plungers T T T used, and the cakes, bricks, or blocks to be formed, which grooves are arranged under the discharge-opening of the hopper and in line with the plungers, so that the latter will work therein. Said plungers T T T are secured in grooves in the slide H by means of screws passing through slots, so that the plungers may be adjusted longitudinally, as desired.

The slide and plungers are reciprocated by means of a cam, U, and vibrating lever V, the

latter having trunnions working in the bearings formed in the sides of the frame C C, a friction-wheel on its lower end, and a slot in its upper arm, through which works a pin passing through eyes on the slide H. At V' is a spring acting on lever V.

On the slide I are secured counter-plungers W W W, to which motion is imparted in the same way as the plungers S S S by means of the lever V'', cam I', and spring V'''; but the time and amount of motion are varied, and the cams are therefore varied also.

The cam U is of such shape as to give one motion to compress the substance and form the cake, a secondary motion to push forward and discharge the cake from the grooves, and a third to rapidly withdraw from under the hopper-opening and return to its original position. The cam I' has only a forward motion to press the cake, and a backward one to allow it to be discharged.

The slide J is operated by a cam, X, pressing against a friction-roller on the bottom of said slide; and a spring or springs, Z, may be employed to keep the roller in contact with the cam, should not the weight of the slide be found sufficient.

The operation of the machine may be described as follows: The hopper is first charged with the substance to be operated on, and, if necessary, a weight added to force the material into the grooves. Motion is then given to the machine, by which means the plungers T T T are drawn back to allow the grooves to fill from the hopper, the slide J descends below the grooves S S S, and then both sets of plungers are pushed toward each other, to press the material into cakes. The plungers W remain stationary long enough to allow the plungers T to produce sufficient pressure on the material, and then their motion is reversed sufficiently to allow the plungers T to force the cakes over the slide J and yet retain the pressure on said cakes. The slide J now rises, and, being of the precise thickness of the space

between the two sets of plungers, takes the cakes from between them, and raises said cakes to the level of the upper surface of the band K. The plungers T return to their original position, to allow of the filling of the grooves for the next operation. As soon as the slide J has risen to its full height, the motion of the flap L', caused by the wiper P on the arm M, pushes the cakes off the top of the slide over a guide, y, between the slide and apron or band K onto said band K, which carries it away.

In operating upon some substances, the machine is so arranged as to have the slides I and H arranged vertically and the slide J horizontally, or nearly so. In such case the apron or band K is still arranged horizontally, and the cake is delivered by the slide J directly upon the band K, and the flap L' is in such case dispensed with.

Instead of the cams upon the main shaft, cranks or other suitable moving devices may be used to operate the slides.

What I claim as my invention is—

1. The combination of the plungers T, the grooves S, counter-plungers W, slide J, and hopper A, to form and press the cake, substantially as herein set forth.

2. The combination of the hopper A, plungers T, grooves S, counter-plungers W, slide J, guide y, and endless band K, substantially as described and set forth.

3. The combination of the hopper A, plungers T, grooves S, counter-plungers W, slide J, flap L', and endless band K, substantially as herein shown and described.

4. The combination of the hopper A, plungers T, the grooves S, counter-plungers W, slide J, flap L', band K, slides I H, cams U X I', and levers V V'', substantially as described.

In witness whereof I hereunto set my hand.

MATTHÄUS HASSLACHER.

In presence of—

REINHOLD BOEKLEN,  
JOHN C. HENJEE.