

M.C. MOTCH'S

Improvement in

ROTARY BRICK MACHINES.

72883 Assigned to M.C. MOTCH & W. F. SIMMONS.

Fig. 1.

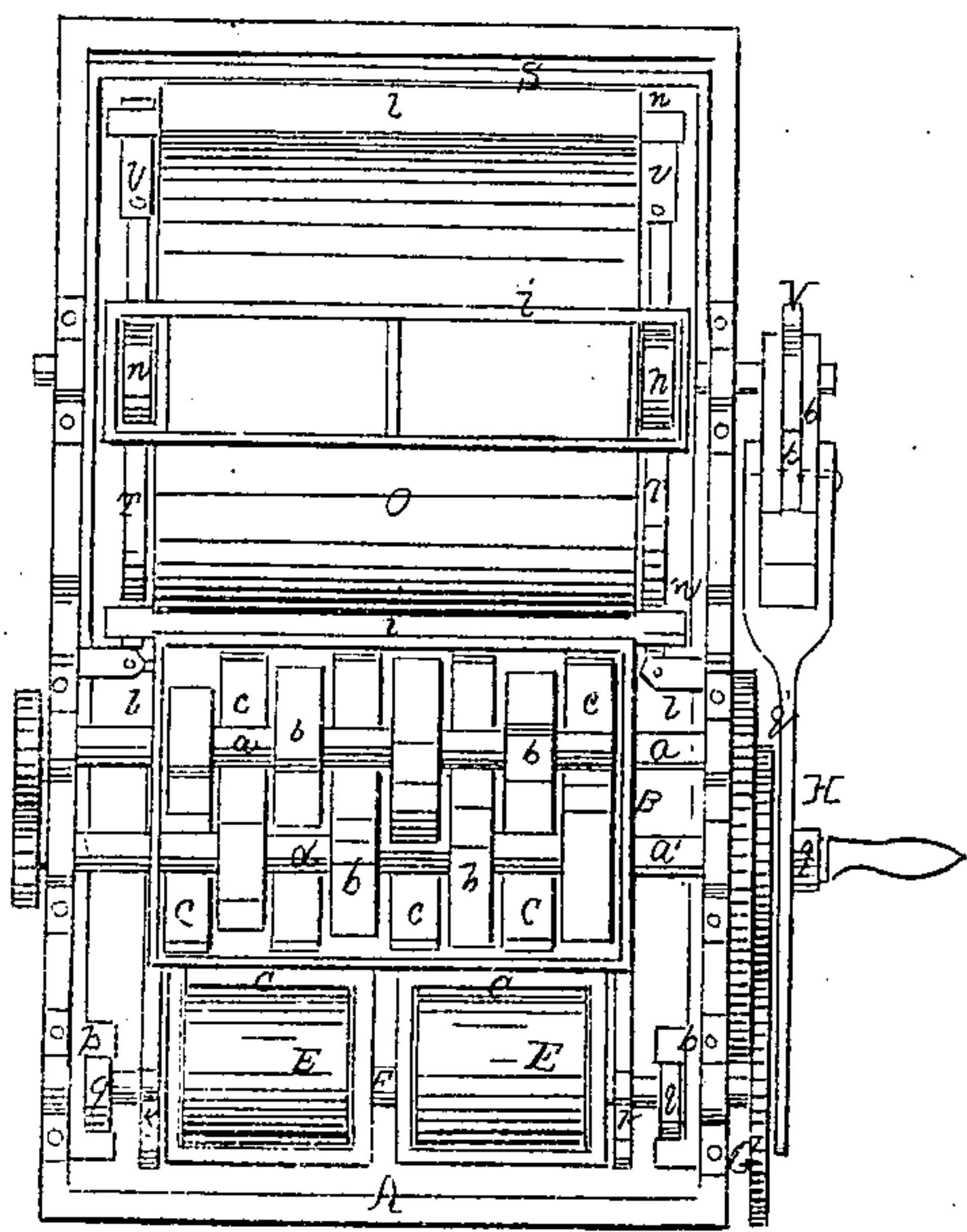
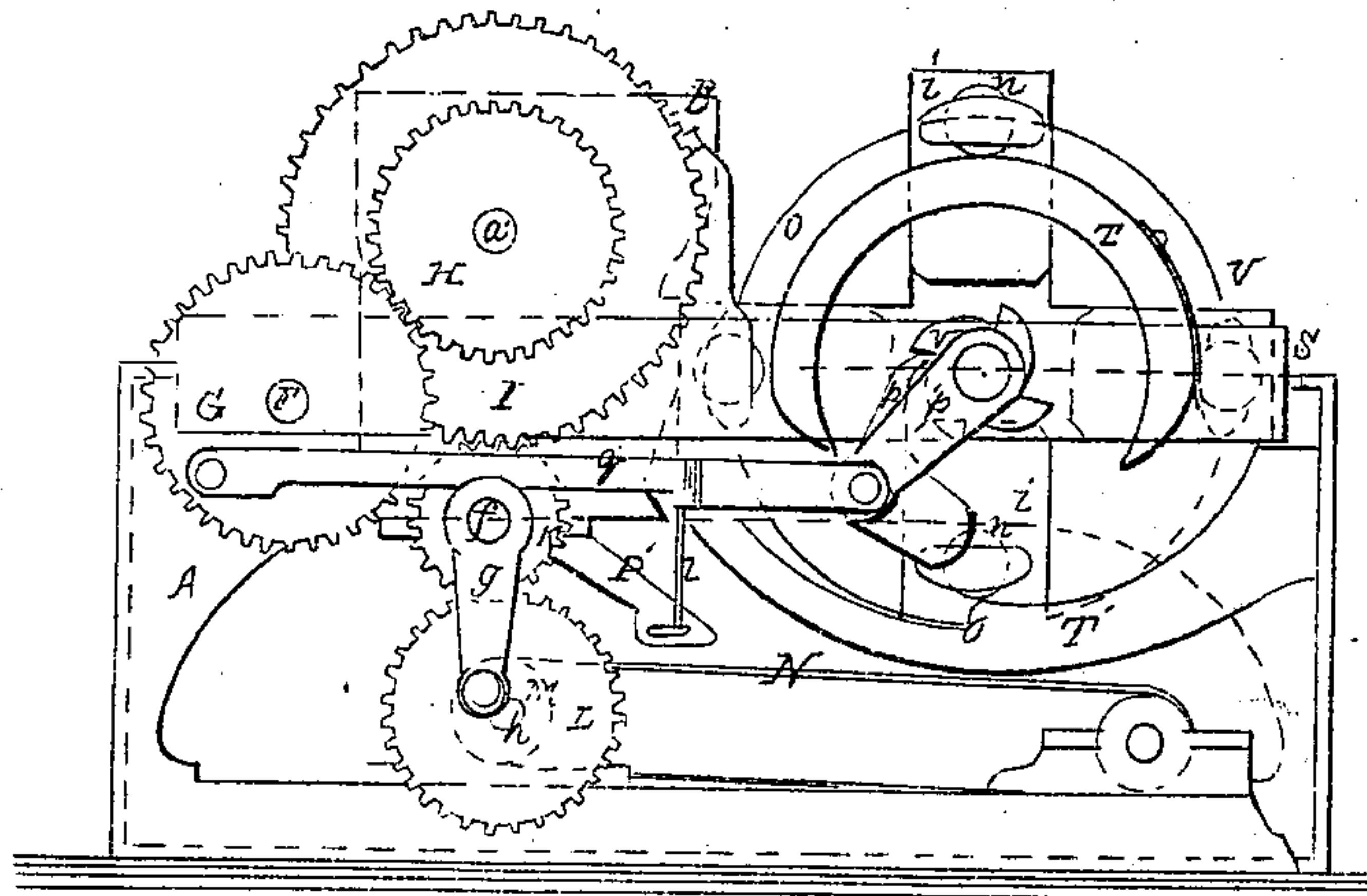
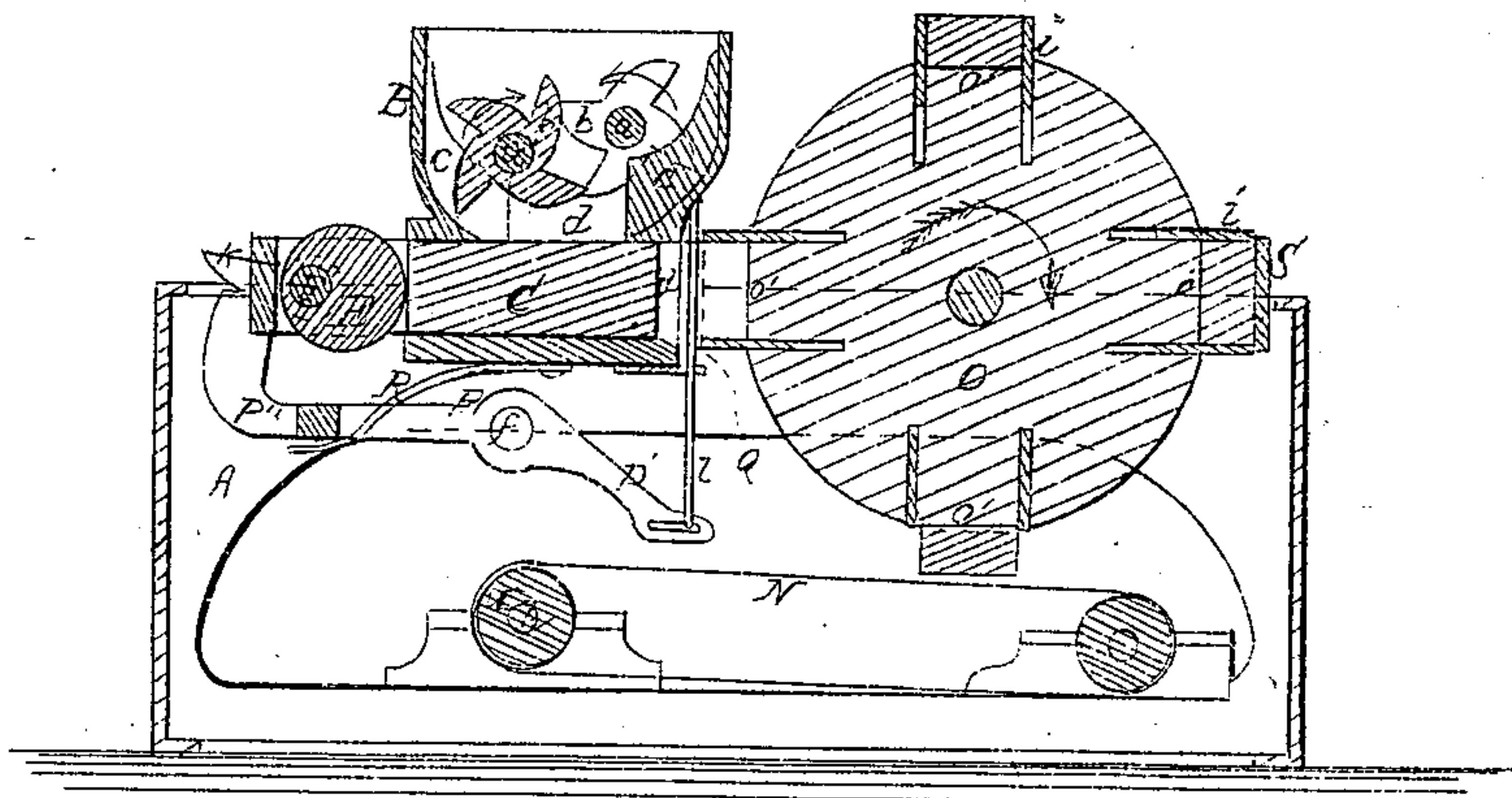


Fig. 2.



PATENTED
DEC 31 1867

Fig. 3.



Attest.

Charles L. Fisher
John H. Bogart

Inventor.

M. C. Motch

United States Patent Office.

M. C. MOTCH, OF COVINGTON, KENTUCKY, ASSIGNOR TO HIMSELF AND
W. F. SMIRALL, OF SAME PLACE.

Letters Patent No. 72,883, dated December 31, 1867.

IMPROVED ROTARY BRICK-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, M. C. MOTCH, of Covington, in the county of Kenton, and State of Kentucky, have invented a new and improved Rotary Brick-Machine, of which the following is a full and clear description, reference being had to the accompanying drawings, making part of this specification.

My improvement in rotary brick-machines relates to the provision within the hopper of a series of revolving "compressing-arms," located immediately over reciprocating "followers," which are operated by eccentrics, and to a revolving "mould-drum," provided with "sliding-mould boxes," the "mould-drum" having an intermittent motion imparted to it by a ratchet connection; also, to a "shearing-knife" operating between the "mould-boxes" and "followers," and finally to a "compressing-board" and "reacting spring," located at the rear of the machine and in connection with the "mould-boxes" of the revolving "mould-drum."

Figure 1 is a plan of my improved rotary brick-machine.

Figure 2 is an elevation of the operating side of the same, having part of the framework removed to exhibit more clearly the moving parts.

Figure 3 is a longitudinal section of the same.

A is the frame of the machine. B is the hopper, within which, located transversely with the machine, are the two rotating shafts a a' , which have secured to them a series of compressing-arms b , revolving in opposite directions. The sides and bottom of the hopper B are ribbed, c , between the compressing-arms b , each rib terminating in vertical faces in a line with the centre of each shaft a . The bottom opening d in the centre of the hopper permits the efflux of tempered clay into the receptacles d' , occupied by the followers C. These followers C are caused to reciprocate, longitudinally with the machine, in the close-fitting box D by means of eccentrics E secured to shaft F. Motion is given to the shaft F through the gear-wheel G, which meshes into the pinion H secured to the shaft a' . A large gear-wheel, I, upon the same shaft a' engages the pinion K. The pinion K on shaft f , to which is attached the crank-handle g , meshes into the gear-wheel L, made fast to the shaft h , which carries the drum M. About the drum M passes the endless apron N, having a slight inclination rearwards beneath the mould-drum O. The shaft bearing the drum O is journalled upon the top of the frame A to the rear of the receptacle d' . The drum O is provided with a number of sliding-mould boxes, i , in two compartments. The ends and sides of the mould-boxes i are received into slots in the drum O at specified times when the bricks are being compressed and delivered upon the endless apron. The shaft F carries trips k , which, in their revolution, depress the levers P. The inner short arms P' of levers P are slotted to allow of the free play of the knife-arms l that have a vertical motion, causing the shearing-knife Q, secured to them, to separate the bulk of clay preceding the followers from the mould-boxes. A spring, R, secured beneath the receptacles d' , constantly presses upon the cross-piece m between the long arms P'' of the levers P, causing the knife Q to remain beneath the mould-boxes till they are filled with clay by the action of the followers. The ends of the mould-boxes i project beyond the ends of the mould-drum O, and are provided with wheels n , which traverse upon the guides T and T'. The guide T is semicircular. The wheels n of the mould-boxes traverse its outer surface from the time the clay is injected into them by the followers until after the repressing-board S has acted upon the material in the moulds, after which the lower guide T', the surfaces of which approach gradually towards the centre of the mould-drum O, when it drops down at o , presses the mould-boxes into their slots in the drum O. The formed bricks, which rest upon the plane surfaces o' of the mould-drum O drop upon the endless apron N. The repressing-board S, located between the end of frame A and the mould-drum O, is connected with boxes p , in which eccentrics q on the shaft F revolve, whereby the repressing-board S is brought in close contact with the outer face of the mould-boxes as they come into place before it, press the clay well into the boxes, leaving the bricks well formed. Springs U attached to the outer surfaces of the guides T, press out the mould-boxes after the action of the repressing-board, relieving the formed bricks from the plane surfaces o' of the drum O. The edges and corners of the bricks are less liable to be torn off when the mould-boxes enter the grooves in the drum O, allowing the bricks to drop upon the apron N, which carries them to a convenient drying-ground, when the above-described action of the relative parts of the machine takes place. A ratchet-wheel, V, secured to the shaft bearing the drum O, is acted upon by the pawl p , which is pivoted to

the wrist-pin of the crank p' . The crank p' is made fast to the shaft of the drum O. A connecting-rod, q , communicates motion from the gear-wheel upon the shaft F to the drum O.

Operation.

Earth, well kneaded, is introduced into the hopper of the machine, where it is worked over to a considerable extent in passing into the receptacles d' by the series of compressing-arms b . The ribs c act as breaks in preventing a reflux of the clay, being pressed into the mould-boxes of the revolving drum O. The mould-boxes having been filled with clay, well pressed in by the followers C, are "struck" off by the shearing-knife Q, are revolved round by the drum O, and when in position diametrically opposite the followers C come to a rest, when the repressing-board acts by pressing strongly upon the mould-boxes, finally compacting the clay, and leaving the material in the mould-boxes in a finished condition, ready for delivery upon the endless apron N. When the repressing-board is redrawn from the face of the mould-boxes the springs U press out the mould-boxes, by which action the brick are detached from the plane surfaces of the drum O and more readily ejected from the mould-boxes, when the guides T' cause the mould-boxes to enter the recesses in the drum O. From the introduction of the clay into the hopper of the machine until the same is delivered upon the endless apron a perfect brick, the intermediate stages of formation are simple, and the simplicity of the mechanism employed is calculated to insure the desired result.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The hopper B, having the ribs c on its inner sides, in combination with the shafts a and a' , provided with the compressing-arms b , all constructed and arranged to operate substantially as and for the purpose described.
2. The follower C, actuated by the eccentric E, in combination with the revolving drum O, having the sliding-moulds i arranged thereon, substantially as set forth.
3. The rotating mould-drum O, provided with a number of sliding-mould boxes, i , constructed and arranged substantially as described.
4. The repressing-board S, operated in the manner and for the purpose specified.
5. The springs U, in combination with the mould-boxes i , when the same are constructed and operate substantially as and for the purpose herein set forth.
6. The guides T and T' , when constructed substantially as described and for the purpose specified.
7. The shearing-knife Q, when operated in the manner substantially as shown and described, and for the purpose set forth.

M. C. MOTCH.

Witnesses:

C. L. FISHER,
JOHN H. BOGART.