

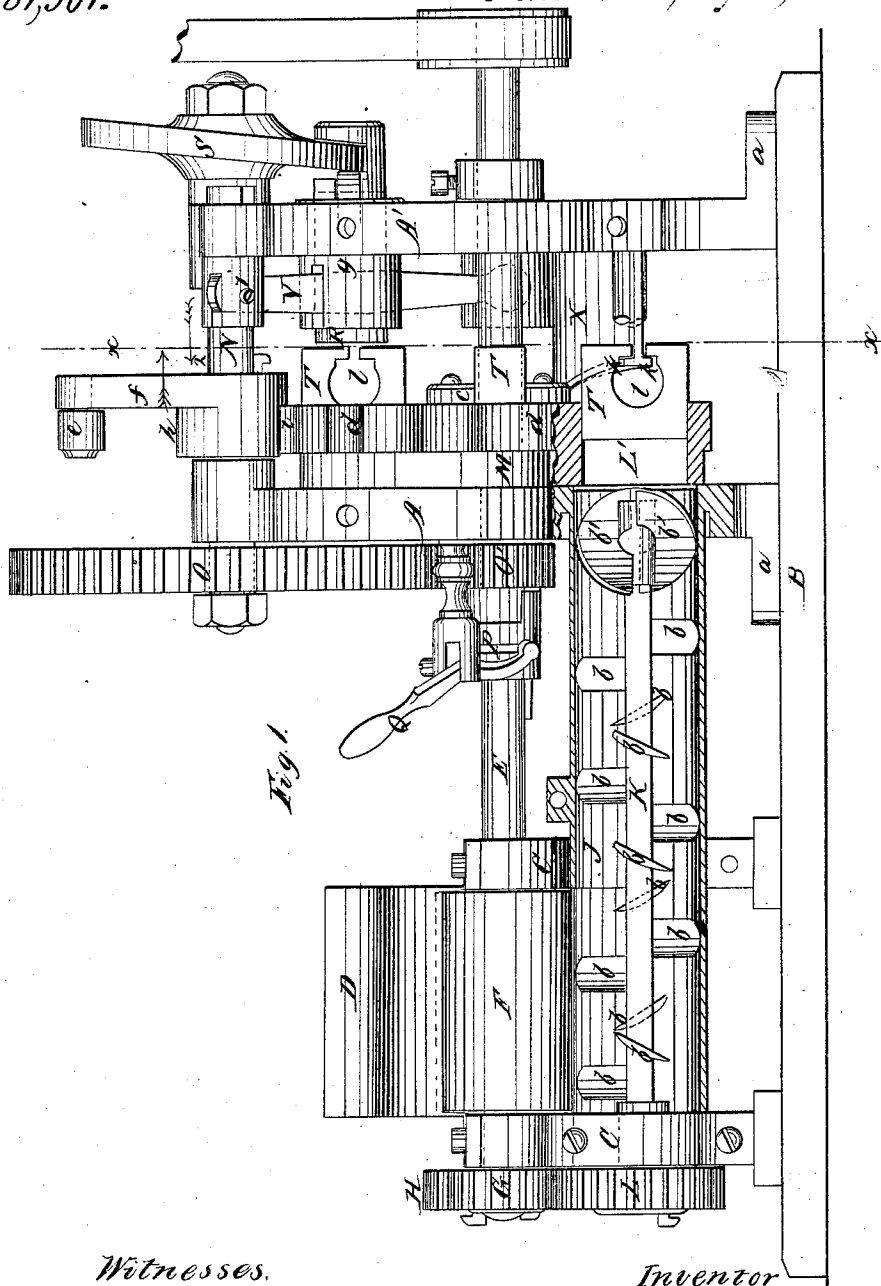
*P. Hayden,*

*35 Sheets, Sheet 1.*

*Brick Machine.*

*N<sup>o</sup> 81,901.*

*Patented Sep. 8, 1868.*



*Witnesses.*  
*Wm A Morgan*  
*R. C. Lutton*

*Inventor*  
*Peter Hayden*  
*per Munnell & Co*  
*attys*

*P. Hayden,*

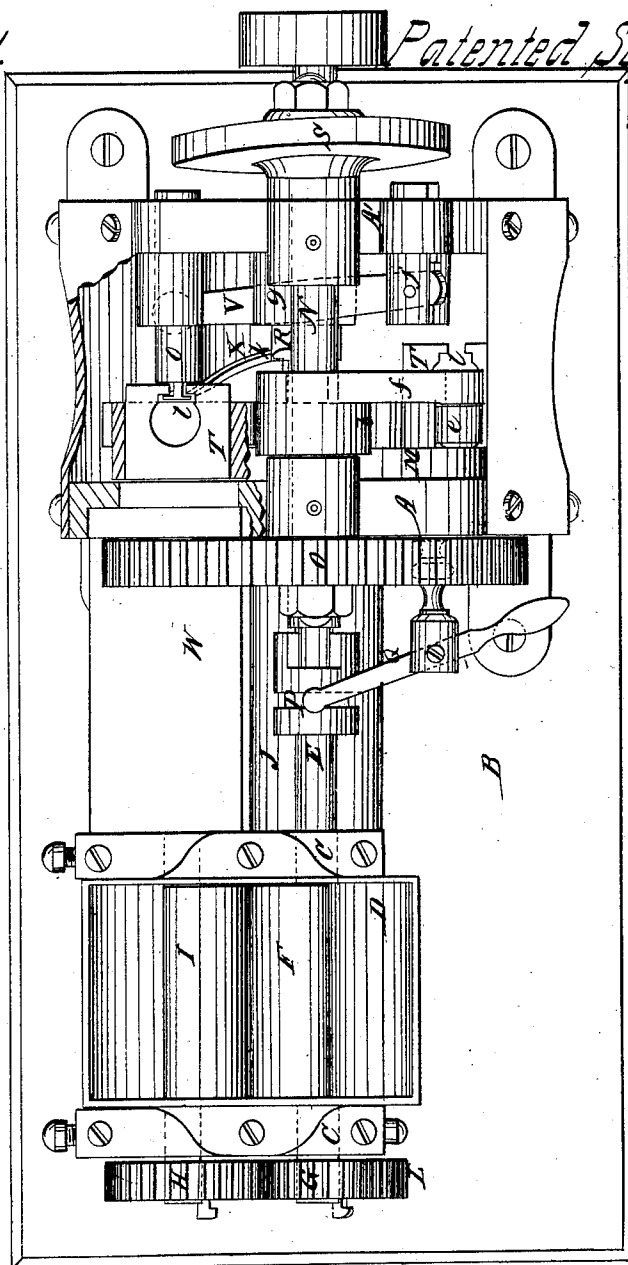
*3 Sheets, Sheet 2.*

*Brick Machine.*

*N<sup>o</sup> 31,901.*

*Patented Sep. 8, 1868.*

*Fig. 2*

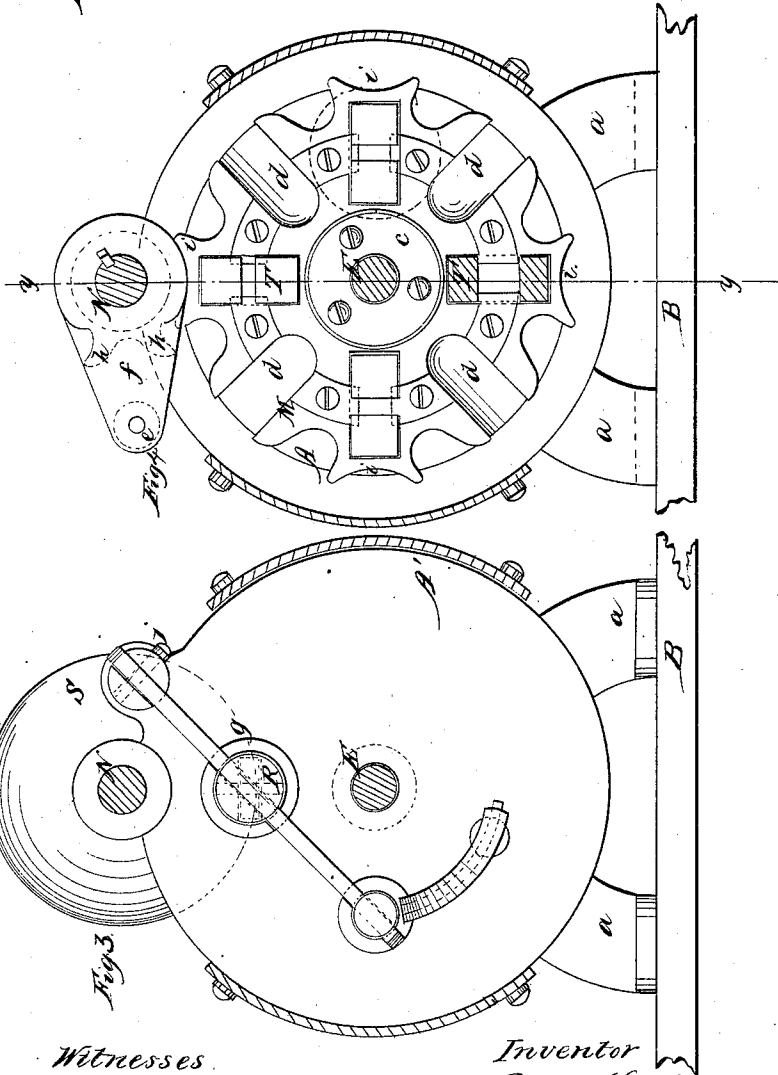



*Witnesses.*  
*Am A. Mayan*  
*G. E. Cotton*

*Inventor*  
*Peter Hayden*  
*per Wm. H. H. H.*

*P. Hayden,*

N<sup>o</sup> 81,901.



Inventor   
Peter Hayden  
Per Munnings  
att'y

# United States Patent Office.

PETER HAYDEN, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 81,901, dated September 8, 1868.

## IMPROVED 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, PETER HAYDEN, of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented a new and improved Brick-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and improved machine for moulding and pressing bricks; and it consists of an improved means for conveying the clay from the crushing or rolling-mill to the press-boxes, and also in a novel and improved construction and arrangement of parts for moulding and compressing clay, and discharging the same after being compressed, as hereinafter fully shown and described, whereby the work may be done with great rapidity, and in a perfect manner.

In the accompanying sheet of drawings—

Figure 1, Sheet No. 1, is a side view of my invention, partly in section.

Figure 2, Sheet No. 2, a plan or top view of the same.

Figure 3, Sheet No. 3, a transverse vertical section of the same, taken in the line *x x*, fig. 1, and looking in the direction of the arrows 1.

Figure 4, a transverse vertical section of the same, taken in the line *x x*, and looking in the direction of the arrows 2.

Figure 5, a vertical section of fig. 4, taken in the line *y y*.

Similar letters of reference indicate corresponding parts:

The frame of the machine is composed of two cylindrical heads, *A A'*, provided with feet, *a*, which are firmly secured to any suitable bed, *B*, and also composed of upright supports, *C*, secured to the bed, the supports *C* having a hopper, *D*, secured on their upper ends.

*E* is the driving or main shaft of the machine, having a roller, *F*, upon it, between the supports *C C*, and partially underneath the hopper *D*.

The shaft *E* has a toothed wheel, *G*, upon it, which gears into a larger wheel, *H*, at one end of a roller, *I*, which is parallel and works in contact, or nearly so, with the roller *F*.

Motion is communicated to the roller *I* from the shaft *E*, and *I* has a slower motion than *F*, owing to the difference in the size of the gears *G H*.

The rollers *F I* crush and pulverize the clay, which is thrown into the hopper *D* in a properly moist state, the crushed or pulverized clay being discharged from the rollers into a hollow cylinder, *J*, which has a shaft, *K*, fitted longitudinally and centrally within it, said shaft having a rotary movement given it by means of a wheel, *L*, which gears into the wheel *G* of shaft *E*, (see fig. 1.)

The shaft *K* has a series of spiral wings or blades, *b*, attached to it, each of which is a section of a screw-thread, and at the discharge-end of the shaft *K* there are two wings or blades, *b' b'*, which form a complete screw-thread, or extend entirely around the shaft, as shown clearly in fig. 1.

This shaft *K* conveys the crushed or pulverized clay, as it is discharged from between the rollers, to the press-boxes *L'*, which are within a cylinder, *M*, the latter being placed loosely on a hub or boss, *c*, through which the driving-shaft *E* passes loosely, and is allowed to turn freely.

The press-boxes *L'* are placed or made at equal distances apart in the cylinder *M*, and of rectangular form, corresponding to the desired shape of the bricks to be moulded, and at the outer or face side of the cylinder *M* there are radial recesses, *d*, to receive a friction-roller, *e*, at the end of a crank-arm, *f*, on a shaft, *N*, which receives its motion from the driving-shaft *E*, by means of gears, *O O'*, the former, *O*, being on shaft *N*, and the latter, *O'*, being on the driving-shaft *E*, and connected to and disconnected from it by a clutch, *P*, operated through the medium of a lever, *Q*.

The crank-arm *f* thus rotates the cylinder *M*, and brings the several press-boxes *L'* consecutively in line with the discharge-end of the cylinder *J*, (see figs. 1 and 5,) and at each movement of the cylinder *M*, a press-

box, L', is carried from the discharge-end of the hollow cylinder J upward, to a point in line with a plunger, R, which is fitted horizontally in a bearing, g, in the head A', (see more particularly fig. 1.)

Besides the crank-arm f, for rotating the cylinder M, there are two teeth, h h, on the end of the crank-arm f, which engage with teeth i, between the recesses d of the cylinder M, and bring the recesses d in proper position, at the required time, to receive the friction-roller e of the arm f.

Each time a press-box, L', is brought in line with the plunger R, the latter is pressed by means of a cam, S, on shaft N, said plunger acting upon a follower, T, in the press-box, and compressing the clay therein, (see more particularly figs. 1 and 2.)

As the plunger R is drawn back by the cam, the cylinder M is again turned, and a succeeding press-box and follower brought in line with the plunger, and the clay in said press-box compressed as before, while the filled press-box, with the previously-compressed clay therein, is brought in line with a plunger, U, which is moved by a lever, V, having its fulcrum at j, said lever passing through a slot in the plunger R, and receiving its motion from the same, so that it may force the compressed clay (bricks) out from the press-box L', directly in front or in line with it, upon a table, W, from which they are taken to the yard or other suitable place, for drying.

The follower T, after being thus forced inward, to discharge the brick, is drawn out by a fixed or stationary cam, X, at the inner side of the head A', said cam having an oblique outer end, with a flange, k, at each side, to catch into a recess, l, in the outer ends of the follower of each press-box L', (see more particularly fig. 1.)

By this arrangement the clay may be moulded and compressed into bricks with rapidity and the greatest facility.

\* There are no parts liable to get out of repair, or become deranged by use, and the machine may be constructed at a reasonable cost, and may be worked with a moderate expenditure of power.

I claim as new, and desire to secure by Letters Patent—

1. The intermittingly-rotating cylinder M, provided with the press-boxes L', followers T, recesses d, and teeth i, in connection with the crank-arm f on shaft N, all arranged to operate in the manner substantially as and for the purpose specified.
2. The plunger R, operated substantially as shown and arranged, in relation with the followers T, for the purpose of compressing the clay in the press-boxes, substantially as set forth.
3. The plunger U, operated from the plunger R, through the medium of the lever V, for the purpose of discharging the bricks from the press-boxes L', substantially as shown and described.
4. The combination of the pressure-rollers F I, rotary shaft K, provided with the spiral wings or blades o and o', the cylinder M, provided with the press-boxes L', with the followers T therein, the plungers R U, and the fixed cam X, all arranged to operate in the manner substantially as and for the purpose specified.

PETER HAYDEN.

Witnesses:

JAS. L. SUTHERLAND,  
D. F. McCLOWRY.