

J. Scheitlin,

Brick Machine,

No 7,908,

Patented Jan. 21, 1851.

Fig 1.

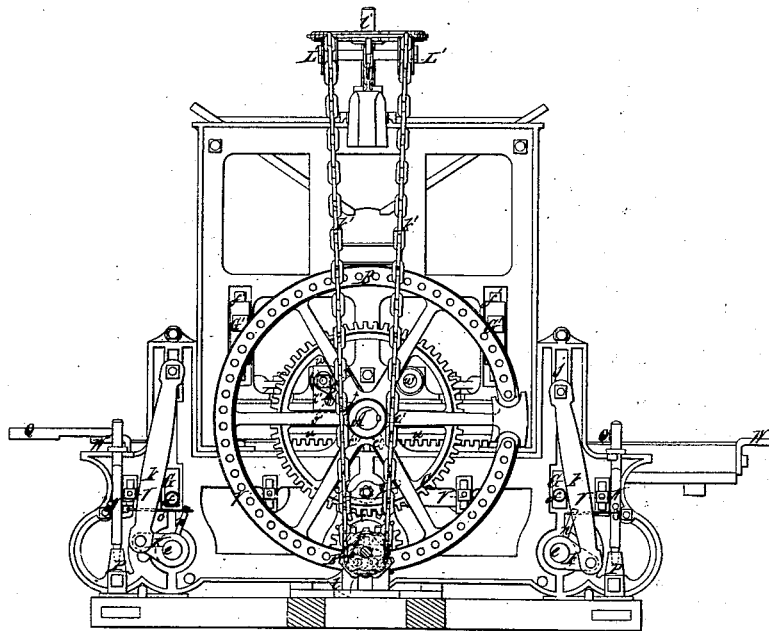
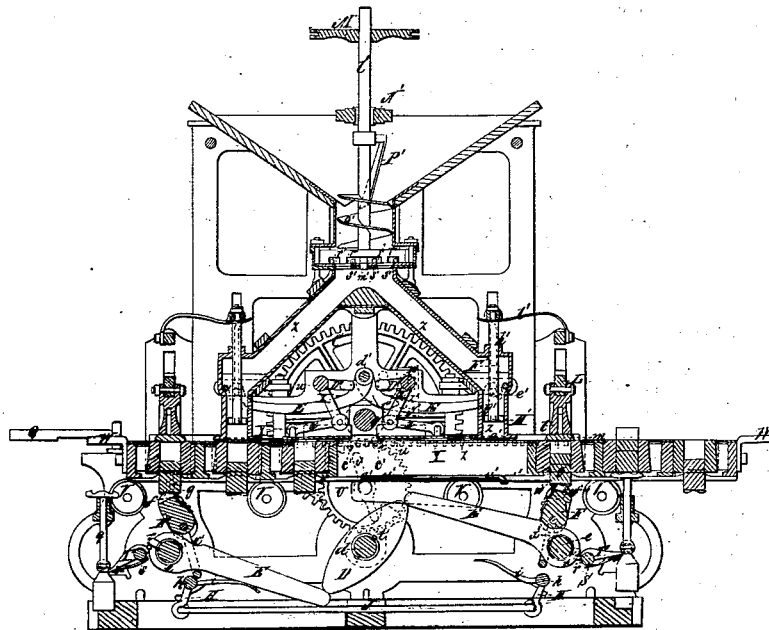


Fig 2.



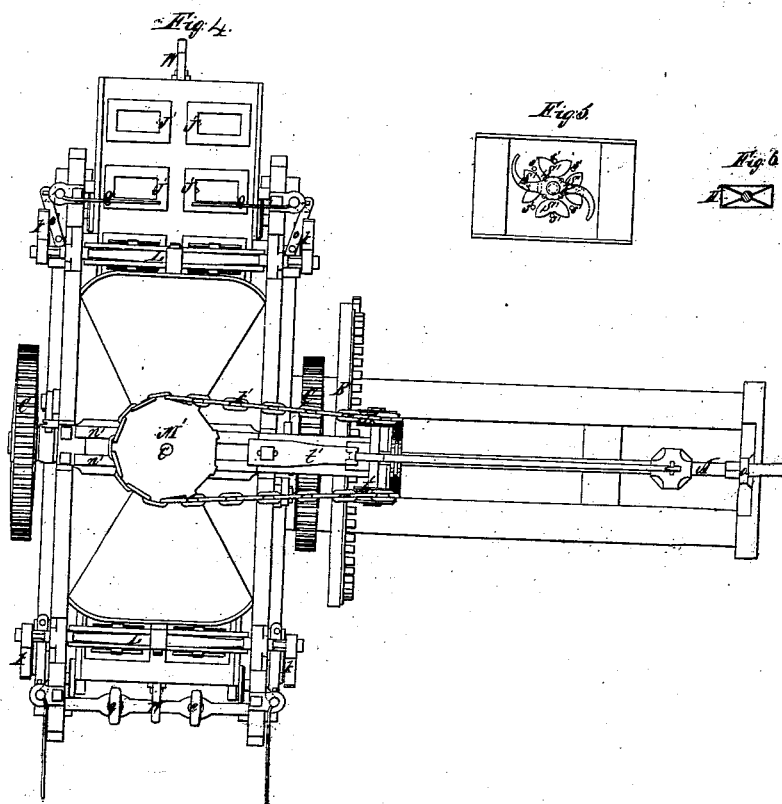
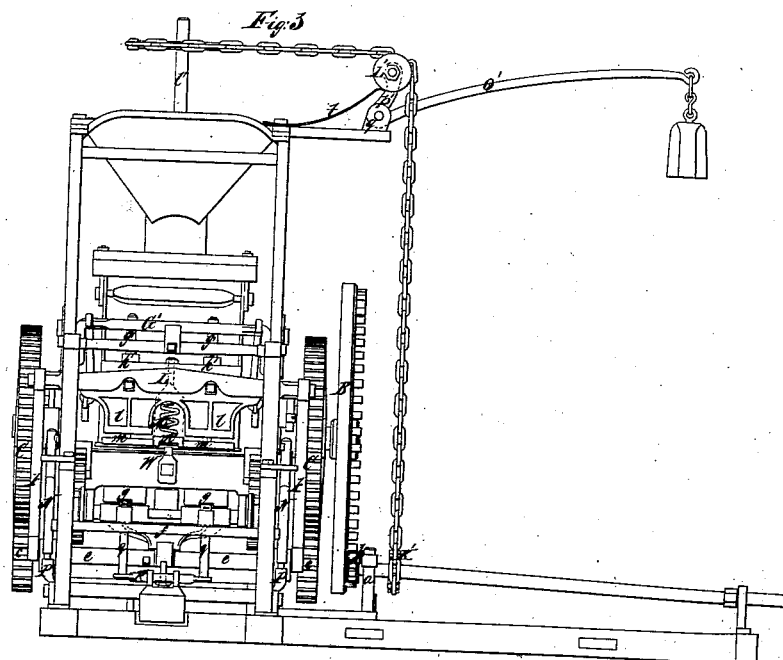
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Sheet 2-2, Sheets.

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UNITED STATES PATENT OFFICE.

JACOB SCHEITLIN, OF LOUISVILLE, KENTUCKY.

BRICK-PRESS.

Specification of Letters Patent No. 7,908, dated January 21, 1851.

To all whom it may concern:

Be it known that I, JACOB SCHEITLIN, of Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Improvement in Brick-Presses; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making part of the same, in which—

Figure 1, represents a side view next the change wheel and driving power. Fig. 2, represents a longitudinal, vertical section through the entire machine. Fig. 3, represents an end view (both ends being the same). Fig. 4, a top view, and Figs. 5 and 6, detailed views of parts of the machine not clearly seen in the other figures.

The nature of my invention consists in so constructing a brick machine, that the clay as it is dug from the ground may be placed in the hopper, mixed, screened, and pressed into bricks, and delivered from the molds ready for the kiln, without any further manual labor, than the mere placing of the clay in the hopper.

To enable others skilled in the art to make and construct my brick machine, I will proceed to describe the same with reference to the drawings in which the same letters indicate like parts in the several figures.

On a shaft A, driven by horse, steam, water or any other power, whose bearings are in bolsters *a, a*, so arranged as to allow said shaft to rise and fall by the rotation of a change-wheel (to be hereinafter described), I place a spur wheel *b*, which meshes into the pins or teeth of the change wheel B, Fig. 1, and which said spur wheel, causes the said change-wheel to make one entire alternating rotation, as the spur wheels runs on the inner or outer periphery of the pins or teeth on the face of said change wheel. The change wheel is hung on one end of the shaft A', and on the same shaft I also arrange the two cog wheels C, C, one on each side of the machine and outside of the frame thereof, which mesh into two spur wheels *c, c*, upon a shaft *d*, directly under and parallel with the shaft A' and nearly in the same plane with the driving shaft A.

On the shaft *d*, is a double cam D, Fig. 2, which moves the levers E, E, alternately, accordingly as it revolves in one direction

or the other. The levers E, E, have their fulcrum upon the rock-shafts *e, e*, and as the levers are moved up by the motion of the said cam D, they force up the shaft *f*, upon which is placed an eccentric F, which drives up the followers *g, g*, and presses the under side of the clay in the molds. The cam F, rests upon a rounded shoulder, near the fulcrum of the levers E, E, and moves up and down through, and is guided by the slot G, in the frame of the machine, and falls by its own weight as it is gradually relieved by the lowering of said levers operated upon by the cams as before described.

On the two small rock shafts *h, h*, I arrange the springs *i, i*, for catching the levers E, E, as they descend, and which are so arranged by means of the arms H, H, and connecting rolls J, as that the lever in falling upon one of said springs, will cause the other spring to raise up the opposite lever, so as to bring it in proper position for the cam to act upon it, when the motion of the cam is reversed by the action of the change wheel.

On the ends of the shafts *e*, I arrange the cranks K, K, and to the crank pins of said cranks, I attach by one of their ends, the connecting rods *k, k*, the other end of said connecting rods, being attached to the cross-head L, which moves up and down through the slots *j*, in the frame of the press. On the aforesaid cross-head L, is arranged the upper followers *l, l*, which by the operation of the rock shaft *e*, cranks K, K, and the connecting rods *k, k*, are brought down to the top of the mold, at nearly the same moment that the pressure is put on below by means of the double cam and levers as before described.

To the face of the upper followers, I arrange a guard plate or shield *m*, secured to the follower, by a helical spring M, and kept in place by guide pins fitting into holes in the follower. This guard projects from the follower sufficiently far to cover the top of the mold, before the follower is forced down, and protects the clay from being forced out of the molds by the pressure from below, as well as relieves the molds from the sudden pressure of the follower, or the unequal pressure arising from stones or any hard substance which may accidentally get into the molds, by the yielding of the springs aforesaid.

On the cranks K K are two upright pins *n n* to the top of which are secured so as to move freely, connecting rods *o o* which have their ends attached, respectively, one on said pins, the other, by means of a short crank to the standard N. The lower end of the standard N, rests in a socket P, in which it moves freely, and the upper end is secured by a dead-eye (in which it turns) attached to the frame. Near the top of this standard is an arm Q which moves close to the upper surface of the carriage containing the molds and as the cranks K K move down, after having pressed the clay in the molds, it throws the arm forward over the molds by means of the small crank and connecting rod aforesaid, just in time to remove the brick from the mold carriage, after it has been forced from the molds by the two uprights *q q* operated as will be hereinafter described. The uprights *q q* have their support in a cross bar R and move freely through a sleeve arranged on top of said bar, and are forced up at the proper time by means of the pins *r r*, one in the shaft S, the other in the end of the levers E E coming in contact as said levers E E are lifted by the action of the cam D and which causes the shaft S to rock on its axis. On this shaft S is an eccentric arm T which catches under the rod which connects the two uprights, and forces them up against the bottom follower and pushes the pressed brick out of the molds, when it is immediately removed by the arm Q as hereinbefore described and may be carried off by an endless apron or other known means to the kiln.

The carriage containing the molds is moved back and forth alternately and at proper interval to allow the pressing, &c., to take place, by means of the change wheel before described acting with the cog wheel C, to which it may be attached (though here represented as being on the same shaft) which meshes into the spur wheel *c*. On the ends of the shaft of the spur wheel *c* and diametrically opposite each other are two eccentric arms *t*, one of which is shown in dotted lines in Fig. 2, which strike alternately against two levers *v* placed at right angles to each other on the ends of the shaft of the small cog wheel U and cause said cog wheel to make a portion of a revolution sufficient to bring the molds in the carriage immediately in the plane of the followers by means of the rack *u* on the under side of said carriage into which rack said cog wheel U works and where the clay is pressed by the action of the levers E E operated upon by the double cam on the shaft of the spur wheel *c*, as hereinbefore described.

V V V are rollers upon which the carriage of molds runs, said rollers having flanges upon them which also guides the car-

riage in the proper line of the molds. At each end of the carriage is a projection W, which supports the guard of the upper follower and prevents it from being forced down by the helical spring below the face of the carriage when said carriage has run its extreme distance from one end of the press to the other.

On the center of the two shafts *w w* which have their bearings in the frame of the press are arranged the arms X X, which are jointed to the connecting rods *x x*, as seen at *y* at one end, and these connecting rods are connected by an eye Y at the other end to a thin steel sliding plate or gate Z which moves back and forth under the clay-ducts *z z* by means of the rocking motion of said shafts *w w*, said sliding plate or gate having holes through it corresponding in size exactly to the size of the mold and being moved forward to open or back to close the communication between the clay-ducts and the mold at proper intervals as the machine is pressing at one end or the other, and which is represented as being closed at *a'*.

At each one of the opposite ends of the shaft *w w* and outside of the frame of the press are two curved eccentric arms B' C' (the latter being shown by dotted lines in Fig. 2) which move freely on the shafts *w w* when forced in the direction of the arrows and which are operated upon by the pins *c' c' c'* on the axis of the cog wheel C, said pins being set on the axis of said wheel at such intervals as will mesh with the eccentric arms B' C' before described. And when the motion of the cog wheel C is in a contrary direction to the arrows the pins *c' c' c'* forces the arm C' against a pin *y'* in the square lever *z'*, Fig. 1, and, also, shown by dotted lines in Fig. 2 and by means of the arms X X and connecting rods *x x* attached as at Y *y* and to the shafts *w w* will move the steel plate or gate Z back or forth as the communication between the clay ducts and the molds are to be closed or opened as before described. On these same shafts *w w* and inside of the frame of the press are the cams D' D' which, by the rocking of said shafts *w w*, are brought down against the curved arms E' E' alternately as the machine is pressing at one end or the other and raises or lowers said curved arms for purposes to be hereafter described.

The curved arms E' E' are secured at one end to a rod *d'* which passes through from one side of the frame to the other and is secured by nuts screwed up against the frame and upon which said rod the said curved arms freely move as they are operated upon by the cams D' D' on the shaft *w w* before described. The other end of said curved arms E' E' are attached by an open eye or hook to a wrist *e'* on the con-

necting rods $F' F'$ and which connecting rods shown by dotted lines in Fig. 2 have their upper ends (by means of an open eye) hooked over the crossheads G' which move in and are guided in their motions by the slots $f' f'$ in the frame of the machine. On these crossheads G' are firmly attached two rods $g' g'$ working perpendicularly through the sleeves $h' h'$ in the top of the clay-ducts.

10 On the lower ends of these rods I arrange a cutting apparatus H' , Fig. 6, the sides and diagonal arms of which are made of steel and their top and bottom edges so as to pass freely through the mass of clay in the clay-ducts both in descending and ascending.

As the cams D' are brought against the curved arms E', E' , by the rocking motion of the shafts w, w , the arms are forced down, which by means of the connecting rods F', F' , brings down the cross heads G' , together with the rods g', g' , which are attached to them, and by means of the knives on the lower ends of said rods, blocks off a sufficient quantity of clay to fill the molds—thus at all times securing the filling of the molds with regular quantities of clay. As the clay is cut off, the steel slide or gate before described opens the communication between the clay-ducts and the molds and allows the clay to drop into the mold. After the cam D' ceases to operate upon the curved arms E', E' , as before described, the cross-heads with the rods g', g' attached is forced up by means of the spring i' , attached to the frame of the machine, which brings the cross-head with its connections in proper place to be operated on again by every succeeding motion of the machine.

The bottom part of the mold which moves up and down through the mold as the clay is pressed, and the brick delivered, has an angular groove in its side, into which fits a corresponding angular ledge made on the side of the mold, near the bottom, as seen at J' , Fig. 4, on which it slides or moves freely, and which prevents said movable bottom from dropping below the mold carriage as it moves along.

On the driving shaft A , which communicates motion to the several parts of the machine, is arranged at a suitable distance between the bearings of said shaft a chain wheel K' , the teeth of which are so adjusted as to catch into the open links of the chain k', k' , which passes over it, and thence over the friction pulleys L', L' , to another chain wheel M' , similarly constructed, on a vertical shaft l' , which has its lower end supported by a step m' , in which it turns, and its upper end passing through a box N' , which is secured to the cross beam n' , in a slot cut in said beam. On the lower part of said shaft l' , is a spiral or screw flange o' , for forcing down the clay from the hopper

to where it is mixed and screened, and thence into the clay-ducts. P , is an inverted arm secured to and rotating with the shaft l' , for the purpose of mixing and loosening the clay at the mouth of the screw, and prevent it from choking the entrance to the screw.

The friction pulleys L', L' , are supported on an axis which passes through the bent arm p' , of a weighted lever Q' , which has its fulcrum on the standards q', q' , and as the driving shaft A , rises or falls by running on the inner or outer periphery of the teeth of the change wheel as before described, so the weighted lever also falls or rises thus keeping the chain always taut, and giving a uniform motion to the mixing apparatus before described. On the cross beams n' , is also secured a spring t' , which bears against the bent arm of the weighted lever aforesaid, and assists the said weighted lever in tightening the chain aforesaid.

Between the bottom of the screw and the top of the clay-ducts, is a space in which a curved arm R' Fig. 5 moves around, it being attached to the shaft l' , and rotating with it. This curved arm R' has spaces r', r' , &c., cut out of its under side, so as to pass the stationary pins $s' s' s'$, which effectually mixes the clay before it passes through the holes S', S', S' , into the clay ducts to be conveyed to the molds as heretofore described. If the clay is very dry, or if desired for any other reason a screen may be placed below the holes S', S', S' , operated by being geared with any portion of the moving parts of the machine.

As the general operation of the machine ceases with the last bricks pressed, and it is necessary that said last brick should be removed from the mold—for this purpose I have arranged the stationary bar u' , with its curved ends v', v' , which when the carriage to which it is attached runs out to its extreme distance strikes against the spring w' , on the cam F which causes said cam to rock. Attached to the cams F, F , are levers x', x' Fig. 2, the bent ends of which passes under the levers E, E , and when said cams F , vibrate, it raises up the levers E, E , by means of said bent levers $x' x'$, and brings the pins r, r , in contact, causing the arm T , on the shaft S , to force up the uprights q, q , which in turn forces the last bricks from the molds and throws them off by the arms Q as fully shown.

Having thus fully described my invention, what I claim therein as new, and desire to secure by Letters Patent is—

1. I claim in combination with the clay ducts and alternating carriage of molds—the rods g' , with their knives H' (for the purpose of cutting off and forcing into the molds the regular quantity of clay)—and sliding plate or gate Z , for the purpose of

opening and closing the communication between the clay ducts and molds as herein described and represented.

2. I claim the arrangement of the pins
5 *n, n*, connecting rods *o, o*, and standard *N*,
with its arm *Q*, for the purpose of removing
the brick after it is raised from the molds,

when the same are operated by means of the
cranks as herein described and shown.

J. SCHEITLIN.

Witnesses:

CHAS. W. WELSH,
A. B. STOUGHTON.