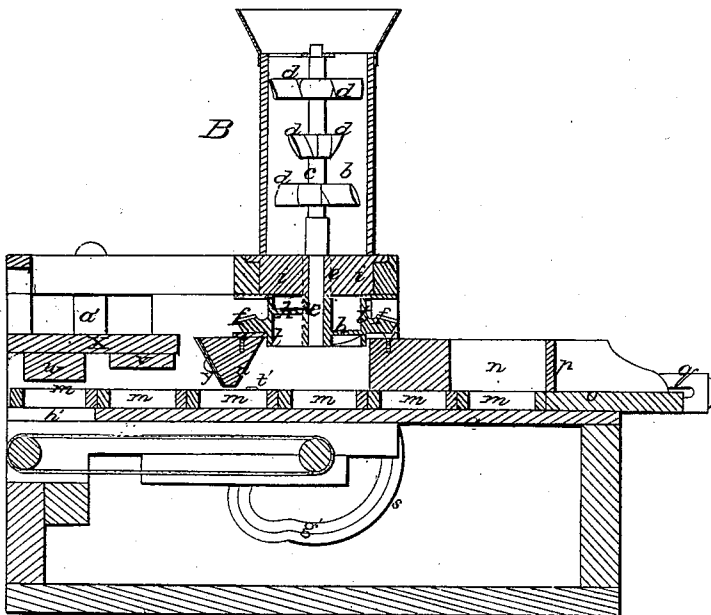
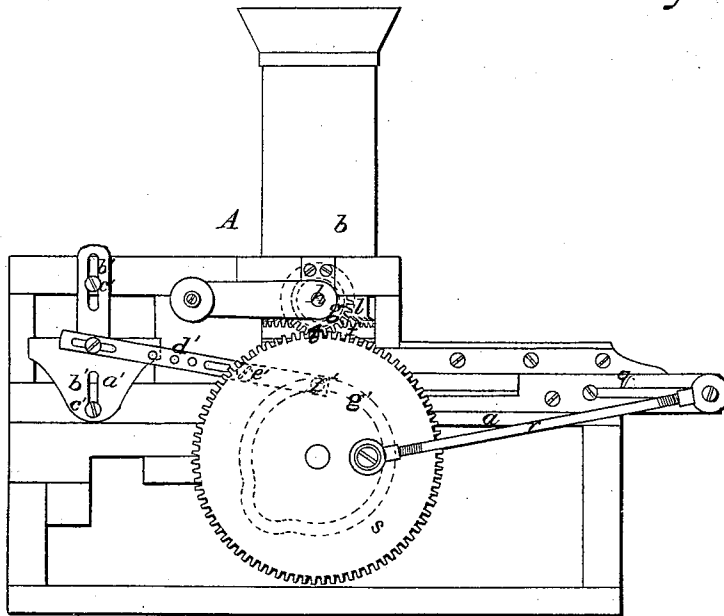


D. Wellington,
Brick Machine.

No 81,313.

Patented Aug. 18, 1868.



Witnesses

*L. B. Hilder
M. W. Frothingham.*

Inventor

*D. Wellington,
by his Attys,
Brody Halstead & Poole*

United States Patent Office.

DARIUS WELLINGTON, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 81,313, dated August 18, 1868; antedated August 6, 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, DARIUS WELLINGTON, of Boston, in the county of Suffolk, and State of Massachusetts, have invented an Improved Brick-Machine; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practise it.

My invention relates to an organization of mechanism for converting clay into bricks for burning, and the invention consists in the peculiar combination and arrangement of parts by which the crude clay, after being divided and pulverized in a pug-mill, is fed from thence into a series of moulds, automatically and successively brought under and fed from the mill, and is solidified in the moulds and ejected from them, the surface of the mould, after being filled, being passed under a cutter, which cuts off the clay in the mould from that above it, and then under a throat-piece, which presses the loose clay into any unfilled parts of the mould, and then under a scraper, which smooths the surfaces of the bricks, and scrapes all projecting pieces or edges of clay from the mould.

The drawings represent a machine embodying my invention—

A showing a side elevation, and

B a vertical longitudinal section of the same.

a denotes a strong bed, supported on a suitable frame, and extending nearly from end to end of the machine. Over this bed is erected a pulverizing-mill, *b*, in which is a vertical rotary shaft, *c*, carrying a series of inclined blades, *d*, which, in their rotation, not only divide or break up the crude clay entered at the mouth of the mill, but press it downwards towards the bed.

This shaft is supported in a bearing, *e*, on the framework above the bed *a*, and carries at its foot a bevel-gear *f*, which meshes into and is driven by a bevel-pinion, *g*, on the driving-shaft *h*.

At the lower part of the mill, a stationary wing, *i*, stretches across from the hub or bearing *e* to each side of the mill, and the pulverized material pressed down by the blades *d* is stopped from further rotation by these wings, and collecting against them, is caught by the upper edge of a screw-blade, *k*, bounded by a ring or cylinder, *l*, this screw-blade, in its rotation, pressing the clay down against and into the moulds beneath.

The moulds *m m* traverse over the top surface of the bed *a*, and between suitable guides or ways, which keep the moulds in position as they slide over the bed.

The moulds fit into a square opening, *n*, and drop through the same on to the bed *a*. In rear of this opening is a reciprocating plate or follower, *o*, the front end of which, as the follower goes back, comes under and flush with the rear wall *p*, allowing an empty mould to drop through the opening *n* down upon the bed.

As the follower goes forward, it pushes the mould before it, so as to carry said mould just from under the opening and sliding it from under the mould, resting upon it, which mould falls down upon the follower, and when the follower next goes back, falls down in front of it upon the bed *a*, its movement forward, by the next forward movement of the follower, carrying the mould, in advance of it, under the mill, where the rotation of the screw-blade fills it with clay.

The follower is attached to slides, *q*, on opposite sides of the machine, and these slides are connected by connecting-rods *r* to geared crank-wheels, *s*, meshing into and driven by a pinion-gear, *t*, on the driving-shaft.

The shaft of the crank-wheel is so hung that when the connecting-rods are moving forward to advance the follower and moulds, they are in line with the slides *q*, and thereby prevent that strain upon the slides and follower which would take place were the connection otherwise made.

The mould under the mill being filled, it is pressed forward by the empty mould next in rear of it, and as it moves on, it passes under a scraper, *u*, which cuts the clay in the mould off from the mass of clay above. This leaves the mould charged, except on its sides, where the clay may not fill out closely, or may be drawn back as the mould moves under the scraper. I therefore place an inclined throat-piece, *v*, in front of the scraper, and as the loose clay above the mould hugs down under this throat-piece, it is again compressed down

against the mould, and fills all interstices left therein, an adjustable knife or "doctor," *y*, then trimming off all surface clay as the mould passes under it.

The filled mould passes beyond the "doctor," and is brought to a state of rest (as the follower *o* moves back) directly under a vertically-reciprocating plunger or compressor-block, *v*. This block and a discharge-block or piston, *w*, are fixed to the under surface of a platen, *x*, at the opposite ends of which are fixed slide-plates *a'*, having vertical slots *b'*, through which project guide-screws *c'*.

To each plate *a'* is jointed a lever, *d'*, turning on a fulcrum, *e'*, and carrying at its rear end a pin, *f'*, projecting into a cam-groove, *g'*, on the inner face of the gear-wheel *s*, the cam-groove being concentric with the axis of the gear, excepting in that part thereof acting upon the pin, while the follower *o* is retreating and the moulds are at rest.

As the follower first begins to retreat, the cam forces the adjacent end of the lever up, and thereby depresses the opposite end, carrying the block *v* down into the filled mould beneath it, and compressing or solidifying the clay in the mould, the block being raised by the continued action of the cam as the follower completes its retreat.

The next forward movement of the follower carries the mould with the solidified clay under the discharge-block *w*, where it stops (as the follower retreats) while the discharger *w* descends. This forward movement of the mould carries it beyond the bed *a* (over which it has previously slid through all its intermittent movements) on to side rails *h'*, leaving the mould open at its under surface. The discharged plunger then descends, and ejects the clay from the mould in the form of a smooth, compact, solid brick, the bricks falling upon an endless apron, *i'*, by which they may be conveyed to any desirable locality for drying.

The next forward movement of the moulds pushes off the empty mould, which is then returned to the mouth or opening *n* to be refilled.

The mechanism organized substantially as shown, may be used in the conversion of peat into portable blocks for fuel, as well as for the manufacture of bricks.

I claim, in combination with the follower, (which intermittently feeds forward the series of moulds,) and with the rotating pulverizing-blades *d* and feed-screw *k*, (which break up the clay and force it into the moulds,) the scraper-bar *t'*, the throat-piece *u*, and the "doctor" *y*, each arranged to operate substantially as set forth.

Also, in combination with the reducing and feeding-mill *b*, and with the mould-feeding mechanism, the solidifying-plunger *v*, and expelling-plunger *w*, when arranged to operate substantially as described.

Also, the arrangement of the bevel-gear *f*, at the bottom of the pulverizing and mould-filling mill *b*, to be driven by a pinion, *g*, on the driving-shaft, just above the bed *a*, substantially as described.

Also, the arrangement of the crank and cam-wheel *s*, connecting-rod *r*, slides *q*, lever *d'*, and slide-plates *a'*, for driving the follower *o* and plungers *v w*, substantially as described.

DARIUS WELLINGTON.

Witnesses:

J. B. CROSBY,
FRANCIS GOULD.