

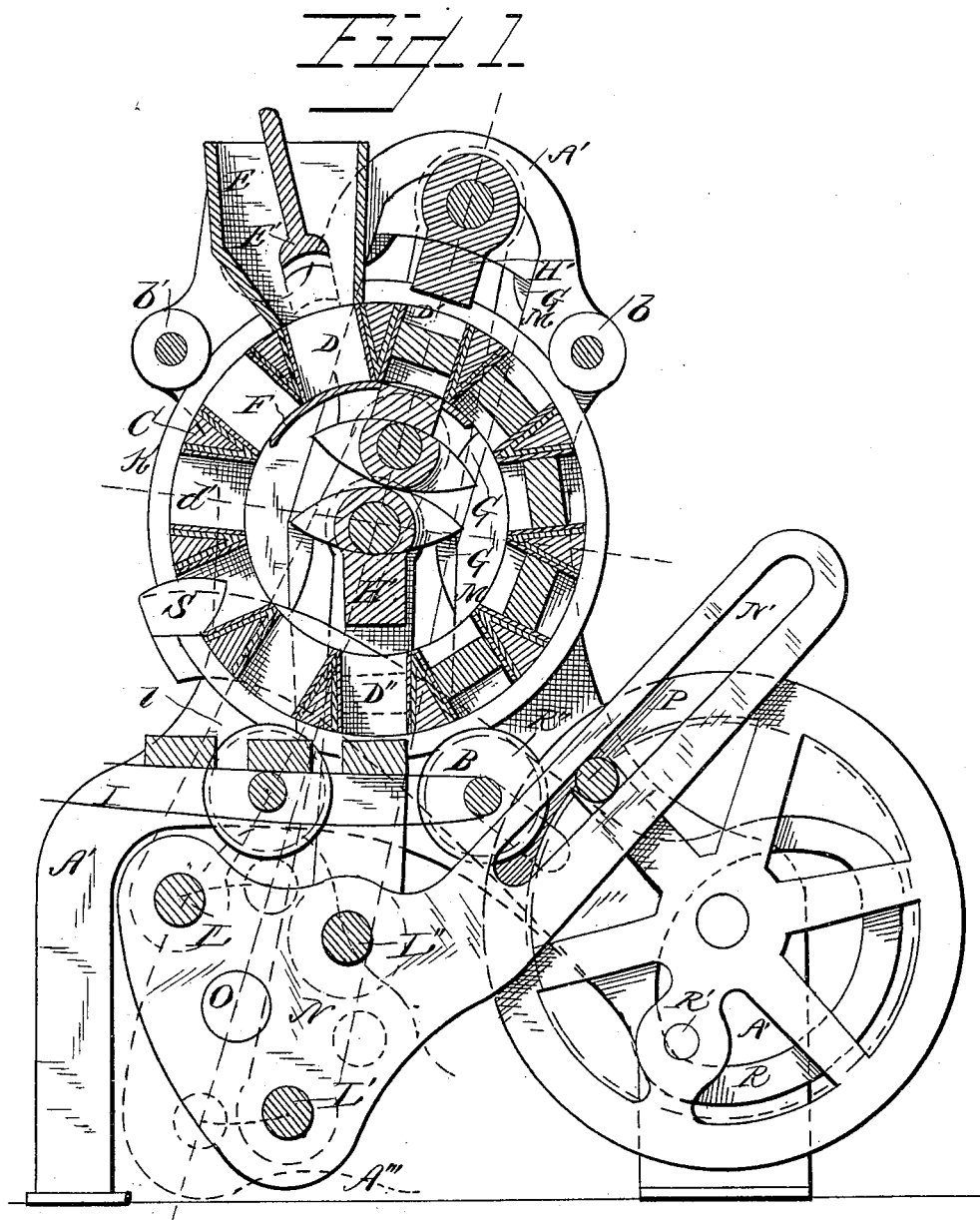
(No Model.)

2 Sheets—Sheet 1.

W. ANDRUS.
BRICK MACHINE.

No. 267,392.

Patented Nov. 14, 1882.



Witnesses:
F. L. Curand
C. J. Williamson.

Inventor:
Wm Andrus.
By Saml. J. Wallace,
Atty.

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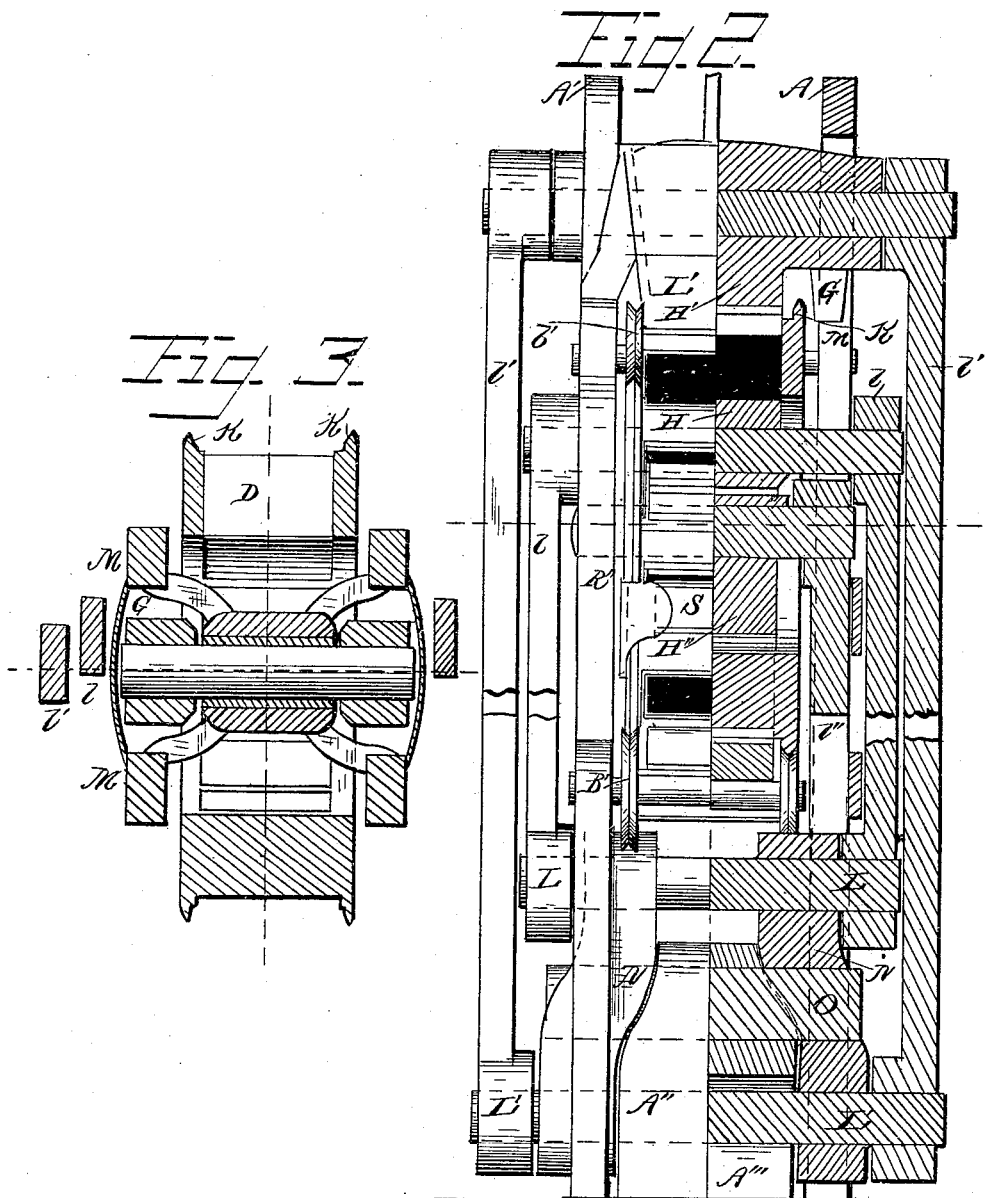
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UNITED STATES PATENT OFFICE.

WILLIAM ANDRUS, OF KEOKUK, IOWA.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 267,392, dated November 14, 1882.

Application filed July 24, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ANDRUS, a citizen of the United States, residing at Keokuk, Iowa, have invented a new and useful Improvement on Brick-Machines, which is made substantially as set forth hereinafter, referring to the accompanying drawings, in which—

Figure 1 is a sectional elevation of the brick-machine as improved. Fig. 2 is an elevation of same at right angles to Fig. 1, one-half in section. Fig. 3 is a horizontal section of a portion of same.

This invention consists in an improved machine for molding pulverized clay under great pressure into brick, having the features hereinafter set forth and claimed.

The machine has a main frame, A A' A'', to which the other parts are connected and held, and which rise from a common base-plate, A'''. The frame bears wheels B B', on which is borne a mold-frame, C, in the form of a wheel set to turn upon them by V-shaped bearings, as shown. The guide-wheels b b' hold the frame true in place, while allowing it to turn freely upon the lower wheels.

The mold-frame C bears molds D, arranged radially, with their walls forming the annular frame or ring, and they open freely to the central space and outward.

The clay for forming the brick is put into a hopper, E, held by frame A, so that the molds pass under it in rotation as the mold-frame turns, so as to be filled one after another. In this hopper is a plunger, E', arranged to move up and down. This plunger is made of approximately the shape of the mold, and its face is made concave, as shown, so that its corners, ends, and sides will come down nearer to the mold than in the center, and when it moves down almost to the top of the mold without entering it, it will compress the clay more fully into the corners, ends, and sides of the mold than into the central portion, and cause the brick to come out more perfect at the corner edges from the increase of their solidity. A plate, F, is fixed upon the main frame so that the mold being filled will come over it closely, so as to form a bottom for it, while it fills and as it moves until in the position D', where a plunger, H, fitting in the plate F, takes its place, as a bottom to the mold, and rises through it to press the brick from below. When in

position D' a top plunger, H, comes down and presses the clay into the mold against the rising plunger H. The two are arranged to press the brick between them equally from above and below. When the clay is compressed into a brick in the center of the mold, as shown in section in Fig. 1, the plungers H H' withdraw, and the table is turned to bring another mold into position under them, and another under the hopper E, to be filled with clay. This process is continued at a suitably-rapid rate, and when the pressed brick reaches the bottom at position D'' another plunger, H'', descends onto it and pushes it out onto the traveling-belt I, which carries it away to a suitable position, where it is taken off for hacking up.

The mold-frame has a raised rim, K, on each side, set back from the edge of the molds, and with a V-beveled edge. This fits into guide-grooves on the wheels B B' b b', and the clay-hopper E fits down between them, so that the clay will not work out sidewise onto any of the journal-bearings.

The plungers H H' H'' have bars of heavy steel through their tops, and have bars pivoted on their ends, so as to move them as required. They also have guide-heads fitting against guideways M in the main frame, which hold them in position so as to enter the molds correctly, and move up and down in them without strain on the molds. The plunger H connects with pivot L in the lever N below by bar l, so that when that lever turns on pivot O, held by part A''', it will be moved from the position shown in Fig. 1 in full lines to that shown in dotted lines in that figure, and in full lines in the lower part of Fig. 2, and push the plunger H up into the mold at D', while the contrary motion of the lever will withdraw the plunger from the mold to the first position. The plunger H' connects with pivot L' by bars l' in like manner, so that when the lever turns as before it brings the parts into corresponding positions and draws the plunger H' down into the mold as plunger H rises into it. The plunger H'' connects with pivot L'' by bars l'' in the same lever, which, by a corresponding motion, pulls the plunger H'' down into mold D'' as the other two plungers are drawn into mold D'.

The lever end is bifurcated at its back end

to pass on each side of support A''', and be held by pivot O without interference with the pivots L L' L'' borne by it and their connecting-bars, which are arranged upon the outer faces, so as not to interfere with the movements of each other, as shown. This lever N has a slotted arm, N'. Into the slot of this arm fits the crank of main drive-wheel P, so as to move the arm up and down as the wheel turns, and so that the several operations of pressing and pushing out of the brick will take place at each full revolution of the drive-wheel, and the parts all returned to their previous places ready for a new action.

Over the shaft of wheel P is a yoke, R, and pin R' projects from the wheel to engage with inner surface of this yoke as the wheel turns, and the yoke is formed so that it will be moved in a peculiar way by this pin as the wheel turns, to turn the mold-frame the distance of one mold and hold it so the plungers will properly enter the next mold. On the yoke is a lever, R'', having a slot fitting over the shaft of wheel B or other suitable part, so as to act as a guide for the lever to be pushed along upon by pin R' at the same time it is turned upon this shaft as a pivot. The other end of this lever has a head, S, fitted to enter and fit the mold, as shown, and so that as the lever is pushed it will push that mold the proper distance ahead. The form of the yoke is arranged so that when the part S is ready to enter a new mold the lever will be turned to push it into the mold, and will turn to follow up the change of position of the mold as the table or frame turns, so as to hold it into it, and so that when the part S is ready to leave the mold the lever will be turned the other way, so as to pull it out and hold it out till the lever is drawn back to the position of a new mold.

Several of the parts may be varied or modified in form and action, so as to produce varied effects upon substantially the same principle, so that I do not confine myself to the exact forms shown.

I claim—

1. The combination of plunger E', having concave face with the clay-hopper E and the mold-bearing frame C, arranged so that it will press clay into the mold and force a greater proportion into the mold ends than into the center without entering the mold.
2. The combination of lever N, pivoted at O, with plungers H H', connected directly thereto by link-bars and pivots, and arranged to move in opposite directions at one time by its motion to press a brick upon opposite sides.
3. The combination of annular mold-ring C with lever N, having pivot O and plungers H H' H'', connected to it by link-bars and pivots, and arranged to move in the molds in different directions at one time to compress a brick in one mold and to discharge one from another.
4. The combination, with the annular mold-frame and the drive-wheel, of a sliding lever, R'', having yoke R on one end and projection S on the other end for engagement with a mold-cavity, whereby the mold-frame is driven one step in its revolution.
5. The combination of a drive-wheel having crank-pin P with lever N, having slot N' therefor, and having pivot O and link-bar connections, arranged to operate two brick-mold plungers in opposite directions at one time from the motion of the drive-wheel and lever.

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Witnesses:

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