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[illegible]

UNITED STATES PATENT OFFICE.

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BRICK-MACHINE.

Specification of Letters Patent No. 20,109, dated April 27, 1858.

To all whom it may concern:

Be it known that I, J. Z. A. WAGNER, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and Improved Machine for Molding and Pressing Bricks; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a side sectional elevation of my invention taken in the line x, x , Fig. 3. Fig. 2, is a transverse vertical section of ditto taken in the line x, x , Fig. 3. Fig. 3, is a plan or top view of ditto. Fig. 4, is a detached view of the device employed for detaching the molded clay, from the wheel over the endless apron.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in the employment or use of two wheels, the peripheries of which are notched or recessed, in such a way as to form, as the wheels rotate and the projections formed by the notches come in contact, rectangular chambers or molds into which the clay is compressed by the rotation of the wheels which work through the lower part of a hopper in which the clay is placed.

The invention also consists in using in connection with the wheels above mentioned, an adjustable hopper arranged so as to form sides to the molds and prevent the lateral escape of the clay therefrom while being compressed.

The invention also consists in using in connection with the wheels a device for detaching the molded clay or bricks from the wheel which conducts the bricks to the endless apron, by which they are conveyed out from the machine.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A represents the framing of the machine which may be constructed in any suitable way to support the working parts.

B, B', are two shafts which are placed transversely in the framing one at each end and parallel with each other. On each of these shafts a wheel is placed, on the shaft B and wheel C, and a wheel C', on shaft B'. The peripheries of these wheels are made of such a width as to correspond to the length of a brick and the peripheries of both wheels are notched or recessed entirely around each

recess being so formed as to leave a plane bottom a , and one side b , at a right angle with it, see Fig. 1, the sides b , projecting from the bottoms a , a distance equal to the thickness of a brick, the bottoms a , leaving the same area as the top or bottom surface of a brick. The recesses in the two wheels C, C', correspond precisely with each other in position and size.

On one end of each shaft B, B', a bottom wheel D, said wheels gearing into each other, and on the opposite end of the shaft B', a trotter wheel E is placed into which a pinion F on a driving shaft G gears.

H represents a hopper which is formed of two longitudinal parts the ends of which overlap each other as shown at c , and are connected by set screws d . The lower end of each part or half of the hopper has a horizontal flanch e , formed on it, and these flanches are attached by screws f to flanches g , at the upper ends of plates I, I', placed one at each side of the wheels C, C'. These plates are each connected to the framing A by screws h , by regulating which the plates as well as the sides of the hopper may be adjusted as close to the sides of the wheels C, C', as occasion may require.

The inner edges of the wheels C, C', pass through the ends of the hopper H and the plates I, I, serve as side pieces to the notches or recesses of the wheels at the inner ends of the wheels. To one side of the wheel C, a wheel J, is attached concentric with the wheel, C. The wheel J, has teeth i , attached radially to its periphery.

K, is a vertical rod which is fitted in guides j , and allowed to slide freely up and down therein. The lower end of the rod K is wedge shaped see a^* Figs. 2 and 4, and it bears against a horizontal pin L which works through the plate I, at its lower end, the pin L being opposite the notches or recesses in the wheel C. To the rod K a horizontal arm k is attached, said arm crossing the periphery of the wheel J—and to the upper end of the rod K an arm k' is attached. A spiral spring l , is also placed around the rod K, said spring having a tendency to keep the rod elevated, and a spiral spring m , is placed around the pin L, the spring m , having a tendency to keep the pin thrown outward or free from the wheel C.

M is an endless apron which is placed below the wheel C.

The operation is as follows—The clay is

placed in the hopper H, and the pinion F, is rotated in the direction indicated by the arrow adjoining it, see Fig. 3. This pinion communicates motion to the wheel C', through the medium of wheel E, and the two wheels C, C', rotate in reverse directions toward each other as indicated by the arrows l, motion being communicated to wheel C, from wheel C', by the means of the wheels D, D. The clay passes down and is compressed between the two wheels, the notches or recesses forming molds as those of each wheel meet or coincide with each other. This will be clearly understood, by referring to Fig. 1, in which it will be seen that the recesses of the wheels as they meet, form rectangular quadrilateral chambers, and it will also be seen that the edges b, of the sides of the recesses first meet at the lower sides of the molds the clay being gradually compressed from the lower to the upper sides, so that all air can escape before the edges b, at the upper parts of the molds meet. The sides of the hopper H and the plates I, I', are adjusted snugly to the inner parts of the wheels so that the clay cannot be pressed out between the sides of the wheels and the hopper and plates. The compressed or molded clay follows or remains in the recesses of wheel C and as said wheel rotates the molded clay or bricks are detached or loosened from the wheel C by means of the pin L which is shoved around as each brick is brought in line with it, the pin being actuated in consequence of the teeth l' of wheel J, striking the arm k, and thereby depressing the rod, K the wedge a^x forces the pin L, against the bricks and lowering them so that they will fall on apron M, the spring m, forcing the pin L back each time the rod K, rises; the spring l, elevating the rod as the teeth l', leave or pass over the arm k.

This machine will work rapidly and well. The air has an opportunity to escape as the clay is molded and consequently the bricks will be molded with perfectly sharp corners and no air compressed within them. This is an essential feature in the machine, for by the ordinary machines air is frequently compressed within the clay there being no chance for it to escape from the molds and when the bricks are burned, the confined air as it becomes heated cracks the bricks owing to its expansive force. The machine as a whole is also extremely simple there being but few working parts and none that are liable to get out of repair.

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

1. Molding and pressing bricks by means of the two rotating wheels C, C', and hopper H, or its equivalent the wheels having their peripheries notched or recessed as shown so as to operate substantially as and for the purpose set forth.

2. Having the hopper H formed of two parts and arranged substantially as shown in connection with the plates I, I', so that the sides of the hopper and the plates may be adjusted to the wheels to prevent the escape of clay between their ends and the sides of the hopper and plates.

3. Pin L, operated from the wheel J, by the rod K, with its wedge a^x and spring l, substantially as shown, where said pin is used in connection with the molding and pressing wheels C, C', and hopper H or its equivalent, substantially as and for the purpose set forth.

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Witnesses:

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