

(No Model.)

M. CARROLL.

BRICK MACHINE.

No. 289,889.

Patented Dec. 11, 1883.

Fig. 1.

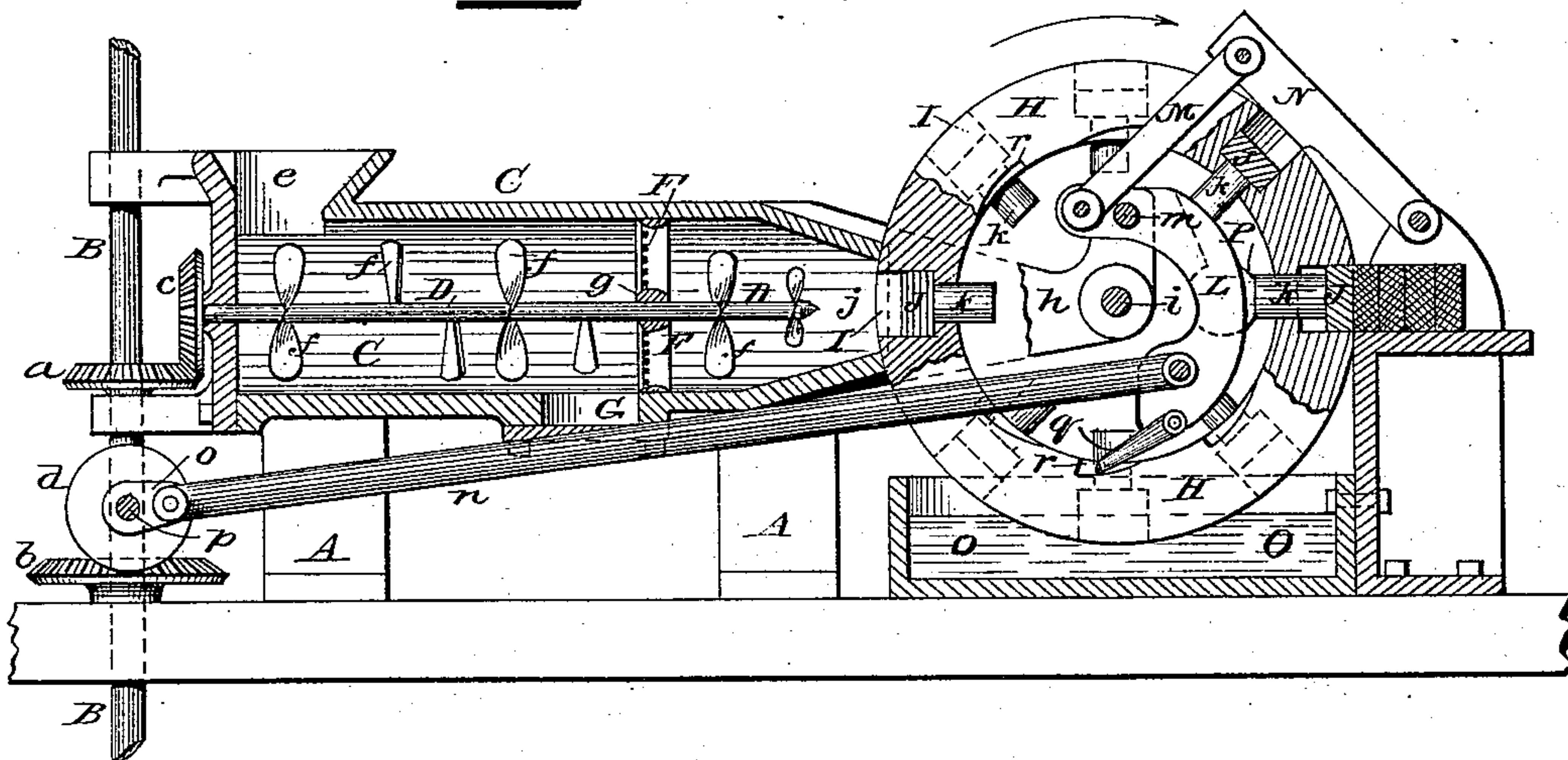
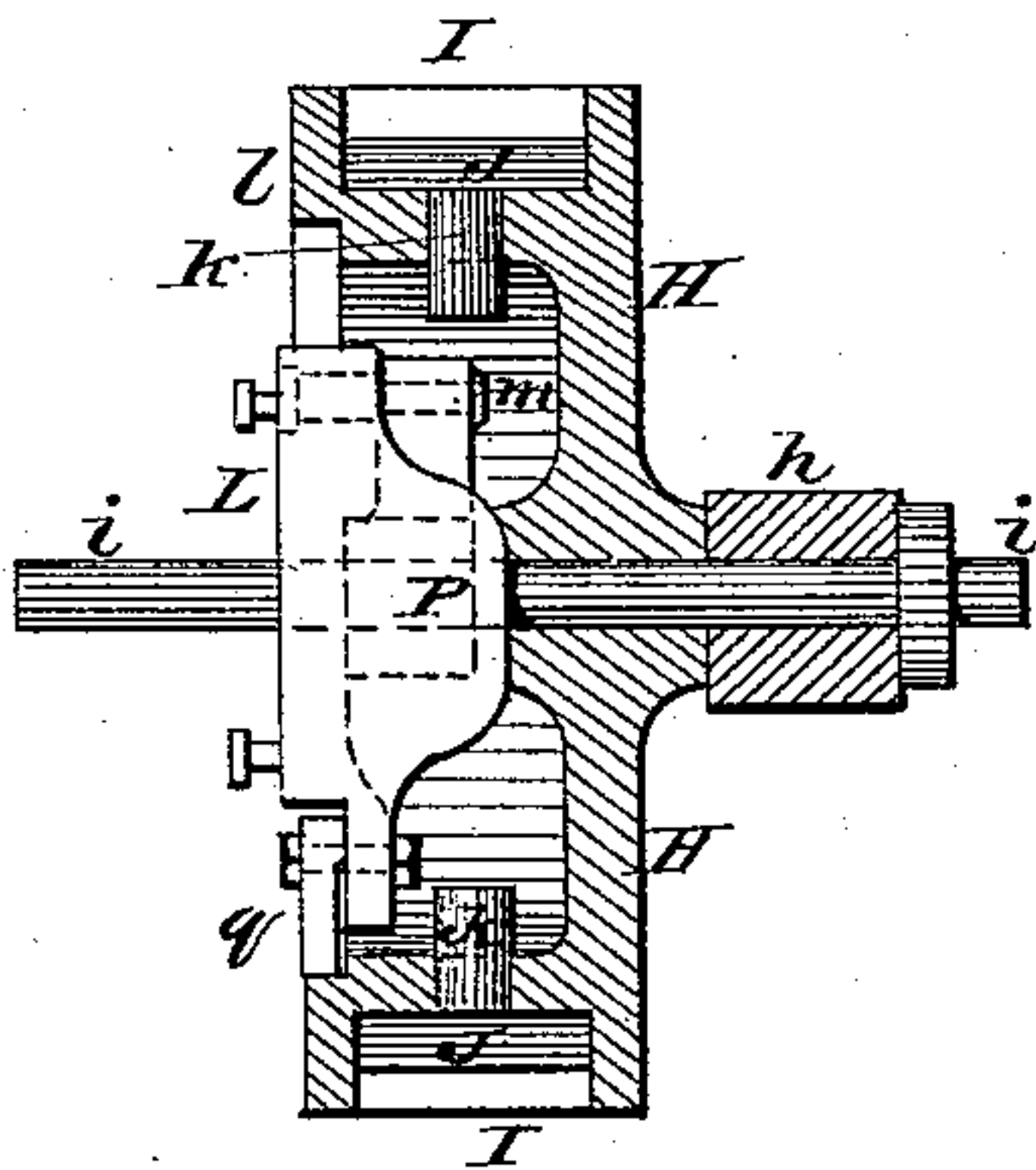


Fig. 2.



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MARTIN CARROLL, OF CHICAGO, ILLINOIS.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 289,889, dated December 11, 1883.

Application filed August 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, MARTIN CARROLL, of Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Brick-Machines, of which the following is a specification.

My invention relates to that class of brick-machines in which a rotating mold-wheel is employed; and it consists in a novel construction and operation of the machine, as hereinafter more fully explained.

In the accompanying drawings, Figure 1 represents a vertical longitudinal central section of my improved machine, and Fig. 2 a vertical cross-section of the mold wheel or cylinder and its operating devices.

The objects of this invention are to provide means for causing a positive feed of material to the molds, to insure a uniform and sufficient pressure upon both sides of the brick, to simultaneously discharge a brick already molded, and to cause the mold-wheel to revolve a proper distance each time. To accomplish these objects I adopt the construction shown in the drawings, in which—

A A represent legs or supports for the body of the machine, and B upright shaft by which motion is communicated to the machine, said shaft being provided with two bevel-pinions, *a b*, which mesh with similar pinions, *c* and *d*—one for operating the pug-mill and the other giving motion to the mold-wheel, in a manner presently explained.

C indicates a horizontal pug-mill, provided with a supply-hopper, *e*, and with a shaft, D, provided with blades or flights *f*, for working the clay and feeding it to the mold-wheel. The shaft D is journaled at one end in the pug-mill casing, and has at its other end a pinion, *c*, meshing with the pinion *a* of shaft B, as mentioned, while its forward end is supported by a cross-bar, *g*, of a grating or screen, F, as shown in Fig. 1, which screen prevents stones and lumps of dirt from being carried forward and incorporated in the bricks or interfering with the operation of the machine, the stones, &c., remaining behind the screen being removed from the casing through a door, G, in the lower side thereof, as shown in Fig. 1. The forward end of the main frame of the machine terminates in

arms or hangers *h*, in which the shaft or axle *i* of the mold wheel or cylinder H is mounted, said wheel being provided with any suitable number of equidistant molds or pockets, I, in its periphery, into which the clay is forced by the blades *f* through the mouth *j* of the pug-mill C. Each of the pockets or molds I is provided with a plunger, J, which is furnished with a stem, *k*, projecting inward through the annular rim or flange *l* of the mold-wheel, adapted to be acted upon and caused to compress and to eject the brick, as presently explained, the stems being prevented by set-screws or otherwise from leaving the wheel.

L is a lever pivoted to the arms *h* at *m*, above the center of the wheel, and connected by a pitman, *n*, and crank *o* to the shaft *p*, carrying bevel-pinion *d*, which latter transmits motion to the machine through said pitman. The lower end of the lever L is provided with a pawl or dog, *q*, which engages with ratchet teeth or notches *r* in the face of the rim of the wheel H, while at the other or upper end, above its pivot, said lever L is connected by a link, M, with the compressor N, which in turn is pivoted to the frame of the machine.

O represents a tank placed directly under the wheel, and supplied with water, through which the wheel travels to soak off and remove adhering clay.

The lever L is formed with a laterally-projecting face or wing, P, the upper portion of which, in connection with the compressor N, serves to compress the brick, while the lower end is so shaped as to simultaneously eject the brick which has been previously pressed and is contained in a lower mold by acting upon the inner end of plunger-stem *k*.

With the machine constructed as above described, the operation is as follows: Material being fed into the hopper *e* and motion communicated to shaft B, the clay is forced forward and squeezed through the grating, all stones, &c., remaining behind and the clay passing out through the mouth *j* into the mold I by reason of the action of the blades on the shaft D. During the filling of the mold the crank *o* carries back the pitman *n* and lever L, with its pawl or dog *q*, to engage a fresh tooth of ratchet-teeth *r*, and by the time that the

mold is full the crank and pitman move the lever L and pawl *q* forward and turn the wheel far enough to bring the next mold opposite the mouth of the pug-mill, which action
 5 is repeated until a filled mold comes under the compressor N. As the pitman moves backward to cause the pawl to take hold in a new tooth or notch, the upper end of the lever L is thrown down, carrying with it the com-
 10 pressor N, until the latter comes in contact with the face of the wheel H and forms the brick, the lateral bearing-face P of lever L causing the plunger or ejector J to be forced outward simultaneously with the inward press-
 15 ure by the compressor on the outer face, and thus producing equal pressure on both faces. The next movement of the lever L brings the mold containing the pressed brick on line with the table Q, and the plunger or ejector J is
 20 forced outward by the lower end of this lateral bearing-face P, and thus removes the brick entirely from the mold-wheel, leaving it standing upon the table, as shown. An endless carrier may be substituted for the carrier, if
 25 desired.

The simultaneous pressure upon both sides of the brick is a feature of importance, in that it causes the brick to be equally pressed from face to face, whereas pressure upon one face
 30 alone, or even pressure first upon one face and then upon the other, causes the bricks to be more solidified on one side than the other, and causes a warping or bending of the brick in burning, and gives two faces differing in ap-
 35 pearance, hardness, and finish.

I am aware that a mold-wheel has before been provided with ejectors and rotated by a pawl-and-ratchet mechanism, and this I do not
 40 broadly claim.

I am aware that in a press for forming concrete paving and building blocks composed largely of asphalt, which must be worked in a
 45 heated state, a mold-wheel has been arranged to rotate in a reservoir of cold water for the purpose of cooling the blocks and molds, and such

idea I do not claim; but I believe myself to be the first to arrange below the rotary mold-wheel of a brick-machine in which the molds are emptied before passing below the axis of
 50 said wheel a tank to contain water, whereby the molds are cleaned and all adhering matter removed.

Having thus described my invention, what I claim is—

1. The herein-described brick-machine, consisting of rotary mold-wheel H, pug-mill C,
 55 driving-shaft B, pitman *n*, lever L, provided with pawl *q*, compressor N, connected with said lever, and intermediate connections, substantially such as described and shown, connecting
 60 the driving-shaft with the pug-mill and pitman.

2. In a rotary brick-machine, the combination of a mold-wheel provided with ratchet-teeth and with radially-moving plungers in the
 65 mold-cavities, a pivoted lever provided with a pawl to engage with the ratchet-teeth and arranged to bear against the inner ends of the plungers successively, and an outside compressor connected with said lever, all substantially as shown and described.
 70

3. In a brick-machine, the combination of a rotary mold-wheel which discharges the brick before the molds pass below the axis of said
 75 wheel, and tank O, placed directly beneath said wheel and extending upward above the periphery thereof, whereby the empty molds are subjected to the action of the water and adhering matters removed.

4. The herein-described brick-machine, consisting of wheel H, provided with molds I and
 80 plungers J, pug-mill C, shaft B, pinions *a b c d*, crank *o*, pitman *n*, lever L, provided with pawl *q*, compressor N, link M, and tank O, all combined and operating substantially as set forth.

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Witnesses:

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