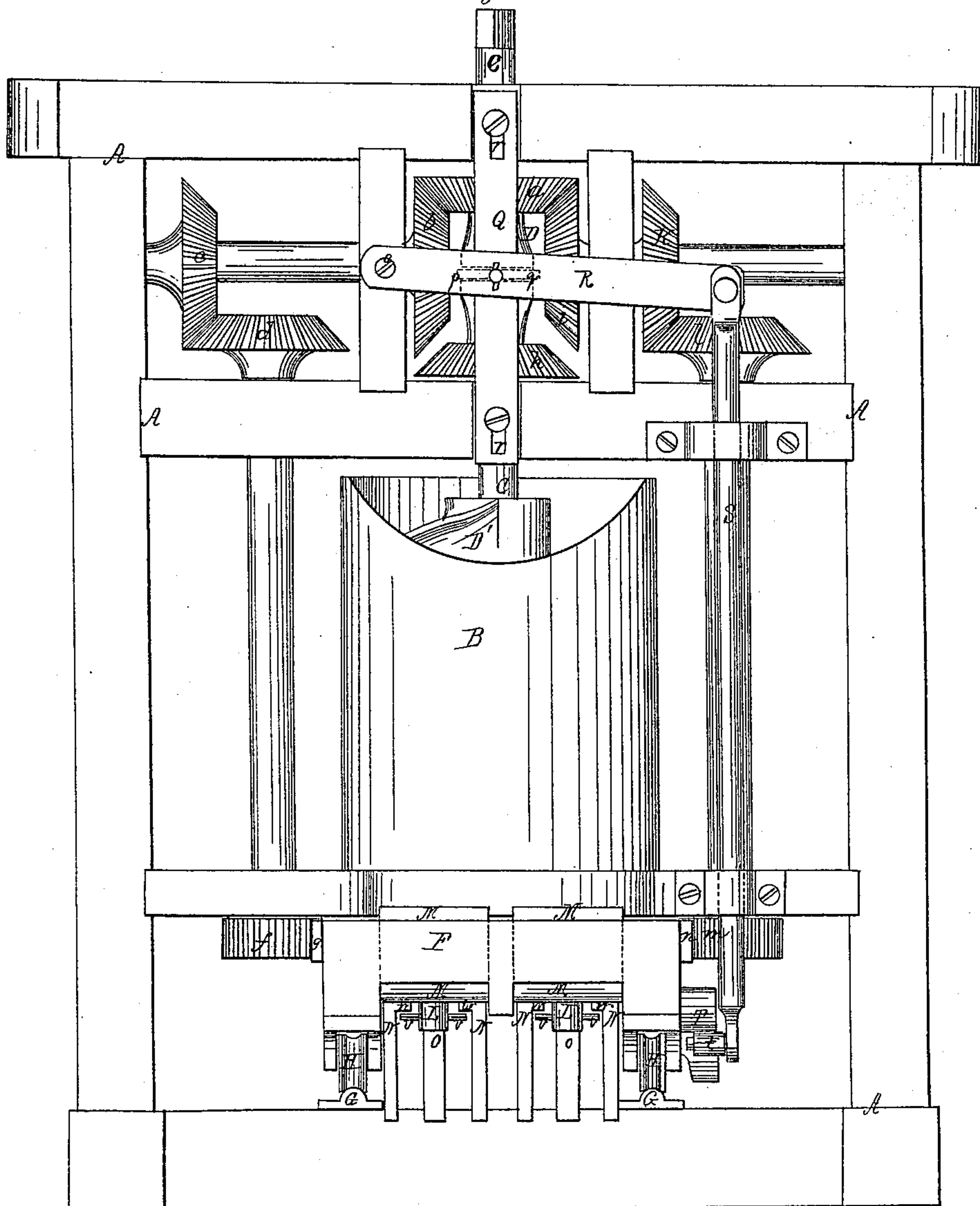


*E. R. Gard,
Brick Machine.*

N^o 52,156.

Patented Jan. 23, 1866.

Fig: 1



*Witnesses:
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S. Berne*

*Inventor:
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By his atty
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UNITED STATES PATENT OFFICE.

EMERY R. GARD, OF CHICAGO, ILLINOIS.

IMPROVED BRICK-MACHINE.

Specification forming part of Letters Patent No. 52,156, dated January 23, 1866.

To all whom it may concern:

Be it known that I, EMERY R. GARD, of Chicago, in the county of Cook and State of Illinois, have invented an Improved Brick-Machine; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being an end elevation of the machine; Fig. 2, a side elevation thereof, the frame being in section and the case of the pug-mill being removed to show the working parts inside, its position and form being shown in red lines.

Like letters designate corresponding parts in both figures.

In this machine I employ a reciprocating mold table or bed, E, in combination with a continuously-revolving spiral wing or wings, D, in the pug-mill, whereby I am enabled to make bricks of excellent quality without interruption by a very simple and compact machine.

The frame A is of suitable form and construction to mount the parts in, and requires no special description. An upright shaft, C, the upper end of which receives the sweep-lever or other means of applying the power, is located in the center of the pug-mill case B, and upon it is secured the spiral wing or wings D near the bottom of the pug-mill. The number of wings is not material; but nearly or quite the whole circle of the pug-mill should be covered thereby, and nearly at one height, so that as the shaft revolves in the proper direction the clay will be continuously driven downward by the wing or wings, and will be fed and pressed into the brick-molds in the reciprocating mold-table below with sufficient force to make the bricks very compact and solid. At the same time the force is not a positive but a yielding one, only the weight of the clay in the pug-mill and the downward action of the screw or spiral wings producing the force. Other auxiliary spiral wing or wings, as D', may be located on the shaft C above the regular wings D.

The reciprocating motion may be given to the mold-table E in various ways. That which I have represented in the drawings is by gearing from the upper end of the shaft C, substantially as follows:

A collar or sleeve, P, is located on the driving-shaft, so that it must turn with it, but may have a vertical sliding movement thereon. C the upper end of the sleeve is a bevel-gear wheel, a, and on the lower end another bevel wheel, h. On opposite sides, between these two bevel-gears, are two bevel-wheels, b i, c horizontal shafts, so arranged as to gear into the gear-wheels a h, the latter being at such a distance apart that only one can gear into the side wheels, b i, at once, so that by moving the sleeve P up and down the said wheels a will alternately be geared into the said wheel b i, as indicated in Fig. 1, and thereby drive the shafts of said wheels b i alternately in opposite directions. On those shafts, respectively, are other bevel-wheels, c k, gearing into bevel-wheels d l on vertical shafts, on the lower ends of which, respectively, are spur cog wheels f m, gearing into racks g n, respectively, on opposite sides of the mold-table E. Hence by alternately gearing the wheels a h into the wheels b i the mold-table E will be driven alternately in opposite directions and become reciprocating in motion, as desired, to deliver the bricks from the molds at both ends.

In order to shift the wheels a h alternately to the side wheels, b i, by automatic movement, the sleeve P is connected with a sliding bar, Q, by a yoke, q, reaching from said bar and clamping the sleeve in a groove, p, thereof. This sliding bar has slots r r moving over pins or screws so as to allow sufficient vertical movement for the purpose, substantially as indicated in Fig. 1. The bar is secured to a vibrating lever, R, one end of which pivots on a pin, a, and the other end to a connecting-rod, S, which extends down to the frame below, and has a projecting pin and friction-roller, t, which runs first under a guide-track, T, till it reaches a spring lifting-guide, U, which raises it up to the level with the top of the track-guide T. This lifting movement shifts the pinions a h, so that the latter gears into the side wheels, b i, and reverses the motion of the mold-table. The roller t then travels back on the top of the guide-track T till it reaches the other end, when the connecting-rod S falls by its own weight and shifts the gears a h again and reverses the motion of the mold-table, as before.

e mold-table has friction-wheels H H run on tracks G G. The mold-followers M M on tracks N N, so shaped as to lower them early in the molds when passing under the mill, and to lift them out of the molds at end for removing the bricks; or the followers may have projecting stems L L, Fig. 1, which run on suitable tracks o o under the ends of the followers. Through the stems of the followers pins v v, Fig. 1, extend transversely and reach under lips or ledges on the inner sides of the tracks N N and draw the followers in the molds and draw them out when required. Suitable striking-plates on the edges of the pug-mill strike off the plus clay and form the upper surfaces of bricks.

What I claim as my invention, and desire secure by Letters Patent, is—

1. The continuously-revolving spiral wing or wings D D, when applied to a mold table or bed, F, which has a continual reciprocating motion communicated to it by gearing, or the equivalent thereof, substantially as and for the purpose herein specified.

2. The combination of the pins v v in the projecting stems of the followers with the double ledges w w of the tracks N N, for the purpose herein specified.

The above specification of my improved brick-machine signed by me this 20th day of October, 1865.

E. R. GARD.

Witnesses:

C. D. WOLF,
S. H. ELLARD.