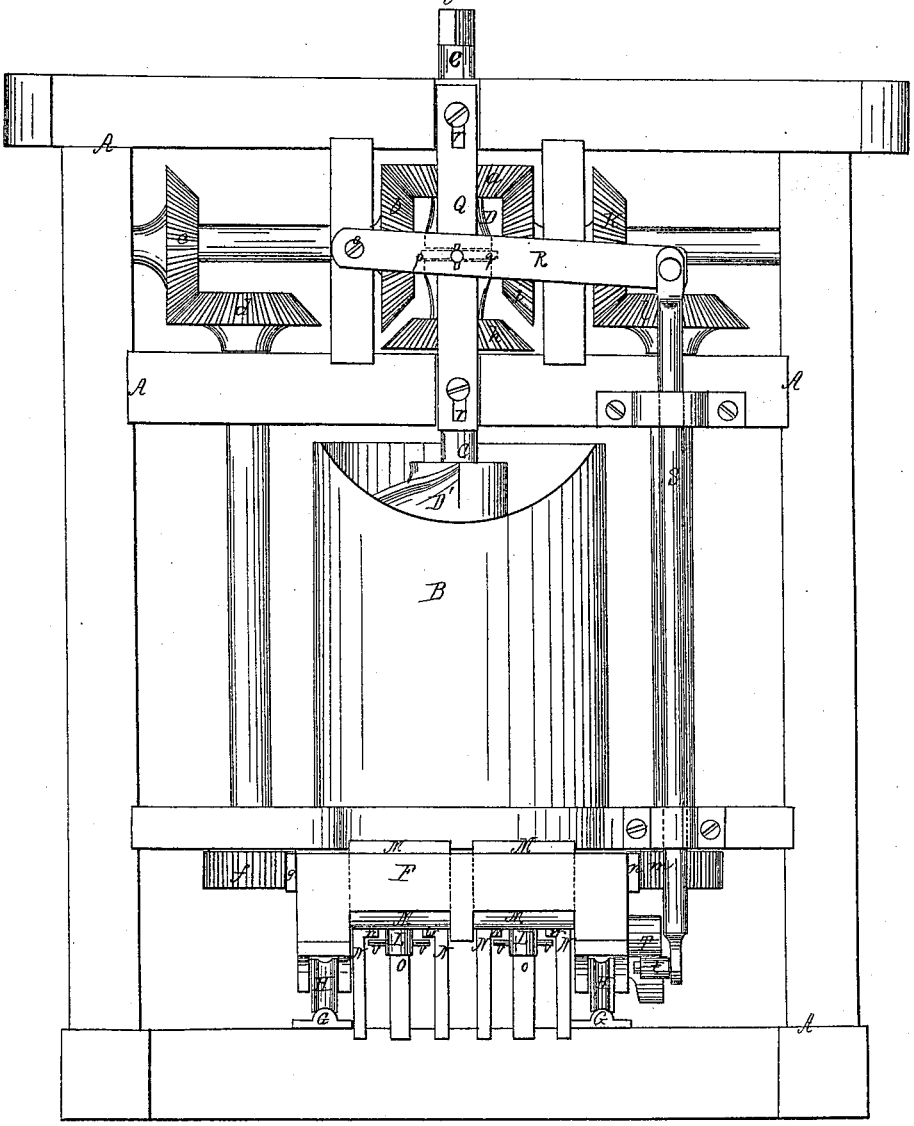
2 Sheets, Sheet 1.

E. R. Gard,

Brick Machine.

No. 52,156. Patented Jan. 23, 1866.

Fig. 1.



Witnesses:
E. J. Brown
S. Brown

Inventor:
E. R. Gard
By his atty
J. S. Brown

2 Sheets. Sheet 2.

E. R. Gard,

Brick Machine.

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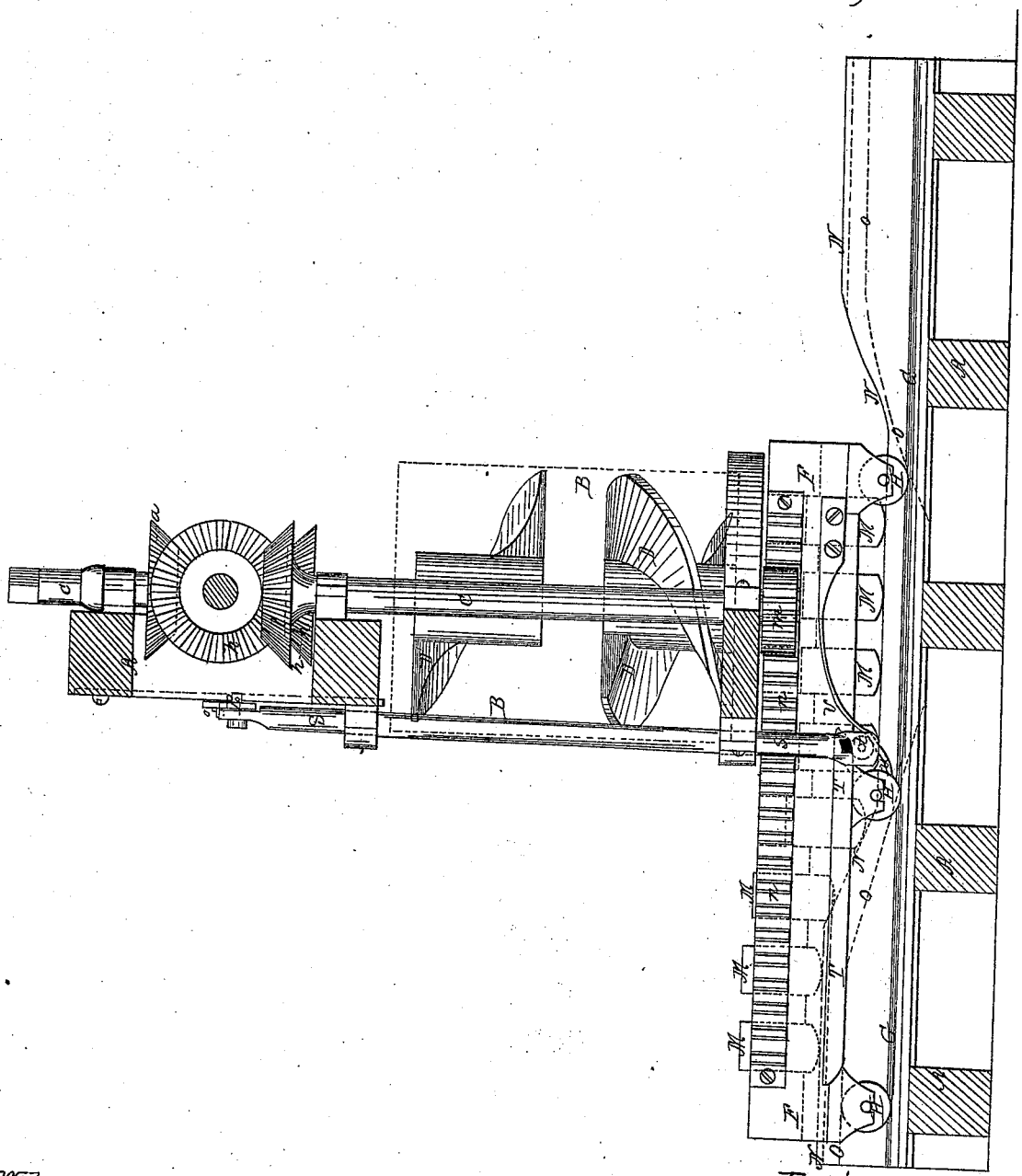

Witnesses:
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J. Brown

Inventor:
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J. S. Brown

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 dri ing-shaft, so that it must turn with it, but m have a vertical sliding movement thereon. C the upper end of the sleeve is a bevel-ge wheel, *a*, and on the lower end another beve wheel, *h*. On opposite sides, between the two bevel-gears, are two bevel-wheels, *b i*, c horizontal shafts, so arranged as to gear in the gear-wheels *a h*, the latter being at suc a distance apart that only one can gear in the side wheels, *b i*, at once, so that by movin 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 driv the shafts of said wheels *b i* alternately i opposite directions. On those shafts, respect ively, are other bevel-wheels, *c k*, gearing int bevel-wheels *d l* on vertical shafts, on the lowe ends of which, respectively, are spur cog wheels *f m*, gearing into racks *g n*, respect ively, 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 b 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 clasping 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
n tracks N N, so shaped as to lower them
erly in the molds when passing under the
mill, and to lift them out of the molds at
end for removing the bricks; or the fol-
rs may have projecting stems L L, Fig. 1,
h run on suitable tracks *o o* under the
ers of the followers. Through the stems
of the followers pins *v v*, Fig. 1, extend
sversely and reach under lips or ledges
on the inner sides of the tracks N N and
the followers in the molds and draw them
n when required. Suitable striking-plates
er the edges of the pug-mill strike off the
lus clay and form the upper surfaces of
bricks.

What I claim as my invention, and desire
ecure 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.