4 Sheets--Sheet 1.

E. DESHLER.

Brick-Machine.

No. 160,310. Patented March 2, 1875.

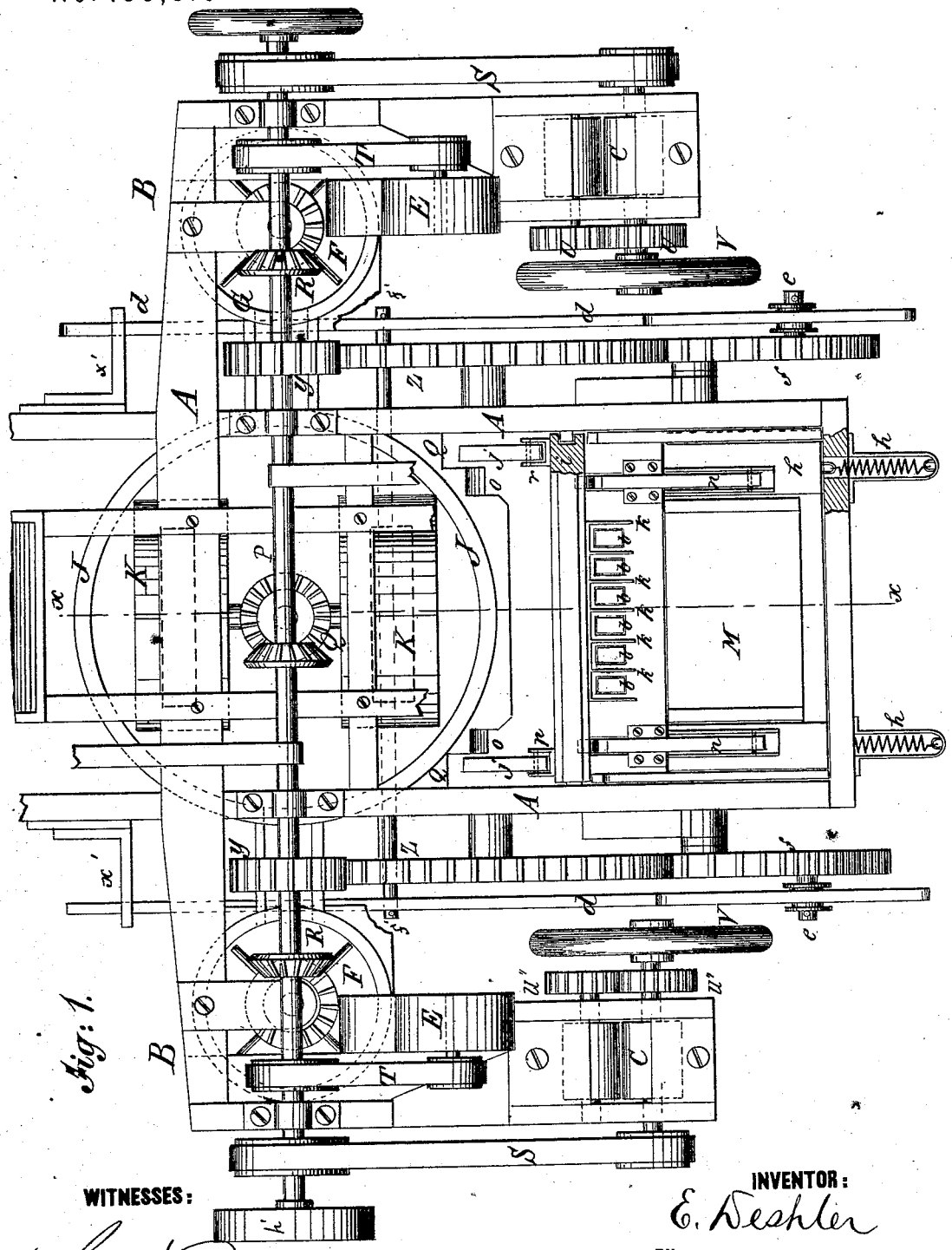

Fig: 1.

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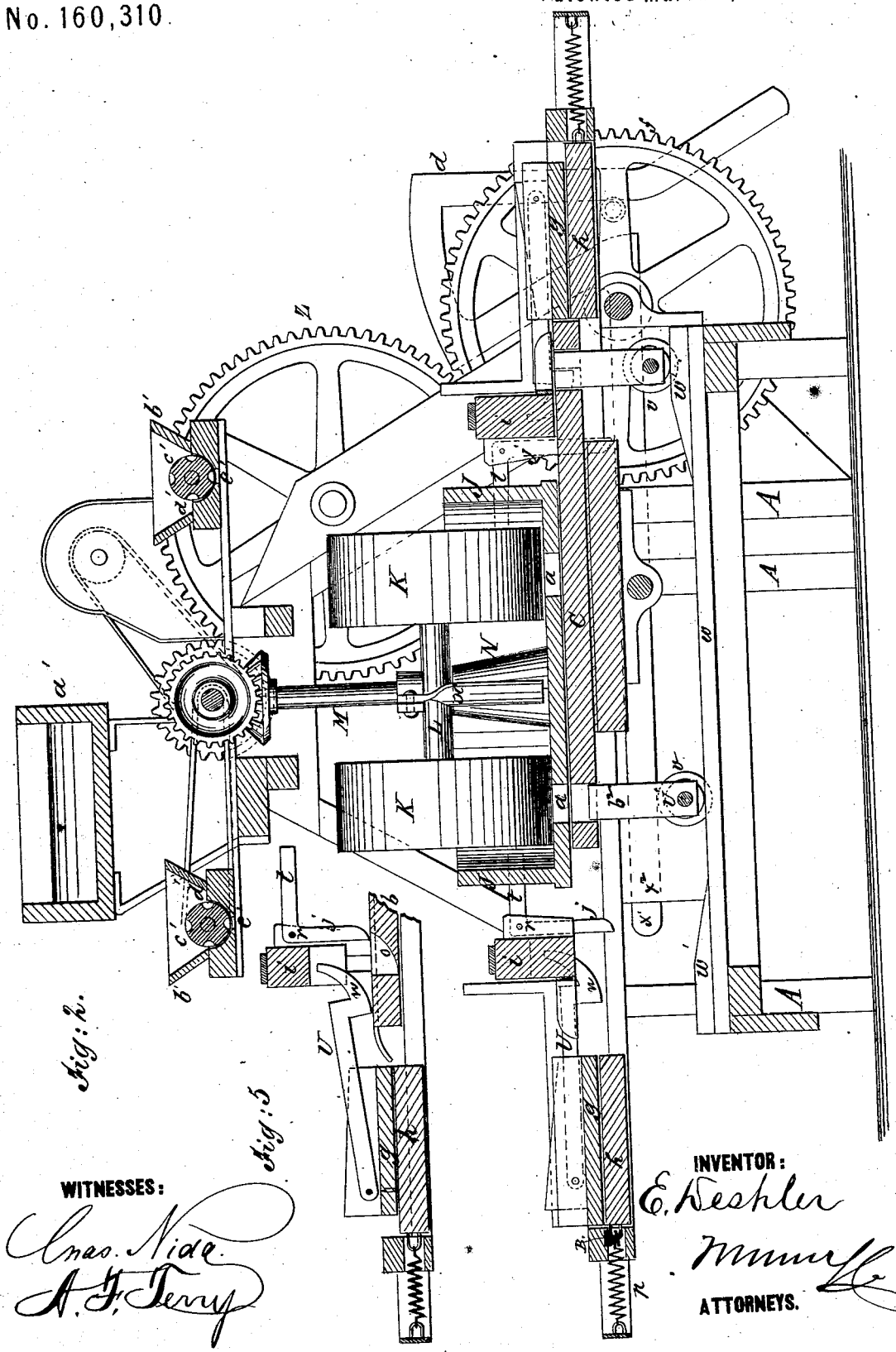

Fig: 2.

Fig: 5

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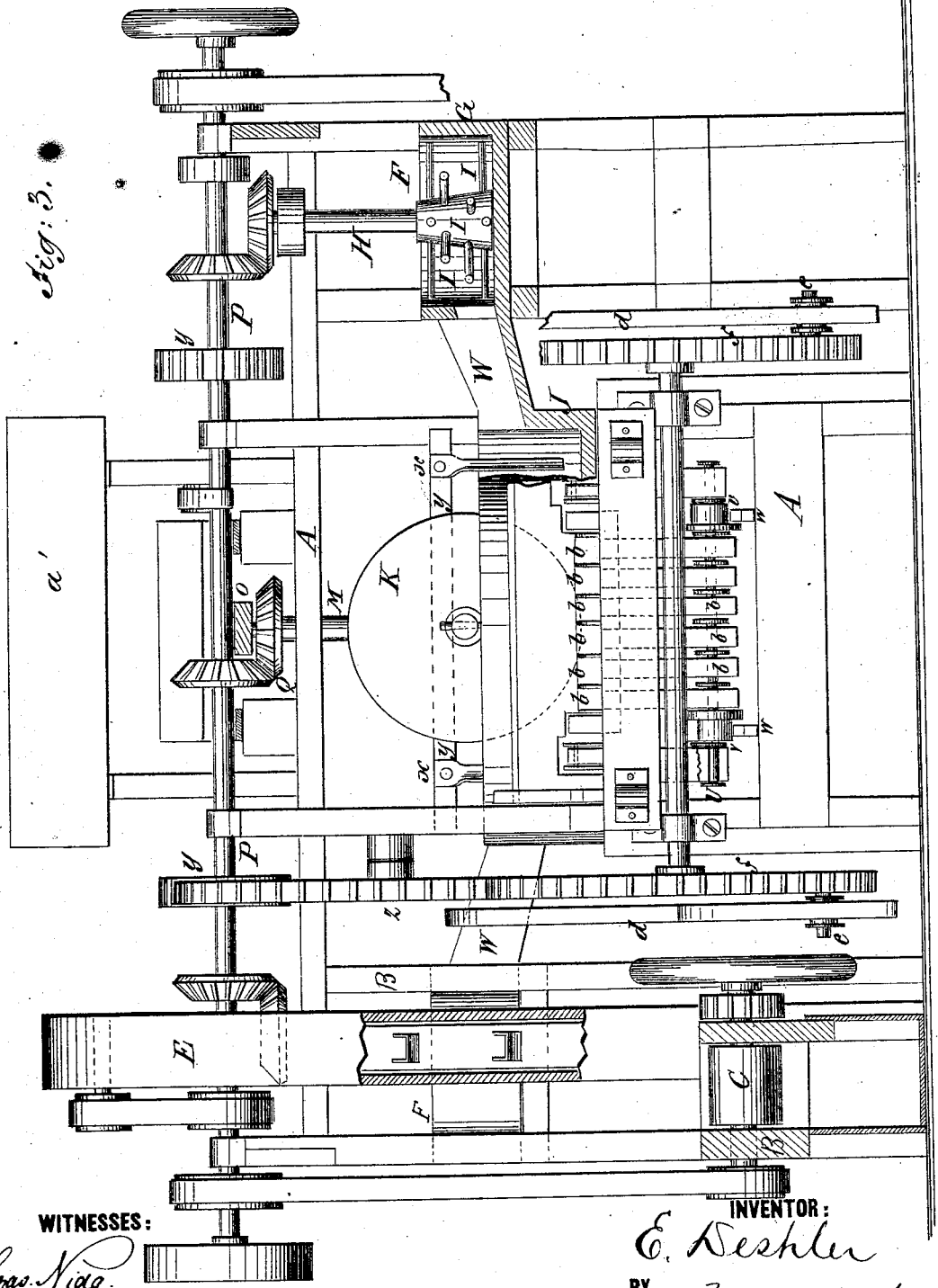
Fig. 3.



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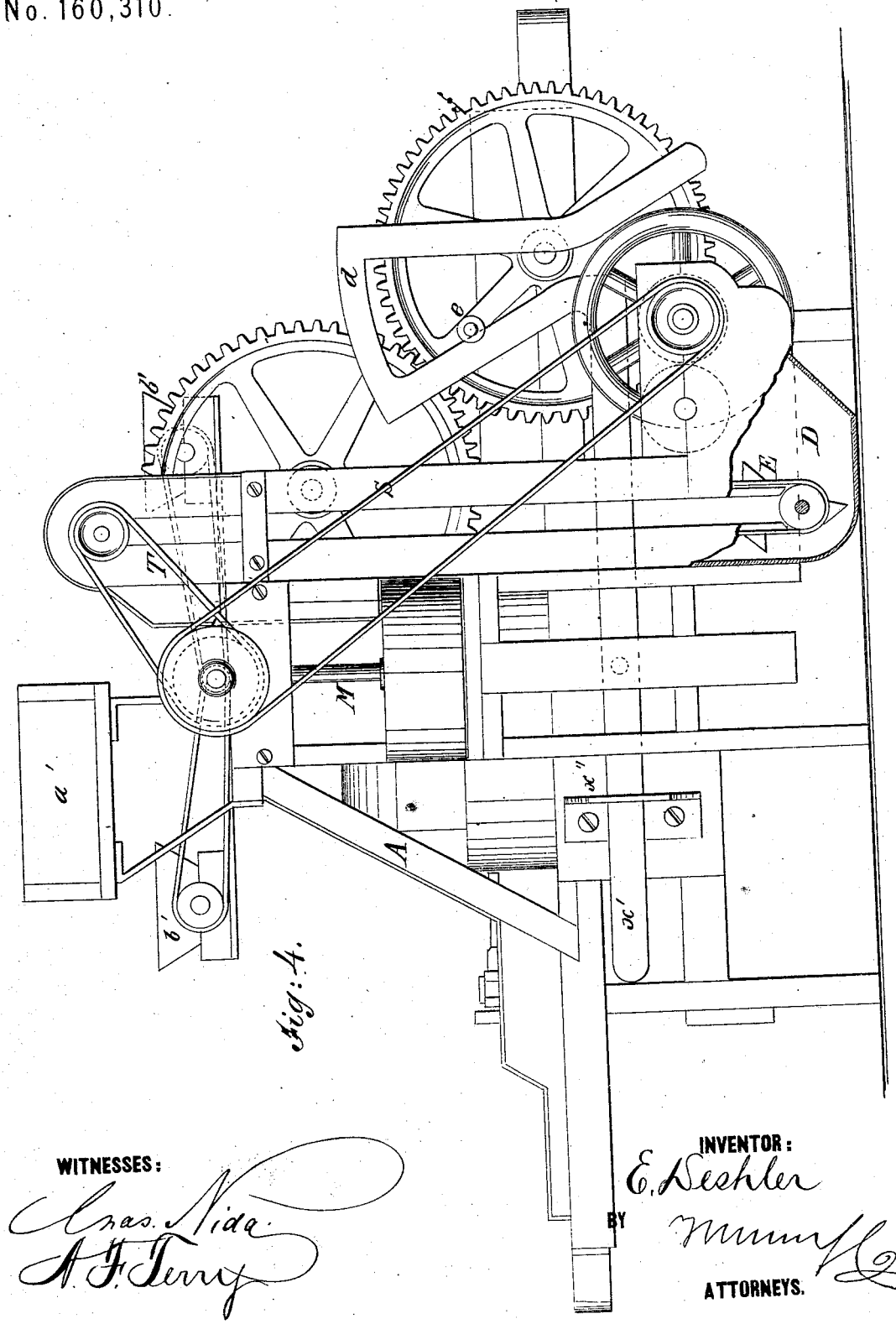

Fig: 4.

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UNITED STATES PATENT OFFICE.

EDWARD DESHLER, OF ALLENTOWN, PENNSYLVANIA.

IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. **160,310**, dated March 2, 1875; application filed November 30, 1874.

To all whom it may concern:

Be it known that I, EDWARD DESHLER, of Allentown, in the county of Lehigh and State of Pennsylvania, have invented a new and useful Improvement in Brick-Machines, of which the following is a specification:

The invention will first be fully described, and then pointed out in the claims.

In the accompanying drawing, Figure 1 represents a top view of the machine with the extreme upper parts broken away. Fig. 2 is a vertical cross-section of Fig. 1, taken on the line *x x*, or through the center of the machine. Fig. 3 is a front elevation, with parts broken away to show the tempering-mills and parts connected therewith. Fig. 4 represents an end view of the machine, partly in section, to show the elevators. Fig. 5 is a detail.

Similar letters of reference indicate corresponding parts.

This machine is made double, or to turn out bricks from each side, the grinding and tempering mills and the brick-molds being duplicates of each other. The parts of the machine are supported by a properly-constructed frame, in the two end portions of which frame the clay is ground, elevated, and tempered, and delivered into the pressing-cylinder, which latter is supported by the central frame.

A is the central frame. B B are the two end frames. C are the grinding-mills, consisting each of two cylinders, between which the clay, as it is dug from the earth, is placed and crushed as the cylinders revolve. The clay drops from the cylinders of the grinding or crushing mills into the bottom of the elevator-boxes D. E is an elevator, which takes the clay from the box D and delivers it into the tempering-mill F. These tempering-mills consist each of a curb, G, in which are central revolving upright shafts H, provided with hubs and lateral rods or teeth I, of a length to nearly sweep the entire circumference of the curb, and force the clay out and into the pressing-vessel J, which is a broad cylindrical vessel, in which revolve two traverse-wheels, K K. These traverse-wheels are broad and heavy, and are arranged to run in contact with the bottom of the pressing-vessel J. The wheels K K revolve on a central horizontal axle, L, by their contact with the clay on the bottom of the pressing-vessel J, and are carried round by the axle L, which receives motion from the vertical shaft M. This shaft is stepped into the stationary center N of the pressing-vessel. Its upper end is supported by the cross-timber O. (See Fig. 3.) This shaft receives its motion from the long horizontal shaft P (which is the driving-shaft of the machine) by means of the gear-wheels Q. (See Fig. 1.) The shafts of the tempering-mills before referred to are driven by gear-wheels R R from the same shaft. S are the belts which drive the crushing-mills, and T the belts which drive the elevators E. U″ U″ are gear-wheels on the shafts of the grinding-mill rollers. V are hand-wheels, which allow the rollers to be turned back in case of obstruction, or for other causes.

We will now go back to the pressing-vessel J, into which the ground and tempered clay has been delivered, through the spouts W W, from the tempering-mills.

X X are arms, which extend down from a horizontal bar, Y. (See Sheet 3.) This bar is clasped around the vertical shaft M, secured by bolts. The arms or blades X are broad, and are twisted below the bar Y, so that they stand at an angle of about forty-five degrees with the bar, and serve to force the clay toward the apertures *a a* (see Fig. 2) in the bottom of the press. The clay is forced by the traverse-wheels through these apertures into the brick-molds. *b* represents the brick-molds, which are connected with the sliding plate *c*, which receives a reciprocating motion by means of two cams, *d d*, which are given a sliding horizontal motion by means of wrist-pins *e* in the arms of the two gear-wheels *f f*. These cams, it will be noticed, are of peculiar construction, and have important duties to perform. At one part of their movement they leave the brick-mold at rest, so that they may receive the clay, after which the two molds are alternately brought forward for delivering the bricks upon the brick-board *g*, which rests on the sliding spring-platform *h*. The two outer edges of the brick-mold plate are provided with cams, by which the cross-bar *i* is raised. *j j* are detents attached to the cross-bar, which the mold-plate strikes as it is pushed outward, and allows the brick-

mold to be shoved under it. On the outer side of this bar are projecting fingers K, between which the bricks are delivered. At this stage of the operation a set of plungers, b^2, are made to push the bricks from their molds. The spring-platform *h* is now moved forward with the brick-board *g* till it meets the mold-plate. The hooks *n n* drop into recesses in the mold-plate and hold the two together, and the molds recede (carrying the platforms and brick-board *g*) till the bricks are fairly on the brick-board, when the ends of the hooks *n n* strike stationary cams *o o*, and are raised, so that the spring-platform is released from the mold-plate, and is drawn back with the bricks on the brick-board by means of the spiral springs *p p*, which have been drawn out by the movement of the mold-plate, and now recoil to draw back the platform and bricks.

The cross-bar *i* is raised by means of cams Q on the edge of the mold-plate, which strike the detents *j j*, which are pivoted to the bar at *r*. The detents *j j* are angular in form. The arms *t* act simply as weights. When the detents leave the cams the bar drops by its own gravity. This bar scrapes the bricks from the ends of the plungers as the mold recedes, and leaves them on the brick-board, as before described. The plungers are carried back and forth by the mold-plate, and form the bottoms of the molds when the clay is pressed into them.

U′ is a bolt which passes through the plungers, upon which are truck-wheels *v*, which run on the ways *w*. At the ends of these ways are inclined planes *w′*, by which the plungers are raised to force the bricks from the molds after they have passed the bar *i*. The projecting fingers *k* keep the bricks in position as the molds leave them. The cams *d* (by means of which these motions are produced) have each a long bar, x^1, which slides through plates x^2, and are actuated from the driving-shaft by the gear-wheels *y*. *z* are wheels, which transfer the motion from the gear-wheels *y* to the wrist-wheels *f*, which latter act directly upon the cams. *a′* is a water-tank, and *b′* represents sand-boxes, from which sand is dropped into the molds as the molds recede by means of the revolving cylinders *c′* contained in each box, which are provided with cavities *d′*, which deliver the sand to a slot, *e′*, in the bottom of the boxes. *f′* is a cross-bar underneath the machine, the ends of which pass through the cams *d*, and thus connect the cams with the mold-plate. *h′* is the driving-pulley on the long shaft P.

I do not confine myself to the precise form and arrangement of any of the parts shown, as variations may be made in many ways without departing from my invention.

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

1. The combination, with vessel N, having holes *a*, of the rotary grinders K K and twisted blades X, arranged to operate in the manner described.

2. The combination of the board *g*, having pivoted hook-bar U *n*, spring-platform *h*, and mold *b*, as and for the purpose set forth.

3. The cross-bar *i*, having angle-bar *j* and fingers *k*, in combination with a brick-mold plate having cams, as and for the purpose specified.

4. The combination, with mold-plate, of the cross-bar *f′*, cam-bars *d*, and sliding bars *x′*, as and for the purpose described.

EDWARD DESHLER.

Witnesses:
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A. K. WITTMAN.