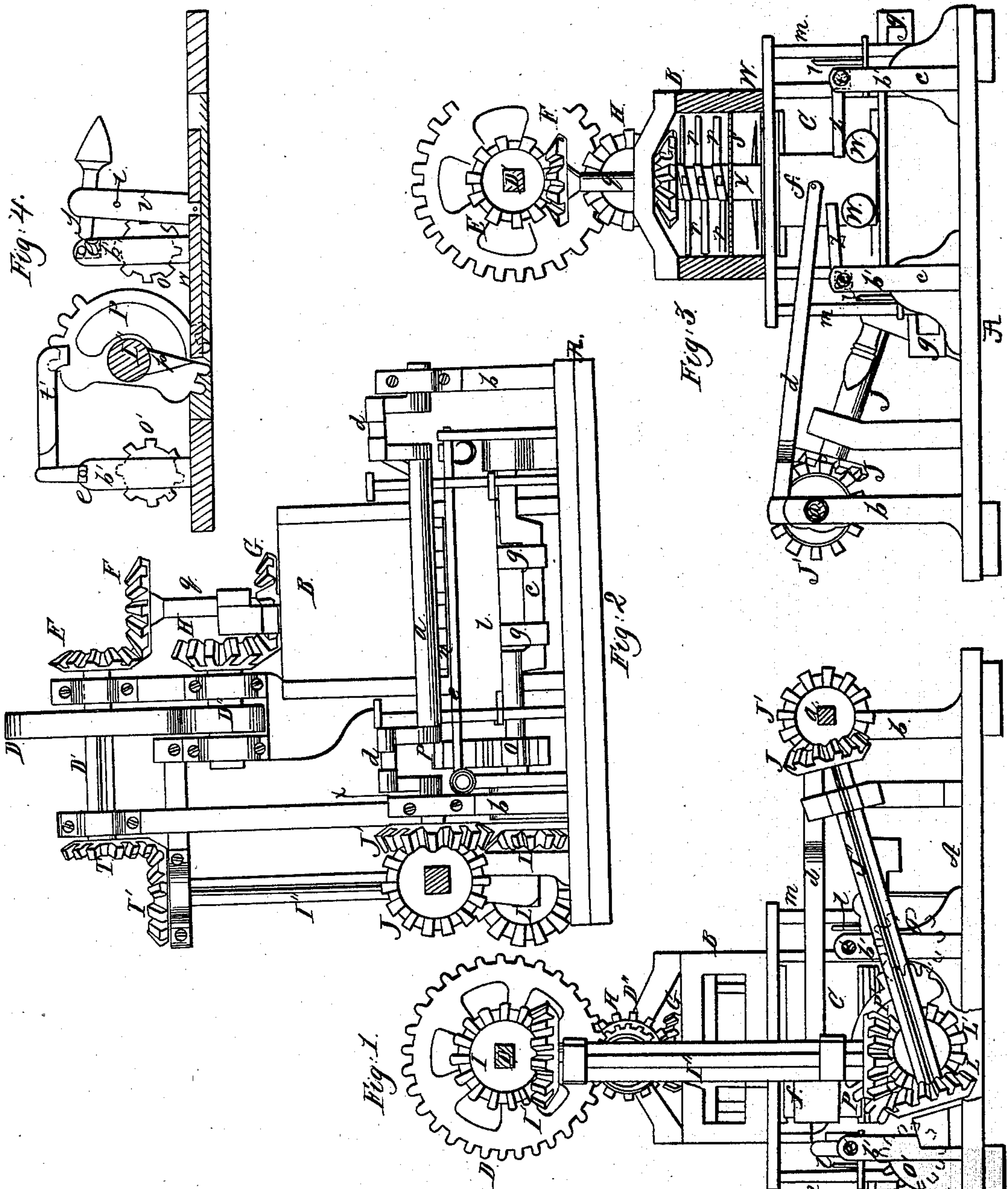


I. Morley,
Brick Machine,

No 62,149,

Patented Feb. 19, 1867.



Witnesses:

F. Lehmann
O. J. Dodge

Isaac Morley
Inventor: By W. C. Dodge
his attorney

United States Patent Office.

ISAAC MORLEY, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 62,149, dated February 19, 1867.

IMPROVED BRICK MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ISAAC MORLEY, of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented certain new and useful improvements in Brick Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, like letters indicating like parts wherever they occur. To enable others skilled in the art to construct and use my invention, I will proceed to describe it.

My invention consists in certain improvements upon the machine heretofore patented to me for making brick, and consists in a novel arrangement of devices whereby the machine is made to operate with greater perfection.

Figure 1 is a side view.

Figure 2, an end view.

Figure 3, a view of the side opposite to the side represented by fig. 1; and

Figure 4 is a view of a portion detached.

The machine consists of a frame, A, upon which is mounted a pug mill for grinding the clay, and which consists of the hopper B and the vertical shaft *x*, armed with the usual blades or arms *r*, for pulverizing the clay. Transversely of the hopper B is arranged a screen, S, to prevent stones from passing below. Underneath the hopper B is a chamber, C, into which the clay passes from the hopper B, it being pressed down by means of a screw diaphragm, W, attached to the lower end of shaft *t*, which latter shaft extends through the centre of shaft *x*, which is made tubular for that purpose. Motion is imparted to these shafts, *x* and *t*, by the bevel gear-wheels F and G attached to their upper ends, these gearing into similar wheels, H and E, as shown clearly in fig. 2. It will be observed that the spur-wheel D, on the shaft D', to which E is attached, is much larger than the wheel D'' on the shaft with H, and that, consequently, the shaft *x*, which grinds the clay, revolves much more rapidly than *t*, which presses the clay down into the chamber C. The clay is pressed alternately from opposite ends of the chamber C, through openings of the area of the brick to be formed, into moulds placed there to receive it, the clay being pressed out by a reciprocating plunger or cross-head, worked to and fro in the chamber C, by means of the pitman *d* at each side; the pitman being attached to a slide, *f*, to which the plunger is connected at one end, and to a crank on the shaft *a* at the opposite end, the same as in my former patent. The moulds for receiving the clay and shaping the bricks are raised and lowered by a crank-shaft *c*, working in slotted plates or yokes *g*, shown in figs. 2 and 3. These crank-shafts *c* have a pinion, O, attached at one end, into which the segment gear P meshes at intervals, as represented in fig. 3, the general arrangement and operation of these parts being similar to those described in my former patent. In figs. 1, 2, and 3, *l* represents the bar which holds the moulds in place while the clay is being pressed into them. Instead, however, of letting the moulds also rest on a ledge or shelf attached to the lower edge of this bar *l*, as in my former machine, I mount a bar, *e*, in the standards *b'*; this bar *e* being pivoted at its ends so as to permit it to rock slightly, for the purpose of loosening the moulds after they are filled, and the brick cut off by the wire *n* attached to the bar *l*, and thus permit them to be more readily detached and removed. In order to tilt these bars *e*, an arm, *p*, is attached to the shaft L'', on which is mounted the segment gear P; this arm being arranged to hit the sliding bar *n*, by which the vertical bar *v*, pivoted at *i*, is tilted, causing the projection *y* to strike against *e*, and tip it to loosen the mould, as represented in fig. 3. As the arm *p* continues to rotate, it then comes in contact with the arm *t'* attached to the bar *e*, at the opposite end of the chamber C, and thus to loosen the mould at that end also. On the opposite side of the machine, as shown in fig. 3, an arm, *z*, is attached to each of the rocking bars *e*, and to these arms weights *w* are attached, which return the bars *e* to their position again as soon as the arm *p* has operated to tilt them. On the opposite end of shaft D' is a bevel gear, I, gearing into a similar wheel, I', on the upper end of a vertical shaft, I''. To the lower end of this shaft is secured a bevel-wheel, P', which gears into a similar wheel, L', on the outer end of the shaft that carries the segment-wheel P. The wheel L' gears into a similar wheel, L, attached to the end of an oblique shaft, J'', which has at its opposite end another bevel gear, J, which, engaging with a similar wheel, J', on the crank-shaft *a*, by which the reciprocating plunger or presser is operated, as already described. It will thus be seen that all the parts of the machinery must move together, and that by this arrangement of the gear, a positive movement of each

part at the desired time is secured. The parts which particularly constitute my invention in this machine are the arrangement of the gear, the rocking bars *e*, with their operating parts, and the shafts *x* and *t*, arranged to rotate in opposite directions within the hopper.

What I claim, is—

1. The arrangement of the gear for operating the various parts of the machine, as herein shown and described.
2. The tilting bars *e*, for supporting and loosening the mould, when arranged and operated substantially as set forth.
3. The combination and arrangement of the shafts *x* and *t*, with the hopper B, screen S, and screw W, substantially as herein described.

Witnesses:

ISAAC M. PENNOCK,
JAMES GRACEY.

ISAAC MORLEY.