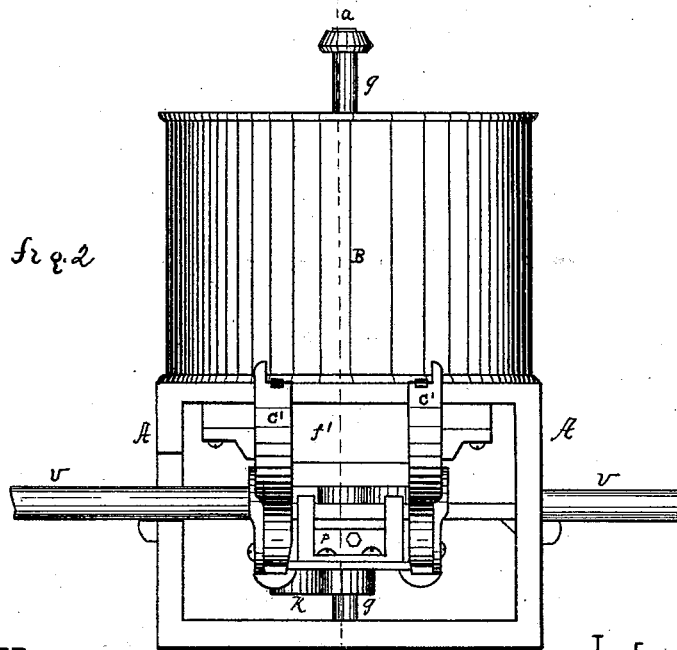
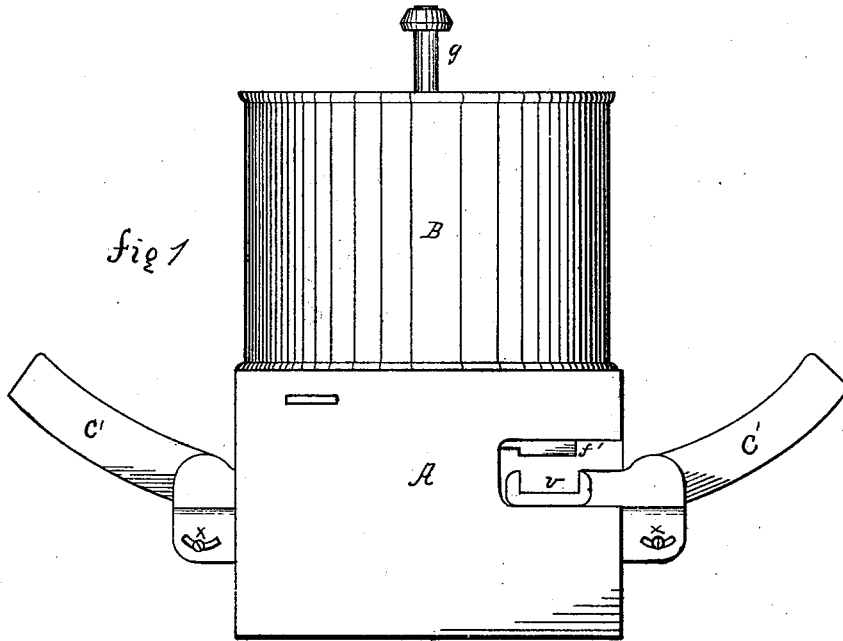


E. SPRAGUE.  
BRICK-MACHINE.

No. 181,803.

Patented Sept. 5, 1876.



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fig 3

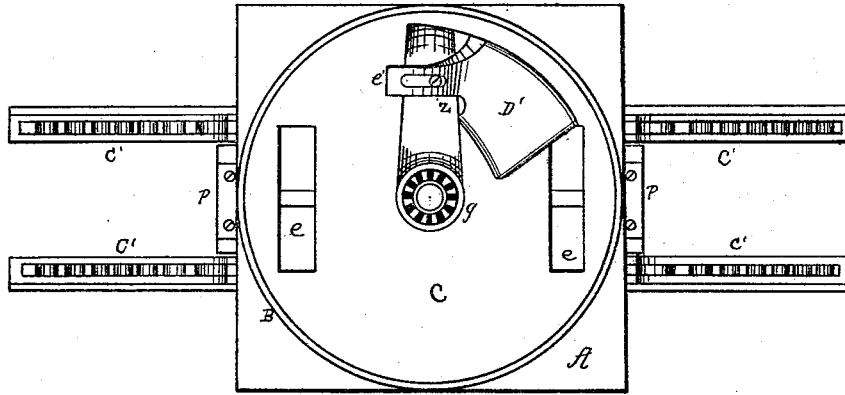
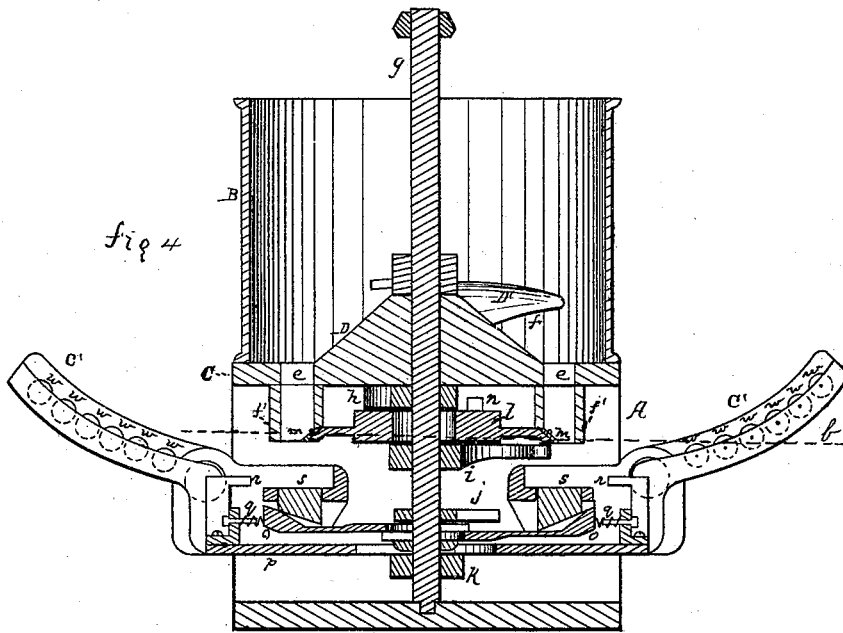


fig 4



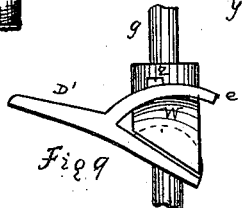
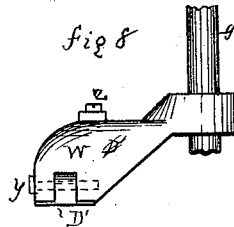
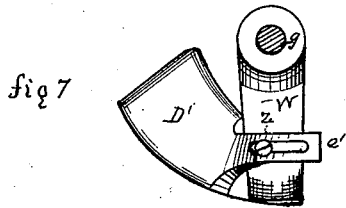
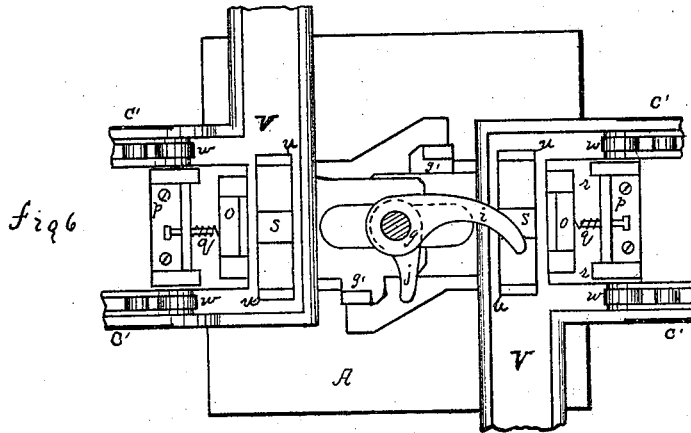
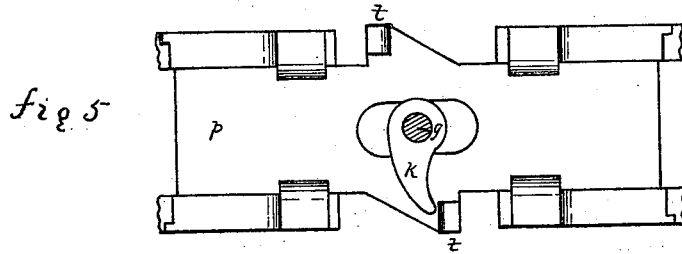
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# UNITED STATES PATENT OFFICE.

EDWIN SPRAGUE, OF PITTSBURG, PENNSYLVANIA.

## IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. 181,803, dated September 5, 1876; application filed July 19, 1876.

To all whom it may concern:

Be it known that I, EDWIN SPRAGUE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Brick-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to that class of brick-machines having a mixing and supply hopper, automatic mold-feeder, cut-off, and delivering device, such as is described in Letters Patent No. 85,142, granted to me December 22, 1868; and consists in combining with such mold-feeder a mold-elevating plate operated through the medium of a mold-feeder and cam; and also consists in an adjustable cut-off knife, and also in an adjustable feed and pressure sweep for filling the molds; and, finally, in combining with the hopper a mold-feeder, a mold-way, and adjustable inclines having anti-friction rollers for conducting the molds to the mold-carrier.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, which form part of this specification, Fig. 1 is a side elevation. Fig. 2 is an end elevation. Fig. 3 is a top view or plan. Fig. 4 is a vertical section at line *a* of Fig. 2. Fig. 5 is an inverted view of the mold-carrier, and cam for operating it. Fig. 6 is a horizontal or top view in detail, representing all above line *b* of Fig. 4 removed. Fig. 7 is an isometric perspective view of the adjustable feed and pressure sweep for feeding the molds. Figs. 8 and 9 are side views of the same.

In the drawings, A represents the base of the machine. B represents the hopper, the bottom C of which is furnished with a coniformed elevation, D, in the center, for directing the mixed clay toward the openings *e* in the bottom in the track of the adjustable feed and pressure sweep *f*. *g* is a vertical shaft, to which is secured the sweep *f*, cams *h*, *i*, *j*, and *k*. The cam *h* operates the cut-off knives *m*. The cam *h* striking against projections *n* upon the upper side of the carrier *l*, at proper in-

tervals, moves it so as to cut off the surplus clay from the top of the molds; the cam giving to the carrier *l* a reciprocating motion. The cutting-edge of the knives *m* should project a little below the outer ends of the carrier *l*, thereby leaving an air-space back of the cutting-edge of the knives, which will prevent a dragging and sucking action, cutting the surplus clay off and leaving a smooth surface of clay in the mold on a plane with the top edge of it. The cam *i* is used for the purpose of forcing the molds along on the moldway. The cam *j* is used for operating the mold-elevating plates. The cam *k* is for operating the mold-carrier *p*. The mold-carrier is furnished with springs *q*, suitably arranged to compensate for the variations that may be in the thickness of the bottom boards for the molds. If such arrangement or its equivalent were not provided for compensating for the variations that may be in the bottom boards of the molds, some part of the operating mechanism would be subjected to undue strain, and the cam *k* operating the mold-carrier could not pass the projections *t*, Fig. 5, on the under side of it, in case the bottom boards of the molds are of undue thickness; but by the use of springs which press against the end of the mold-elevators *o*, when the mold has been elevated until it presses against the under side of the bottom of the hopper, the spring will then yield, allowing the mold-carrier its full travel, thereby relieving the cam *k* from undue strain. *s* are elevating-blocks, which are placed in openings *u* in the moldways V, and are used in combination with the mold-elevators *o*. The under side of the blocks *s* are beveled, and the mold-elevators having bevels or inclines upon their upper surface, said inclines of the mold-elevators, acting against the bevel surface of the blocks *s*, gradually move them upward in a vertical line to the desired height for elevating the molds. C' C' are adjustable inclined ways, furnished with anti-friction rollers *w*. The ways C' are adjusted through the medium of the slots and set-screws, as indicated at *x* in Fig. 1. The pressure-sweep D' is pivoted at *y* to an arm, W, of the shaft *g*, as shown in Fig. 8, and is adjusted by means of a set-screw, Z, and a slot in the arm *e'*, as shown

in Fig. 7. By this adjustable arrangement of the pressure-sweep the pressure and the sweep of clay to the molds are regulated.

Having all things constructed and arranged as hereinbefore described, and as shown in the accompanying drawings, the molds, being placed upon their bottom boards, are set on the inclined ways *C'*, and gradually carried down by their own gravity, and pass the points *r* of the mold-carrier *p*, and the shaft *g*, revolving, causes the cam *h* to impart to the mold-carrier a reciprocating motion, which carries the molds in upon the blocks *s* alternately, and the inward movements of the mold-carrier *p* move in the mold-elevators *o*, which, acting upon the blocks *s*, cause them to raise the mold up against the hollow projections *f'* on the under side of the bottom of the hopper. The clay is carried down by the pressure-sweep *D'*, through openings *e*, and as soon as the mold is filled the cam *h*, acting upon the knife-carrier *l*, the surplus clay is cut off by the knives *m*. The cam *i*, then striking against the end of the mold, carries it along on the moldway *V*, and one mold pressing against the other is carried forward in the moldway *V*, from which they are carried off by bearing-off boys. While the cam *i* is performing its office of discharging the molds, the cam *j* acts alternately against the projections *g'*, Fig. 6, on the upper side of the mold-carrier *o*, moving them outward, thereby allowing the elevating-blocks *s* to descend in the openings

*u* of the moldway *V*. Then a second mold is carried in, elevated filled, surplus clay cut off, and discharged, as before.

It will be observed that there are duplicate carriers, ways, and elevators, so that molds are supplied, filled, and discharged from the two ends of the machine.

Having thus described the nature, construction, and operation of my improvement, what I claim is—

1. In a brick-machine of the class hereinbefore described, the mold-elevator, in combination with the mold-carrier, as and for the purposes set forth.

2. In a brick-machine of the class hereinbefore described, the mold-elevators and mold-carriers, in combination with the springs *q*, arranged to operate as set forth.

3. The combination of the sliding knife-carrier *l*, and its projections *n*, with the hollow projections *f'* and cam *h*, arranged and operating as set forth.

4. The combination of the hopper-shaft *g*, carrying the arm *W*, and sweep pivoted to said arm at *y*, and provided with an arm, *e'*, secured by a set-screw, *Z*, as set forth.

5. The mold-elevators, operated through the medium of the mold-carrier and cam, as and for the purpose set forth.

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Witnesses:

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