

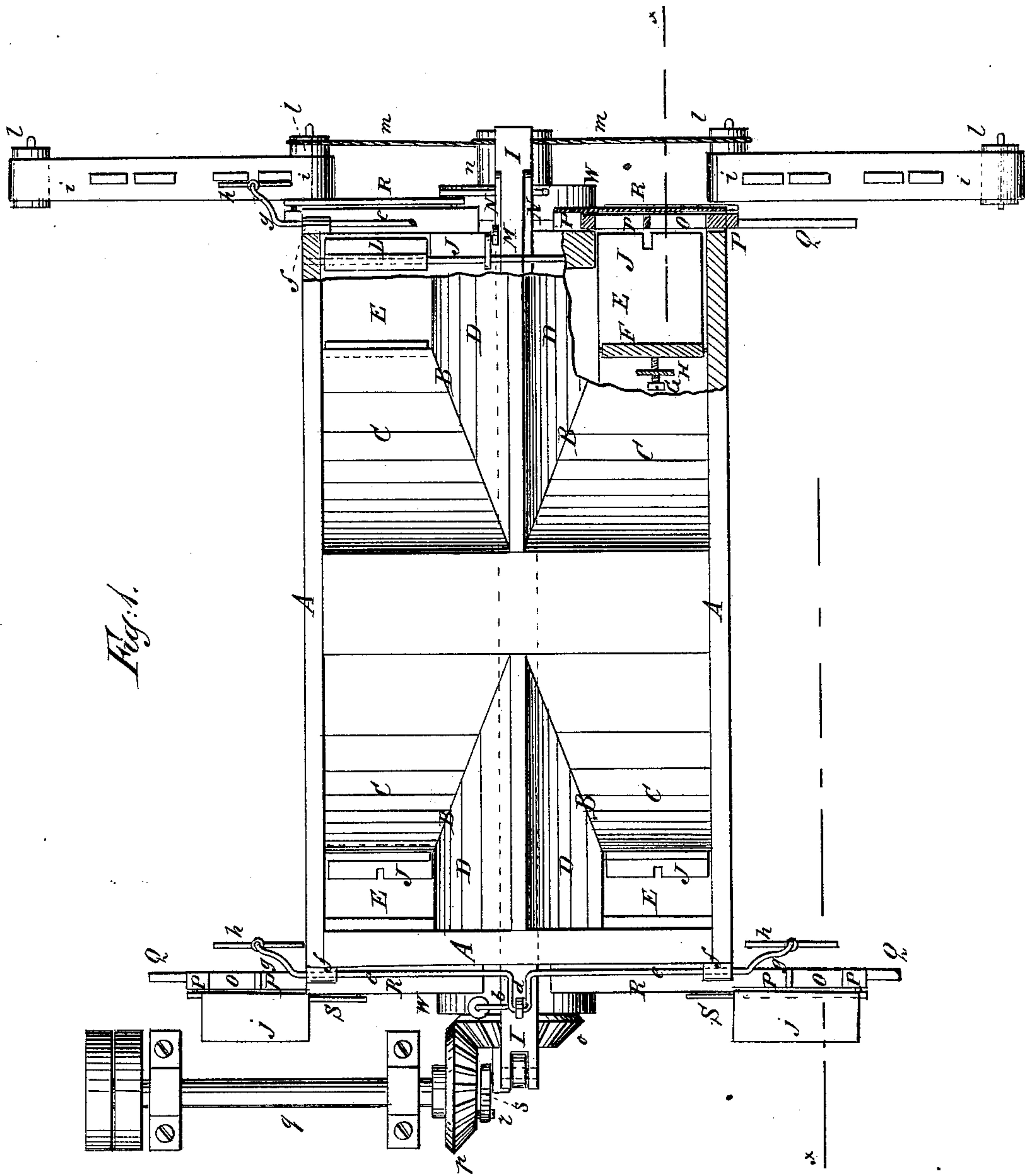
(Model.)

2 Sheets—Sheet 1.

G. H. WILLIAMS.  
Brick Machine.

No. 234,101.

Patented Nov. 2, 1880.



WITNESSES:

*Chas. Nida*  
*C. Sedgwick*

INVENTOR:

*G. H. Williams,*  
BY *Munn & Co.*  
ATTORNEYS.

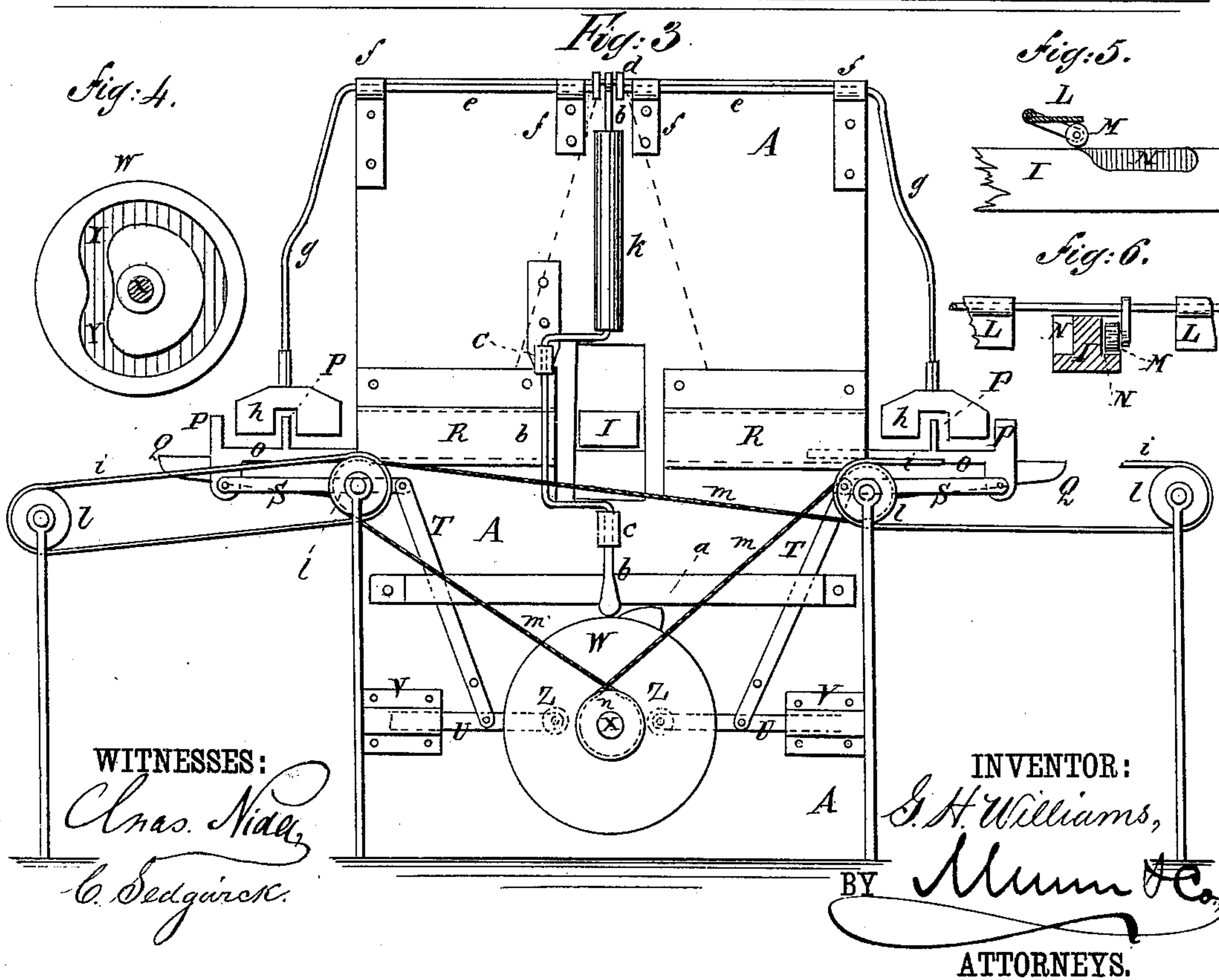
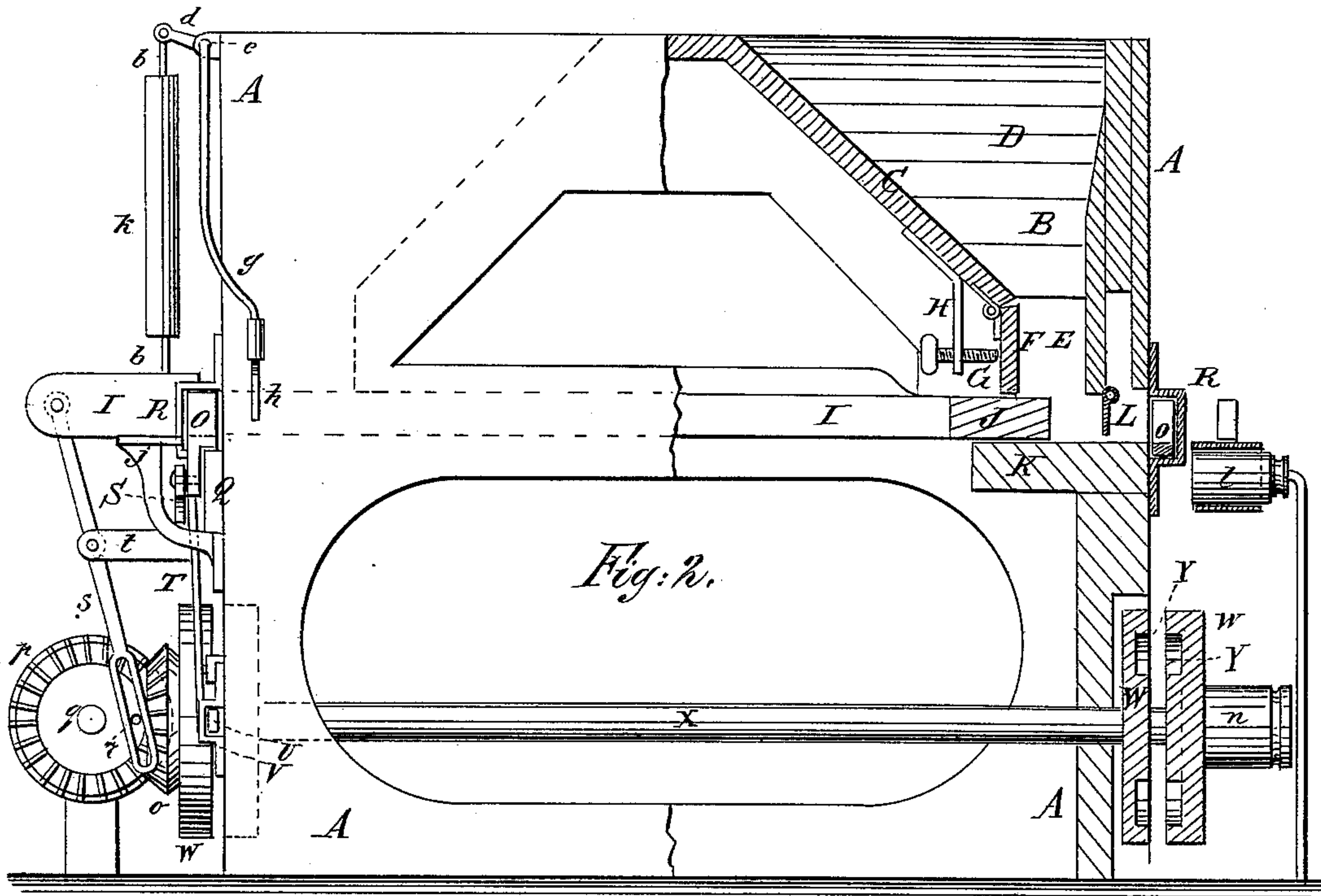
(Model.)

2 Sheets—Sheet 2.

G. H. WILLIAMS.  
Brick Machine.

No. 234,101.

Patented Nov. 2, 1880.





# UNITED STATES PATENT OFFICE.

GEORGE H. WILLIAMS, OF FORT SMITH, ARKANSAS.

## BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 234,101, dated November 2, 1880.

Application filed July 16, 1880. (Model.)

*To all whom it may concern:*

Be it known that I, GEORGE H. WILLIAMS, of Fort Smith, in the county of Sebastian and State of Arkansas, have invented a new and useful Improvement in Brick-Machines, of which the following is a specification.

Figure 1, Sheet 1, is a plan view, partly in section, of the improvement. Fig. 2, Sheet 2, is a side elevation, partly in section. Fig. 3, Sheet 2, is an end elevation. Fig. 4, Sheet 2, is a plan view of one of the cams. Fig. 5, Sheet 2, is a sectional elevation of one of the cut-offs open, the end part of the plunger-bar being shown in side view. Fig. 6, Sheet 2, is a front view of the inner ends of a pair of cut-offs, and showing the plunger-bar in cross-section.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish machines for making bricks, so constructed as to mold the bricks, press them, and deliver the pressed bricks upon off-bearing belts automatically, and which shall be simple in construction, reliable in use, and rapid in operation.

A represents the box of the machine, the upper part of which is divided into four hoppers, B, two at each end, by inclined partitions C D. In the lower part of each hopper B is formed a vertical chamber, E, of a length equal to, or a little greater than, the length of two bricks, and of such a width as to contain enough clay to form bricks of the desired thickness when the said clay is compressed into the molds. The inner sides, F, of the chambers E are hinged at their upper edges to the lower edges of the inclined partitions C, and are held forward by set-screws G, which pass through screw-holes in the ends of arms or brackets H, attached to the inclined partitions C, or other suitable supports, so that by turning the set-screws G the sides F can be adjusted according as the clay may be capable of more or less compression.

Beneath the partitions D slides a bar, I, to the opposite sides of each end of which are attached two plungers, J. The forward ends of the plungers J are of a length equal to the length of two bricks, and of a thickness equal to the width of a brick. In the center of the

forward end of each plunger J is formed a notch to receive the central partition or projection, P, of the bars O, so that the forward end of each plunger can press the clay for two bricks. The plunger-bar I and the plungers J slide upon the bottoms K of the hoppers B, and beneath the lower edges of the front and rear sides of the said hoppers B, so that at each outward movement of the said plungers J the clay will be forced out beneath the lower edges of the forward sides of the said hoppers into the molds.

At the lower edges of the forward sides of the hoppers B are hinged the upper edges of cut-off plates L, with the inner ends of which, or with their hinging-rods, are connected small rollers M, which roll along rabbets N in the upper corners of the end parts of the plunger-bar I, the said rabbets being so formed as to raise the cut-offs L as the plungers J move outward, and to close the said cut-offs as the plungers J move inward, to prevent the clay from passing out while the plungers J are drawn back and the pressed bricks are removed and the bars O P returned to their places.

The ends of the box A have slots formed in them, through which the clay passes to the molds. The lower edges of the molds are formed of bars O, each of which has three projections, P, formed upon it to form the ends of the molds.

The bars O slide upon bars Q, attached to the ends of the box A, and which project beyond the sides of the said box. The bars O and the clay are supported against the pressure of the plungers J by the keepers or chambers R, attached to the ends of the box A, and which form the outer sides and upper edges of the molds, the inner sides of the said molds being formed by the plungers J.

To the outer ends of the bars O are pivoted the outer ends of connecting-bars S, the inner ends of which are pivoted to the upper ends of levers T.

The levers T are pivoted near their lower ends to the ends of the box A, and their lower ends are pivoted to bars U, which slide in keepers V, attached to the box A. The inner ends of the sliding bars U, at each end of the box A, pass in between the two wheels or disks



W, attached to the shaft X, and in the adjacent sides of which are formed cam-grooves Y, as shown in Figs. 2 and 4, to receive pins Z, attached to the inner ends of the sliding bars U.

The wheels W are arranged with the re-entrant parts of the grooves Y upon the opposite sides of the shaft X, so that the two bars U, and consequently the two bars O P, will move in and out at the same time.

To the outer cam-wheel, W, is attached an inclined projection, *a*, in such a position as to strike the lower end of the rod *b* and push it upward at the time that the bars O P are at their farthest outward position.

The rod *b* slides in keepers *c*, attached to the end of the box A, and its upper end is pivoted to a crank-arm, *d*, formed upon or attached to the shaft *e*, which works in bearings *f*, attached to the upper part of the end of the box A.

Upon the ends of the shaft *e*, at the sides of the box A, are formed, or to them are attached, crank-arms *g*, to the lower ends of which are attached plates *h*, which plates are moved forward by the movement of the shaft *e*, to push the bricks from the bars O P to the off-bearing belts *i*, or to the shelves *j*. The lower middle parts of the plates *h* are cut away, so that the said plates can pass over the middle projection, P, of the bars O, and thus push off both bricks at one movement.

To the push-rod *b* is attached a weight of sufficient gravity to draw down the rod *b*, and swing back the plates *h* as soon as the said rod has been released from the inclined projection *a*.

The off-bearing belts *i* pass around the rollers *l*, the inner ones of which are made long to receive a second belt, *m*.

The belt *m* also passes around a pulley, *n*, attached to the end of the shaft X, and is so arranged upon the pulley *n* and the rollers *l* that the upper parts of both the belts *i* will move outward.

To one end of the shaft X is attached a large beveled gear-wheel, *o*, the teeth of which mesh into the teeth of the beveled gear-wheel *p*, attached to the shaft *q*. The shaft *q* revolves in bearings attached to any suitable support, and receives motion from any convenient power.

To the gear-wheel *p* is attached a crank-pin, *r*, which enters a slot in the lower end of the lever *s*. The lever *s* is pivoted to a support, *t*, attached to the box A, and the upper end of the said lever is pivoted to the end of the plunger-bar I, so that the plungers J will be operated by the movements of the driving-gearing.

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

1. A brick-machine constructed substantially as herein shown and described, consisting of the box A, having two pairs of hoppers, B, made with vertical lower parts, E, provided with hinged inner sides, F, held in place by set-screws G, the plunger-bar I, carrying two pairs of plungers, J, and having rabbets N, the hinged cut-offs L, having guide-rollers M, the mold-carrying bars O, having projections P, the guide-bars Q, and the chambers R, the connecting-bars S, the levers T, the sliding bars U, having pins Z, the two pairs of cams W W, the inclined projection *a*, the push-rod *b*, the shaft *e*, having crank-arms *d* and *g*, the plates *h*, the driving-gear wheels *o p*, the crank-pin *r*, the pulley *n*, the rollers *l l*, and the belts *i m*, whereby the bricks are pressed and delivered from the machine, as set forth.

2. In a brick-machine, the combination, with the box A, the hoppers B, the plunger-bar I, and the plungers J, of the sliding bars O, having projections P, the guide-bars Q, the chambers R, the pivoted connecting-bars S, the pivoted levers T, the sliding bars U, having pins Z, the pairs of cams W, and the shaft X and its driving mechanism, substantially as herein shown and described, whereby the molds are supported while receiving the clay and are carried out of the machine, as set forth.

3. In a brick-machine, the combination, with the cams W W and the bars O P, of the inclined projection *a*, the push-rod *b*, the shafts *e*, having the crank-arms *d* and *g*, and the notched plates *h*, substantially as herein shown and described, whereby the molded bricks are removed from the bars O, as set forth.

4. In a brick-machine, the combination, with the cam-shaft X, of the pulley *n*, the rollers *l l*, and the bands *i m*, substantially as herein shown and described, whereby the pressed bricks are carried away from the machine, as set forth.

5. In a brick-machine, the combination, with the vertical lower parts, E, of the hoppers B, the plunger-bar I, having rabbets N, and the plungers J, of the hinged cut-offs L and the guide-rollers M, substantially as herein shown and described, whereby the clay is kept in the hoppers when the plungers are drawn back, as set forth.

GEORGE H. WILLIAMS.

Witnesses:

G. W. SCHULTE,  
ABE BLOCH.