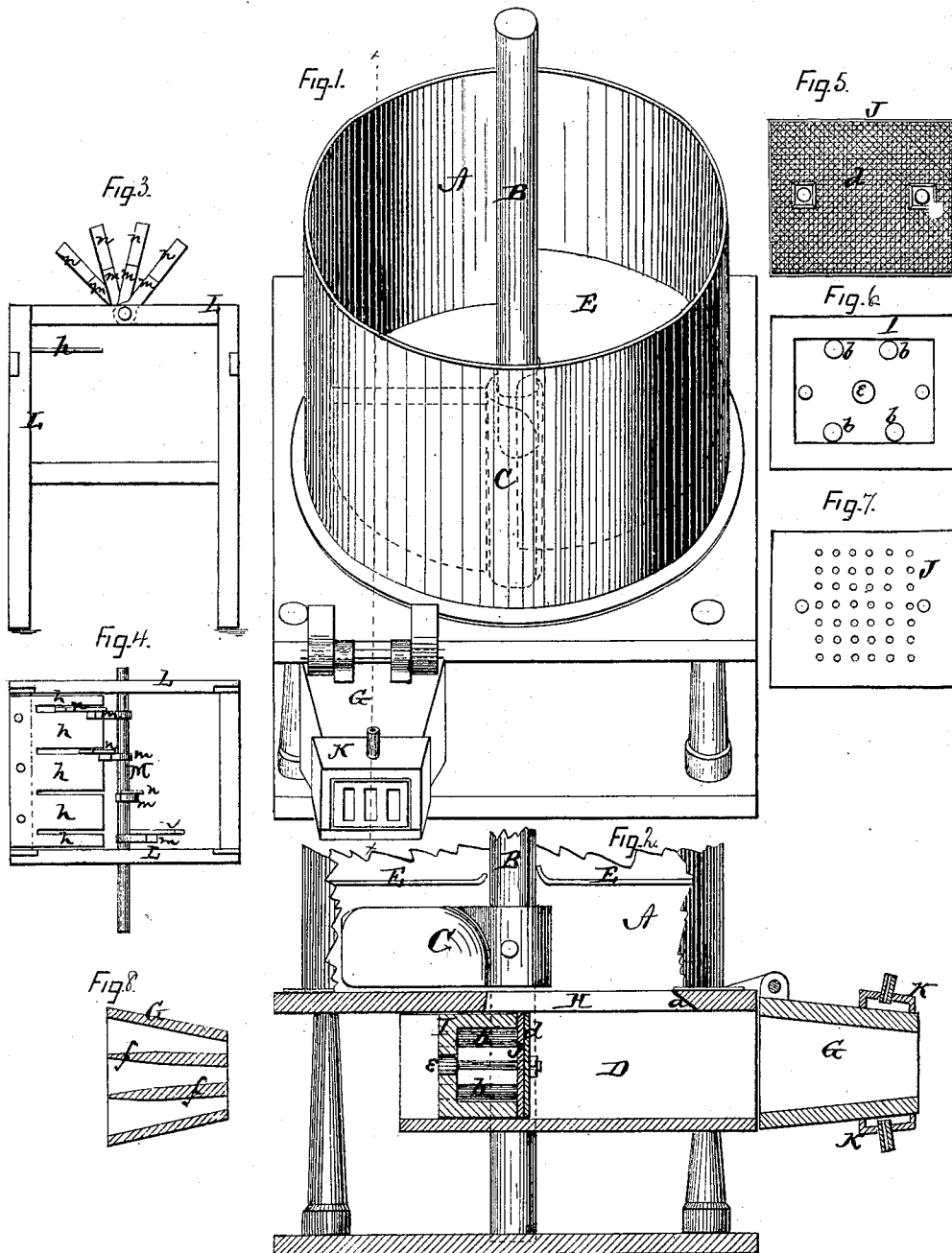


F. L. CARNELL.

Improvement in Brick-Machines.

No. 129,097.

Patented July 16, 1872.



Witnesses:
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L. L. Ewert.

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UNITED STATES PATENT OFFICE.

FRANKLIN L. CARNELL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF
THREE-QUARTERS OF HIS RIGHT TO CHARLES MELCHER, DAVID R. CAR-
NELL, AND WILLIAM H. MELCHER, OF SAME PLACE.

IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. 129,097, dated July 16, 1872.

To all whom it may concern:

Be it known that I, FRANKLIN L. CARNELL, of Philadelphia, in the county of Philadelphia and in the State of Pennsylvania, have invented certain new and useful Improvements in Brick-Machine; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists, first, in the plunger-head being made a hollow square open on one end, and having lugs projecting from the back for the purpose of affording a support to the cloth-covered perforated head-plate, thus giving a free passage for the air to escape through a hole in the back of the plunger-head; second, in a square die having two partitions or sections, said partitions being wedge-shaped, for dividing the clay, thereby equalizing the friction of the clay or web as it passes through the die, and surrounding said die by a steam-chamber or jacket for the purpose of heating the web, thereby causing the steam to act as a lubricator; third, in a mechanism for cutting the clay or web into the required shape for bricks, consisting of a frame having a series of smooth plates or rollers, being set on a line with the bottom of the die to receive the web as it comes from the die, the plates being set apart to allow knives to pass between them. Said mechanism also consists in a shaft with arms and blades or knives, set equal distances apart, for the purpose of cutting the bricks the right length, and the arms so keyed on the shaft that only one knife is cutting at the same time.

In order to enable others skilled in the art to which my invention appertains to make and use the same I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a perspective view of my machine, showing the pug-mill with interior false bottom, and cylinder and die underneath. Fig. 2 is a longitudinal vertical section of the same through line *x x*, Fig. 1. Fig. 3 is an enlarged side elevation, and Fig. 4 an enlarged plan view, of the mechanism for cutting the clay or

web. Fig. 5 is a front view of the plunger-head. Fig. 6 is a similar view of the same with the head-plate removed. Fig. 7 is an interior or rear view of the head-plate; and Fig. 8 is a horizontal section of the die.

A represents the pug-mill of a brick-machine with usual upright shaft B, having propeller C for forcing the clay into the square cylinder or box D underneath. Inside of the mill A, and immediately above the propeller C, is placed a false bottom, E, extending over about one-half, more or less, of the area of the mill, so as to hold the clay up from the propeller C for a part of the revolution, thus lessening the pressure on the same, yet leaving sufficient space for the propeller to gather enough clay to fill the cylinder D underneath, the clay being forced into the same through the aperture H. The front end of this aperture is beveled, as shown at *a* in Fig. 2, thereby giving an outward inclination to the clay and facilitating the filling of the cylinder. I represents the plunger-head, which is made hollow, and of suitable form and size to fit in the square cylinder or box D. It is provided with lugs *b b* projecting from the back to support the head-plate J, which is perforated, and covered on the front or outer side with cloth *d*, thus giving a free passage for the air, which escapes through the hole *e* in the back of the plunger-head I. G represents the die, which is made square and tapering, as shown, and placed at the front end of the square cylinder or box D. The die is provided with two vertical partitions, *f f*, which are made wedge-shaped, as shown in Fig. 8, and divide the die in three sections, thereby equalizing the friction of the clay as it passes through the die. Around the outside of the die G, at the mouth, is a steam-chamber or jacket, K, which, during the operation of the machine, is to be kept full of live steam, so as to heat the web, preventing the same from sticking to the die, the steam thus acting as a lubricator. L represents a frame made of iron, wood, or other suitable material, provided with a series of smooth plates or rollers, *h h*, which are to be set on a line with the bottom of the die to receive the web as it comes from the die, said plates or rollers being set a suitable distance apart to allow knives

to pass between them. *M* is a revolving shaft having its bearings in the frame *L*, and provided with a series of arms, *m m*, having blades or knives *n n*, which arms are set equal distances apart for the purpose of cutting the bricks the right length, and the blades to pass down between the plates or rollers *h h*. These arms with blades are keyed on the shaft at different angles, so that only one knife at a time will pass through the clay or web.

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

1. The plunger-head *I*, made hollow and provided with lugs *b b* and aperture *e*, substantially as and for the purposes herein set forth.

2. The combination of the plunger-head *I*, having lugs *b b* and apertures *e*, with the cloth-covered perforated head-plate *J*, substantially as and for the purposes herein set forth.

3. The combination of the die *G*, having in-

terior wedge-shaped partitions *f f*, and the exterior steam-chamber or jacket *K*, substantially as and for the purposes herein set forth.

4. A series of knives, set at varying angles on a revolving shaft, for cutting the web as it is forced out of the die of a brick-machine, whereby only one knife is allowed to pass through the clay at a time, substantially as herein set forth.

5. The combination of a frame, *L*, plates *h h*, and shaft *M* with arms *m m* and blades *n n*, all constructed and arranged substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 13th day of April, 1872.

FRANKLIN L. CARNELL.

Witnesses:

A. N. MARR,
C. L. EVERT.