

No. 694,394.

Patented Mar. 4, 1902.

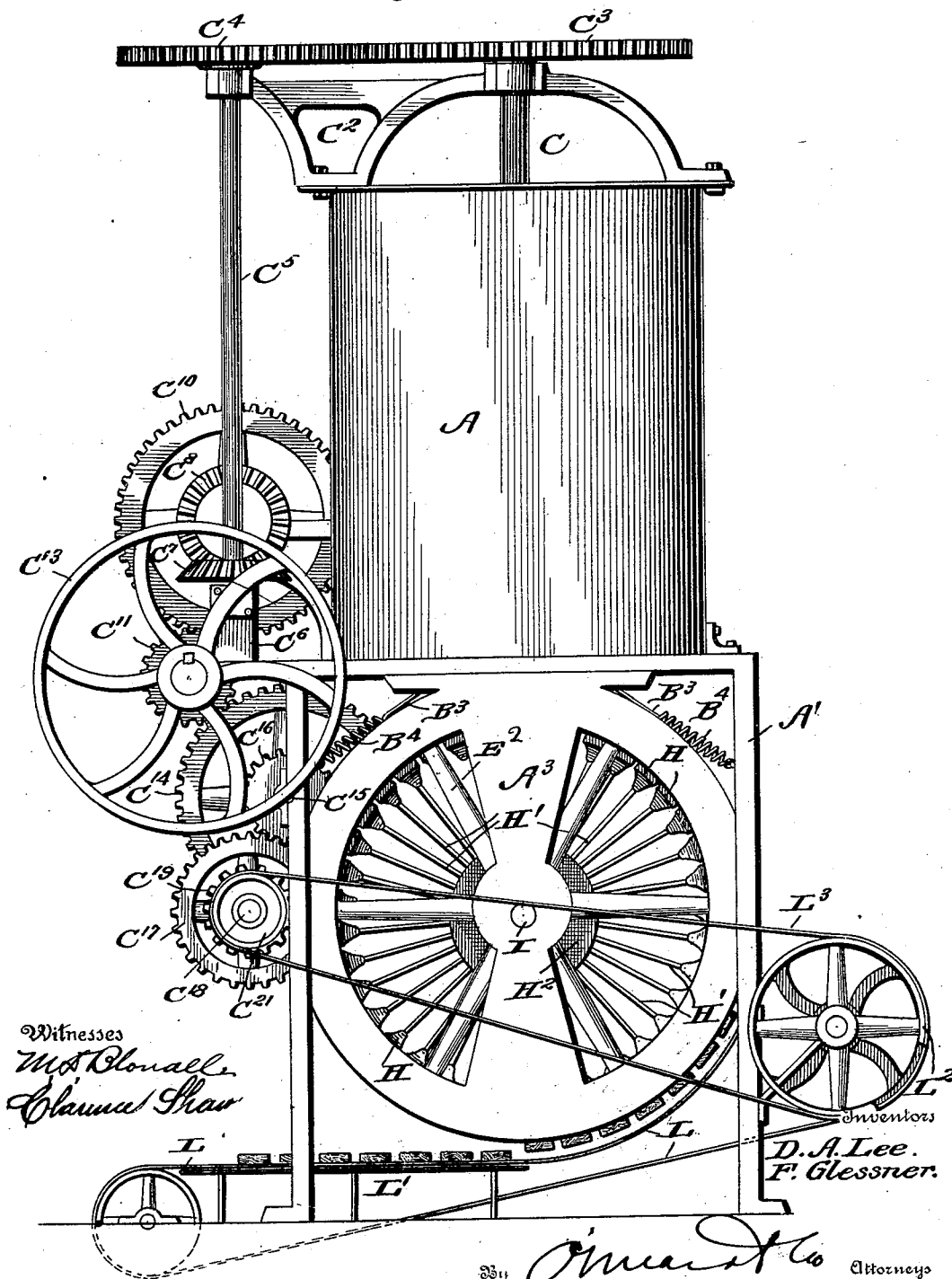
D. A. LEE & F. GLESSNER.
BRICK MACHINE.

(Application filed Mar. 16, 1901.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



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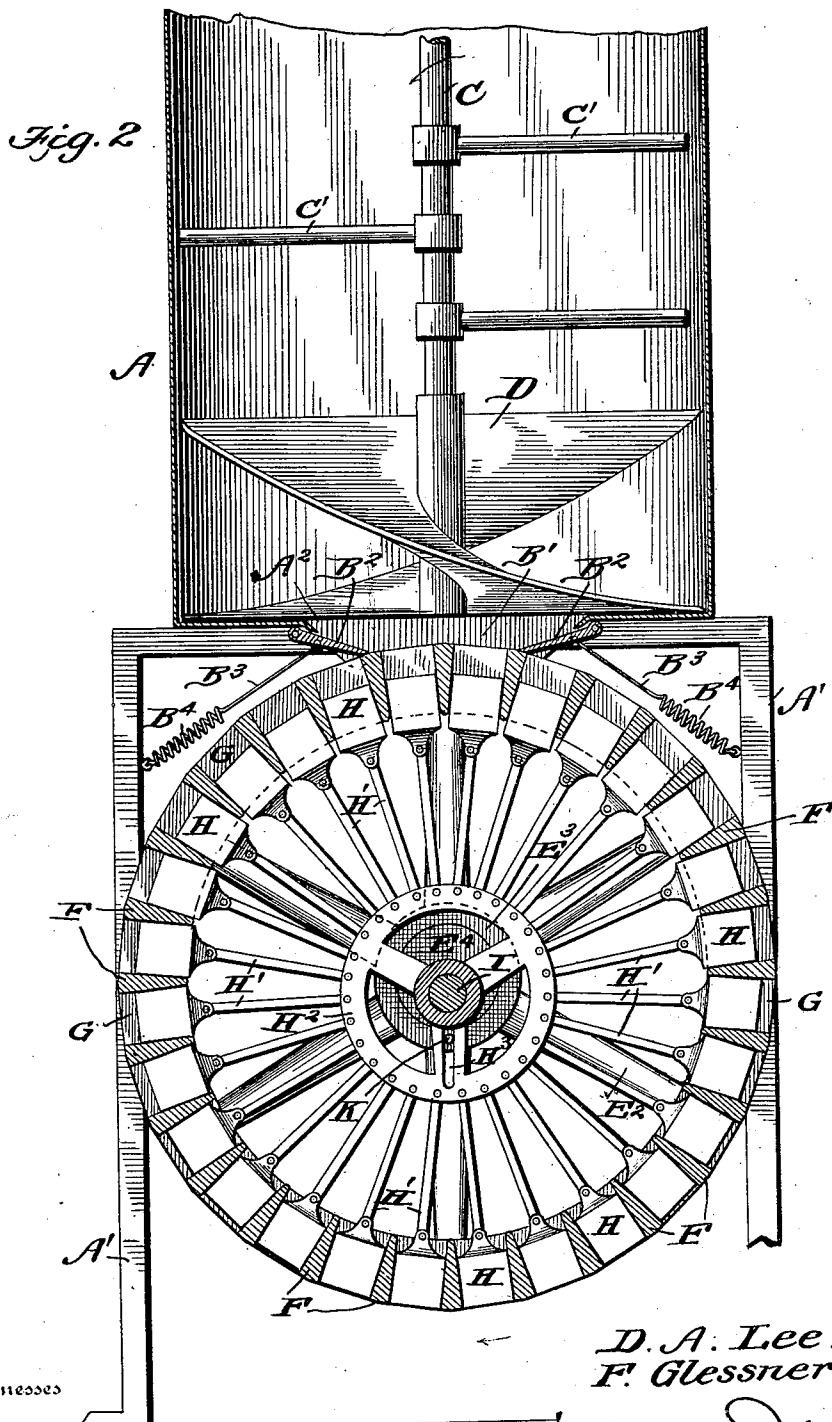
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3 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

DAVID A. LEE AND FRANK GLESSNER, OF SHELBYVILLE, INDIANA.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 694,394, dated March 4, 1902.

Application filed March 16, 1901. Serial No. 51,448. (No model.)

To all whom it may concern:

Be it known that we, DAVID A. LEE and FRANK GLESSNER, citizens of the United States, residing at Shelbyville, in the county of Shelby and State of Indiana, have invented a new and useful Brick-Machine, of which the following is a specification.

This invention relates generally to brick-machines, and more particularly to that class thereof known as "rotary machines," in which the clay to be molded into bricks is fed from a hopper to a molding-wheel rotating beneath the hopper, said bricks being molded during the rotation of the wheel and ejected therefrom at the bottom upon a traveling belt, which carries them to a suitable point for collection.

The object of the invention is to provide an exceedingly cheap, simple, and efficient mechanism whereby all of the operations before mentioned are quickly and easily carried out.

Another object of the invention is to provide improved means for cutting off the surplus clay from the mold-wheel; and another object is to provide simple means for the operation for molding and ejecting plungers.

With these objects in view the invention consists in the peculiar construction of the various parts and in their novel combination and arrangement, all of which will be fully described hereinafter and fully pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a side elevation of a machine constructed in accordance with our invention, the driving-belt being purposely omitted for the purpose of clearer illustration. Fig. 2 is a vertical longitudinal section of the hopper and molding-wheel. Fig. 3 is an end view of the machine. Fig. 4 is a detail sectional view taken transversely through the molding-wheel, the plungers being shown in elevation.

In the practical embodiment of our invention we employ a hopper A, which is mounted upon a suitable frame A', and a vertical shaft C is journaled centrally in the hopper A, carrying stirrer-arms C', and below the stirrer-arms is arranged a spiral blade D, the purpose of which is to forcibly feed the mixed clay out through the opening A², produced in the bottom of the hopper. A trough B is ar-

ranged directly beneath the hopper A, said trough corresponding in size with the opening A², the ends B' of said trough being fixed or rigid, while the sides B² are pivoted at their upper ends, their lower ends resting upon the mold-wheel, hereinafter described, and serving as scraper-plates to cut off the surplus clay fed from the hopper. These movable sides or plates B² are normally held against the mold-wheel by means of rods B³, attached thereto and connected at their outer ends, said rods being coiled intermediate their ends, as shown at B⁴, whereby spring-pressure is applied to the scraper-plates.

In practice we prefer to construct the mold-wheel with two or more rows of molds; but it will of course be understood that a single row of molds may be employed, if desired, the essential features of the wheel remaining the same in all cases. In constructing this wheel we employ the outer rims E and the interior rim or ring E'. The outer rims E are supported by means of the spokes or arms E², which terminate at their inner ends in hubs E³, which turn upon the journals E⁴, which are formed integral with the inner face of plates A³, which constitute a part of the supporting-frame A'. The rims E and E' are connected by means of a series of radial subdividing partitions F, which serve to divide the mold-wheel into a series of molding-compartments, the said partitions being wedge-shaped, as shown, so that they can be properly arranged upon radial lines and provide molds with parallel faces. The partitions and rims are securely bolted together, forming a rigid structure, which will freely rotate upon the journals formed upon the inner face of the plates A³. Each molding-compartment G has a plunger H working therein, each plunger having a pitman H' attached thereto, and each pitman is pivotally connected to a wheel H², the hub of which turns freely upon the rigid axle or shaft I, journaled eccentrically within the journals E⁴, as most clearly shown in Figs. 2 and 4. It will thus be noted that the wheels operating the plungers are journaled eccentric to the molding-wheel, comprising the molding-compartments. In order that the wheels carrying the plungers may be rotated in unison with the molding-wheel proper, we connect the arms E² with the arms of the

wheel H² by means of the rod K, passing through the arms of the wheel H² and securely fastened in the arms E², as most clearly shown in Fig. 4, the arms of the wheel H² being slotted, as shown at H³, on account of the eccentric journaling of the wheel H². The edges of the outer rims E are grooved circumferentially, as shown at E⁵ in Fig. 4, the rigid sides of the trough B fitting into the said grooves and making a perfectly-tight joint at the sides or ends, and thereby prevent the escape of clay.

By referring to Figs. 2 and 4, it will be noted that the clay is fed from the hopper through the trough into the molding-compartments G. Owing to the fact that the plungers are connected with an operating-wheel which is journaled eccentrically, said plungers will be in their lowermost positions in the compartments which are uppermost, and as the molding-wheel rotates the spring-actuated scrapers will serve to cut off the surplus clay, and as the wheel continues its rotation the molded bricks are gradually forced out from the mold by the plungers H, inasmuch as the said plungers reach their outermost positions when the molding-compartments are at their lowest positions. The molded bricks are discharged upon a traveling belt L, which moves through a supporting-table L', and at this point the bricks can be collected and transported to any point desired.

The operations of the various parts of the molding mechanism have been fully described, and we shall describe the means for driving the said parts whereby these operations are accomplished.

The vertical shaft C is journaled at its upper end in a suitable supporting-bracket C² and has a gear-wheel C³ mounted upon its upper end, which gear in turn meshes with a gear C⁴, mounted upon the upper end of a shaft C⁵, which is journaled in one portion of the bracket C² at its upper end and in a bracket C⁶ at its lower end. This shaft C⁵ has a beveled gear C⁷ mounted upon its lower end, which meshes with a beveled gear C⁸, carried by the horizontal shaft C⁹, journaled in the bracket C⁶, said shaft C⁹ carrying a gear C¹⁰ upon its outer end, which meshes with a pinion C¹¹, arranged upon the main drive-shaft C¹², said shaft receiving its motion from a driving-pulley C¹³. The pinion C¹¹ also meshes with the gear C¹⁴, mounted upon the end of a shaft C¹⁵, which carries a pinion C¹⁶, meshing with a gear C¹⁷, mounted upon a shaft C¹⁸, which carries a pinion C¹⁹, meshing with a toothed rim C²⁰, cut in the periphery of the inner rim E, so that by driving the main shaft C¹² through the medium of the drive-pulley C¹³ the vertical shaft in the hopper is revolved in a direction indicated by the arrow, whereby the clay is forced out through the opening in the bottom of the hopper and into the molding-wheel, and at the same time the molding-

wheel is rotated in the opposite direction, as indicated by the arrow. (See Fig. 2.) A band-pulley C²¹ is mounted upon the end of the shaft C¹⁸ and drives the belt L through the medium of a pulley L² and belt L³, so that while the mixing, feeding, and molding operations are taking place the transporting operation can also be proceeding.

It will thus be seen that we provide an exceedingly simple and effective mechanism, by means of which the clay is thoroughly stirred in the hopper, forced therefrom into the rotary molding-wheel, molded into bricks, and then ejected from the molding-wheel upon a transporting-belt ready for delivery to the drying-racks.

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

1. In a brick-making machine, the combination with the rims and subdividing-partitions providing a series of peripheral molding-compartments, the outer rims having arms terminating in hubs which are journaled upon suitable bearings arranged upon the main frame, of the plungers located in the compartments, the pitmen connected to the plungers, the wheel to which the pitmen are connected, the shaft upon which the wheel turns freely, said shaft being arranged eccentrically to the journals upon which the mold-wheel proper turns, and the rod passing through the slotted arms of the pitmen-operating wheel, said arms being rigidly connected to the arms of the mold-wheel proper, whereby the rotating of the mold-wheel causes the pitman-operating wheel to move in unison therewith, substantially as and for the purpose described.

2. In a brick-making machine, the combination with the hopper having a spiral blade arranged therein and adapted to force the clay from the said hopper, a trough arranged beneath the hopper and into which the clay is fed, the sides being pivoted and constituting scraper-plates, the mold-wheel comprising the outer and intermediate rims, and the subdividing-partitions providing a series of peripheral molding-compartments, the outer rims being grooved circumferentially to receive the rigid ends of the trough, the plungers working in the mold-compartments, the pitmen and wheel for operating said plungers, means for causing the pitmen-operating wheel and the mold-wheel to move in unison, the conveyer-belt adapted to receive the molded bricks ejected from the mold-wheel, and means for simultaneously operating the spiral blade and mold-wheel and conveyer-belt, substantially as and for the purpose described.

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