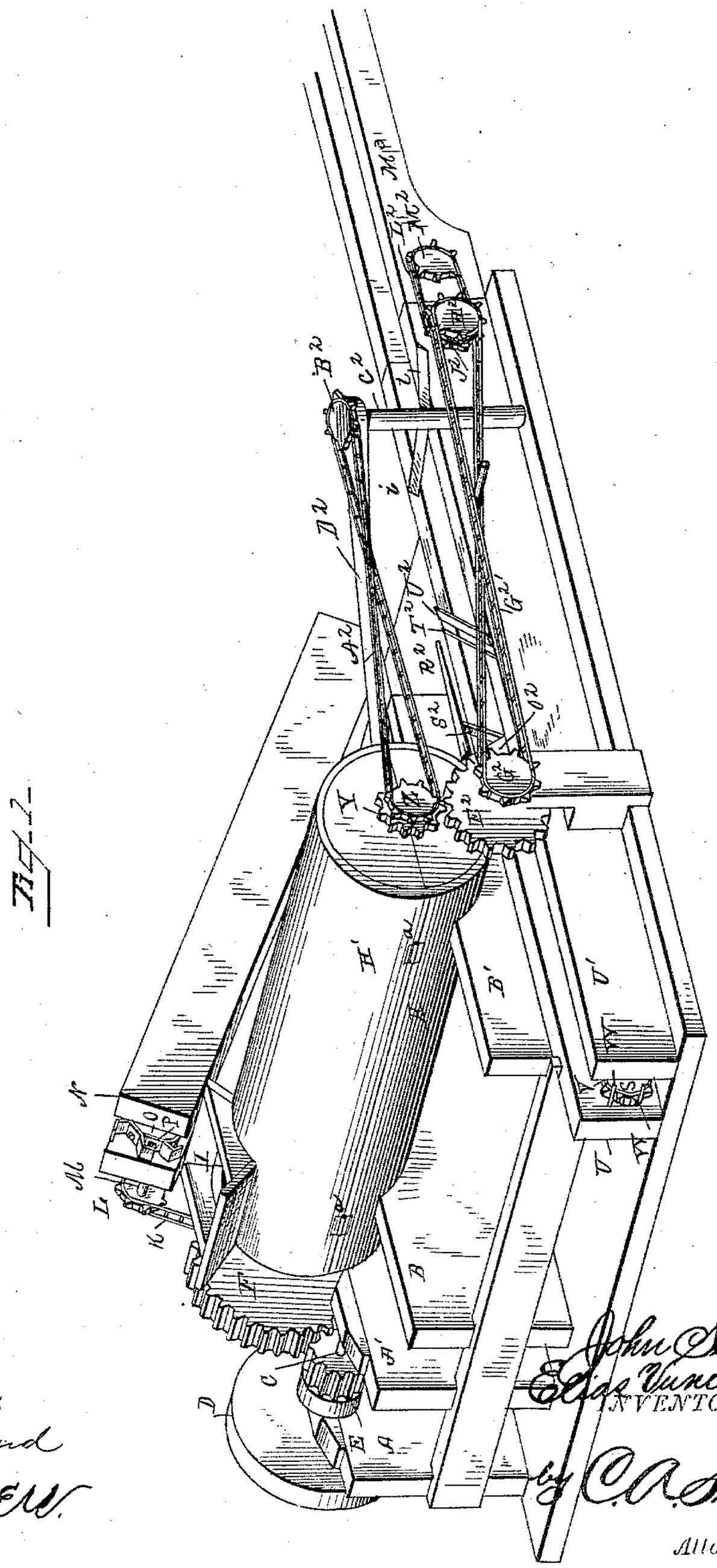
(No Model.) 2 Sheets—Sheet 1.

J. SECRIST & E. VUNCANNON.

BRICK MACHINE.

No. 304,038. Patented Aug. 26, 1884.



WITNESSES
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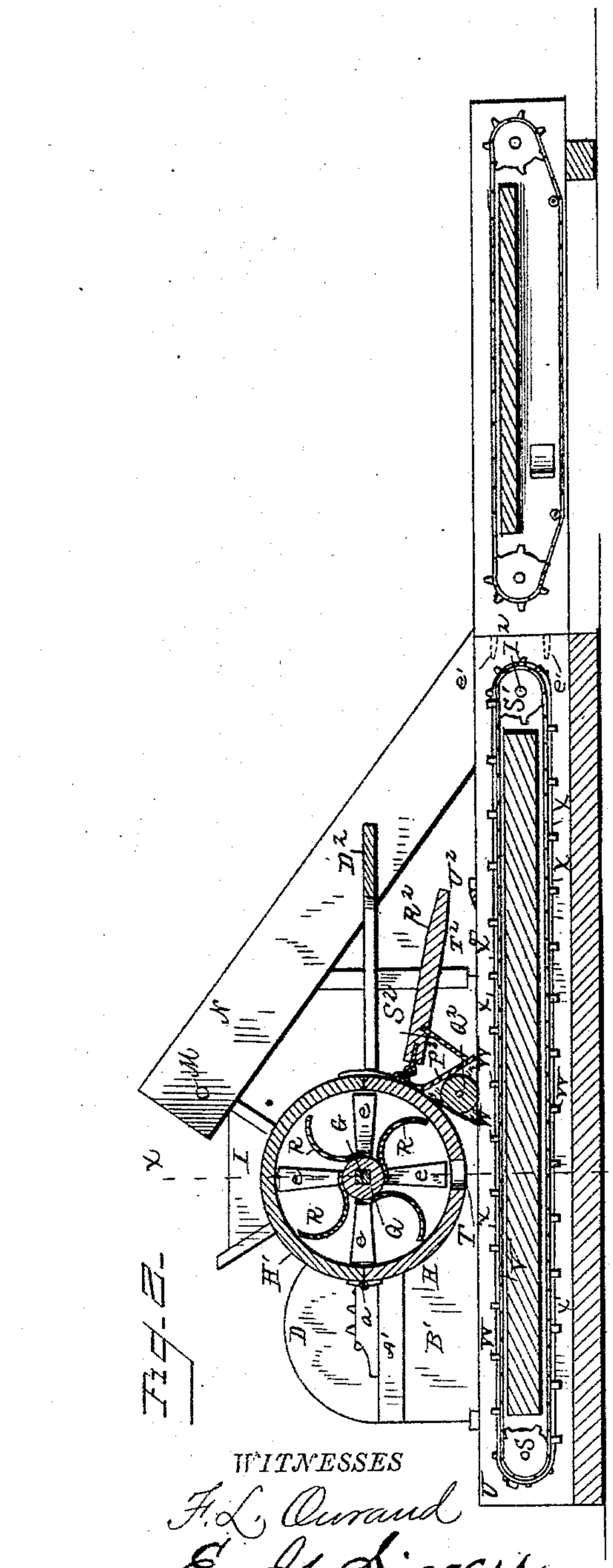

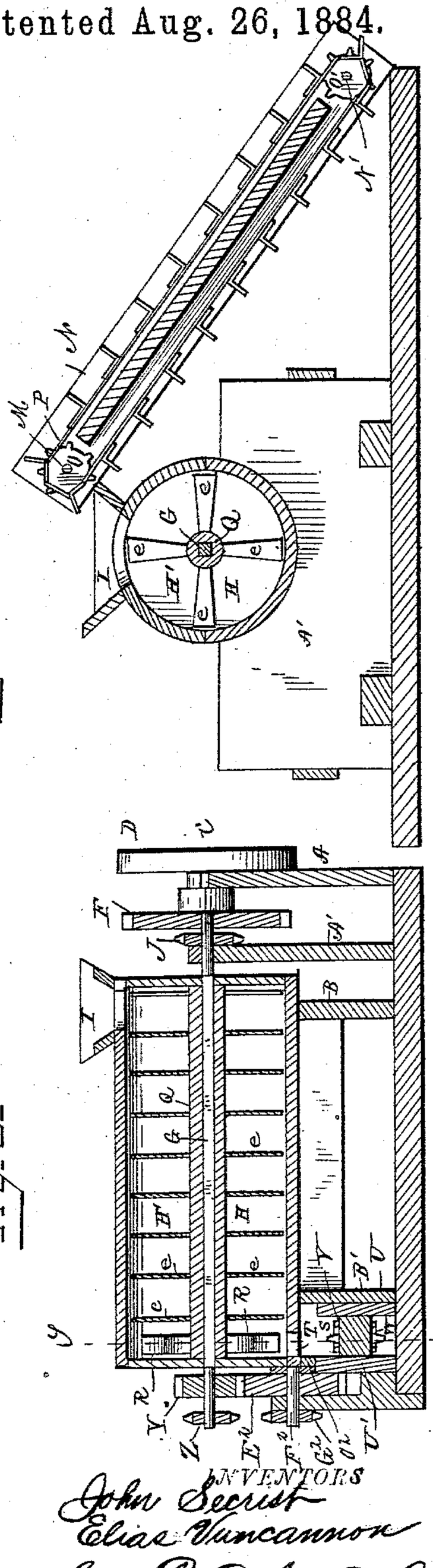

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UNITED STATES PATENT OFFICE.

JOHN SECRIST AND ELIAS VUNCANNON, OF MARION, INDIANA.

BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 304,038, dated August 26, 1884.

Application filed April 29, 1884. (No model.)

To all whom it may concern:

Be it known that we, JOHN SECRIST and ELIAS VUNCANNON, citizens of the United States, residing at Marion, in the county of Grant and State of Indiana, have invented a new and useful Brick-Machine, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to brick-machines, and especially to that class of the same in which the molds are arranged on a traveling chain and pass under the discharge-opening of the grinding or pug mill.

The objects of the present invention are, first, to provide means for delivering the clay directly to the pug or grinding mill; second, to provide an improved grinding-mill, which will grind the same quantity and quality and discharge the clay upon the molds in a given time, the molds being automatically filled with the requisite amount of material as they pass under the discharge-opening of the mill; third, to provide means for preventing any surplus clay from the molds from passing out; fourth, to provide means for removing surplus clay from the molds, and also removing stones or other obstructions, thereby securing a smooth brick; and, fifth, to provide means for receiving the molds from the traveling belt and carrying the same to any desired point.

With these and other objects in view, the said invention consists in certain details of construction and combination of parts, as hereinafter set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view, illustrating our improved machine in operation. Fig. 2 is a transverse section through the pug or grinding mill. Fig. 3 is a longitudinal section through the same. Fig. 4 is a sectional view through the grinding-mill and elevator.

Referring to the drawings, A A′ B B′ designate suitable standards or uprights connected together and braced in any suitable manner, and supporting the pug-mill and its operating mechanism. The driving-shaft C of said operating mechanism is journaled in the standards A A′, and is provided on its outer end with a band-wheel, D, adapted to receive motion by means of a belt-connection with any suitable power, a pinion, E, being mounted on the shaft C between the standards and engaging with a gear-wheel, F, mounted on the end of the grinding-shaft G of the pug-mill. Said pug-mill is cylindrical in form, as shown, and comprises two sections, H H′, semicircular in cross-section, the lower section, H, being stationary and securely held in place by the standards B B′, the latter being cut out to receive said section, and the upper section, H′, being hinged to the lower section, as at *a a*, and carrying the hopper I, a hasp and staple or other suitable means being employed to hold the upper section to the rigid lower section. A sprocket-wheel, J, is mounted on the grinding-shaft G between the gear-wheel F and the standard A′, and a chain-belt, K, connects the sprocket-wheel with a similar wheel, L, mounted on the end of a shaft, M, journaled in the upper end of the frame N of the elevator. The lower end of the frame is provided with a similar shaft, N′, and sprocket-wheels O O′ are mounted on the shafts M N′ and connected by endless chains P, to which suitable buckets (not shown) may be attached, in order to carry up the clay and deliver it to the hopper of the pug-mill, to which the elevator communicates. The grinding-shaft G of the pug-mill passes longitudinally through the same, a sleeve, Q, being secured on the shaft and provided with a series of paddles or grinders, *e e*, which project radially outward from the sleeve, and serve to mix the clay and feed it toward the discharge-opening of the pug-mill. Arms R R, preferably four in number, are secured on the end of the sleeve Q directly above the discharge-opening T of the pug-mill, said arms being curved and shaped in the manner shown, so as to press the clay downward through the discharge-opening upon the molds, as hereinafter set forth.

U U′ designate two beams arranged parallel to each other and at right angles to the pug-mill, and forming a frame in which the molds travel, the space between the beams registering with the discharge-opening of said mill, sprocket-wheels S S′ being mounted at both ends of the beams and connected by endless chains V, said chains being connected at intervals by transverse bars W W, the latter being connected by short slats X X, the molds, of any

desirable form and thickness, resting on the slats between the transverse bars, so as to be held properly in place and yet may be readily removed, as desired.

The grinding-shaft G extends through the end of the pug-mill beyond the arms R, and has mounted thereon a gear-wheel, Y, and a sprocket-wheel, Z, the sprocket-wheel connecting by an endless chain, A^2, with a similar sprocket-wheel, B^2, on the upper end of a vertical shaft, C^2, said shaft being mounted in the end of a bar, D^2, extending outward from the standard B′ over the frame in which the molds travel, the lower end of the vertical shaft being suitably journaled to the frame. Fingers *i i* project radially outward from the vertical shaft and operate across the beams U U′, and are adapted to pick stones and other obstructions from the molds, so as to provide a perfect brick. The gear-wheel Y of the grinding-shaft G meshes with a similar gear-wheel, E^2, working on a shaft, F^2, mounted in an extension of the frame of the machine, a sprocket-wheel, G^2, being secured on the end of the shaft F^2 and connecting by a chain, G^2, with a sprocket-wheel, H^2, on the end of shaft I^2, carrying the sprocket-wheel S′, another sprocket-wheel, J^2, being secured on the shaft I^2, adjacent to the wheel H^2, and connecting by a chain, L^2, with a sprocket-wheel, M^2, of a suitable carrier, M^3. Said carrier is preferably formed of a frame provided with pins *e* to enter openings in the ends of beams U U′, so that said carrier may be detached therefrom, as desired, an endless chain with sprocket-wheels being employed to receive the molds from the machine and transport the same to any point required. Slats O^2 O^2 are secured to the beams U U′ on each side of the discharge end of the mill, and a shoe, P^2, is pivoted to the stationary section H of the mill and fits between the said slats, a roller, Q^2, being journaled in the shoe, and is adapted to smooth the clay around the molds. A lever, R^2, is pivoted to the section H above the shoe, and is provided with a downwardly-extending arm, S^2, adapted to bear against the shoe, so as to press the same onto the molds. A wire, T^2, is arranged at an inclination across the beams U U′, and a cutter, U^2, is arranged in a similar manner adjacent to the wire, said wire and cutter being adapted to remove any surplus clay from the molds, and thus enable the bricks to present a smooth and even appearance.

The operation of my invention will be readily understood from the foregoing description, taken in connection with the annexed drawings.

The machine is set in operation by the employment of steam, water, or other power, the elevator supplying the hopper of the pug-mill with the necessary amount of clay, which drops down inside of the mill, and is acted upon by the paddles, which serve to mix the same thoroughly and feed the material toward the discharge-opening, where the curved arms press it downward through the opening onto the traveling molds. The shoe prevents any surplus material from escaping, the roller running over the mold and smoothing the material around the same. As shown, the molds rest on slats within transverse bars, and are thereby held in proper position without any danger of being displaced, the endless chain carrying the molds directly beneath the discharge-opening to receive the necessary supply of clay, then beneath the shoe, and outward to the end of the machine, the carrier receiving the molds from the mold-carrying chain, and adapted to carry the molds to any desired point. In the passage of the molds from the mill to the carrier the wire and cutter remove the surplus material from the molds, and also smooth the surface of the same, while the revolving fingers on the vertical shaft serve to remove stones and other obstructions which may be settled in the molded brick.

It will be seen that the pug-mill grinds the clay thoroughly, and, should there be any stones or other obstruction to effect the operation of the grinding-shaft, the hinged section of the mill may be raised to permit access to the interior thereof and remove the same. The elevator carries up the supply of clay directly to the hopper, and is operated by the movement of the mill. The clay as it is ground in the mill is fed toward the discharge-opening of the mill, where the curved arms press it downward upon the molds, so as to automatically fill the latter. The finger, with its operating-shaft, is also operated by the movement of the mill, likewise the carrier.

It will be seen that the pressure of the shoe can be regulated by the lever hereinbefore referred to, and should there be any stones or other obstructions said shoe will be allowed to raise and permit the passage of the obstruction, and thus accidents to the machinery will be avoided.

Our improved machine is simple, durable, and inexpensive in construction, and efficient in operation, and will prove of great utility for the purposes intended. By means of the same the manufacture of bricks can be conducted more successfully, with less expenditure of time and labor, and produce greater and more perfect results than heretofore.

Having described our invention, we claim—

1. In a brick-machine, the combination, with the pug-mill and the mold-carrying chain, arranged as shown, of a shaft provided with suitable operating means, and having a series of arms or fingers arranged to sweep across the molds and pick out stones and other obstructions, as set forth.

2. In a brick-machine, the combination, with the pug-mill, of a triangular-shaped pivoted or hinged shoe attached to the mill in front of the discharge-opening, said shoe hav-

ing a roller journaled therein, and a hand-lever pivoted to the mill above the shoe and arranged to bear against the same, said shoe being adapted to be raised as desired, as set forth.

3. In a brick-machine, the combination, with the pug-mill, of the mold-carrying chain moving in a suitable frame, and a wire arranged in an inclined direction across the frame above the molds, as set forth.

4. In a brick-machine, the combination, with the pug-mill and the mold-carrying chain moving in a suitable frame, of a cutter arranged in an inclined direction across the frame, and a wire arranged in front of the cutter, as set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

JOHN SECRIST.
ELIAS VUNCANNON.

Witnesses:
SAML. HULLEY,
JAS. F. MCDOWELL.