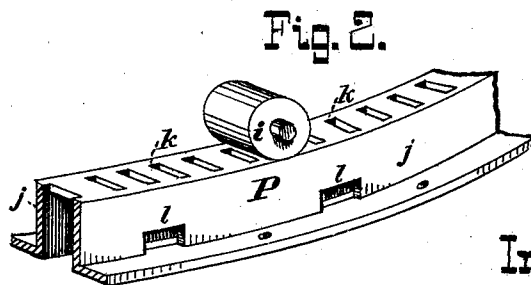
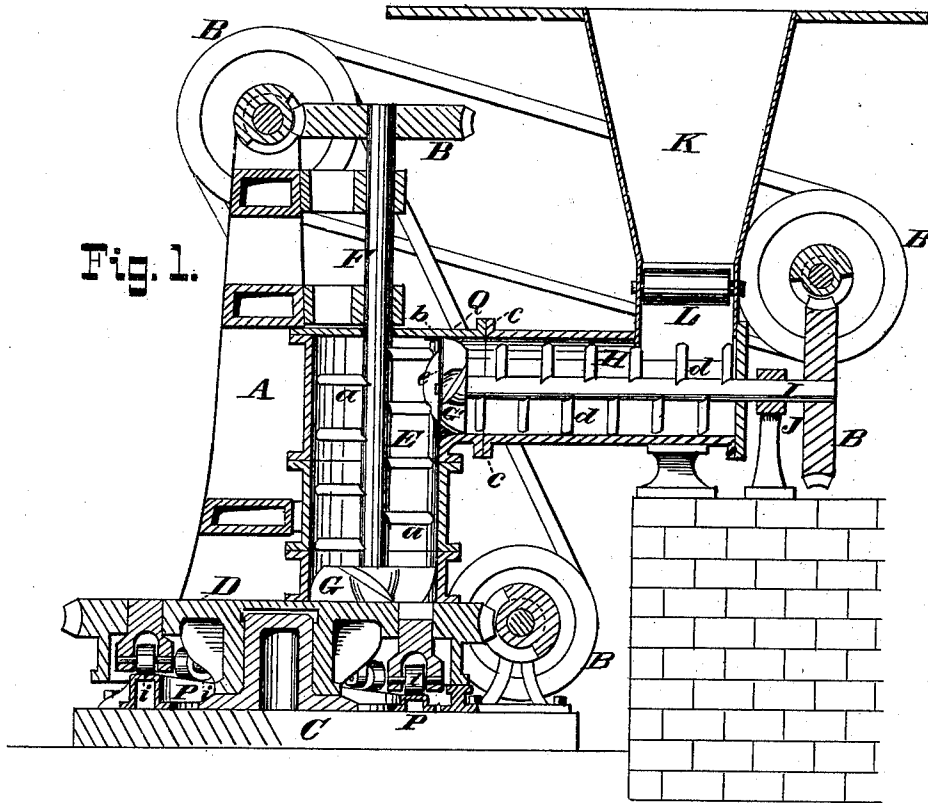


A. MORAND.
BRICK-MACHINE.

No. 170,761.

Patented Dec. 7, 1875.



Witnesses:

Arthur C. Fraser.

Thomas J. Kergham

Inventor:

Augustus Morand.

By his Attorneys:

Burke & Fraser

UNITED STATES PATENT OFFICE.

AUGUSTUS MORAND, OF GERMANTOWN, PENNSYLVANIA.

IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. **170,761**, dated December 7, 1875; application filed May 24, 1875.

To all whom it may concern:

Be it known that I, AUGUSTUS MORAND, of Germantown, in the county of Philadelphia and State of Pennsylvania, have invented certain Improvements in Brick-Machines, of which the following is a description:

My invention has for its object, first, a freer passage for the clay from the pug-mill or tempering-machine to the receiver; second, more perfect propelling apparatus for forcing the clay toward and into the molds; third, the automatic clearing of the roller track or way.

One feature of my invention consists in the combination of a horizontal pug-mill or tempering-machine with a vertical clay-receiver, each provided with suitable propelling apparatus, so arranged that the clay passes from the crushing-rollers to the molds freely, and with very little friction.

Another feature consists in providing the hollow camway with openings in its upper face and side or sides, for the purposes hereinafter set forth.

In the drawings, Figure 1 is a longitudinal vertical mid-section of a brick-machine, showing my improvements. Fig. 2 is an enlarged perspective detail, showing the perforated circular track.

Like letters of reference designate corresponding parts in all of the figures.

The general construction of the frame-work A, gear-wheels B B, base-plate C, and mold-wheel D, herein shown, is substantially the same as that described in former Letters Patent granted to me, dated June 27, 1871, and September 3, 1872, and I desire to clearly distinguish between these features and what I now claim as new.

E is a vertical receiver for tempered clay, within which revolves a vertical shaft, F, provided with obliquely-arranged radial blades *a a*, and a propeller, G, at the lower end over the mold-wheel D. The receiver is provided with a cover, *b*, and has a short flanged branch, Q, which coincides with and receives the flange *c* of a horizontal clay-tempering machine, H. Within this latter revolves a horizontal shaft, I, provided with radial pugging-blades *d d*, obliquely arranged in the usual manner. This shaft has an outside bearing

at J, and an inside bearing at *e*, near the flange-joint, and is provided with a propeller, G', keyed to its extreme end beyond the bearing *e*, and within the branch Q, working as close to the blades *a a* as possible. K designates the hopper for receiving the uncrushed clay, and L the crushing-rollers, all of which may be arranged in connection with the pug-mill H, in the usual manner.

It has heretofore been customary when using a horizontal pug-mill in connection with a receiver closed at the top, to connect the two by means of a narrow conduit or pipe. In this construction the propelling mechanism in the mill and that in the receiver being necessarily separated a considerable distance, the tempered clay will inevitably clog up the narrow conduit, and become so compacted as to stop the working of the machine. With the construction shown herein this is impossible, for the propeller G' works so closely to the blades in the receiver that the moving mass of clay is being continuously acted upon at all points, and no contraction is experienced, owing to the pug-mill cylinder being joined directly to the larger cylinder of the receiver. The propellers G G' differ only in size, being made to fit snugly in their respective cylinders.

The inclined camway P is cast hollow, and in form corresponds with that described in my Letters Patent before mentioned.

It is found in practice that particles of clay from the machine become attached to the surfaces of the rollers *i i* and impede their smooth rolling action on the camway. To obviate this I perforate the upper face of the camway with openings or slots *k k*, preferably extending only across between the sides *j j*, leaving an uninterrupted bearing-surface for the ends of the rollers. The edges of these openings bite into the particles of clay, which are thus loosened and pressed down through said openings into the hollow of the camway, eventually passing out at the openings *l l* in the outer side *j* of the said camway.

I do not confine myself to any particular shape or form of the opening *k*, but consider that shown as well adapted to accomplish the desired result.

As the clay particles contain more or less

oil from the machinery they do not dry readily, and therefore are less liable to choke up the hollow of the camway.

The cylinders of the receiver E and pug-mill H might be cast in one piece, or joined together in any other manner than that shown; or they might be considered jointly as a right-angled pug-mill, as the receiver assists in tempering the clay; but I have preferred to designate each part separately, as "horizontal pug-mill" and "vertical receiver," for the sake of clearness in the description.

I claim—

1. In a brick-machine, the combination of the mold-wheel D, vertical receiver E, and horizontal pugging-mill H, arranged substantially as shown, and provided with suitable shafts and pugging-blades, and the propellers G G', constructed as described and arranged, to operate substantially as set forth.

2. The combination of the vertical receiver E and horizontal pugging-mill H, arranged as shown, and provided with suitable shafts and pugging-blades, the mold-wheel D, the propellers G G', constructed as described, and the hollow way P, as and for the purposes specified.

3. The hollow camway P, provided with openings *k k* in its upper face, and openings *l l* in the side, for the escape of obstructions to the rollers *i i*, in the manner substantially as shown and described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

AUGUSTUS MORAND.

Witnesses:

HENRY CONNETT,
ARTHUR C. FRASER.