George Clayton

Imp'vts. in Tile Machines.

117983

PATENTED AUG 15 1871

Fig. 1.

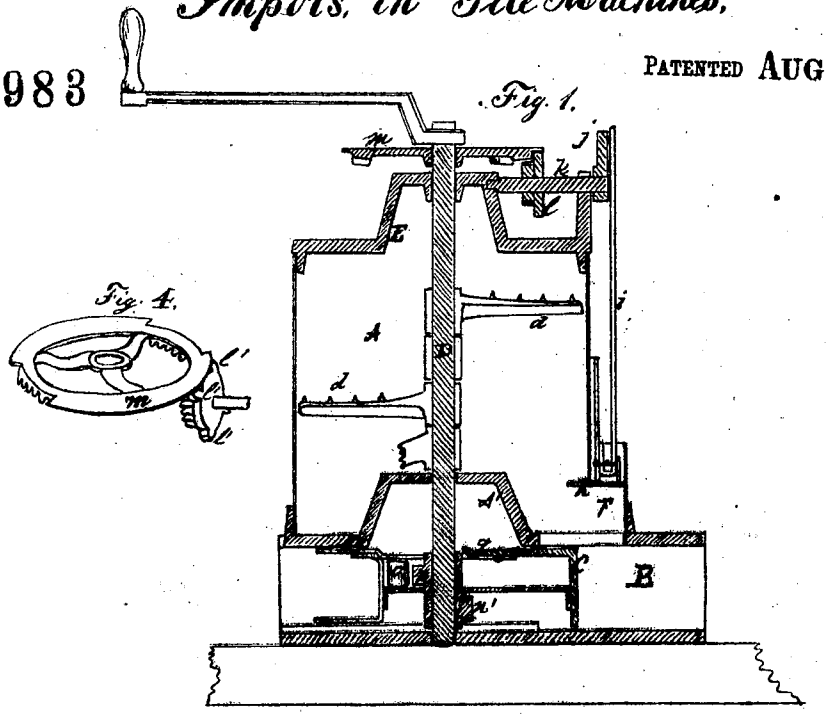


Fig. 4.

Fig. 5.

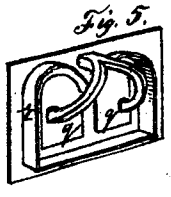


Fig. 2.

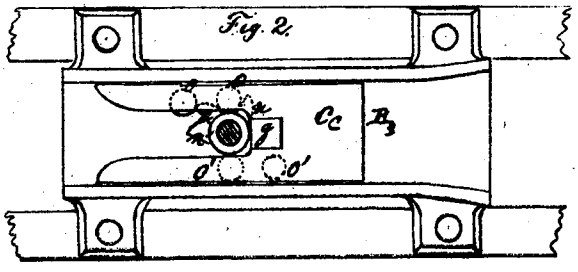


Fig. 3.

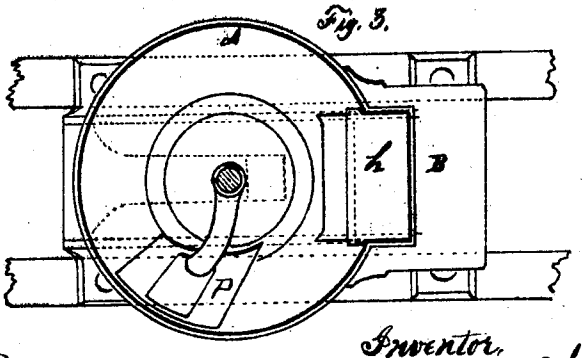
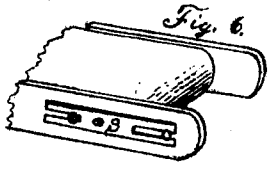


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE CLAYTON, OF CLEVELAND, OHIO.

IMPROVEMENT IN TILE-MACHINES.

Specification forming part of Letters Patent No. 117,983, dated August 15, 1871; antedated August 11, 1871.

To all whom it may concern:

Be it known that I, GEORGE CLAYTON, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain Improvements in Tile-Machines, of which the following is a specification:

The first part of my invention relates to the manner of constructing the bottom of the tub, providing it with a dome in the central part, and in providing an auxiliary space, whereby a larger throat is obtained, enabling the clay to be more easily and thoroughly fed to the dies; also, in combination with the above mentioned, providing an auxiliary plunger operated by a crank and gearing from the top of the machine, the object of which is to close the throat while the main plunger is moving forward. The second part of my invention relates to the combination, with short arms on the lower end of the shaft and rotating with it, of friction-rollers arranged in the frame-work of the main plunger, the object being to obtain increased power, and making the machine work easier; also, in combination with the above, the trap-lid for covering the slot in the frame of the main plunger when it is carried forward and the slot comes under the throat. The third part of my invention relates to the construction and arrangement of the gear-wheels on the top of the machine, whereby the auxiliary plunger which covers the throat shall be operated alternately to rise and fall at suitable intervals. The fourth part of my invention relates to the construction of the dies for tile, whereby double tile can be made, and also in providing them with an inside flange, enabling the clay to pass more easily on all sides alike. The fifth part of my invention relates to an adjustable box or bearing for the journals of one of the rollers for the endless belt in one end of the conveyer-frame.

Figure 1 is a vertical section of a machine embodying my invention. Fig. 2 is a plan of the main plunger and devices for operating it. Fig. 3 is a plan of the bottom of the tub, showing the dome and throat. Fig. 4 is a detached view of the gear-wheels. Fig. 5 is a detached view of a die. Fig. 6 is a portion of endless-belt conveyer-frame, showing the adjustable bearing.

A is the tub of a tile-machine, which sits on a frame or box, B, in which is placed the main plunger C, said plunger being operated by the upright shaft D. The lower end of the shaft is set in a suitable step in the bottom of the box B. Across the top of the tub A is placed a cross-piece, E, through which the top of the shaft D passes. Upon the shaft D are the mud-wings *d d* for grinding and mixing the clay. The bottom of the tub A has a dome, A′, the object of which is to provide an annular space next to the sides of the tub, by which the clay shall be more easily conveyed to the circumference and into the throat leading to the dies. The under side of the dome also gives space for the trap-lid *g* to rise. In the front side and at the bottom of the tub is provided an auxiliary space, F, by which the throat is extended to give it ample capacity for feeding the dies. In the space F is placed a plunger, *h*, operated by a pitman, *i*, connected with a crank, *j*, on a small shaft, *k*, on which is a pinion, *l*, operated by a gear-wheel, *m*, secured to the top of the main shaft D. The gear-wheel *m* is made with a wide flange, which slides over the pinion *l* to prevent its revolving, except at the two opposite spaces cut out of the flange, at which spaces, on the under side of the wheel *m*, are segments of gearing sufficient to cause the pinion to turn half round, the pinion only having gearing on two opposite sides, and having four projections, *l′*, which serve to steady the crank, to keep it firm, and hold the plunger *h* in position. The lower end of the upright shaft D is provided with two sets of short arms, *n* and *n′*, the upper ones *n* for carrying the plunger backward, and the lower ones *n′* for carrying it forward. The plunger-frame is divided most of its length into two parts, so that it can pass back of the shaft D. On one side of the frame are arranged two friction-rollers, *o o*, which are operated on by the upper arms *n n*, and in the other side of the frame are two other rollers, *o′ o′*, which are operated on by the lower arms *n′ n′*. By this means an increase of power is applied to the plunger and makes it work much easier. The position of the mud-wing P is such that, when it passes over the throat, the plunger *h* is up, and then, as soon as it has passed by the throat, the plunger *h* is carried down, and the throat is mostly covered when the main plunger moves forward and forces the clay through the dies. The little trap-lid *g* drops down and covers the slot in the plunger *c* so that no clay can get into the slot when it is under the part of the throat that is not covered by the plunger *h*. The dies, Fig.

5, are made with one or more centers, *q*. With two centers like the one represented a double tile is made, which possesses greater strength and double capacity without using as much clay as to make two complete tiles. On the inside of the die is fixed a flange, *r*, which passes all around, which has the advantage of guiding and conducting the clay more smoothly and easily through the die on all sides alike. On the conveyer-frame are placed adjustable bearings, which consist of a strip of iron, *s*, having a slot in each end, by which means it may be adjusted by being slipped backward or forward on the screws which hold it, the object of which is to adjust the roller so as to make the belt run true.

I claim as my invention—

1. The combination of the tub A, dome A′, extension F, and auxiliary plunger *h* with the pitman *i*, crank *j*, shaft *k*, and gear-wheels *l m* provided with open spaces and the projections *l′*, substantially as and for the purpose set forth.

2. The combination of the tub A, dome A′, extension F, auxiliary plunger *h*, the throat, the base B, and the main plunger C provided with the gate *g*, all substantially as set forth.

3. The double die, Fig. 5, provided with the continuous flange *r* and the centers *q q*, having the arms bent as shown, as and for the purpose described.

Witnesses: GEORGE CLAYTON.

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