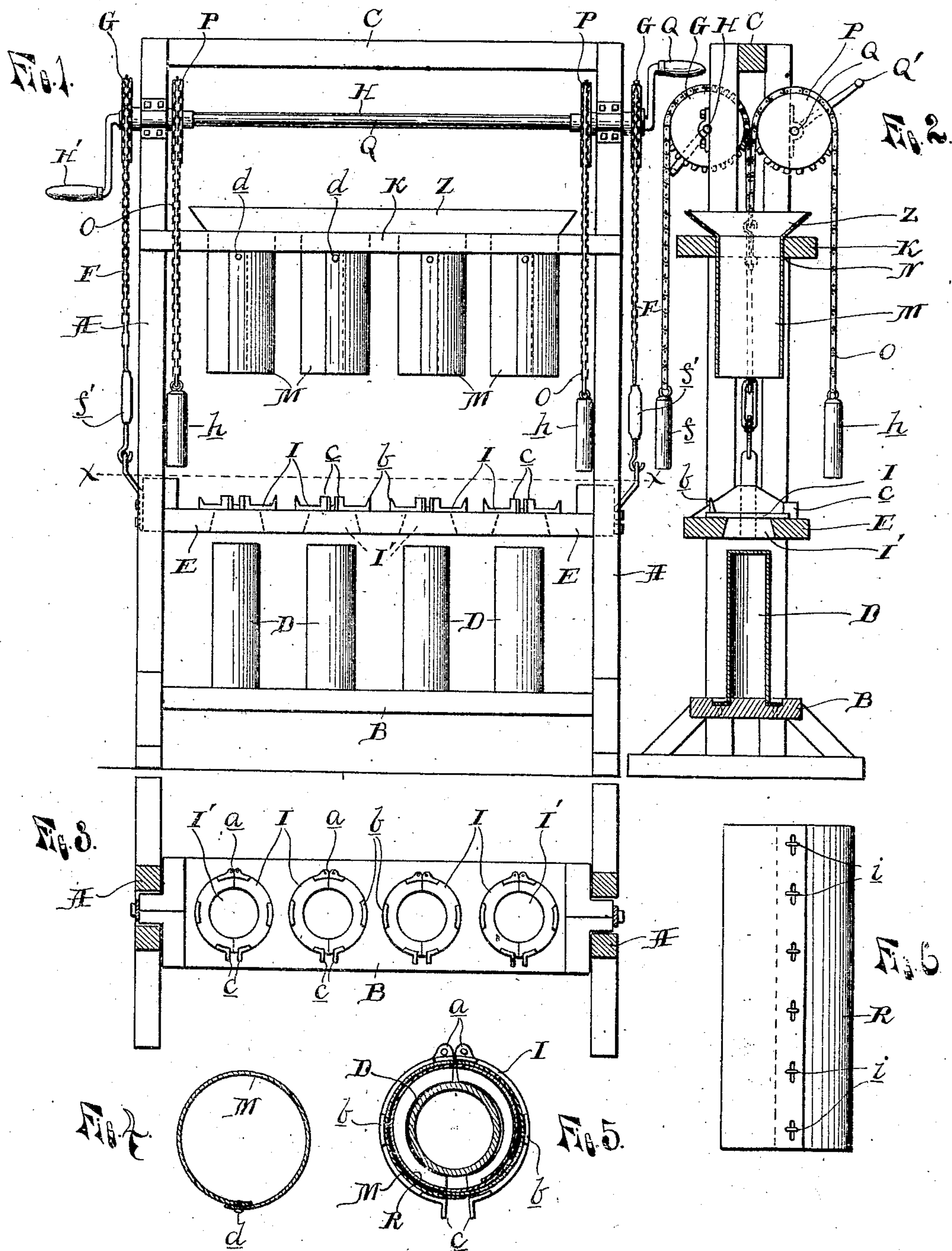


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PATENTED MAY 1, 1906.

L. R. PECK.
CEMENT TILE MACHINE.
APPLICATION FILED JAN. 26, 1906.



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CHARLES O. THOMAS, OF CARO, MICHIGAN.

CEMENT-TILE MACHINE.

No. 819,251.

Specification of Letters Patent.

Patented May 1, 1906.

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To all whom it may concern:

Be it known that I, LUKE R. PECK, a citizen of the United States of America, residing at Caro, in the county of Tuscola and State of Michigan, have invented certain new and useful Improvements in Cement-Tile Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention is particularly designed for the commercial manufacture of tiles from cement or like cementitious material; and it consists in a machine particularly characterized by embodying the use of one-piece molds, all as more fully hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 is a front elevation of the machine. Fig. 2 is a vertical cross-section thereof. Fig. 3 is a horizontal section on line $x x$, Fig. 1; Fig. 4, an enlarged horizontal section of the outer mold, and Fig. 5 is an enlarged horizontal section of the outer mold with the inner mold and the auxiliary mold in position therein as in the operation of the machine. Fig. 6 is a detached elevation of the auxiliary outer mold.

In the drawings, A represents two standards rigidly united near the base by the horizontal member B and at the top by the horizontal member C and forming together the supporting-frame of the machine.

D represents a series of inner molds secured upon the member B, which forms the bench. E is a vertically-movable support slidingly engaging in vertical guide-slots in the standards A.

F represents sprocket-chains suitably connected to the opposite ends of the support E. G G are two sprocket-wheels mounted upon a horizontal shaft H, journaled near the top of the frame and around which the chains F pass, the sprocket-chains carrying weights f at their free ends and provided with turn-buckles f' for lengthening or shortening the chains.

H' is a crank for turning the shaft H for raising and lowering the support E.

I represents a series of clamping-rings, made in halves, secured by pivots a upon the support E. Each half is peripherally provided with upwardly-projecting tapering guide-lugs b and with finger-pieces c at the open ends.

I' represents openings in the support E, adapted to register with the lower molds D.

K is a vertically-movable support guided upon the vertical standards A and provided upon its upper face with a hopper Z.

M is a series of outer molds secured in openings N of the support K and depending therefrom. These molds are of sheet metal made with overlapping ends which near the top are fastened together by a rivet d , but otherwise are free to expand at the lower end.

O represents chains secured to the support K near the outer ends and carrying weights h at the free end.

P represents sprocket-wheels around which the chains O pass.

Q is a shaft journaled near the top of the frame and carrying the sprocket-wheels P.

Q' is a crank for turning the shaft Q, and thereby raising or lowering the support K.

R is the auxiliary outer mold which fits inside the main outer mold M. This mold is made of a sheet of pliable material, preferably of roofing-paper of the necessary strength and waterproof quality to stand extended use, and its longitudinal edges are made to overlap and are detachably fastened together by buttons i or other like fastenings which will be found most suitable.

The machine being thus constructed and arranged as shown and described, the operation is as follows: First, the support E, carrying the clamping-rings I, is lowered down upon the bench B, and then the support K, carrying the outer molds, is likewise lowered in position after each has first received one of the auxiliary molds R, which can be readily introduced from below while the molds are in the elevated position. (Shown in Fig. 1.) In lowering the outer molds it will be seen that their lower edges will be guided into position by the lugs b of the clamping-rings, (which have been previously opened out, as shown in Fig. 5,) and after they are in position the clamping-rings are shut, thereby contracting the lower ends of the outer molds, which on account of having open seams (except at the top, where the rivets d hold them together, are normally flaring outwardly toward the lower end. The molds are now in position, and cement of proper consistency for casting is thrown into the hopper and distributed into the spaces between the respective molds

in a well-known manner to form the tiles. After giving sufficient time for the cement to set the clamps are thrown open again and the outer molds are raised. This leaves the auxiliary outer molds with the tiles cast within undisturbed in position upon the inner mold, and by raising now the support E the tiles, with the auxiliary outer mold remaining thereon, will be stripped of the inner mold and then removed for further drying. After the tiles are suitably hardened the auxiliary molds are then unbuttoned and removed and are used again.

In the operation of the clamps I it will not be necessary to lock them together when closed provided there is sufficient friction in their pivotal connections.

Of course the machine may be constructed with a lesser or with a greater number of molds, and the raising and lowering devices for the movable supports of the clamps and outer molds will be arranged to provide the necessary power, and, if desired, mechanical power may be readily substituted for manual power, although it does not require much power to operate my machine.

With machines of the character described perfect tiles up to the largest commercial sizes may be made, and the manipulation is very simple and within the capacity of ordinary unskilled labor, and it will be readily understood that the keynote of my invention is based upon the use of the auxiliary outer mold, for which I have found asphalt roofing-paper having a smooth hard glossy surface cheapest and best adapted, although I do not limit the scope of my invention to such material alone, but claim the use of any material of similar or like character.

Having thus fully described my invention, what I claim is—

1. In a cement-tile machine, the combination with one-piece inner and outer molds, of one-piece auxiliary outer molds formed of a pliable sheet of a material such as tar or roofing paper and provided upon opposite ends with fastening devices detachably connecting the ends of the sheet together and forming it into an open-ended mold adapted to form a lining for the outer mold in casting the tile and an independent and removable outer support for the tile after casting it.

2. In a cement-tile machine, the combination with an inner mold, of an outer mold adapted to diametrically expand and contract at least for a portion of its length, and an auxiliary outer mold formed of a single sheet of pliable material with overlapping ends provided with fastening devices detachably securing the ends together, said auxiliary molds adapted to form a non-adhesive lining for the outer mold in casting the tile and a removable independent outer support for the tile after the removal of the outer mold.

3. In a cement-tile machine, the combination with an inner mold, of a one-piece outer mold adapted to be diametrically contracted at least for a portion of its length, and an auxiliary outer mold fitting within the outer mold and formed of a sheet of roofing-paper with overlapping ends provided with a button fastening device detachably securing the ends together.

4. In a cement-tile machine, the combination with an inner mold mounted upon a base, a vertically-movable outer mold open-ended and contractible for a portion of its length, a vertically-movable clamping-ring adapted to contract the outer mold upon its lower end and form the base thereon in casting the tile and an auxiliary outer mold adapted to form a non-adhesive lining for the outer mold in casting the tile and an independent and removable outer support for the tile after the removal of the outer mold.

5. In a cement-tile machine the combination with a supporting-frame, of an inner mold rigidly supported thereon, an outer mold vertically movably supported in said frame, and adapted to register with the inner mold, said mold being contractible for a portion of its length, a clamping-ring vertically movably supported in said frame and adapted to register with the inner mold and form the base of the mold in casting the tile and an auxiliary outer mold formed of a sheet of roofing-paper with overlapping ends detachably connected together and adapted to form a lining for the outer mold in casting the tile and an independent outer support for the tile after the withdrawal of the outer mold.

6. In a cement-tile machine, the combination with a supporting-frame and an inner mold stationarily supported therein, of an open-ended outer mold vertically movably supported in the frame above the inner mold and adapted to be registered therewith, said mold being formed of a single sheet of metal with overlapping ends and adapted to be contracted upon its lower portion, and a clamping-ring vertically movably supported in the frame below the outer mold and adapted to be registered with the inner mold and form the base of the mold in casting the tile, said clamping-ring composed of pivoted halves provided with upwardly-projecting guide-lugs adapted to engage the lower end of the outer mold and center and contract the same in the operative position of the parts.

7. In a cement-tile machine, the combination with a supporting-frame, of a series of inner molds stationarily supported in the frame, a corresponding series of outer molds, a common support for the same vertically guided in the frame, a series of clamping-rings adapted to cooperate with the inner and outer molds in the manner described, a common support for said clamping-rings ver-

5 tically guided in the frame, two actuating-shafts journaled in the frame, and actuating connection between said shafts and the supports and adapted to raise and lower the same independently of each other.

10 8. In a cement-tile machine, the combination with a supporting-frame formed with vertical standards, of a series of inner molds stationarily supported in the frame, a horizontal support vertically guided at its ends in the standards of the frame, a series of open-
15 ended outer molds mounted in openings in said support, a hopper mounted upon the support and communicating with the openings therein, a horizontal support guided in the standards of the frame below the first-named support and provided with openings adapted to register with the inner molds,

clamping-rings mounted upon the last-named support around the openings therein, 20 and adapted to form clamping and centering bases for the lower ends of the outer molds, and means for vertically raising and lowering the above-named supports independently of each other, and auxiliary outer molds adapted to form a lining for the outer molds in 25 casting the tiles and to support the tiles independently of the outer molds after casting the tiles.

In testimony whereof I affix my signature 30 in presence of two witnesses.

LUKE R. PECK.

Witnesses:

HENRY PARKER,
LOUIS WEAU.