

No. 840,911.

PATENTED JAN. 8, 1907.

J. CARLEN.
CONCRETE BRICK MACHINE.

APPLICATION FILED APR 21, 1906.

2 SHEETS—SHEET 1.

Fig. 2

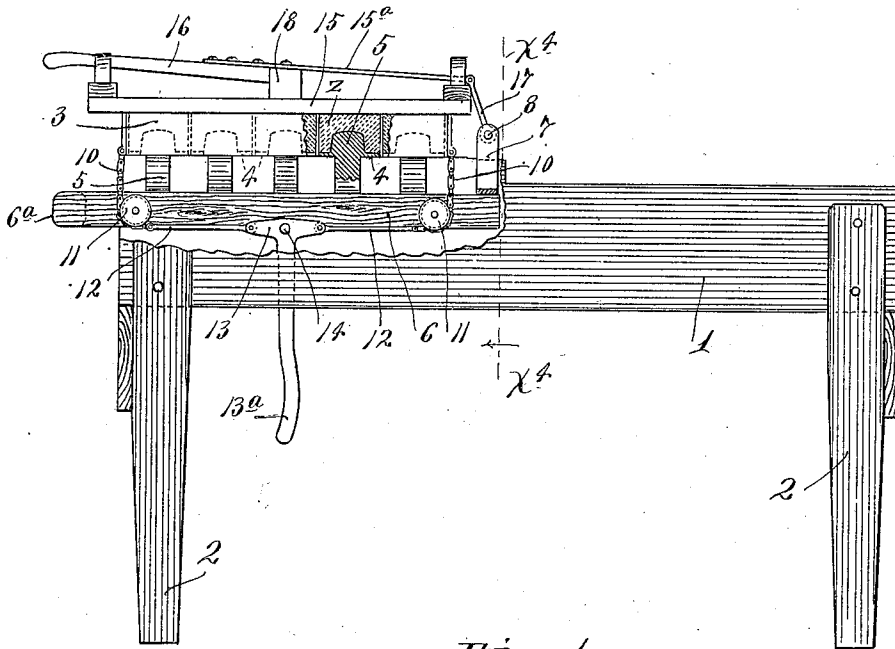
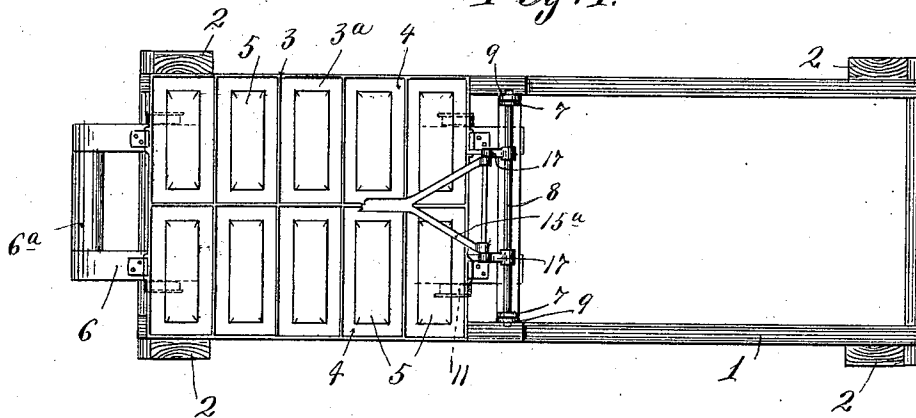


Fig. 1



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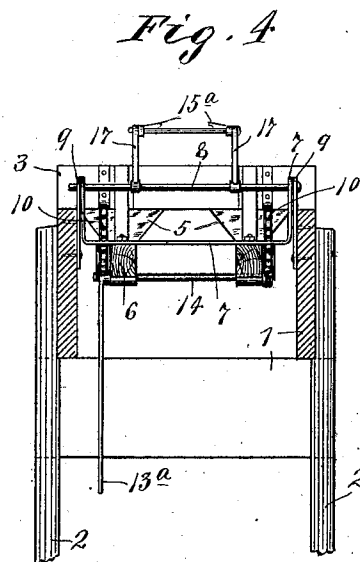
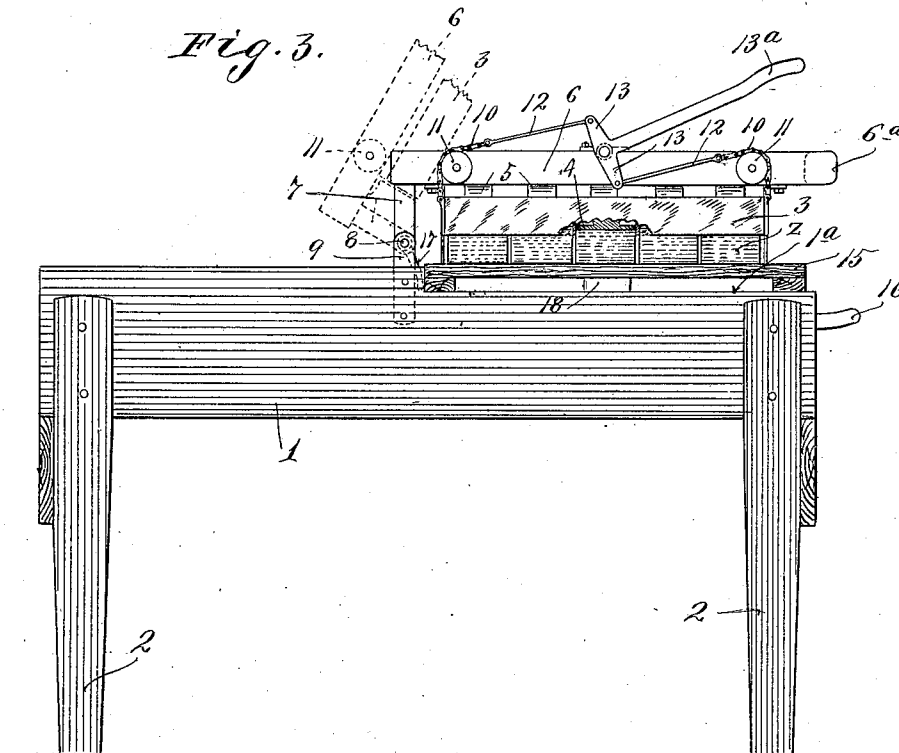
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2 SHEETS—SHEET 2.



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JOHN CARLEN, OF HAVANA, NORTH DAKOTA.

CONCRETE-BRICK MACHINE.

No. 840,911.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed April 21, 1906. Serial No. 312,999.

To all whom it may concern:

Be it known that I, JOHN CARLEN, a citizen of the United States, residing at Havana, in the county of Sargent and State of North Dakota, have invented certain new and useful Improvements in Concrete-Brick Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its especial object to provide an improved machine for molding hollow concrete bricks; and to this end the invention consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a plan view of the improved machine with some parts broken away and with some parts removed. Fig. 2 is a side elevation of the machine with some parts broken and with some parts sectioned. Fig. 3 is a side elevation of the machine, but showing certain of the parts in different positions than those shown in Fig. 2; and Fig. 4 is a transverse vertical section taken on the line $x^4 x^4$ of Fig. 2.

The numeral 1 indicates a rectangular supporting-frame, which is supported from the floor or ground by suitable legs 2.

With the machine described a plurality of bricks may be formed by one operation, and the flask 3, which is constructed of metal, is made up of a plurality of molds 3^a, as shown ten in number, arranged in two rows, with five molds in each row. The molds 3^a are open both at the bottom and top. Working in each mold and closely fitting the walls thereof is a movable bottom plate 4, that has a core 5 formed integral therewith or secured thereto. The several bottom plates 4 are rigidly secured to a carrying-frame 6, which frame at one end is, as shown, provided with hinged brackets 7, both brackets, as shown, being formed by the upturned ends of a metallic strap, which strap is rigidly secured to the said carrying-frame 6. The ends of the hinged brackets 7 are pivotally connected by a hinged rod 8 to the upper ends of hinged brackets 9, that are rigidly secured to the sides of the supporting-frame 1.

The ends of the flask 3 are attached to pairs of chain-sections 10, that run over guide-sheaves 11 on the carrying-frame 6, and are connected by links 12 to the oppositely-extended arms of a pair of rockers 13, one of which, as shown, is provided with an operating-lever 13^a and both of which are rigidly secured to a rock-shaft 14, mounted in suitable bearings on the carrying-frame 6.

The numeral 15 indicates a loose pallet-board that is adapted to be placed loosely on the top of the flask when the flask is in the position shown in Figs. 1 and 2. 16 indicates a pallet-holding lever, which, as shown, is formed with a bifurcated spring-section 15^a, the prongs of which are connected to the hinged rod 8 by short links 17. At its intermediate portion the lever 16 is formed with a presser-block 18, that is adapted to engage the central portion of the back of the pallet 15.

The operation of the improved machine is as follows: The carrying-frame 6 is turned into the position shown in Figs. 1 and 2, at which time the edges of the flask 3 will rest upon the sides of the supporting-frame 1, and the weight of the carrying-frame 6 will draw the mold-bottom plates 4 and cores 5 down into normal position. (Shown in Fig. 2.) While the parts are in this position and before the pallet-board 15 is applied on the top of the flask the several molds are filled with the plastic concrete, made up of moistened sand and cement, and the concrete is tamped down in the said molds. The upper surfaces of the bricks are then troweled off, and the pallet-board 15 is applied on top of the flask in an inverted position, as shown in Fig. 2. Then the lever 16 is turned down so that its block 18 bears on the top of the pallet-board, and then by taking hold of the handpiece 6^a at the free end of the supporting-frame 6 with one hand and by taking hold of the free end of the lever 16 with the other hand the pallet-board is held against the flask and the said supporting-frame, flask, and pallet-board are inverted or turned over into the position shown in Fig. 3 by a pivotal movement of the said supporting-frame 6 on the hinged rod 8. In this way the pallet-board is turned under the bricks and is caused to rest upon the cut-down portions 1^a on the sides of the supporting-frame 1. Then by a movement of the lever 13^a into the position shown in Fig. 3 the flask 3 is raised with a movement always parallel to the face of the pallet-board and is

thus lifted off from the formed bricks, which bricks are left loosely standing on the pallet-board, ready to be carried away with the said pallet-board. The weight of the carrying-frame 6 serves to hold down the mold-plates 4 and cores 5, and thus prevents the bricks from being raised when the flask is raised as just described. Of course if the weight of the carrying-frame 6 should not be sufficient to hold the bricks down the said frame 6 may be positively held down by pressure on its handpiece 6^a. After the bricks are thus ejected from the flask the carrying-frame 6 of the said flask should be turned back to the position shown in Fig. 2, thereby carrying the raised flask against the raised portions of the sides of the supporting-frame 1 and permitting the said carrying-frame 6 by its weight to draw the mold-plates 4 and cores 5 back again down to the bottoms of said molds, as shown in Fig. 2. The flask is then again ready for filling, and after other bricks have been formed therein another pallet-board should be applied on top of the flask and the operation above described repeated.

As is evident, the cores 5 form the bricks with large cavities that open at what would usually be designated as the "bottoms" of the bricks. By thus forming the bricks hollow a large saving of concrete required in their formation is effected, and at the same time the brick is formed which in all respects is as good as a solid brick and is superior to a solid brick, in that an air-space is formed therein, which will resist the passage of frost and moisture.

I claim as my invention—

1. In a machine of the kind described, the combination with a supporting-frame and an invertible carrying-frame hinged thereto and having a plurality of mold-plates, of a flask carried by said frame but movable laterally with respect thereto and having a plurality of molds in which the several mold-plates work, a pallet-board adapted to be applied on top of the filled flask and to be inverted with the flask and carrying-frame, and a lever-actuated means for raising the flask to eject the bricks therefrom when the said parts are inverted, substantially as described.

2. In a machine of the kind described, the combination with a supporting-frame, of an inverted carrying-frame hinged thereto and

provided with a plurality of mold-plates, a flask carried by said invertible frame but movable laterally with respect thereto and having a plurality of molds in which the several mold-plates work, a pallet-board adapted to be applied to the top of the filled flask, a lever hinged to said invertible frame for holding said pallet-board in position while the said carrying-frame, flask and pallet-board are being inverted, a lever-actuated means arranged to impart a parallel movement to said flask to eject the bricks when the said parts are inverted, substantially as described.

3. In a machine of the kind described, the combination with an invertible carrying-frame provided with a plurality of mold-plates, of a flask carried by said frame but movable laterally with respect thereto and having a plurality of molds in which said mold-plates work, a pallet-board adapted to be applied to the top of the filled flask and to be inverted therewith, and means for raising the flask when the parts are inverted comprising guide-sheaves on said frame, an operating-lever pivoted to said frame, and flexible connections between said lever and said flask arranged to run over said guide-sheaves, substantially as described.

4. In a machine of the kind described, the combination with a supporting-frame and an invertible carrying-frame hinged thereto having a mold-plate formed with a core, of a flask carried by said frame but movable laterally with respect thereto and having a mold in which said mold-plate and core are arranged to work, substantially as described.

5. In a machine of the kind described, the combination with a supporting-frame and an invertible carrying-frame hinged thereto having a plurality of mold-plates secured thereto, said mold-plates having cores for producing hollow bricks, and a flask carried by said frame but mounted to move laterally with respect thereto and having a plurality of molds in which the said mold-plates and cores are adapted to work, substantially as described.

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

JOHN CARLEN.

Witnesses:

M. C. MURPHY,
E. J. LEACH.