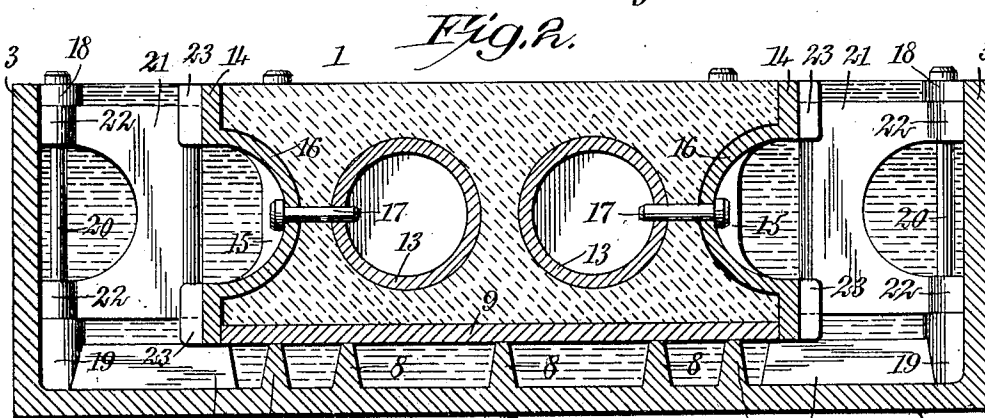
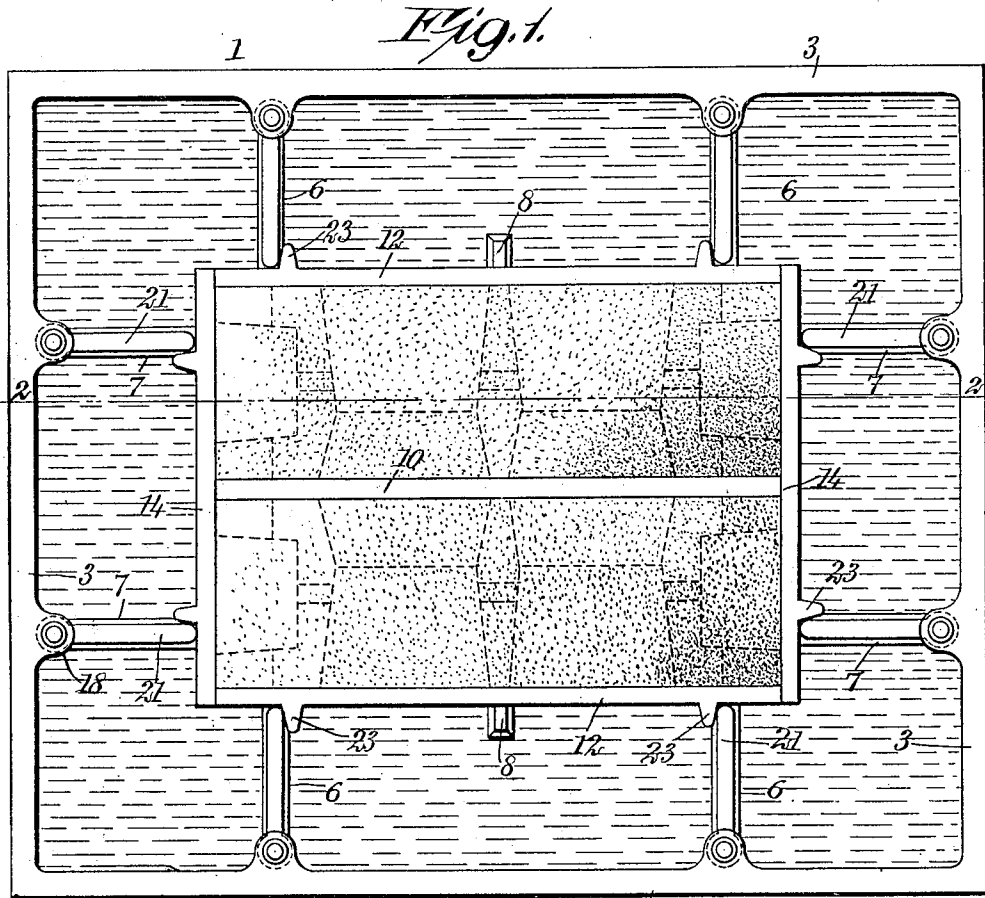


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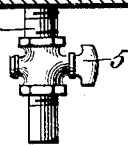
PATENTED JAN. 7, 1908.

F. MORCHER.
CONCRETE BLOCK MACHINE.
APPLICATION FILED APR. 13, 1907.

2 SHEETS—SHEET 1.



WITNESSES
Louis C. Starnes
John H. Beachwood



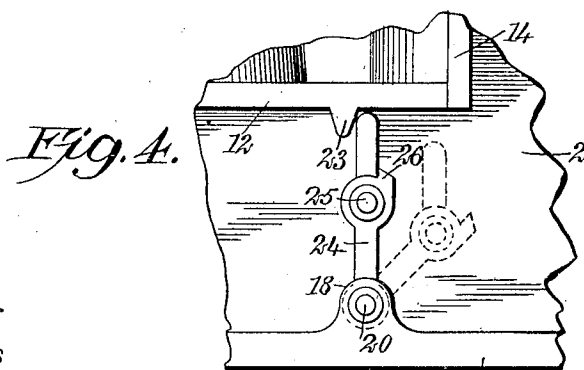
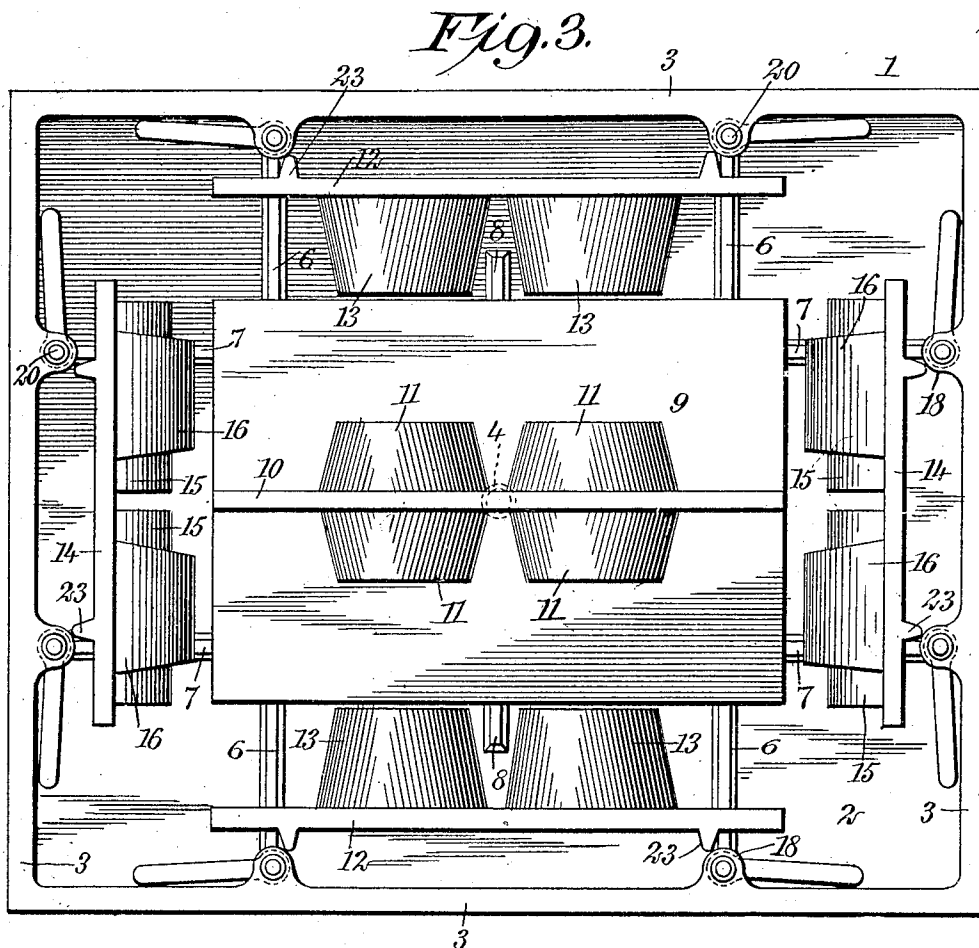
INVENTOR
Frank Morcher
BY *Mum & Co*
ATTORNEYS

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2 SHEETS—SHEET 2.



WITNESSES

Louis C. Starker
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UNITED STATES PATENT OFFICE.

FRANK MORCHER, OF TIFFIN, OHIO.

CONCRETE-BLOCK MACHINE.

No. 876,280.

Specification of Letters Patent.

Patented Jan. 7, 1908.

Application filed April 13, 1907. Serial No. 367,908.

To all whom it may concern:

Be it known that I, FRANK MORCHER, a citizen of the United States, and a resident of Tiffin, in the county of Seneca and State of Ohio, have invented a new and Improved Concrete-Block Machine, of which the following is a full, clear, and exact description.

This invention relates to concrete block machines, and is particularly useful in connection with devices of this character in which a facing liquid is employed to decrease the porosity of the concrete blocks.

The object of the invention is to provide a simple, strong and durable concrete block machine, which can be manipulated with little difficulty and by means of which concrete building blocks of a particularly advantageous form can be manufactured.

A further object of the invention is to provide a device of the class described in which the mold for forming the blocks can be surrounded with a facing liquid.

The invention consists in the construction and combination of parts to be more particularly described hereinafter and fully pointed out in the claims.

Reference is to be had to the accompanying drawings, in which

Figure 1 is a plan view of a concrete block machine of my invention showing a block in the mold, which is surrounded by a facing liquid; Fig. 2 is a vertical cross-section on the line 2—2 of Fig. 1; Fig. 3 is a plan view of the device showing the mold open; and Fig. 4 is a plan view of a part of the device showing a detail of modified form.

Like characters of reference designate corresponding parts in all the views.

Before proceeding to a more detailed explanation of my invention, it should be understood that concrete building blocks are fashioned by means of molds which are so shaped that the block is given the form required for various purposes. In my invention the mold comprises a removable bottom and removable sides and ends, the mold being mounted in a casing. The mold and the casing may be of cast-iron or any other suitable material. The sides of the mold are provided with projections constituting cores, which provide the block formed, with recesses or openings therethrough of the shape desired. The arrangement is such that the bottom of the mold is raised above the bottom of the casing, being carried on suitable

projections; thus the facing liquid may be introduced into the casing to surround the walls of the mold and at the same time to fill the space under the bottom of the mold. The object of employing facing liquid, which may be of a common or preferred kind, is to decrease the porosity of the block. The liquid mixture causes an even, smooth surface to be formed on the block, thus rendering the latter practically water-proof, as the grain is far closer at the surface, and consequently absorbs substantially no moisture. The application of the liquid at the surface of the block setting in the mold retards the setting and hardening of the cement at the surfaces and this retention of the moisture at the surfaces causes the block to present a closer grain at the surfaces.

Referring more particularly to the drawings, 1 represents the casing of my device, having the bottom 2 and the sides 3 integral therewith. An outlet tube 4 having a regulating cock 5 is mounted at the bottom of the casing and communicates with the interior thereof. Upwardly extending guide projections 6 and 7 at substantially right-angles are formed upon the bottom of the casing on the inner side thereof. The guide projections extend from the sides of the casing towards the center of the same. Integral support projections 8 are formed upon the bottom of the casing near the center. Carried by the support projections 8 is the removable bottom 9 of the mold, which has an integral partition 10 extending from end to end longitudinally of the bottom and provided with lateral tubular extensions 11 constituting cores as will appear more clearly hereinafter. The projections 11 are tapered outwardly from the partition to permit the block when finished to be withdrawn therefrom without difficulty. The sides 12 of the mold, which are arranged substantially parallel to the partition 10, are slidably carried upon the guides 6. The sides 12 have inward lateral tubular projections 13 tapered and similar in form to the cores 11 and similarly constituting cores. When the sides 12 are in normal position in the mold the projections 13 engage with the projections 11 of the partition 10 whereby the movement of the sides 12 towards the partition is limited. It will be understood that by means of the partition the mold is adapted for the simultaneous formation of two blocks.

If so desired the bottom of the mold may consist of a flat plate without the partition. When this is the arrangement it will be understood that the tapered extremities of the projections 13 on the sides 12 will be in engagement and but a single block will be formed. The ends 14 of the mold normally engage the edges of the sides 12 and the partition 10 as shown most clearly in Fig. 1. Thus the sides 12 and the partition 10 limit the approach of the ends of the mold, while the approach of the sides 12 is limited by the core projections 11 and 13. The ends 14 of the mold are slidably arranged upon the guide projections 7 and have inward core projections 15 and 16. The core projection 15 is semi-circular in form and the core projection 16 is also semi-circular in form and extends beyond the projection 15. By means of these projections 15 and 16 which constitute cores, semi-cylindrical recesses are formed in the ends of the block, which assist in the ease of handling the block while at the same time decreasing the weight of the latter; the openings formed through the block by the cores 11 and 13 also decrease the weight of the same.

Sometimes it is of advantage to provide concrete building blocks with openings there-through adapted to receive bolts, by means of which the structure formed of the blocks may be bonded, or by means of which objects may be secured to the structure. To provide such bolt holes in the blocks I provide pins 17 located in openings in the core projections 16 and 13 thus constituting smaller cores which leave the required bolt holes in the block.

The inner faces of the sides of the casing are provided with ears 18 and 19 near their upper and lower edges respectively, and having vertical openings in which are mounted pivot pins 20. Wings 21 having arms 22 are pivotally mounted upon the pivot pins 20. The free edges of the wings 21 are rounded, the wings constituting locks to hold the walls of the mold in position by engaging with the same, as appears most clearly in Fig. 1, the sides and ends of the mold having stops 23 adapted to engage with the wing locks 21. If so desired, a toggle locking member 24 may be employed pivotally mounted upon the pivot pin 20 and having a joint 25 and a stop 26 as is shown in Fig. 4. The stop 26 engages with one arm of the toggle when the lock is in position, which prevents the movement of the toggle in one direction, the movement in the opposite direction affecting the disengagement of the lock and the wall of the mold.

The operation of my invention is as follows: The walls of the mold are placed in normal position with the locking members in engagement with the sides and ends to

retain the same in the normal position. If blocks with bolt holes are required, the pins 17 are inserted in position; while if blocks are required without bolt holes, the pins 17 are not employed. When the mold is ready to receive the cement or concrete, the material is tamped into the molds in the usual manner and the facing liquid is introduced into the casing surrounding the mold. The device is then allowed to stand undisturbed until the concrete has set. When the block has hardened sufficiently the facing liquid is drawn off through the outlet pipe 4, the locking members are disengaged from the walls and the mold, the walls are moved outwardly upon the guide projections 6 and 7 and the block is then removed from the mold.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. A concrete block machine, comprising a casing, a mold within said casing having removable walls, means carried by said casing for holding said walls in position within said casing, said casing being adapted to receive a facing liquid surrounding said mold, and means for removing said liquid from said casing.

2. A concrete block machine, comprising a casing, a mold within said casing having a removable bottom and removable walls, means for holding said bottom normally above the bottom of said casing, and means carried at the sides of said casing for holding said walls in position within said casing, said casing being adapted to receive a facing liquid surrounding said mold and under the bottom of said mold.

3. A concrete block machine, comprising a casing having an inward projection on the bottom thereof, a mold within said casing having a removable bottom seating upon said projection, and removable walls, adjustable means carried at the sides of said casing for holding said walls in position within said casing, said casing being adapted to receive a facing liquid surrounding said mold, and means for removing said liquid from said casing.

4. A concrete block machine, comprising a casing having guides on the bottom thereof, a mold within said casing having a removable bottom and removable walls, said walls being adapted to move upon said guides, and means within said casing for holding said walls in position.

5. A concrete block machine, comprising a casing having guides on the bottom thereof, a mold within said casing having a removable bottom and removable sides and ends, means for holding said sides normally apart, said ends being normally separated by said sides, and means for holding said ends and said sides in position, said ends and said sides being adapted to move upon said guides.

6. A concrete block machine, comprising a casing having projections, and guides at the bottom thereof, a mold within said casing having a removable bottom located upon 5 said projections, and removable walls, locking means on the sides of said casing for holding said walls normally in position, said walls being adapted to move upon said guides, and means for normally holding said 10 walls apart.

7. A concrete block machine, comprising a casing having projections and guides on the bottom thereof, a mold within said casing having a removable bottom located upon said 15 projections, and removable sides and ends adapted to move upon said guides, said sides having projections constituting cores and adapted to limit the approach of said sides, the said ends normally abutting 20 against the ends of said sides, said sides and said ends having stops, and wings pivotally mounted upon said sides of said casing and adapted to engage said stops to hold said sides and said ends in normal position.

25 8. In a concrete block machine, a mold comprising a removable bottom, removable integral sides having tapering tubular projections constituting cores and engaging to limit the approach of said sides, removable 30 ends engaging the ends of said sides and having integral projections constituting cores, the approach of said movable ends being limited by said sides, and means independent

of said mold for holding said sides and said ends in position. 35

9. In a concrete block machine, a mold comprising a removable bottom, removable sides having tapering tubular projections constituting cores and engaging to limit the approach of said sides, removable ends en- 40 gaging the ends of said sides and having projections constituting cores, the approach of said movable ends being limited by said sides, removable core pins connecting adja- 45 cent cores of said sides and adjacent cores of said sides and said ends, and means for holding said sides and said ends in position.

10. In a concrete block machine, a mold comprising a removable bottom having a partition presenting tapered tubular pro- 50 jections at the sides thereof, removable sides substantially parallel to said partition and having tapered tubular projections constituting cores and adapted to engage the pro- 55 jections of said partition to limit the approach of said sides, ends adapted to engage the ends of said sides and having cylindrical projections constituting cores, and means for holding said sides and said ends in position.

In testimony whereof I have signed my 60 name to this specification in the presence of two subscribing witnesses.

FRANK MORCHER.

Witnesses:

MILTON SAYLER,
RUSHTON D. NILES.