

APPLICATION FILED JULY 17, 1908.

Patented Jan. 18, 1910.

2 SHEETS—SHEET 1.

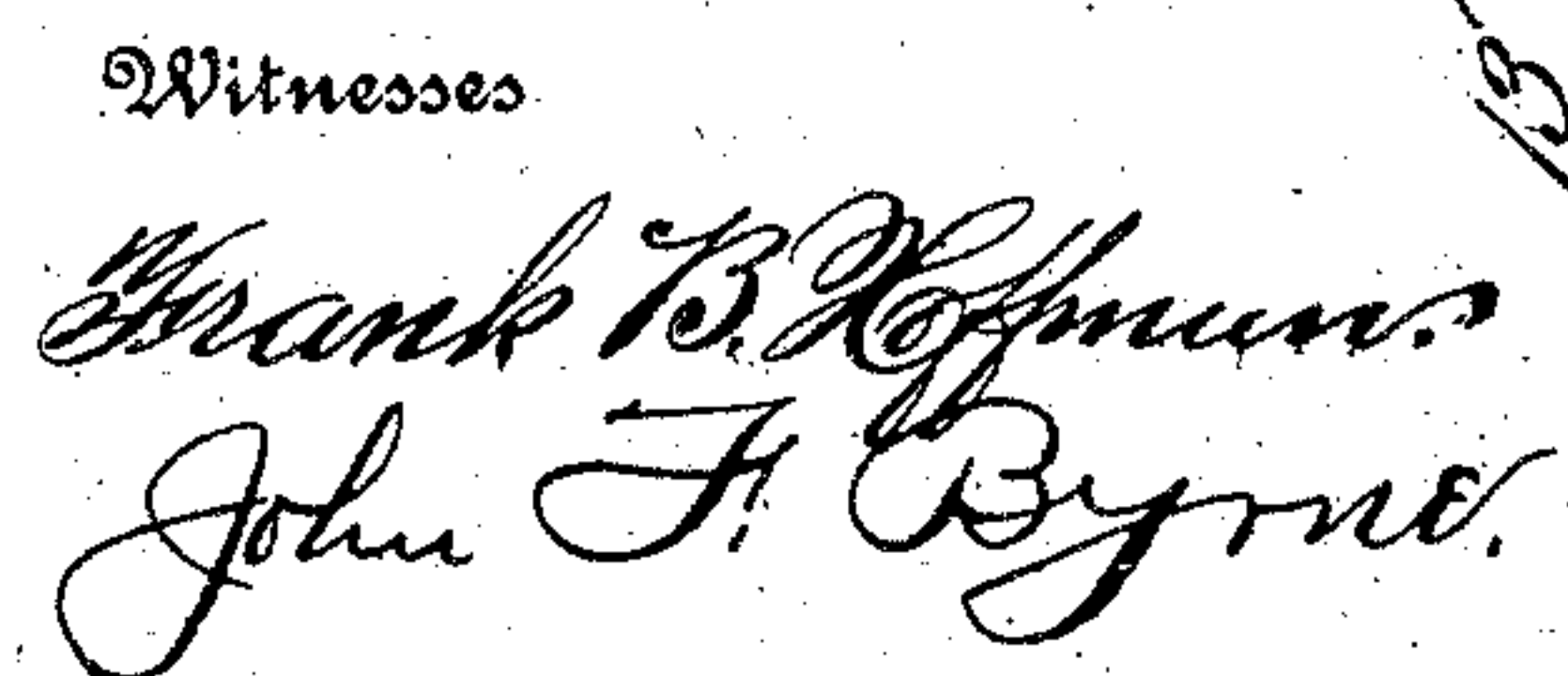


Fig. 6.

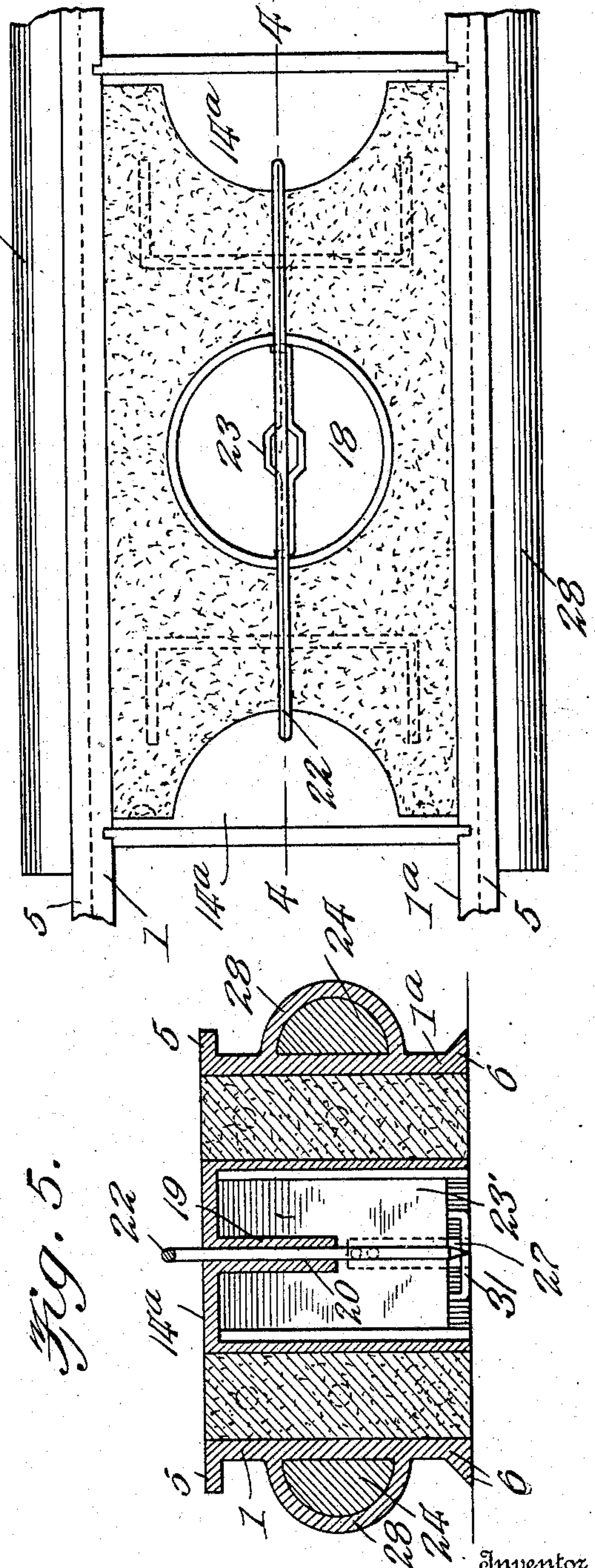
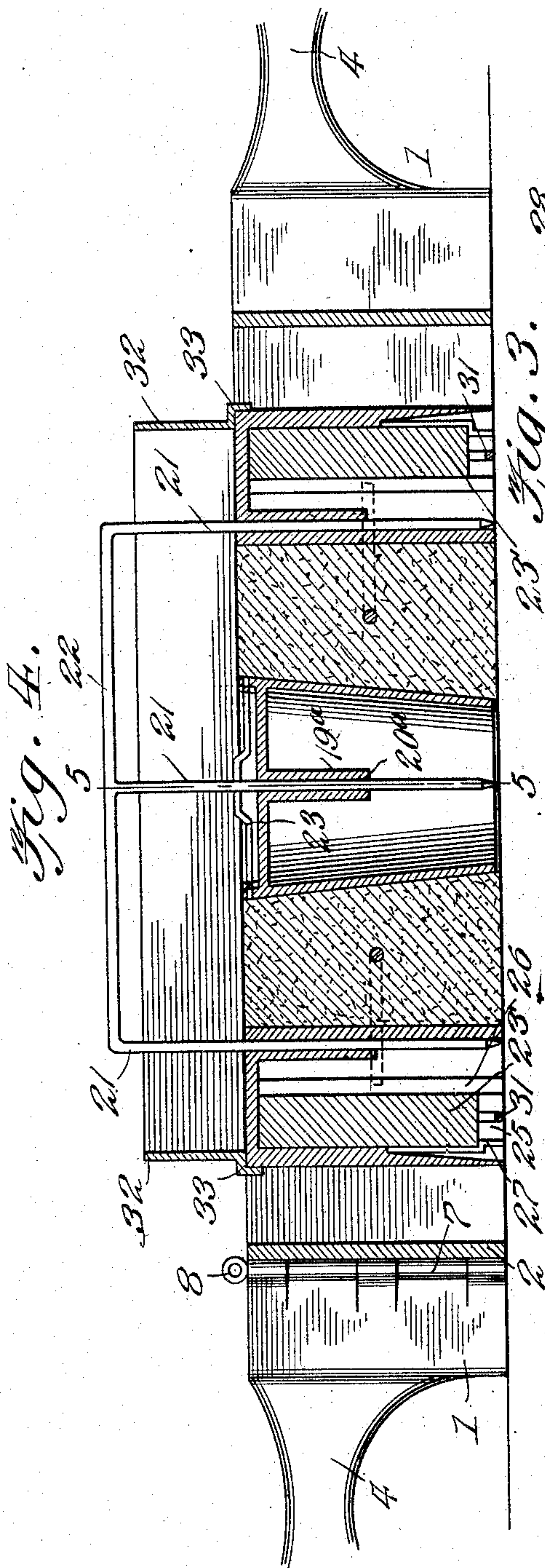
By *Victor J. Evans*
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CEMENT BLOCK MACHINE.
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2 SHEETS—SHEET 2.

947,116.



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UNITED STATES PATENT OFFICE.

GEORGE J. MILLER, OF DOON, IOWA.

CEMENT-BLOCK MACHINE.

947,116.

Specification of Letters Patent.

Patented Jan. 18, 1910.

Application filed July 17, 1908. Serial No. 444,033.

To all whom it may concern:

Be it known that I, GEORGE J. MILLER, a citizen of the United States, residing at Doon, in the county of Lyon and State of Iowa, have invented new and useful Improvements in Cement-Block Machines, of which the following is a specification.

My invention relates to improvements in machines for molding cement building blocks.

The primary object of the invention is the provision of a molding machine wherein means are employed to impart heat to the sides and cores of the machine, the use of heat preventing the cement from adhering to the sides and cores of the machine, and permitting the use of cement having a larger percentage of water than has heretofore been found to be practical.

A further object of the invention is the provision of a molding machine in which may be manufactured a solid building block of rectangular outline or a hollow building block of specifically H-shape, or a hollow building block of such form that two H-shaped blocks may be made from it.

A still further object of the invention is the provision of a molding machine which shall be simple, durable and efficient, and which may be manufactured and sold at a comparatively low cost.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter fully described, claimed and illustrated in the accompanying drawings, wherein—

Figure 1 is a view in side elevation of a molding machine constructed in accordance with my invention, a portion of one of the heating chambers being in vertical section. Fig. 2 is a top plan view of the molding machine, the machine being shown made up for manufacturing blocks of H-shape. Fig. 3 is a top plan view of the molding machine, the machine being shown made up for manufacturing a block of such form that two H-shaped blocks may be made from it. Fig. 4 is a sectional view taken on the vertical plane indicated by the line 4—4 of Fig. 3. Fig. 5 is a sectional view taken on the vertical plane indicated by the line 5—5 of Fig. 4, and Fig. 6 is a detail view in end elevation

of one of the end walls employed for manufacturing blocks of solid rectangular outline.

Referring to the drawings by reference numerals, 1 and 1^a designate the sides, and 2 and 3 the ends of a molding machine constructed in accordance with my invention. The sides and ends of the machine may be constructed of any metal suitable for the purpose, and the sides are provided with handles 4. The sides are provided at their upper edges with outwardly directed and horizontally disposed flanges 5, which are rectangular in cross section, and at their lower edges with outwardly directed horizontally disposed flanges 6, which are substantially right angular triangular in cross section. The flanges 5 strengthen the sides and the flanges 6 provide bases of ample dimensions.

The end 3 is rigidly secured to the side 1 and projects inwardly therefrom at right angles. The side 1^a is connected to the end 3 by means of a hinge 5^a, whereby to enable this side to be moved laterally when it is desired to remove the block from the machine. One member of the hinge 5^a is preferably formed integrally with the side 1^a, while the other member thereof is preferably formed integrally with the end 3. The members of the hinge are connected together by means of a removable pintle 6^a. The end 2 is secured to the side 1 by means of a hinge 7, one member of which is formed integrally with the side and the other member with the end. The members of this hinge are connected together through the medium of a removable pintle 8. The removability of the pintles 6 and 8 permits the side 1^a to be readily attached to and detached from the end 3, and the end 2 to be readily attached to and detached from the side 1. The free edge of the end 2 is provided with a bolt 9 which, when the sides and ends are assembled in molding machine form, passes through an elongated opening 10 formed in the side 1^a. A pin 11 passes through the projecting end of the bolt 9 and secures the sides and ends in molding machine form.

As the side 1^a may be swung away from the side 1, and as the end 2 may be swung into alinement with the side 1, it should be apparent that the block may be readily and quickly removed from the mold.

Grooves 12 are formed in the inner surfaces of the sides 1 and 1^a and are adapted to receive the guide ribs 13 of end walls 13^a which are employed when it is desired to manufacture a solid rectangular block, one only of the ends being disclosed in the drawings.

When it is desired to manufacture a block of substantially H-shape, end cores 14 are used, (see Fig. 2 of the drawings.) Each end core consists of a hollow member of any suitable cross sectional formation and flanges 15 which project in opposite directions from the member. The cores are secured to plates 16 by bolts 17 which pass through the flanges 15 and engage the plates. The plates are provided with guide ribs 16^a which are adapted to be received by the grooves 12 in the sides 1 and 1^a. The heads of the bolts 17 form projections on the inner surfaces of the flanges 15 which projections form recesses in the ends of the block, the recesses being adapted to receive mortar and thereby provide interlocking connections between the blocks of each course of a wall. The upper ends of the cores 14 are fully closed while the lower ends are fully open.

When it is desired to manufacture a corner block, one of the end plates 13^a and one of the cores 14 are employed.

When it is desired to manufacture a building block of such form that two H-shaped blocks may be made from it, end cores 14^a and a center core 18 are used, see Figs. 3, 4 and 5 of the drawings. The building block formed by the use of these cores is provided with a center recess and with end recesses. When the block is separated at a point centrally between its ends, two blocks each having end recesses, that is to say, two H-shaped blocks are provided. The end cores 14^a are substantially similar to the end cores 14, except that the end cores 14 have greater horizontal dimensions. The end cores 14^a also differ from the end cores 14 in that they are provided with tubular members 19 which depend from the closed ends of the cores. Passages 20 extend through the members 19 and through the upper ends of the cores. The center core 18 is substantially frusto-conical, and the upper end thereof is closed while the lower end thereof is fully open. A member 19^a depends from the upper end of the core 18 and a passage 20^a extends through the member and through said end. The passages 20 and 20^a receive arms 21 of a gage 22 which is employed to secure the center core in proper spaced relation to the end cores 14^a. The center core is provided with a bail 23 by means of which it may be withdrawn from the block.

In order to prevent the cement from adhering to the sides of the machine and to the cores, and to permit the use of a cement having a greater percentage of water than has

heretofore been considered practical, I employ means to heat the sides and cores. This means preferably consists of blocks or bodies 23' and 24 which are formed of any heat absorbing material suitable for the purpose. The blocks or bodies 23' are adapted to be received by ways 25 formed in the cores. Each way is formed by a strip 26 and one side wall of each end core. These blocks or bodies are adapted to be secured in applied position by spring latches 27, (see Fig. 4 of the drawings). The blocks or bodies 24 are adapted to be received by chambers 28 formed on the sides 1 and 1^a and extending longitudinally thereof. Each chamber has one of its ends closed and the other end open, the open ends of the chambers being closed by means of pivotally mounted covers 29 which are adapted to be secured in closed position by latches 30. The members are provided with handles 31 by means of which they may be applied and removed. A guard 32 consisting of a rectangular frame is employed to prevent the cement from dropping from the machine, said guard being provided with attaching elements 33 by means of which it is secured in applied position against movement.

In practice the guard rests upon the upper edge of the sides 1 and 1^a and upon the upper edges of the end walls 13 or the plates of the cores. The guard prevents the cement from falling from the machine during the pouring of the cement into the machine. After the cement has been tamped, the guard 32 is removed, and all superfluous material is removed with any implement suitable for the purpose. After the superfluous material has been removed the cores are withdrawn and the pin 11 is removed from the bolt 9. The side 1^a is then swung away from the side 1 and the end 2 into longitudinal alinement with the side 1 after which the machine is lifted from the block.

It should be apparent that a wall constructed of building blocks made in accordance with my invention will be provided with a continuous air passage which will resist the passage of heat, cold and moisture through the wall. It should also be apparent that I provide a molding machine which is simple, durable and efficient and which may be manufactured and sold at a comparatively low cost.

Changes in the form, proportions and minor details of construction may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described the invention, what is claimed as new is:—

1. A molding machine comprising sides, ends, a hollow core closed at its upper and open at its lower end, said core having ways extending longitudinally and opening out

through the lower end thereof, a heat absorbing block mounted in the ways, and a spring latch secured within the core and engaging the block to retain it in applied position.
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2. A molding machine comprising ends, sides secured to the ends and having elongated heating chambers formed on their outer surfaces, the transverse dimension of the heating chambers being smaller than the transverse dimension of the sides, each heating chamber being closed at one end and
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open at its opposite end, closures for the open ends of the chambers pivotally secured to the sides, latches secured to the sides and engaging the closures to retain them in closed position, and heat absorbing blocks removably mounted in the chambers. 15

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

GEORGE J. MILLER.

Witnesses:

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