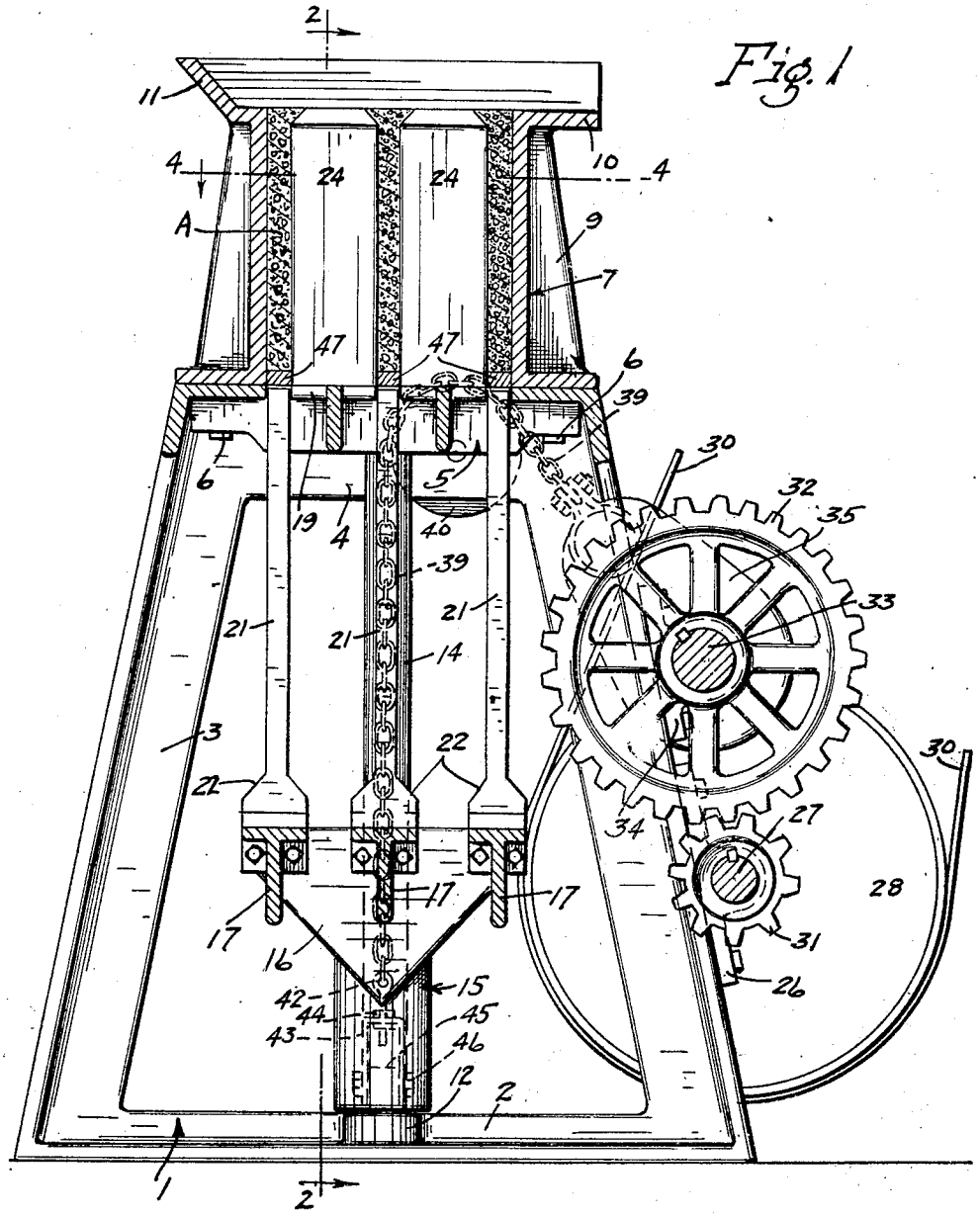
March 31, 1925. 1,531,479

J. A. ERICKSON

TILE MOLDING MACHINE

Filed Oct. 21, 1920 3 Sheets-Sheet 1

Fig. 1



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1,531,479

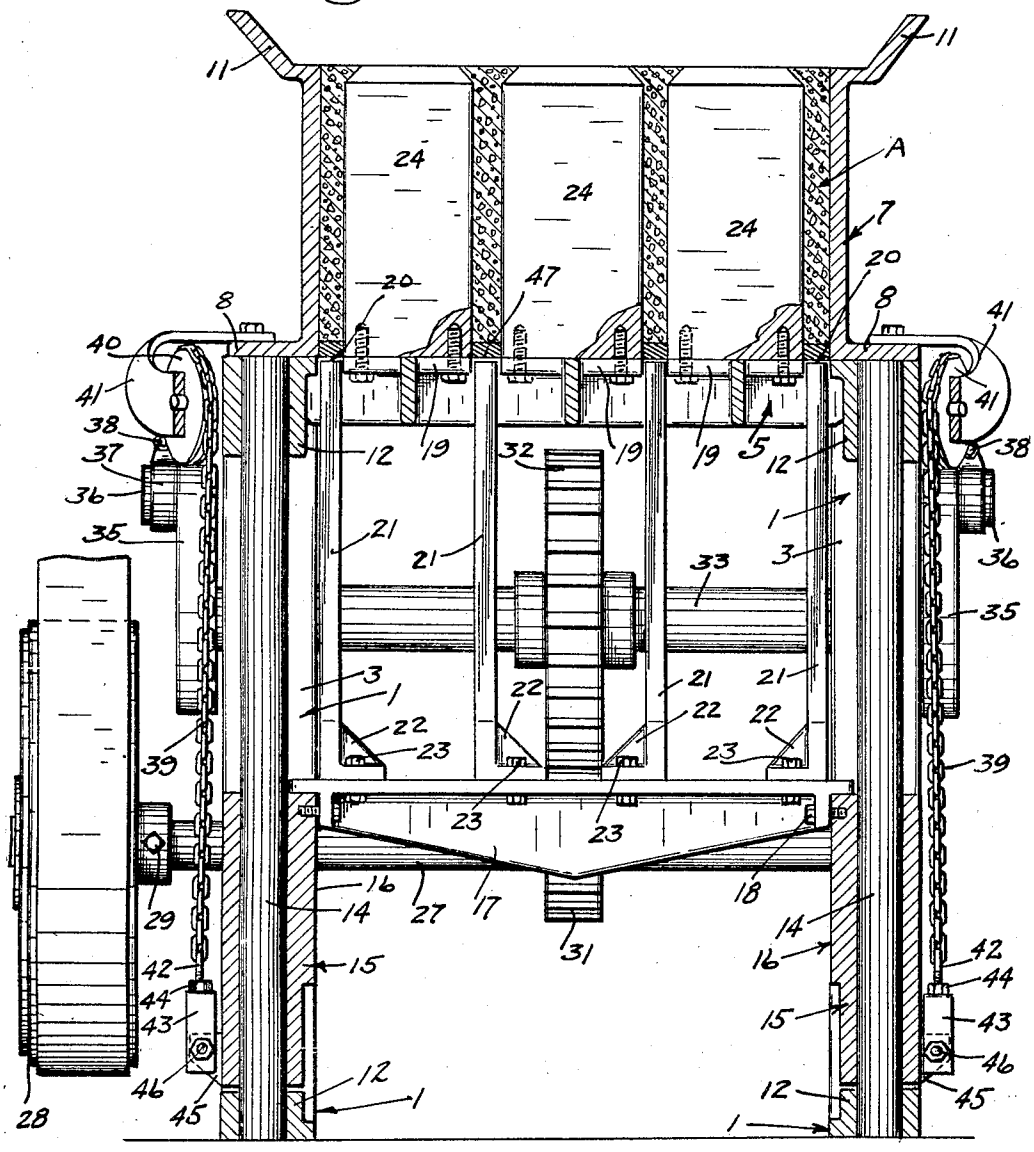
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Fig. 2



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TILE MOLDING MACHINE

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Fig. 5

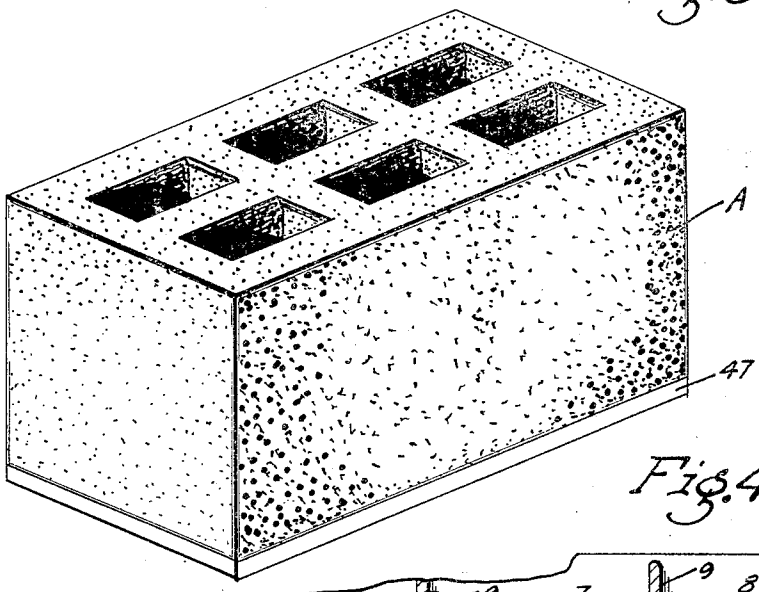


Fig. 4

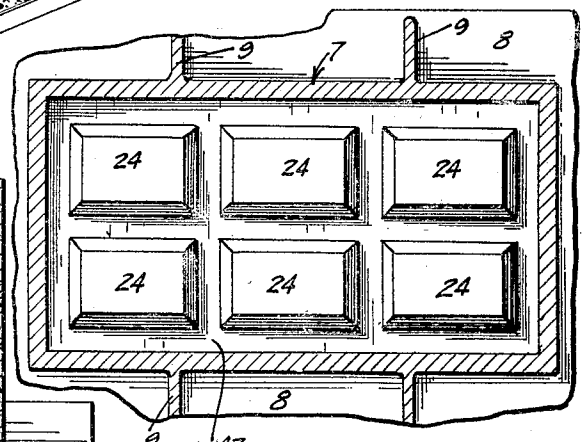
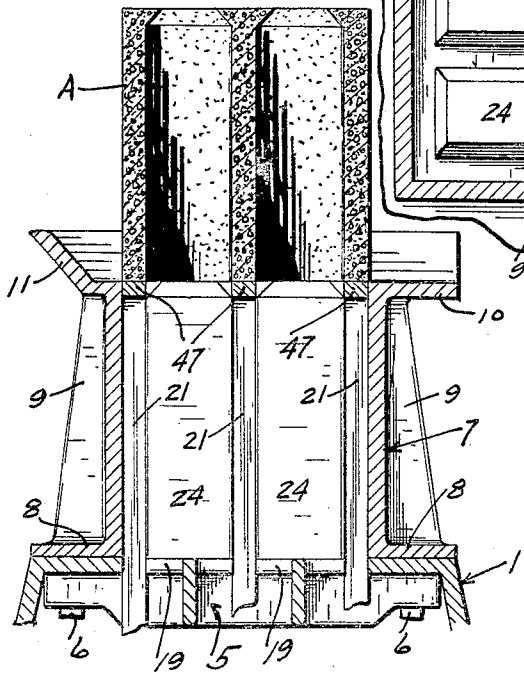


Fig. 3



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UNITED STATES PATENT OFFICE.

JOHN A. ERICKSON, OF WASECA, MINNESOTA.

TILE-MOLDING MACHINE.

Application filed October 21, 1920. Serial No. 418,449.

To all whom it may concern:

Be it known that I, JOHN A. ERICKSON, a citizen of the United States, residing at Waseca, in the county of Waseca and State of Minnesota, have invented certain new and useful Improvements in Tile-Molding 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.

This invention relates to the art of molding and the specific disclosure selected for illustration shows the invention embodied in a tile or block forming machine.

It is an object of this invention to provide a compact, simple and efficient machine, by the use of which, concrete or other tiles or blocks may be quickly and satisfactorily made.

It is a further object of the invention to provide such a machine which can have power applied thereto from a suitable motor, or other source, which power can be efficiently controlled.

Other objects of the invention will appear as the description proceeds, in connection with the accompanying drawings, in which like reference characters indicate the same parts throughout the different views, and in which,

Fig. 1 is a side elevation of the machine, the upper part being shown in section;

Fig. 2 is a sectional view of the machine taken on the line 2—2 of Fig. 1;

Fig. 3 is a partial sectional view similar to the upper part of Fig. 1 and showing the ejecting plungers elevated;

Fig. 4 is a top plan view of the cores with the machine shown in section, substantially on the line 4—4 of Fig. 1; and

Fig. 5 is a perspective view of the block or tile formed in the machine.

Referring to the drawings:—the machine comprises two frame members 1 suitably spaced apart, and each comprising a bottom plate 2, converging upwardly extending side pieces 3 and a connecting top piece 4. These frame members are shown of rib section, but, of course, may be made of any suitable section or design. The two frame members are strongly and firmly joined at their upper portions by a cross piece or top brace 5, which is securely bolted thereto at its opposite ends by bolts 6. Mounted on top of the frame members 1 and top brace 5 is a hollow member 7 having a surrounding flange 8 at its lower portion, by means of which it is securely fastened to the members 1 and 5 by the bolts 6, or other suitable fastening means. The member 7 is provided with a plurality of strengthening ribs 9 and has a flange 10 horizontally disposed at its upper end, which is surrounded on three sides by an upwardly and outwardly extending flange 11. As stated, this flange is omitted at one side, which is the side toward the back of the machine, and on this side the flange 10 is slightly extended.

At the central portion of members 2 of the frame 1 is formed a cylindrical boss 12 and a similar boss 13 is formed at the central portion of the top pieces 4. Firmly secured in these bosses are the cylindrical posts 14, which posts form guide members for the heads 15, which are mounted for sliding movement thereon. These heads 15 are provided with laterally extending flanges 16 and a crosshead 17 extends between the heads and is firmly secured thereto at each end by bolts 18. The crosspiece or top brace 5 is provided with an upper flange 19. This flange is provided with a series of rectangular openings 20. As shown, these openings are arranged in three rows of four each, and as clearly shown in Figs. 1, 2 and 3, the openings at the sides and ends of member 5 have their outer sides in substantial alignment with the walls on the inside of member 7. A series of plungers 21, also shown as of rectangular cross section, are mounted in alignment with the openings 20 and are bolted to and arranged to be carried by the crosshead 17. These plungers are provided with foot brackets 22 and are secured to the head 17 by bolts 23. When the heads 15 are arranged to slide on guides 14, the plungers are caused to rise through the openings 20.

Disposed in the member 7 are a plurality of core members 24, of rectangular cross section and so arranged therein that substantially equal spaces are left between each of them and the walls of member 7. The cores 24 are shown as being slightly tapered at their upper ends and these cores are firmly secured to the flange 19 of member 5 by

bolts 25. While six of these core members have been shown of rectangular cross section, it will be understood that the machine may be so constructed that any desired number of any desired cross section may be used.

Secured to each of the side members 3, at the rear side of the machine are bearing brackets 26, and extending across the back of the machine and carried by said brackets is a shaft 27. This shaft carries at one end a clutch pulley 28 secured thereto by a set screw 29, or other suitable means, which pulley is designed to be driven by a belt 30 adapted to be secured to a driving pulley connected to any suitable source of power. Carried by the shaft 27 and centrally disposed between the frame members 1, is a driving pinion 31 which is keyed to said shaft and arranged to mesh with the driven gear 32. The gear 32 is keyed to a shaft 33 which also extends across the machine and is carried by bearing brackets 34, also bolted to the side members 3 at the back of the machine. This shaft 33 extends beyond the brackets 34 and has cranks 35 rigidly secured to each end thereof. Crank pins 36 extend outwardly at the end of these cranks and are embraced by straps 37 which are firmly clamped thereon by bolts 38. The end link of a chain 39 surrounds the bolt 38, and is clamped between the ends of the strap 37. This chain is arranged to pass over sheaves 40 carried in brackets 41, which are bolted to the flange 8 of member 7. As shown in Fig. 1, these sheaves are so disposed that one side thereof is in substantial alignment with the vertical axis of guide members 14 when viewed from the end of the machine. The chains 39, after passing over sheaves 40, extend vertically downward at each side of the machine and are connected to eye bolts 42, which are adjustably secured in U-shaped clamp members 43 by nuts 44, which clamp members are bolted to lugs 45 extending outwardly from the members 15, by bolts 46.

The operation of the machine, which will be readily understood, will now be described.

A platen member 47, which is adapted to fit in member 7 around the corresponding core, is placed in position, resting upon flange 19, as shown in Figs. 1 and 2. A suitable mixture of concrete, or other material is then filled in between the cores 24 and between these cores and walls of the member 7. This material is tamped and thoroughly compacted in place. When a sufficient amount of material has been placed in the machine, the top of the material is smoothed off, usually in alignment with the top of flange 10 and the clutch pulley 28 then thrown in operation to start the machine. The crank 35 will be turned by shaft 33 through the gears 31 and 32. The chain 31 will be pulled over sheaves 40 and the guides 15 and crosshead 17 will be elevated, carrying the plungers 21 upwardly. The ends of these plungers will simultaneously contact the platen member 47 and the same will be raised and maintained in a horizontal position. As the platen is raised, the block A formed by the material tamped in the machine will be elevated. When the bottom of the platen is raised above the top surface of flange 10 and the top of the core member 24, it can be lifted from the machine and removed. The material is of such consistency that it will retain its molded form and will be left on the platen and removed to a suitable location for permanent setting, drying and curing. When the platen is sufficiently elevated, the machine will be stopped, and after the platen and block A are removed, the machine will be again started and operated to resume the position shown in Fig. 1. Another platen can now be placed in the machine and the operation repeated.

As previously stated, the invention is not limited to the particular form of block shown. The member 7 may be made of any desired shape and any desired number of cores and ejecting plungers may be used, and blocks of many and various forms may be made.

It will thus be seen that applicant has provided a simple and compact machine for quickly and efficiently making the articles desired. The machine is rugged in construction, has few parts and can easily be kept in operation and repair without the attendence of skilled mechanics.

Generally stated, the invention consists in the structure shown and described and set forth in the appended claims.

What is claimed is:

1. A tile molding machine comprising a frame, a mold box secured to the top thereof and having a tray formed at its top portion, spaced core members in said box, a platen movable vertically in said box between the sides and core members thereof, a reciprocating head in said frame having spaced members secured thereto adapted to contact said platen and means for vertically reciprocating said head comprising a crank suitably connected to said head operated under a rotating motion in one direction.

2. A tile molding machine comprising a frame, a mold box secured to the top thereof and having a tray formed at its top portion, spaced core members in said box, a platen movable vertically in said box between the sides and core members thereof, a vertically reciprocating head in said frame having spaced upstanding members secured thereto adapted to contact said platen and means for reciprocating said

head operated under a rotary motion in one direction comprising a flexible member secured at one end to said head and passing over a sheave secured to the upper structure of the machine and a crank to which the other end of said flexible member is attached.

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

JOHN A. ERICKSON.

Witnesses:
EARL SMITH,
G. O. MILLER.