

July 2, 1940.

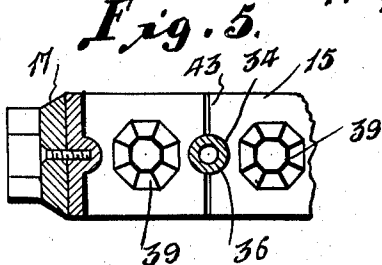
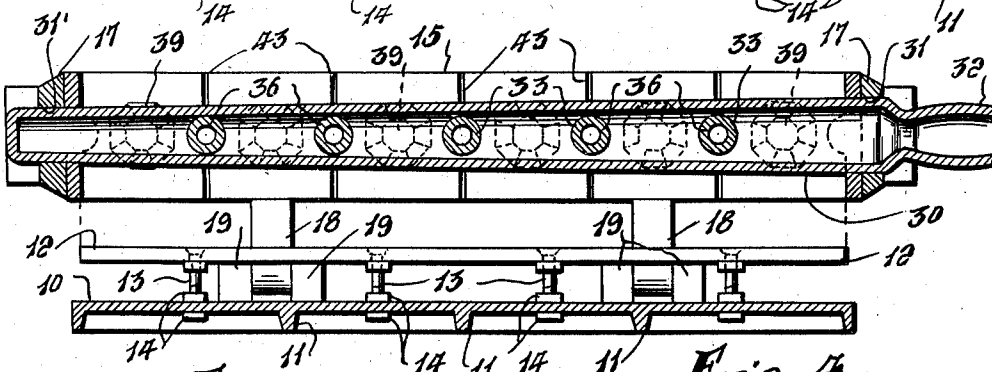
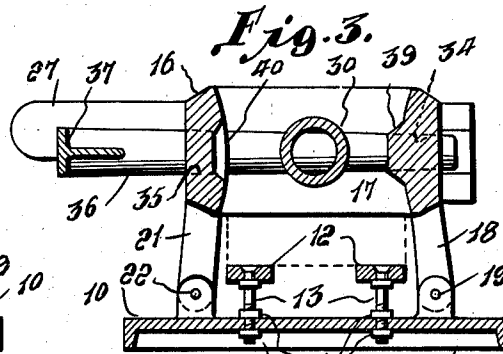
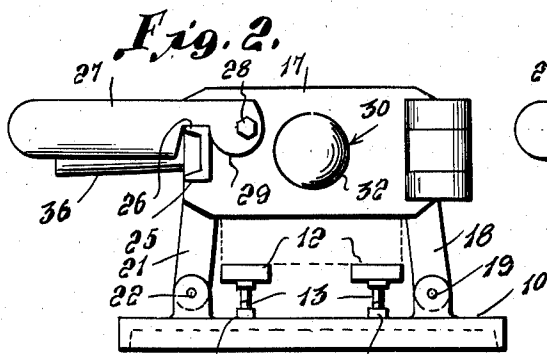
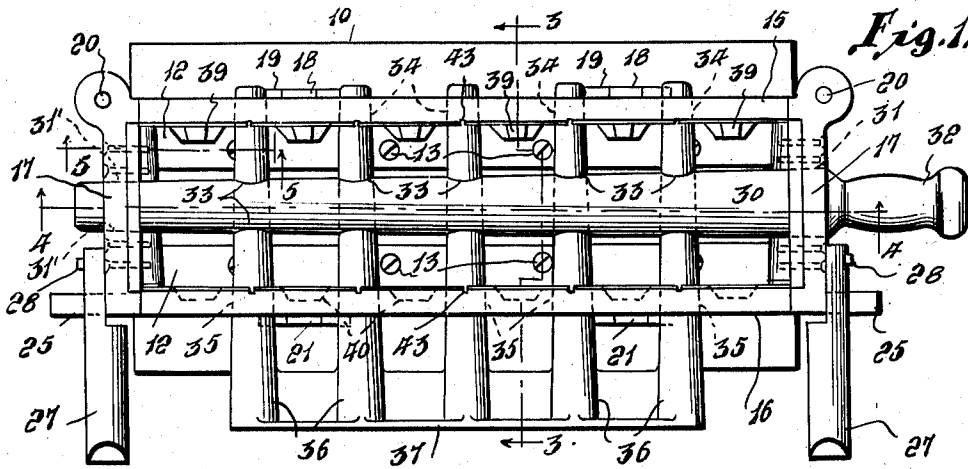
G. H. BRIMHALL

2,206,803

MOLD FOR BUILDING TILE

Filed May 26, 1938

4 Sheets-Sheet 1



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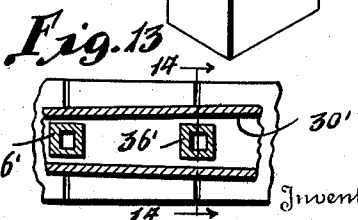
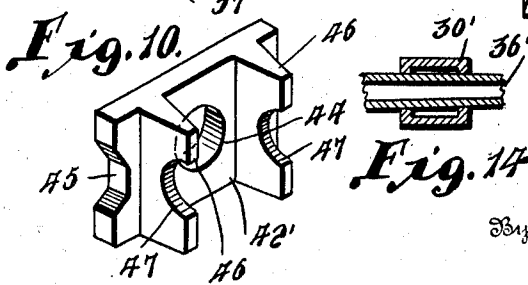
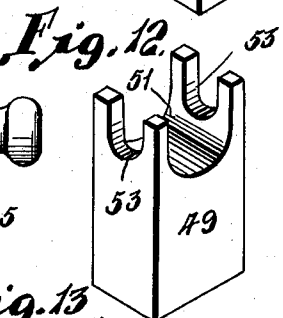
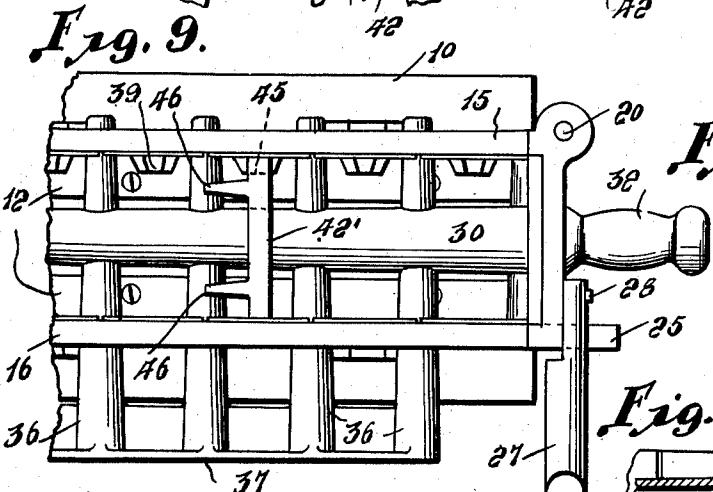
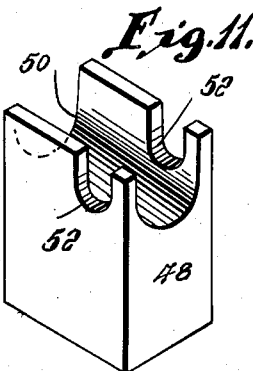
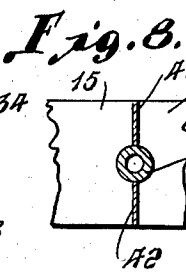
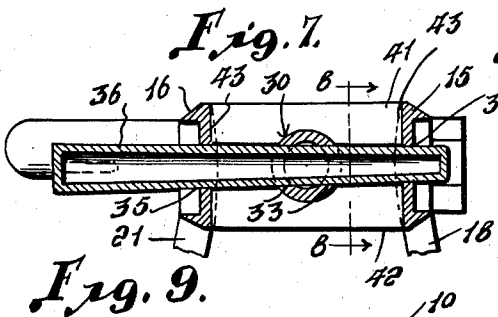
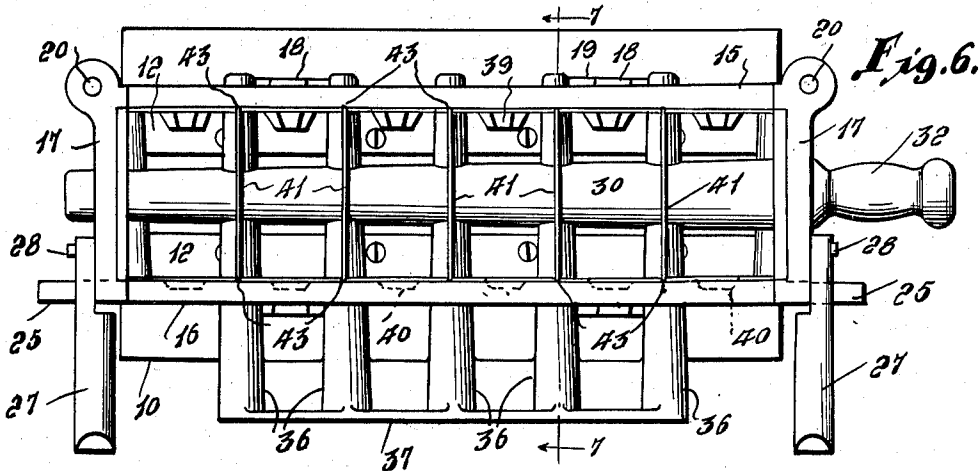
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MOLD FOR BUILDING TILE

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4 Sheets-Sheet 2



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MOLD FOR BUILDING TILE

Filed May 26, 1938

4 Sheets-Sheet 3

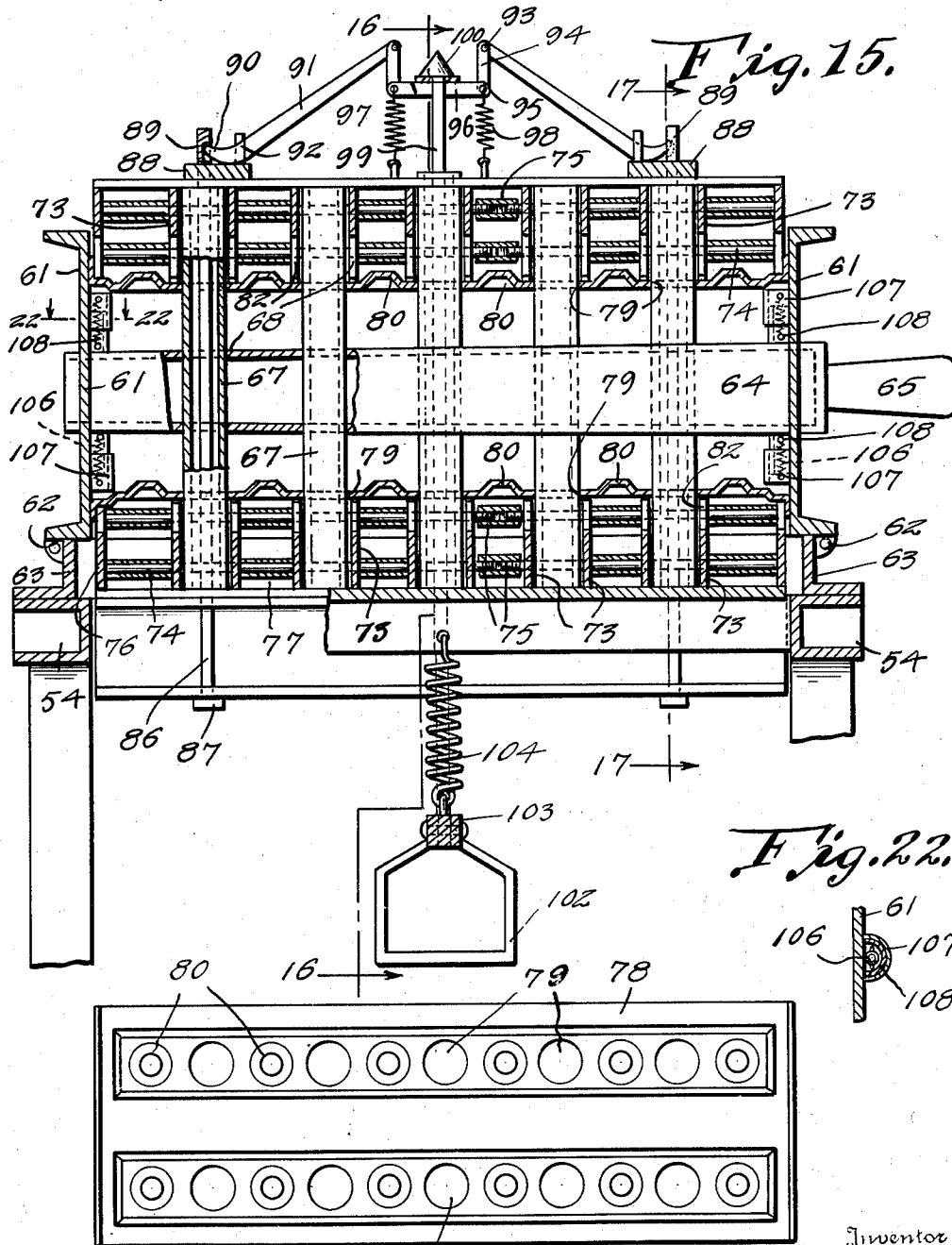


Fig. 18. George H. Brimhall

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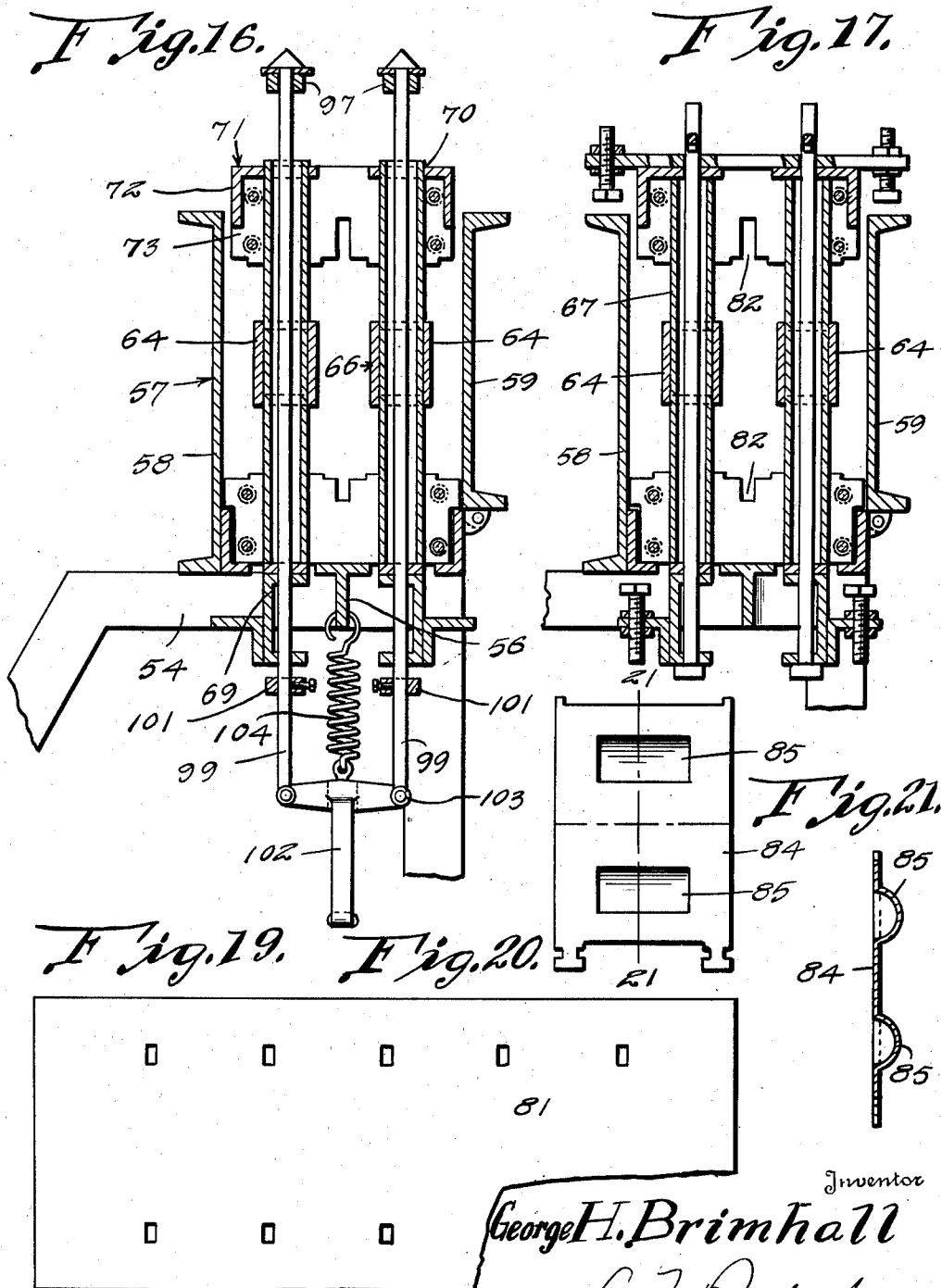
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2,206,803

MOLD FOR BUILDING TILE

Filed May 26, 1938

4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE

2,206,803

MOLD FOR BUILDING TILE

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Application May 26, 1938, Serial No. 210,226

4 Claims. (Cl. 25—121)

This invention relates to a mold for building tile or the like.

A particular aim is to provide a mold in which building tile may be made with a cone-shaped longitudinal hole or bore and perpendicular cone-shaped holes or bores intersecting the first mentioned hole or bore, and in any desired number, all holes or bores being round, square or otherwise in cross section as preferred and designed to accommodate reinforcing steel, electrical conduits, switches, service plugs, water pipes, and wooden dowels to enable the nailing of base and wood trim thereto.

The invention also aims to provide such a means as will eliminate the need for concrete forms for foundations, lintels, and bond beams, provide a building tile which may be converted into a solid concrete wall with steel conduits, water pipes, switches and service plugs and anchor bolts all in place by grouting the various holes or spaces with rich, fluid concrete. The tile may be laid up without mortar in the joints, and may be grouted when in place with thin liquid grout running into the holes, joints and dowel pits. Or laid up with the use of lime or cement mortar between dowel pits and dowels.

Another object is to provide such a means as furnishes blocks which will enable the work of a carpenter to be dispensed with on foundation and lintel forms, making it possible to begin the laying of walls right on footings providing for a portion of tile to be eliminated to receive floor joists, ceiling joists, rafters and like structural parts.

In addition it is aimed to provide for the manufacture of blocks which will provide building tile allowing the installation of reinforcing steel every three feet or thereabout, both horizontally and diagonally to meet earthquake codes.

It is further aimed to provide embodiments for hand or lever tamping as preferred as well as for small or large output.

With the foregoing and other objects in view, the invention consists of a novel construction, combination and arrangement of parts as will be hereinafter more specifically described and illustrated in the accompanying drawings wherein one specific embodiment is disclosed by way of example only.

In said drawings—

Figure 1 is a plan view of the mold;

Figure 2 is an end elevation of the mold;

Figure 3 is a vertical cross sectional view taken on the line 3—3 of Figure 1;

Figure 4 is a longitudinal sectional view taken on the line 4—4 of Figure 1;

Figure 5 is a detail section taken on the line 5—5 of Figure 1;

Figure 6 is a view similar to Figure 1 but showing additional parts in place;

Figure 7 is a cross section taken on the line 7—7 of Figure 6;

Figure 8 is a cross section taken on the line 8—8 of Figure 7;

Figure 9 is a fragmentary plan view showing a partition member in place;

Figure 10 is a perspective view of a partition used in making smaller tile as used in Figure 9;

Figure 11 is a detail perspective view of a space-producing block or partition;

Figure 12 is a perspective view of a modified form of space-producing block or partition;

Figure 13 is a fragmentary longitudinal sectional view taken on the line 13—13 of Figure 6;

Figure 14 is a detail section taken on the line 14—14 of Figure 13;

Figure 15 is a central vertical sectional view through another form of the invention;

Figure 16 is a vertical sectional view taken on the line 16—16 of Figure 15;

Figure 17 is a vertical section taken on the line 17—17 of Figure 15;

Figure 18 is a plan view of one of the seal pallets;

Figure 19 is an elevation of a central longitudinal partition;

Figure 20 is an elevation of a cross partition;

Figure 21 is a section taken on the line 21—21 of Figure 20, and

Figure 22 is a section taken on the line 22—22 of Figure 15.

Referring specifically to the drawings wherein like reference characters designate like or similar parts, the mold has a suitable base generally designated 10, which may be metallic and reinforced by suitable ribs 11. Pallet supporting members 12 are disposed longitudinally of the base in parallelism and have bolts 13 depending therefrom through openings in the base and are adjustably secured in said openings as to height by means of nuts 14 threaded on the bolts.

The mold proper has parallel longitudinal side walls 15 and 16 and end walls 17.

Depending from the side wall 15 are legs 18 50 which are pivoted at 19 longitudinally of the base, for raising and lowering. At opposite ends, said side wall 15 and end walls 17 have interfitting ears pivoted together by vertical pins 20. The side wall 16 is separate from the end walls 55

17 and has depending legs 21 which are pivoted at 22 on a longitudinal axis, to the base 10, so that the wall 16 may be lowered.

The wall 16 also has longitudinal end extensions or ears at 25 which are engageable in notches 26 of latch levers 27, pivoted at 28 to the end walls 17 and having cam surfaces 29 co-acting with said extensions 25. In this manner, the mold is effectively held with the parts in rigid relation for a molding operation.

A core member, preferably hollow and tapered is provided at 30 which is accommodated in tapered openings 31 and 31', respectively, provided in the opposite end walls 17 and such core member 30 has a handle at 32. This core member in turn, at suitable intervals throughout its length has diametrically opposite openings 33. Through the openings 33 and openings 34 and 35 in the walls 15 and 16, respectively, auxiliary core members 36 are passed. Said core members 36 are preferably hollow and tapered as shown and connected together as a unit by means of a bar 37.

With the structure described, a pallet is adapted to be supported or built upon the strips 12, to close the bottom of the mold body consisting of the walls 15, 16 and 17. With the cores 30 and 36 in place, the concrete or cementitious material is placed in the body and suitably tamped manually and leveled at the top of the body. When the concrete or plastic body has sufficiently set, the walls 16 and 17 may be detached by lifting the levers 27, thereupon lowering the wall 16, swinging the walls 17 away from each other and lowering the wall 15, following removal of the auxiliary cores 36 and the main core 30. The cast block or tile may then be removed from the pallet or means supported on the strips 12.

Suitable designs or insignia may be embossed or provided in the block, by incorporating projections or depressions as at 39 and 40 on the inner surfaces of the walls 15 and 16, respectively.

In addition, as shown in Figure 6, the length of the blocks may be regulated or blocks of any desired length or size may be provided by subdividing the space within the mold through the application of partition panels 41 and 42 which are removably slidable in vertical grooves 43 arranged in the inner surfaces of the walls 15 and 16, the panels 41 and 42, respectively, being in engagement with the adjacent core members and applicable and removable in opposite directions.

Another type of partition is disclosed in Figure 10 and is shown in use in Figure 9. This partition is used to limit the length of tiles being cast. It has a wall 42' provided with a tapered opening 44, a notch at one end 45, and spacing flanges 46 preferably notched at 47. The core member 30 is adapted to be passed through and intimately fit the opening 44, with notch 45 accommodating the adjacent element 39. The flanges 46 at the notches 47 fit an adjacent auxiliary core member 36.

Blocks or pillars are shown in Figures 11 and 12 as at 48 and 49, being of different size and each grooved as at 50 and 51, respectively, to fit the core member 30 and also grooved at 52 and 53, respectively, to fit the adjacent auxiliary core member 36. These pillars 48 and 49 may be used singly or in pairs at desired locations, to provide spaces, voids, or the like in the tile being cast, when desired to accommodate or fit parts used in

the construction employing the tiles produced according to the invention.

Attention is also called to the fact that the cores 30 and 36 may be round in cross section or they may be square in cross section or of any other desired cross sectional area. For instance, as shown in Figures 13 and 14, said core members which are respectively designated 30' and 36', are shown as square in cross section, being of wood, metal or any other preferred material.

Referring now to the form of the invention disclosed in Figures 15 to 22, a form of machine is shown in which tile are made of the shape according to the preceding form of the invention, being made however in vertical position, using metal pallets, and wherein tamping is effected by means of a lever and associated parts in order to give a larger output for plant production, than is true with the preceding form.

This second form of the invention has suitable supports 54 connected by angle members 55 usually welded thereto and by a T-shaped angle member 56. On the supports 54 and associated parts, a mold 57 is carried and it has a vertical wall 58 welded or otherwise rigidly connected to the supports. It also has a side wall 59, parallel with the wall 58 and hinged to the supporting means as at 60 so as to be able to swing downwardly in releasing molded blocks. Also, end walls 61 are provided, being pivoted at 62, to angle members 63 of the supporting means, so as to be capable of swinging downwardly to release cast blocks.

A pair of hollow removable core members 64 are employed, for instance having handles at 65 and such core members may be rectangular in cross section as shown, or of any other desired cross sectional configuration. These core members 64 are preferably longitudinally tapered, and they removably rest in openings 66 in the end walls 61. Removable tubes or auxiliary cores 67 are vertically disposed and pass removably through openings 68 in the cores 64. Said auxiliary cores rest on longitudinally extending channel beams 69 welded at opposite ends to the supporting members 54.

Said auxiliary cores 67 pass removably through openings 70 in channel members 71 of a top or follower plate 72.

In order to aid in properly positioning the auxiliary cores 67 and support pallets later to be described, spacing plates 73 are employed, being removably secured in place by rods or bolts 74 secured together by screw threaded turnbuckles as at 75, the rods or bolts having heads at 76 and spacing sleeves 77 removably surround the rods between the plates 73.

The pallets are shown in the form of metallic plates 78, being in place in Figure 15, and having openings at 79 accommodating the auxiliary cores therethrough. Said pallets have bosses, dowels or the like at 80, struck-out therefrom, according to the design desired for the block. The mold space may be subdivided as desired. For instance, a removable longitudinal plate or partition 81 may be disposed in cut-outs 82 of the plates 73 and cross partitions 84 may co-act therewith, where desired, the same having struck-out bosses as at 85 to aid in shaping the blocks.

It will be realized that the plastic material to be molded into the blocks is disposed about the cores between the pallets and side and end walls of the mold box 57 and that the head plate 72 is vertically movable in order to tamp the material.

According to the present embodiment, the

tamping is effected through suitable leverage initiated by foot operation. To this end, rods 86 extend upwardly through the channel members 69, having heads 87 engaging the lower flanges thereof, such rods passing through adjacent auxiliary cores 67 and through plates 88, removably, and removably resting on the head plate 72. Such rods at their upper ends have notches 89 entered by the free ends of levers 91, passing loosely through staples 92. Such levers 91 at their upper ends are pivoted at 93 to links 94, in turn pivoted at 95 to a plate 96 at projections or arms 97 thereof to which coil springs 98 are fastened and which are also fastened to the top or head plate 72.

Rods 99 slide through the channel members 69, adjacent auxiliary cores and the plate 96, having cone-shaped heads 100 above the same. Movement limiting stops 101 are adjustably secured on said rods 99. A stirrup 102 is connected at 103 by pivots, to the lower ends of the rods 99, and a contractile coil spring 104 is connected to the stirrup and to the T-beam 56.

As a result, it will be seen that upon placing the foot within the stirrup 102 and depressing the same, the head 72 and upper pallet, will be lowered or moved downwardly so as to tamp the plastic material in order to form the blocks, the spring 104 restoring the parts to normal position after each depression. After the blocks are formed, the walls 59, and 61 may be swung downwardly and the head plate 72 swung upwardly, and the core 64 and auxiliary core members 67 removed, as well as any partitions 81 or 84, or their equivalent, which have been used.

In order to normally urge one pallet 78 away from the other and properly position the same, coil expansive springs 106 are employed which are housed in housing sections 107 and 108. The section 107 may be integral with or welded to the end wall 61 and the section 108 may simply abut the main core 64.

Various additional changes, variations and modifications may be resorted to within the spirit and scope of the invention as defined by the appended claims.

I claim as my invention:

1. Molding apparatus of the class described having a base, a mold body having longitudinal walls and end walls, means pivotally connecting the end walls to one of the longitudinal walls, means pivotally and separately connecting the longitudinal walls to the base, latch means connected to the end walls, projections on the adja-

cent longitudinal wall engageable by the latch means, strips beneath the body and above the base adapted to support a closure for the bottom of the body, and means connecting the strips to the base located between the second mentioned means.

2. Molding apparatus of the class described having a base, a mold body having longitudinal walls and end walls, means pivotally connecting the end walls to one of the longitudinal walls, means pivotally and separately connecting the longitudinal walls to the base, latch means connected to an end wall, a projection on the adjacent longitudinal wall engageable by the latch means, a core member applicable through the end walls, auxiliary core means applicable through the side walls and first mentioned core member, said core member and core means being tapered, a partition in the body having an opening through which the core passes, and means on the partition engageable with the adjacent auxiliary core means to position the partition.

3. Molding apparatus of the class described having a base, a mold body having longitudinal walls and end walls, means pivotally connecting the end walls to one of the longitudinal walls, means pivotally and separately connecting the longitudinal walls to the base, latch means connected to the end walls, projections on the adjacent longitudinal wall engageable by the latch means, a core member applicable through the end walls, auxiliary core means applicable through the side walls and first mentioned core member, said side walls having vertical grooves therein, and partition members applicable to said grooves and interlocked with the auxiliary core means.

4. Molding apparatus of the class described having a base, a mold body having longitudinal walls and end walls, means pivotally connecting the end walls to one of the longitudinal walls, means pivotally and separately connecting the longitudinal walls to the base, latch means connected to the end walls, projections on the adjacent longitudinal wall engageable by the latch means, a core member applicable through the end walls, auxiliary core means applicable through the side walls and first mentioned core member, and a partition in the body, said partition having an opening through which the core member passes, and flanges on the partition engageable with the adjacent auxiliary core means.

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