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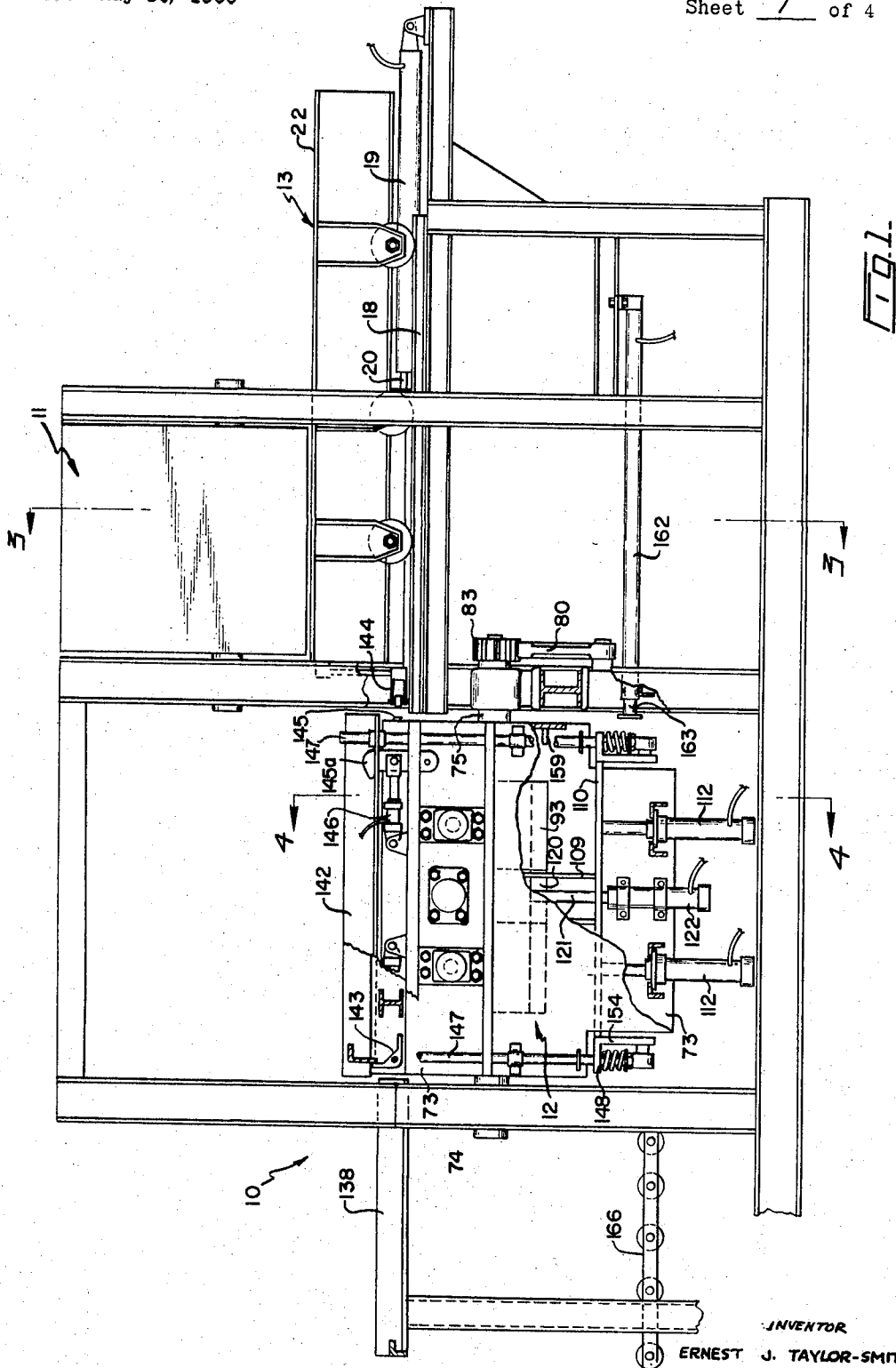
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3,426,112

BUILDING UNIT CASTING AND FACING METHOD AND APPARATUS

Filed May 16, 1966

Sheet 1 of 4



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Sheet 2 of 4

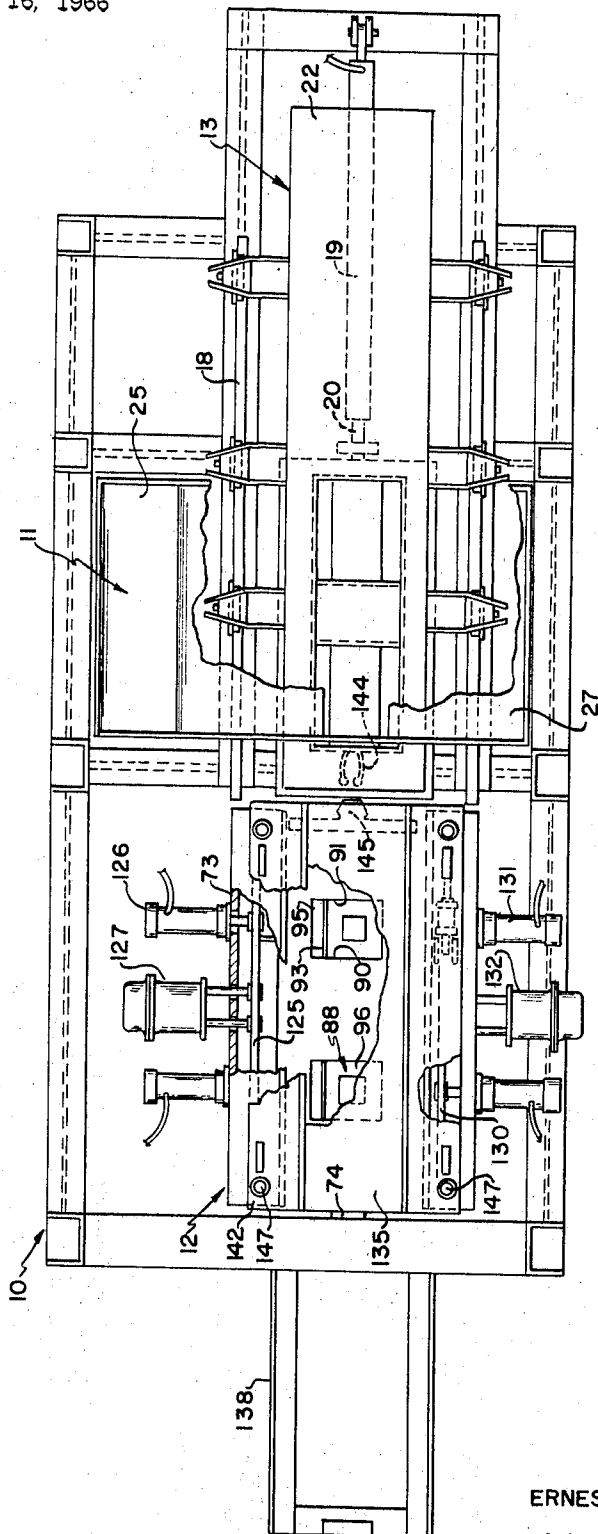


FIG. 2

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Sheet 3 of 4

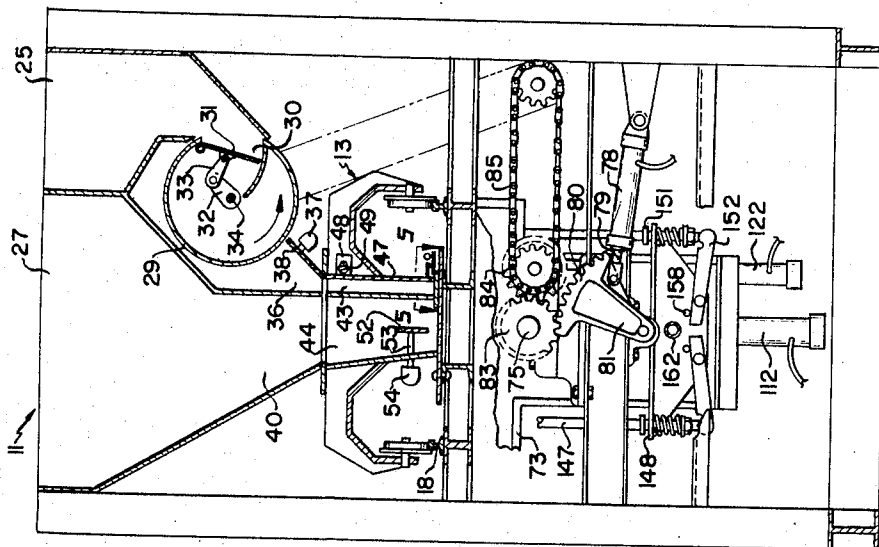


Fig. 3.

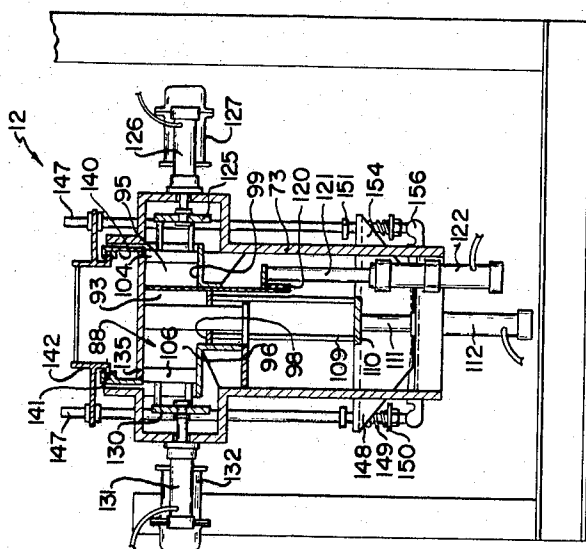


Fig. 4.

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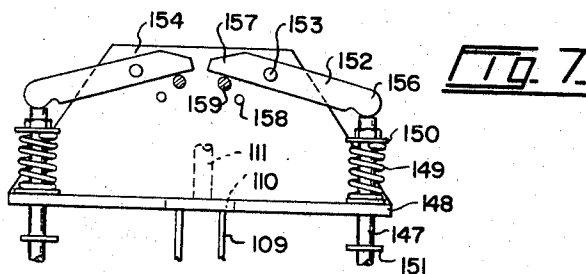
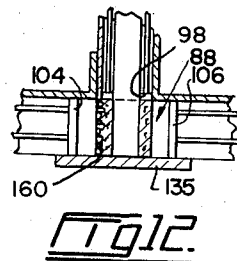
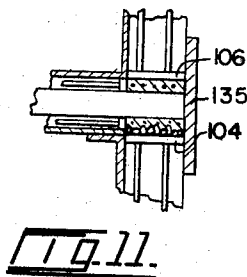
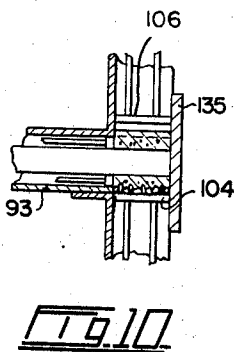
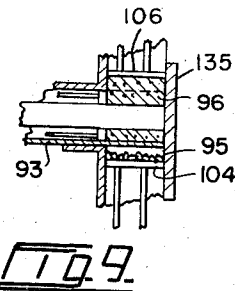
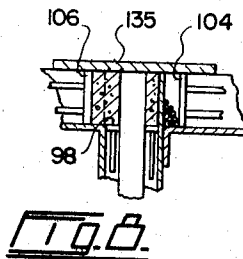
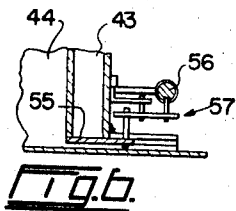
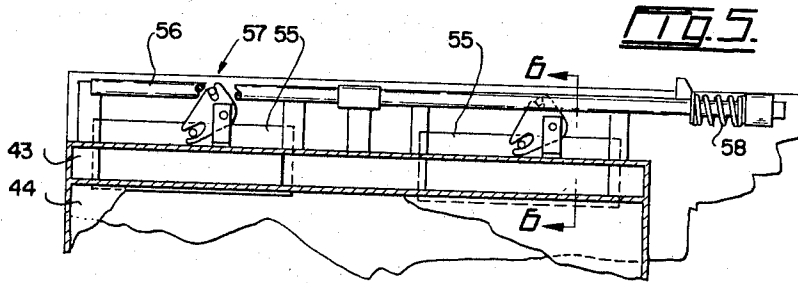
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Sheet 4 of 4



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1

2

3,426,112 BUILDING UNIT CASTING AND FACING METHOD AND APPARATUS

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Continuation of application Ser. No. 385,945, July 29,
1964. This application May 16, 1966, Ser. No. 550,570
Claims priority, application Canada, Mar. 17, 1961,
819,272

U.S. Cl. 264—71
Int. Cl. B44c 1/26

31 Claims

ABSTRACT OF THE DISCLOSURE

A method and an apparatus for the production of building blocks having a plurality of rock-like particles formed in at least one face thereof. The concrete and the rock-like particles are placed in adjacent compartments and turned so that the rock-like particles are located beneath the concrete, which concrete then drops on to the rock-like particles. Face and/or back plates are then vibrated and moved to size and to compress the block and to move the concrete into the spaces between the rock-like particles.

This invention relates to a method and apparatus for facing and casting building units, such as building blocks.

This is a continuation application from application Ser. No. 385,945, filed July 29, 1964, now abandoned, which is a continuation-in-part of my earlier application Ser. No. 117,619, filed June 16, 1961, now abandoned.

An object of the present invention is the provision of a machine and method of making building units or blocks of concrete and having a face formed of a particulate material.

Another object is the provision of a machine for making faced concrete blocks, including all the steps from feeding the concrete mixture and the facing material to the ejection of the complete blocks.

The building blocks produced by the present method may be used purely for ornamental purposes, or they may be used for structural purposes while providing finished surfaces, that is, surfaces which do not require any further coating or finishing. Many types of different particulate or facing materials can be used, such as, rocks, pebbles, marble, slate, lava, mineral ore, coral, ceramics, glass, metal, and the like. For convenience, these various facing materials will be referred to generically as "rock-like particles." The concrete used may be standard mixes having the desired strength characteristics. Two typical concrete mixes are as follows:

(1) Cement 1 part, sand 2 parts, bird's-eye gravel 2 parts, lime 1 part, by volume.

(2) Cement 1 part, cinders 6 parts, lime 1 part, by volume.

The finished block unit is homogeneous and monolithic as opposed to preformed units of the prior art made up of materials which are subsequently stuck together. The machine can be adjusted to make interlocking building blocks, either solid or hollow.

For the sake of convenience, this description will deal with stones or rocks as the particulate facing material, but it is to be understood that any other suitable particulate material may be used.

Many attempts have been made in the past to face concrete blocks with stones and other materials, but these have not been commercially successful. It can be done by hand, although even hand made blocks suffer from the problem of the stones dropping out of the face. Faced blocks made in the past in machines have all suffered from the same difficulties. The problem has been to get

the concrete properly between the stones, and to secure a good bond between the concrete and each stone.

The method according to the present invention comprises forming an even layer of stones, and then dropping the body of concrete required for the block on to this layer and vibrating the stone layer and the concrete. The vibrations may be applied to the stones and through these to the body of concrete, but it is preferable to provide separate vibrations for the body of concrete as well. The timing of the vibrations is such that a sufficient quantity of concrete shifts down between the stones so that each stone is surrounded by concrete, excepting the face of the stone which lies in the plane of the face of the block.

In the manufacture of a building unit or block, rocks and concrete are placed in adjacent compartments with a removable dividing plate therebetween. It is preferable that all the rocks be about the same size. The rock compartment is a little thicker than the rocks to be placed therein, while the concrete compartment holds sufficient concrete to produce with the rocks a block of the desired size. For convenience in loading, it is preferable to have the compartments of the mold upright while the rocks and concrete are being placed therein. The mold is closed in any convenient manner, but it is preferable to clamp a pallet over it for this purpose. The mold is rotated approximately 90° to move the rock compartment beneath the concrete compartment. The rock compartment has a face wall or face press, which is now the bottom thereof, and is subjected to vibrations for a short period in order to spread the rock evenly over said press. This also shifts the heavier or larger sides of the rocks down on to the face press. The comparatively thin compartment prevents one rock from sitting on top of the other so that the vibrations spread the rock evenly throughout the compartment. The amount of rock should be metered before being supplied to the compartment in order to ensure a proper face for the finished block. After the rock has been spread out in the compartment, the dividing plate is withdrawn to allow the concrete in the concrete compartment to drop down on to the layer of rocks. The face plate or press is vibrated at this time so that the rocks and the body of concrete are subjected to vibrations to ensure a good penetration of the concrete into the spaces between the rocks. It is preferable at this time to subject the body of concrete to vibrations while pressing said body into final size and shape. It is usual to provide the concrete compartment with a back plate or press opposed to the dividing plate and the face plate or press, and this back press is moved into the mold to size the block. It is preferable to apply the vibrations to this back press for the body of concrete. Actually, the block can be sized for length by simultaneously moving the face and back presses inwardly while vibrating these presses. If a pallet has been clamped on top of the mold, the latter is turned another 90° so that the pallet is beneath it, the face and back presses are withdrawn, and the finished block is moved downwardly out of the mold on the pallet.

Although the concrete compartment may have a stationary bottom, it is desirable to provide a bottom in the form of a main or bottom press movable at appropriate times between a position outside said compartment to a block sizing position, and into the inverted mold to press the finished block out of it.

The following is an example of this basic method of producing a building block:

(1) A metered quantity of rock is directed into the rock compartment of a mold which is a little thicker than the size of the rock.

(2) Concrete is directed into the concrete compartment of the mold to fill said compartment.

(3) A pallet is clamped in position over the mold.

3

(4) The bottom press is moved inwardly to press the concrete against the pallet and size the unit for height.

(5) The mold is turned to a 90° position with the rock compartment beneath the concrete compartment.

(6) The press face or wall of the rock compartment is vibrated to level the rock.

(7) The dividing plate is withdrawn to allow the body of concrete in the concrete compartment to drop on to the layer of rock.

(8) The face press is vibrated to cause the concrete to flow into the spaces between the rocks.

(9) The back press is moved inwardly of the mold to size the block and is vibrated during this movement, the vibrations preferably ceasing before the completion of the stroke. If desired, the face press may be moved inwardly and vibrated during this movement of the back press.

(10) The mold is turned to the 180° position.

(11) The face and back presses are moved clear of the block.

(12) The block and pallet are moved downwardly clear of the mold.

The machine for producing these faced blocks is constructed to carry out the above-mentioned steps in proper sequence. The rocks and concrete may be directed into the mold compartments in any desired manner, and this may even be done manually. However, the preferred form of machine includes means for metering the rock, means for delivering the metered rock to the rock compartment, and means for filling the concrete compartment with concrete. It is preferable that the bottom of this concrete compartment be in the form of a press or plunger which is usually retracted from its normal position when the compartment is being filled where it determines the quantity of concrete delivered into the compartment.

This method may be carried out by different forms of apparatus, but the following is a description of a very good machine for this purpose.

In the accompanying drawings,

FIGURE 1 is a side elevation, partly in section, of the preferred form of apparatus,

FIGURE 2 is a plan view, partly in section, of the apparatus,

FIGURE 3 is a vertical section taken on the line 3—3 of FIGURE 1

FIGURE 4 is a section taken on the line 4—4 of FIGURE 1,

FIGURE 5 is an enlarged section taken on the line 5—5 of FIGURE 3,

FIGURE 6 is a fragmentary sectional view taken on the line 6—6 of FIGURE 5,

FIGURE 7 illustrates part of the apparatus in a position during movement thereof to discharge a block from the mold, and

FIGURES 8 to 12 are diagrammatic views illustrating the various steps during the formation of a block in the apparatus.

Referring to the drawings, block making apparatus 10 includes a hopper section 11, a mold section 12 to one side and below the level of the hopper section, and a carriage 13 movable from a position beneath the hopper section over the mold section and back again. This carriage moves back and forth on tracks 18, and is reciprocated in any suitable manner, such as by means of a hydraulic cylinder 19, the piston rod 20 of which is connected to the end of the carriage remote from mold section 12. Carriage 13 has a cut-off plate 22 projecting from an end thereof which moves beneath and closes off the bottom of hopper section 11 when the carriage moves over mold section 12.

The machine shown in FIGURES 1 and 2 is designed to form a plurality of blocks at a time. As the molds of the apparatus for forming the blocks are identical, the machine for the sake of convenience will be mainly described in connection with the formation of one block.

Hopper section 11 includes a small rock hopper 25 and

4

a large concrete hopper 27. Hopper 25 directs rock to a rotatably mounted measuring drum 29 having a measuring pocket 30. This pocket has a movable bottom or gate 31 which is controlled by a lever 32 and link 33, said lever being fixedly secured to and moved by a shaft 34. The position of gate 31 in pocket 30 determines the amount of rock held by said pocket. When drum 29 is rotated, a predetermined quantity of rock in pocket 30 is shifted around and directed into a vertical passage 36, see FIGURE 3. If desired, a vibrator 37 may be connected to the bottom wall 38 of passage 36. Concrete hopper 27 tapers down to a vertical passage 40. There preferably are hoppers 25 and 27 and drum 29 for each block to be manufactured, although hopper 27 may be common for all blocks, in which case it would have a passage 40 for each block.

Carriage 13 has a narrow vertical rock container 43 and a larger concrete container 44 therein for each set of hoppers 25 and 27 and located respectively beneath these hoppers when the carriage is positioned beneath hopper section 11. Rock container 43 is made large enough to hold more than the maximum quantity of rock that can be metered by drum 29, while container 44 is large enough to hold a little more than the amount of concrete necessary to make the largest block that can be made by this machine. The size wall or plate 47 of container 43 can be agitated by a bearing block 48 pressing against it and mounted on a rotatable eccentric shaft 49. A vibrating plate 52 may be suspended in said plate being carried by a shaft 53 which is connected to a vibrator 54. A gate 55, is slidably mounted on the bottom of carriage 13 for each rock container 43 and normally closes the bottom or outlet of the latter, see FIGURES 5 and 6. A shaft 56 extends longitudinally of the carriage bottom and is connected to each gate 55 by a cam arrangement 57. Gates 55 are normally held closed by a spring 58 on shaft 56, and when carriage 13 is moved over mold section 12, shaft 56 engages a stop which moves said shaft longitudinally of the carriage to open gates 55.

Mold section 12 includes a frame generally designated by the numeral 73 having trunnions 74 and 75 projecting outwardly from opposite ends thereof, see FIGURE 1. Suitable means is provided for rotating frame 73 from its normal or zero position, shown in FIGURES 1, 4 and 5, to a 90° position, a 180° position and back again. In this apparatus, this is accomplished by a hydraulic cylinder 78 having a piston rod 79 projecting therefrom and connected to a segment gear 80 pivotally mounted at 81, see FIGURE 3. Segment 80 meshes with a gear 83 fixedly mounted on trunnion 75 and meshing with another gear 84 which rotates drum shaft 34 by means of a chain drive 85.

Mold section frame 73 carries a mold 88 for each block to be manufactured at a time by this machine. Mold 88 opens upwardly when frame 73 is in its normal or zero position, and has opposed side walls 90 and 91. A vertical divider plate or partition 93 projects upwardly into mold 88 and divides it into a small rock compartment 95 and a relatively large concrete compartment 96, said partition 93 slidably extending between side walls 90 and 91 transversely of the mold. Compartment 96 has a main or bottom press 98, while compartment 95 has a fixed bottom 99. In addition to this, compartment 95 has a face wall or press 104 which forms one end of mold 88, and compartment 96 has a back wall or press 106 which is opposed to face press 104 and constitutes the back wall of said mold. Main press 98 is moved up and down by a plurality of rods 109 which are connected to a cross beam 110, said cross beam being connected to plungers 111 of main hydraulic cylinders 112. Cylinders 112 are carried by mold section frame 73. Divider 93 extends downwardly between bottom press 98 and bottom 99 and is connected to a cross bar 120 which is moved up and down by a piston 121 of a cylinder 122 carried by frame 73.

Face press 104 is connected to a press beam 125 which, in turn, is connected to the piston rods of cylinders 126 that are mounted on part of frame 73, see FIGURES 2 and 4. These cylinders move the face press inwardly and outwardly relative to mold 88. A vibrator 127 is connected to beam 125, said vibrator being free of frame 73, as shown in FIGURE 2. Similarly, back press 106 is connected to a press beam 130 which is connected to the piston rods of cylinders 131. A vibrator 132 is connected to beam 130.

A pallet 135 is positioned over molds 88 in mold section 12 and clamped thereon in any suitable manner. A clamping frame 140 is slidably mounted on the top of frame 73 between guide rails 141 of an upper frame 142 for movement outwardly relative to said frame 73 under the action of carriage 13. Although pallet 135 may be moved into place by hand, it is preferable to provide frame 140 with a suitable gripping dog 143, see FIGURE 1, for engaging a pallet on a support 138 when the carriage is positioned over mold section 12 and frame 140 is moved outwardly thereby over support 138 so that when the carriage returns to its position beneath hopper section 11, the pallet is pulled over the molds. The carriage includes a coupling 144 adapted releasably to grip a tongue 145 projecting from frame 140. Upper frame 142 and clamping frame 140 are pulled down firmly to press and lock the pallet on top of frame 73 over the molds thereof by a plurality of locking dogs 145a operated by hydraulic cylinders 146 mounted on frame 73. Upper frame 142 is connected by a plurality of rods 147 to a lower frame 148, said rods slidably extending through portions of mold section frame 73. Lower frame 148 is connected to piston rods 111 through cross beam 110 and moves therewith. Actually, each rod 147 slidably extends through frame 148 and has a spring 149 mounted thereon between said frame and a stop 150 at the lower end of the rod. Another stop 151 on each rod 147 is normally spaced a little above frame 148. This allows frame 148 to be moved upwardly a little by cylinder 112 without moving rods 147. When piston rods 111 move frame 148 in the direction of upper frame 142, after a predetermined amount of movement, frames 142 and 140 are moved in the same direction but at an increased speed relative to frame 148. This is accomplished by means of levers 152 pivotally mounted on pins 153 carried by a support 154 connected to frame 148, there being a lever 152 for each rod 147. Each lever 152 has an end 156 in engagement with the adjacent end of a rod 147, the opposite end 157 of said lever engaging a pin 158 mounted on support 154. Pins 158 limit the downward movement of the outer ends 156 of levers 152 under the action of springs 149. When upper frame 142 is gripped by dogs 145a, pistons 112 can move frame 148 upwardly until it engages stops 151 on rods 147 without moving said rods because pins 158 move upwardly with support 154 while levers 152 swing around their pins 153. If dogs 143a are released, further movement of frame 148 causes frames 142 and 140 to move in the same direction. After a predetermined amount of movement of these frames, the inner ends of levers 152 are engaged by pins 159 projecting into the paths thereof from a portion of frame 73, see FIGURE 1. FIGURE 7 illustrates levers 152 engaged by pins 159, which causes the ends 156 of said levers to move rods 147 against the action of springs 149, thereby moving frames 142 and 140 relative to frame 148.

An ejector cylinder 162 is mounted beneath hopper section 11 and is aligned with the space beneath mold section 12. This cylinder has a piston rod 163 projecting therefrom which is adapted to move across the space beneath mold section 12 in the direction of an unloading rack 166 which is aligned with said cylinder.

Each mold for forming a building unit or block basically comprises side walls 90 and 91, bottom press 98, face press 104 and back press 106. The mold is completed when a pallet 135 is clamped on the top thereof.

The operation of apparatus 10 is as follows:

Supplies of rocks and concrete are kept in hoppers 25 and 27. When carriage 13 is in position under hopper section 11, as shown in FIGURES 1 and 3, the concrete containers 44 thereof are filled with concrete, while metered quantities of rocks are deposited in rock containers 43. Piston 19 is operated to move carriage 13 over mold section 12, this action shifting clamping frame 140 over support 138 to cause dog 143 to grip a pallet 135. At the same time, cut-off plate 22 of the carriage moves beneath hoppers 27 to retain the concrete therein. As the carriage advances over section 12, the concrete drops into concrete compartments 96 of molds 88. As the carriage approaches its final position over section 12, gates 55 thereof are opened to allow the rocks to drop out of containers 43 into rock compartments 95. The main or bottom press 98 is below its block-sizing position when the concrete is directed into compartments 96, as shown in FIGURE 4. Vibrators 49 and 54 are operated at this time. Carriage 13 is moved back beneath hoppers 25 and 27 drawing clamping frame 140 back to its position over mold section 12 and moving a pallet 135 over molds 88. Cylinders 146 are operated to cause locking dogs 145a to draw frame 140 downwardly firmly to clamp pallet 135 over molds 88. Cylinders 112 are operated to shift bottom press 98 upwardly to its block sizing position, which sizes the block for height. However, this height sizing step may take place after frame 73 has been rotated to a 90° position. FIGURE 8 diagrammatically illustrates the filled mold with a pallet closing the top thereof and the bottom press in the block-sizing position.

Piston 78 is operated to rotate frame 73 on pinions 74 and 75 to a 90° position with rock compartment 95 below concrete compartment 96, as shown in FIGURE 9. At the same time, measuring drum 29 is rotated through 90° by means of chain drive 85 from its rock-receiving position shown in FIGURE 3. Vibrator 127 is operated for a few seconds to level the rock in compartment 95 on face press 104, and then cylinder 122 is operated to withdraw divider 93 from compartment 96 of mold 88, as shown in FIGURE 10. The concrete of compartment 96 drops down on to the layer of rocks, and vibrator 127 is operated for a few seconds to cause the concrete to penetrate into the spaces between the rocks, see FIGURE 11. Cylinders 131 are operated to move back press 106 inwardly of the mold to finish the sizing of the block, and vibrator 132 preferably operates during this movement. It is preferable to stop vibrator 132 before back press 106 reaches its final position. If desired, face press 104 and back press 106 can be moved inwardly simultaneously with their respective vibrators going in order to size the block for length. This completes the formation of the block, as shown in FIGURE 11.

Frame 73 is now rotated to the 180° position, and this action moves pallet 135 to a position below mold 88. At the same time, drum 29 is rotated to bring pocket 30 into position to drop rocks through passage 36 in rock container 43 of carriage 13. Vibrator 37 is operated at this time. Cylinders 146 are operated to cause dogs 145a to release frames 142 and 140.

Presses 104 and 106 are moved outwardly away from the formed block 160, and cylinders 112 are operated to move lower frame 148 downwardly. This moves main press 98 in the same direction, and after a predetermined movement levers 152 causes clamping and upper frames 140 and 142 and the pallet thereon to move downwardly faster than frame 148 to clear the block of said main press. Bottom press 98 moves block 160 downwardly through mold 88 so that it continues to move with the pallet while pressing it against pallet 135 which is moving at exactly the same speed. After said predetermined movement, the pallet and the block thereon move away from the bottom press, after which the block is clear of the mold. After the block has cleared the mold, piston 162 is

operated to move the pallet and block on to the unloading rack 166.

Frame 73 is rotated back to the zero position, and this causes drum 29 to rotate to move pocket 30 back to the position where it receives rocks from hopper 25, as shown in FIGURE 3.

What I claim as my invention is:

1. A method of making a faced building block unit having at least one face thereof formed with a plurality of rock-like particles which particles each have a portion of their surfaces exposed to form a part of the exterior surface of the said face, comprising the steps of: placing a layer of facing material of said rock-like particles in a mold on a substantially flat horizontal face plate arranging said particles so that the said surface portion of the particles which would form the exterior surface of the said face physically contact the said face plate, forming a quantity of concrete into a layer separated from the said layer of facing material, with the face plate in a horizontal position depositing the said layer of concrete onto the rock-like particle facing material, vibrating the mold to cause the concrete layer to move towards the face plate into the spaces between the rock-like particles, and compressing the concrete to size the unit by moving the said face plate into the mold against that face of the unit containing the rock-like particles, so that the force of the moving face plate acts directly upon at least some of the said rock-like particles.

2. A method as claimed in claim 1 wherein the said step of arranging the particles includes vibrating the horizontal face plate to level the rock-like particles into a single layer on said plate, and wherein the step of vibrating the mold is performed by vibrating only the said face plate.

3. A method as claimed in claim 2 including moving a back plate inwardly of the mold towards said face plate to size the unit, and vibrating said back plate during at least part of said movement thereof.

4. A method as claimed in claim 1 including vibrating the said face plate during at least part of the said movement thereof.

5. A method of making faced building block units comprising depositing a quantity of facing material formed of rock-like particles into a compartment having a thickness a little greater than the size of the particles of said material, directing a quantity of concrete into a concrete compartment separated from the facing material compartment by a removable plate, said facing material compartment having a face plate upon which the rock-like particles rest when the plate is in a horizontal position, said plate being movable into said material compartment towards the removable plate, vibrating the face plate to level the rock-like particles into a layer on said face plate, withdrawing the removable plate to allow the concrete to deposit in a layer on the rock-like particles, and vibrating the face plate to cause the concrete layer to move towards the face plate into the spaces between the rock-like particles.

6. A method as claimed in claim 5 including moving the face plate inwardly of the mold and vibrating said face plate during at least part of said movement thereof.

7. A method as claimed in claim 5 wherein the said concrete compartment has a back plate opposed to the face plate and movable into said concrete compartment towards the face plate, and moving the back plate inwardly of the mold to size the unit, and vibrating the back plate during at least part of said movement.

8. A method as claimed in claim 7 wherein said concrete compartment has a bottom plate movable inwardly of the mold substantially normal to the direction of movement of said face and back plates, and moving the bottom plate inwardly of the mold to compress the concrete to a predetermined thickness.

9. A method of making faced building block units comprising depositing a metered quantity of facing ma-

terial formed of rock-like particles onto an open-topped vertical compartment having a thickness slightly greater than the size of the particles of said facing material, directing a quantity of concrete into an open-topped vertical concrete compartment separated from the facing material compartment by a vertical removable plate, said facing material compartment having a face plate opposed to the removable plate and movable towards the latter into the material compartment, covering the top of said material and concrete compartments, rotating said compartments together to shift the facing material compartment below the concrete compartment, vibrating the mold to level the rock-like particles into a layer on the face plate, withdrawing the removable plate to allow the concrete to deposit on the rock-like particles as a layer, and vibrating the face plate to cause the concrete to move towards the face plate into the spaces between the rock-like particles.

10. The method of making faced building blocks comprising directing a concrete mix and a metered quantity of facing material in rock-like particle form into separate holders of a horizontally-reciprocal carriage, moving said carriage over a vertical mold divided by a removable partition into two separate compartments corresponding to the carriage holders, directing the mix and facing material into the mold compartments while subjecting said mix and facing material to vibration, rotating the mold to a horizontal position with the facing material beneath the concrete mix, withdrawing the partition from the mold to allow the concrete mix to drop onto the facing material, causing the concrete mix to move into the spaces between the rock-like particles thereof to form a faced block, pressing the block horizontally to a predetermined size, further rotating the mold to an inverted position, and ejecting the block from the mold.

11. The method as claimed in claim 10 including the step of subjecting the mix and facing material to vibration during and after the withdrawal of the partition from the mold.

12. A method for making faced building blocks comprising directing a concrete mix and a metered quantity of facing material in particle form into separate compartments of a vertical mold divided by a removable partition, rotating the mold to a horizontal position with the facing material beneath the concrete mix, withdrawing the partition from the mold to allow the concrete mix to drop onto the facing material, causing the concrete mix to move into the spaces between the rock-like particles, pressing the block horizontally to a predetermined size, further rotating the mold to an inverted position, and ejecting the block from the mold.

13. A method as claimed in claim 12 including the steps of securing a pallet on the mold over said compartments before the mold is rotated and wherein the block is ejected onto the pallet.

14. The method as claimed in claim 13 including the step of subjecting the mix and facing material to vibration as the partition is withdrawn from the mold.

15. Apparatus for making faced building units comprising a mold having a first compartment adapted to receive facing material formed by rock-like particles, a second compartment adapted to receive concrete beside the facing material compartment, a removable dividing plate normally positioned between said compartments, a face press forming a wall of the facing material compartment opposed to said dividing plate, a back wall for the concrete compartment opposed to both the dividing plate and the face press, a pair of side walls substantially perpendicular to the said face press and back wall, and forming the sides of both of said compartments, means for moving the face press towards the said plate in a direction normal to the plane of the latter while holding the back wall and side walls stationary to compact the material in the mold, means for placing the face press into a horizontal position whereat the rock-like particles can

rest on the face press, means for selectively removing the dividing plate out of and back to the normal position, and vibrating means connected to the face press operable to vibrate said press.

16. An apparatus as claimed in claim 15 wherein said back wall is a back press and including a means for moving the back press towards the said plate in a direction normal to the plane of the latter to compact the material in the mold, and vibrating means connected to said back press to vibrate the same.

17. Apparatus for making faced building block units comprising a rotatable frame, a mold mounted in the frame, a first open-topped compartment in the mold adapted to receive facing material formed by rock-like particles, a second open-topped compartment adapted to receive concrete in the mold beside the facing material compartment, a removable dividing plate normally positioned between said compartments, means for selectively moving the dividing plate out of the mold and back to its normal position, a face press forming a wall of the facing material compartment opposed to the dividing plate, a back wall forming a wall of the concrete compartment and opposed to the dividing plate and face press, a pair of side walls substantially perpendicular to the said face press and back wall and forming the side of both of said compartments, means for moving the face press towards the said plate in a direction normal to the plane of the latter while holding the back wall and side walls stationary to compact the material in the mold, cover means for covering the top of the material and concrete compartments, a rotating means for rotating the frame to shift the facing material compartment beneath the concrete compartment, and vibrating means connected to the face press operable to vibrate said press.

18. Apparatus as in claim 17 wherein said back wall is a back press and including a means for moving the back press towards the said plate in a direction normal to the plane of the latter to compact the material in the mold, and a bottom press forming a bottom for the concrete compartment and movable outwardly and inwardly relative to said concrete compartment between a compartment expanded position and a block unit sizing position.

19. Apparatus as claimed in claim 18 including vibrating means connected to the back press operable to vibrate said press.

20. Apparatus as claimed in claim 17 wherein said back wall is a back press including a means for moving the back press towards the said plate in a direction normal to the plane of the latter to compact the material in the mold.

21. Apparatus as claimed in claim 17 in which said cover means for the compartments comprises a pallet, and including means for releasably clamping said pallet in position over the material and concrete compartments.

22. Apparatus as claimed in claim 17 in which said cover means for the compartments comprises a pallet, and including a clamping frame carried by the rotatable frame positioned over said compartments and movable to clamp the pallet thereover, and power means connected to the clamping frame for moving the latter to clamp the pallet over the compartments.

23. Apparatus as claimed in claim 17 including a bottom press forming a bottom for the concrete compartment and movable outwardly and inwardly relative to said concrete compartment between a compartment expanding position and a block unit sizing position, power means carried by the rotatable frame below the mold, means connecting the said power means to said bottom press to selectively move said press from the compartment expanding position to the sizing position and into the concrete compartment sufficiently to discharge a formed block therefrom.

24. Apparatus as claimed in claim 23 in which said cover means for the compartments comprises a pallet, and including a clamping frame carried by the rotatable frame positioned over said compartments and movable to clamp the pallet thereover, and means connecting said power means to said clamping frame for moving the latter away from the compartments at the same time as the bottom press is moved from the sizing position into the concrete compartment to discharge a formed block.

25. Apparatus as claimed in claim 24 in which the means connecting the power means to the clamping frame includes resilient means permitting limited movement of the bottom press without corresponding movement of the clamping frame.

26. Apparatus as claimed in claim 24 in which the means connecting the power means to the clamping frame includes lever means for accelerating the movement of the clamping frame relative to the movement of the bottom press when the latter is moved by said power means.

27. Apparatus as claimed in claim 17 wherein the said apparatus also includes a carriage mounted for movement to an inner position over the mold and back to an outer position to one side thereof, vertical facing material and concrete containers in the carriage sized and adapted to register with said facing material and concrete compartments when the carriage is over the mold, facing material and concrete hoppers mounted above said outer position and having bottom outlets sized and adapted to register with said facing material and concrete containers when the carriage is in said outer position, and power means connected to the carriage for moving said carriage between said inner and outer positions.

28. Apparatus as claimed in claim 27 including means at the facing material hopper for discharging a metered quantity of facing material into said hopper each time the carriage is moved into said outer position.

29. Apparatus as claimed in claim 27 including independent vibrating means on the carriage for each of the facing material and concrete containers, the vibrating means of the material container being connected to a wall thereof and the vibrating means of the concrete container being mounted within the latter.

30. An apparatus as claimed in claim 17 including a horizontal axis substantially parallel to the planes of the said face press, back wall and dividing plate, mounting means for mounting the said rotatable frame for rotational movement about said axis.

31. An apparatus as claimed in claim 30 wherein said rotating means includes a further means for rotating the frame from the said position whereat the facing material compartment is beneath the concrete material compartment to another position whereat the cover means is below the said compartments.

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