

May 11, 1954

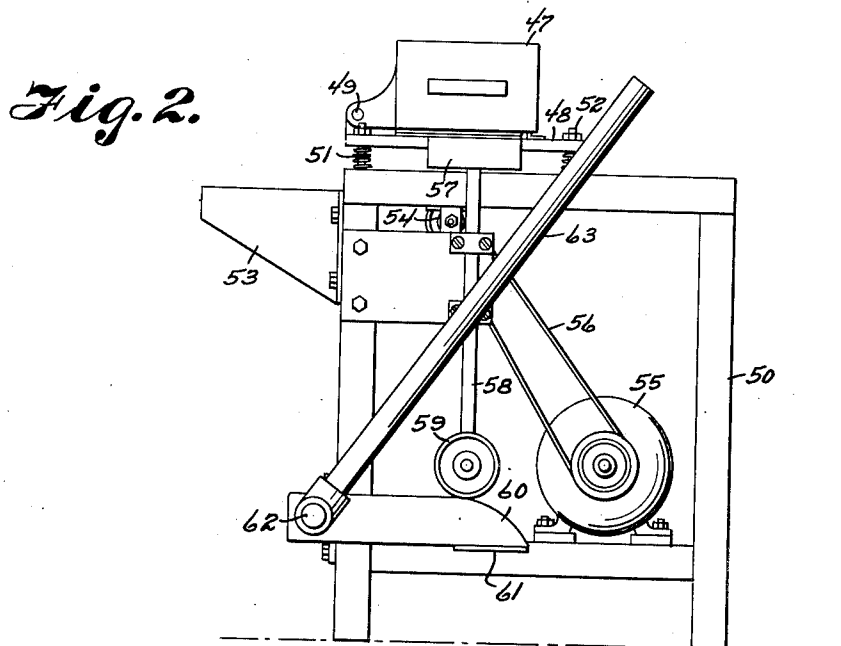
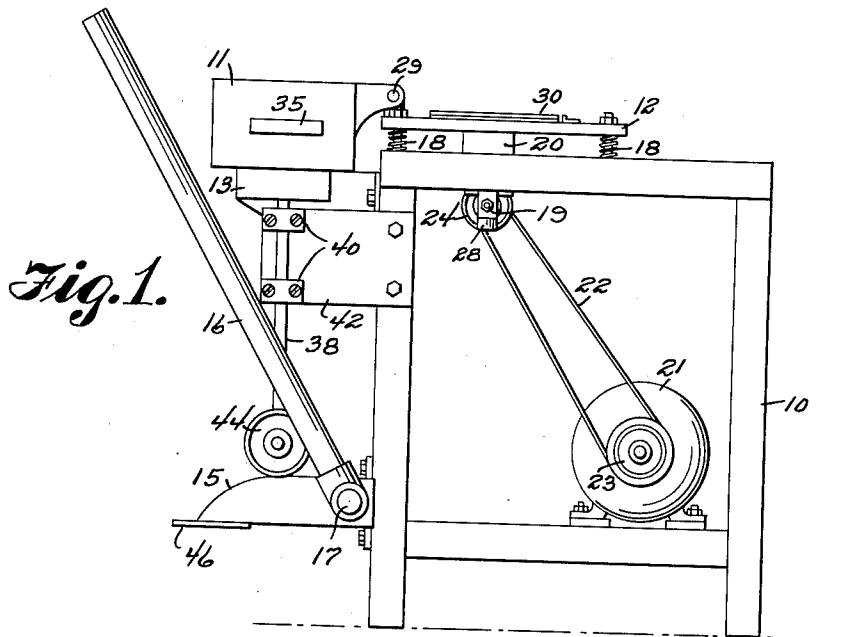
E. GARNICH

2,677,856

PROCESS OF FORMING BUILDING BLOCKS

Filed Jan. 13, 1950

2 Sheets-Sheet 1



INVENTOR.

Emil Garnich

BY *Victor J. Enns & Co.*

ATTORNEYS

May 11, 1954

E. GARNICH

2,677,856

PROCESS OF FORMING BUILDING BLOCKS

Filed Jan. 13, 1950

2 Sheets-Sheet 2

Fig. 3.

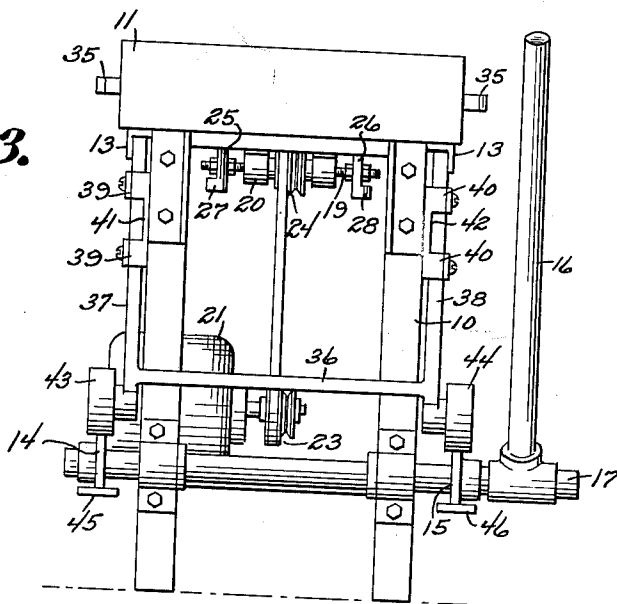


Fig. 4.

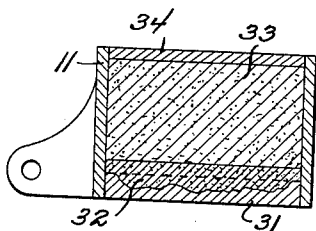


Fig. 5.

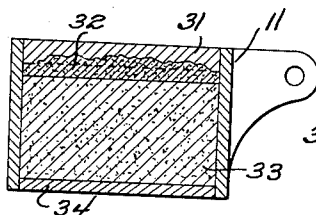
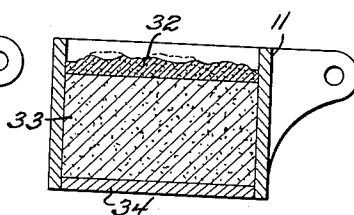


Fig. 6.



INVENTOR.

Emil Garnich

BY *Vietor J. Evans & Co.*

ATTORNEYS

UNITED STATES PATENT OFFICE

2,677,856

PROCESS OF FORMING BUILDING BLOCKS

Emil Garnich, Egg Harbor City, N. J.

Application January 13, 1950, Serial No. 138,433

1 Claim. (Cl. 18—60)

1

This invention relates to a slump or press face process for forming building blocks, bricks, lintels, sills and slabs with various uneven rock-like faces wherein a hard face is provided without extra water for curing.

The purpose of this invention is to provide an improved method of forming building blocks with hard faces wherein building blocks may be formed in quantity with faces of different designs.

Building blocks of this type are formed with dry tamped faces and the dry tamped face requires plenty of water. These blocks are very seldom cured properly as workmen do not use sufficient water. With this thought in mind this invention contemplates a process of forming concrete building blocks with hard faces wherein the rough material is set by vibrating and the rock face is formed by placing wet material below the material forming the body of the block with a facing plate in which the design is provided below and protruding into the wet material.

The object of this invention is, therefore, to provide a method for forming concrete building blocks with different facing designs used on the blocks and in which the facing is hard and smooth.

Another object of the invention is to provide an improved method of forming concrete building blocks in which the same rock face plate is used for providing different designs of rock faces by slumping the block.

A further object of the invention is to provide an improved method of forming concrete blocks with uneven rock-like faces of different designs in which blocks are formed in quantity and in which the blocks are comparatively inexpensive.

With these and other objects and advantages in view the invention embodies a machine having a box-like form with facing plates of different designs adapted to be positioned with the design protruding into materials in the forms, means for vibrating the forms and means for mechanically turning and again vibrating the forms to cause the materials to partially drop away from the facing plates and to facilitate removing the block.

Other features and advantages of the invention will appear from the following description taken in connection with the drawings wherein:

Figure 1 is a view showing a side elevation of the improved block forming machine with the form in the position in which it is finally vibrated and from which blocks are removed.

Figure 2 is a similar view showing the form in the vibrating position.

2

Figure 3 is an end elevational view showing the machine with the form in the vibrating position as illustrated in Figure 2.

Figure 4 is a cross section through the form with the form in the vibrating position as illustrated in Figure 2 and showing the facing plate on the lower side of the block.

Figure 5 is a view similar to that shown in Fig. 4 showing the form turned over to the finishing and block removing position as illustrated in Figure 1.

Figure 6 is a view also similar to that shown in Fig. 4, showing the form inverted and the facing plate removed.

Referring now to the drawings wherein like reference characters denote corresponding parts the block forming machine on which the improved process of this invention is carried out is formed with a frame 10, having a box-like form 11 with a vibrator plate 12 and an ejecting plate 13 which is actuated through cams 14 and 15 by a hand lever 16 on a shaft 17.

The frame 10 is formed as illustrated in prior Patent No. 2,559,422.

The vibrating plate 12 rests on springs 18 and a shaft 19 which is journaled in bearings 20 on the under side of the plate is rotated by a motor 21 through a belt 22 that is trained over pulleys 23 and 24. The vibration is provided by discs 25 and 26 with eccentrically positioned weights 27 and 28 thereon, respectively. These discs are mounted on the ends of the shaft as shown in Figure 3.

The form 11 which is pivotally mounted on a shaft 29 is positioned to rest upon the vibrating plate 12 as illustrated in Figure 2, with the form positioned over a locating plate 30. With the form in this position a facing plate 31 is positioned in the lower end and wet facing material 32 is placed on the plate. Rough material 33 is placed on the facing material 32 and an upper plate 34 is positioned thereon. The form is then vibrated to settle the material and after being vibrated the form is turned over manually by the handles 35 to the position illustrated in Figure 1 where it rests upon the ejector 13.

With the form in this position the facing plate is in the inverted position with the uneven surface having hills and valleys or cavities therein extended downwardly and with the parts in these positions the vibrating instrumentalities are again actuated whereby the material in the form is slumped whereby the facing material partially leaves the cavities so that each block formed by the process has a different face.

The slumping action only requires a knock or

3

kick and by operating the vibrating instrumentalities of the machine for a second or the like sufficient vibration is transmitted through the body of the machine to the element 13 upon which the block is resting to slump the material away from parts of the facing plate.

While the material is still green the block is ejected by a frame 36 having side bars 37 and 38 slidably mounted in bearings 39 and 40, respectively on side plates 41 and 42. The frame 36 is positioned so that the lower ends of the bars 37 and 38 coact with the cams 14 and 15 whereby as the cams are elevated about the shaft 17 by the hand lever 16 the green block is ejected from the form or mold. The lower ends of the bars 37 and 38 are provided with rollers 43 and 44, respectively which ride upon the upper surfaces of the cams. The cams are provided with stop plates 45 and 46, respectively which limit the upward movement thereof.

As the molded block is removed from the form the facing plate 31 is removed and the concrete product is placed face up upon a table. The block is sprayed with a dry material of the same mix as that of the facing material to level off defects and after a short while the dry material is absorbed by the material of the block and it is sprayed with a water vapor spray to even up the face to give it a regular cut stone appearance. The block is then cured for approximately thirty days and may be used in broken ashler zone style with the blocks provided in different lengths and heights.

In the design illustrated in Figure 2 a form or mold 47 similar to the mold 11 is hinged to a vibrator plate 48 by a shaft 49 and the plate 48 is resiliently mounted on a frame 50 through springs 51 and bolts 52. With the parts arranged in this manner the mold 47 may be turned over about the pivot or shaft 49 so that it may be positioned upon the support 53 for cleaning.

The frame 50 is provided with a stationary platform 53 to hold the mold and a vibrator 54 is actuated by a motor 55 with a belt 56.

The frame 50 is also provided with an ejector 57 with an ejecting frame 58 having rollers 59 on the lower end that ride on cams 60 with stop plates 61 on the end, the cams being similar to the cams 15 of the machine shown in Figure 1. The cams are carried by a shaft 62 and the shaft and cams are actuated by a hand lever 63, similar to the lever 16.

The facing plates 31 may be made of plastic, steel or other rigid material, or these plates may be made of rubber or other flexible material. The flexible material relieves the suction of the wet material providing a smooth face on the block.

4

This improved process for forming building blocks with facings of different designs, therefore, includes filling molds with rough material having a layer of facing material in combination with a facing block on the lower surface, vibrating the form in which the product is positioned, reversing the position of the form, again vibrating the form with the same vibrating elements or by jarring the frame, placing the finished product on a table, spraying a dry material of the same mix as that of the facing material over the face of the block and after this material is absorbed into the facing material, spraying the surface with water vapor.

With this process a building block is formed with a hard face that requires no extra water for curing.

By using face plates with cavities of different designs therein and slumping the material away from the uneven rock-like face of the facing plate blocks may be provided with numerous designs on the faces thereof and with each block having a different design.

It will be understood that modifications may be made in the process or in the method of forming the blocks without departing from the spirit of the invention.

What is claimed is:

The process of molding building blocks which comprises vibrating cementitious material having a layer of facing material on the lower surface in a block forming mold whereby the facing material is worked into cavities of a facing plate having an uneven rock-like surface facing the material, inverting the position of the mold whereby the facing plate is positioned on the upper end of the mold with the uneven rock-like face extended downwardly, and vibrating the materials with the materials in the inverted positions whereby the facing material is slumped partially from some of the cavities of the facing plate so that each block cast in the form is provided with a face of a different design.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
384,295	Stockwell	June 12, 1888
723,281	Jaques	Mar. 24, 1903
1,164,099	Kline	Dec. 14, 1915
1,344,087	Kline	June 22, 1920
2,227,756	Kirkham	Jan. 7, 1941
2,270,829	Wellnitz	Jan. 20, 1942