Feb. 10, 1953 E. GARNICH 2,627,640

APPARATUS FOR FRACTURING BLOCKS OF GREEN FRANGIBLE MATERIAL

Filed Sept. 14, 1950 2 SHEETS—SHEET 1

Fig. 1.

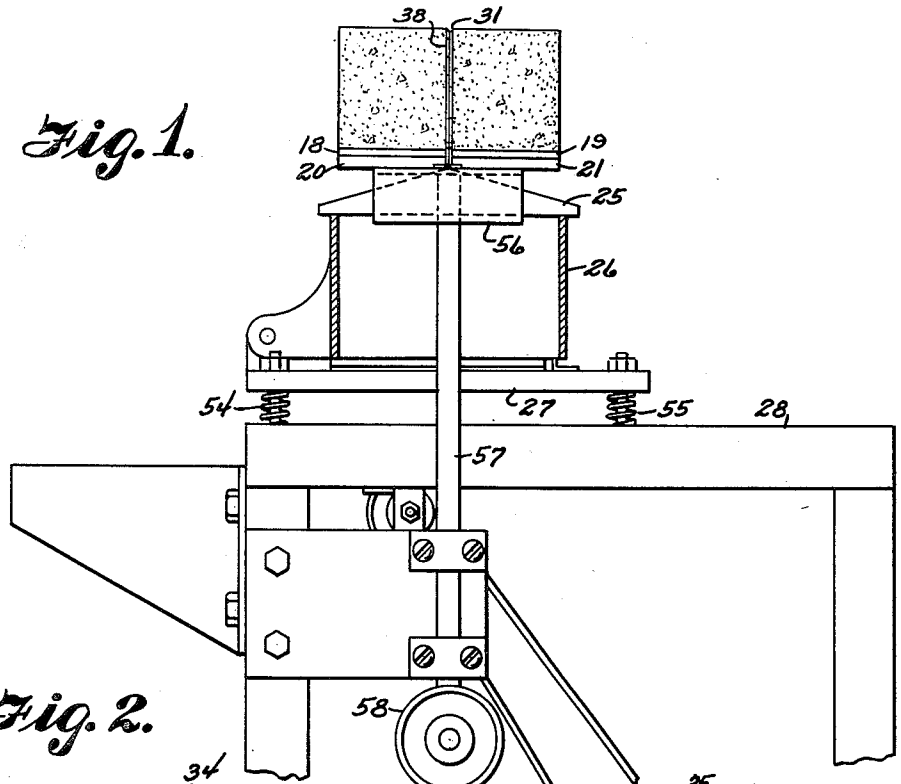
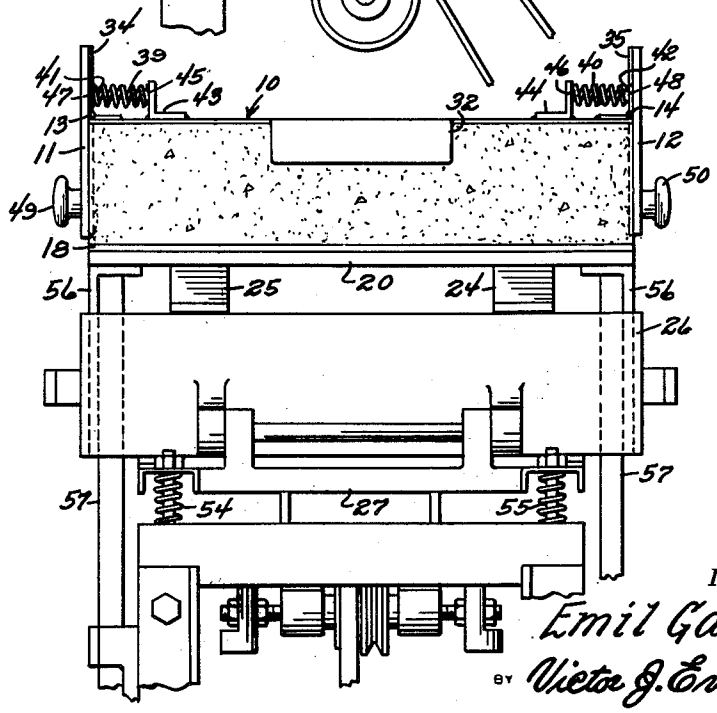


Fig. 2.



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Fig. 3.

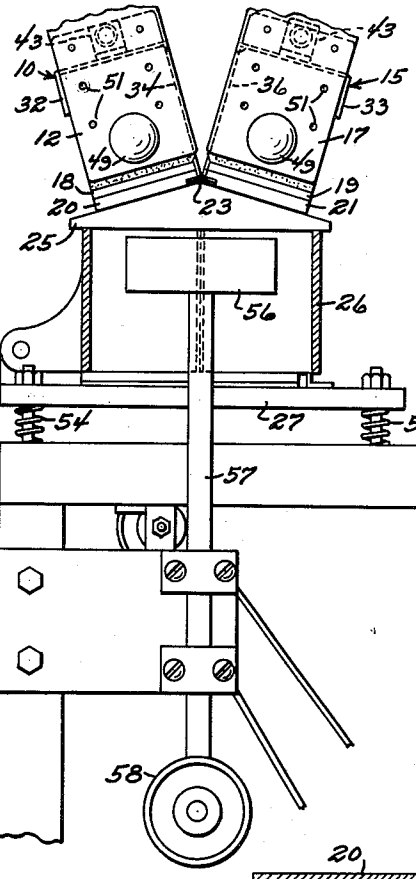


Fig. 4.

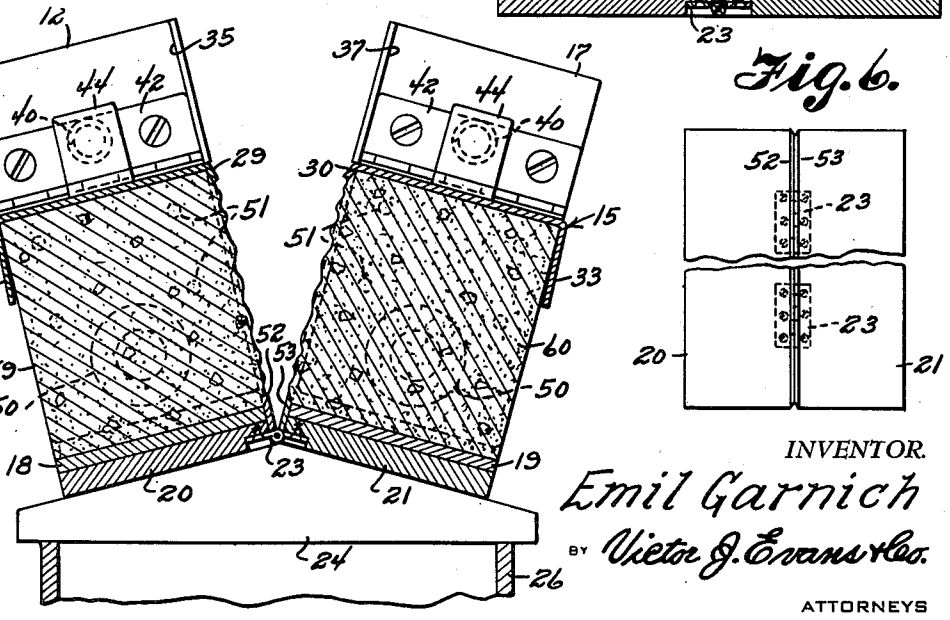


Fig. 5.

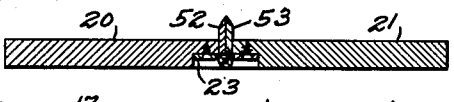


Fig. 6.

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APPARATUS FOR FRACTURING BLOCKS OF GREEN FRANGIBLE MATERIAL

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Application September 14, 1950, Serial No. 184,863

8 Claims. (Cl. 25—1)

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The invention relates to an improved system of making split concrete blocks with natural broken faces for use as bricks, lintels, sills, slats and coping and in particular a pair of holders for gripping opposite sides of a green block ejected from a form and separating the sides each of which, as an illustration, forms one half of the block, by positioning on inverted V-shaped rails with a plane through the longitudinal center of the block positioned through the vertexes of the rails whereby with downward pressure upon the holders lips on the inner edges thereof break the block forming two substantially similar sections.

The purpose of this invention is to provide means for gripping and breaking elongated concrete blocks or slabs whereby the surface material of both halves of the block is encased during the breakage operation to prevent chipping the corners of edges thereof.

Various methods have been provided for providing broken or stone faces on concrete blocks but where the blocks are broken after the concrete is hard a broken section shows chisel or drill marks and the breaking face is, sometimes, too irregular for use. Where the blocks are broken while the concrete is still green the sections crack and break to such an extent that the loss is comparatively high. With this thought in mind this invention contemplates a method of breaking concrete blocks longitudinally wherein the two halves of a block are gripped between holders whereby the material is supported continuously from the time it leaves the form until it is placed in a rack.

The object of this invention is, therefore, to provide means for breaking concrete blocks longitudinally while the material is green in which the sections are supported to prevent cracking and breaking thereof.

Another object of the invention is to provide a holder for gripping sections of concrete blocks for breaking, which is adjustable to blocks of different sizes.

Another object of the invention is to provide holders and supports for breaking concrete blocks longitudinally into sections wherein each section may be positioned with the broken side up for finishing.

A further object of the invention is to provide holders for breaking green concrete blocks longitudinally into sections wherein the sections are supported continuously around the peripheral surfaces thereof, which are of a simple and economical construction.

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With these and other objects and advantages in view the invention embodies a pair of holders including flat elongated panels having lips on the inner edges and flanges on the outer edges, plates with knobs on the outer surfaces hinged to the ends of the elongated panels, springs urging the plates against the ends of a block section upon which the elongated panel is positioned and blocks or rails having V-shaped upper surfaces upon which hinged pallets with the blocks carried thereby are positioned.

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

Figure 1 is a side elevational view showing part of a concrete block forming machine with the side walls of a mold positioned on the machine shown in section and with a block positioned on a pallet extended upwardly above the mold.

Figure 2 is an end elevational view taken at a right angle to that shown in Fig. 1 also showing a block of material ejected from the mold or form and illustrating a holder positioned upon the block of material.

Figure 3 is a side elevational view similar to that shown in Fig. 1 showing the two sections of a block separated and positioned upon the V-shaped upper surface of a rail.

Figure 4 is a cross section on an enlarged scale illustrating two separated sections or halves of a block showing the rough surfaces formed by breaking the two sections apart.

Figure 5 is a cross section through the hinged pallet showing the parts extended straight outwardly.

Figure 6 is a plan view of the pallet shown in Fig. 5 with parts broken away.

Referring now to the drawings wherein like reference characters denote corresponding parts the improved concrete block breaking device of this invention includes a panel 10 having plates 11 and 12 attached to the ends by hinges 13 and 14, complementary panels 15 having end plates 16 and 17, filler pallets 18 and 19 and a hinge pallet formed with sections 20 and 21 connected by hinges 23, and rails 24 and 25 adapted to be positioned upon the upper ends of a mold 26 which is illustrated as positioned upon a vibrating plate 27 of a machine having a frame 28.

This invention provides means for breaking the concrete blocks of my copending application with the Serial No. 138,433.

The inner edges of the panels 10 and 15 are provided with continuous lips 29 and 30 that are pressed downwardly into the material of the

block forming a groove 31, as shown in Fig. 1 and the outer edges are provided with centrally disposed flanges 32 and 33. The inner edges of the end plates of the holder are also provided with lips similar to the lips 29 and 30, the plates 11 and 12 having lips 34 and 35 on the inner edges and the plates 16 and 17 having similar lips 36 and 37. The lips on the end plates form vertically disposed grooves 38 in the ends of the blocks, and with the lips slightly inclined the grooves in both the ends and upper and lower surfaces will be V-shaped.

The end plates 11 and 12 of the panel 10 are resiliently held against the ends of the blocks by springs 39 and 40, respectively, the springs being positioned between the upwardly extended legs 41 and 42 of the hinges 13 and 14, respectively and angles 43 and 44 mounted on the panels. The angles 43 and 44 are provided with studs 45 and 46 for locating the ends of the springs and similar studs 47 and 48, respectively are provided on the legs 41 and 42 of the hinges. The plates 11 and 12 are provided with knobs 49 and 50 by which the holders are gripped by both hands of an operator as they are placed in position upon the upper surface of a block and the holders are also held by these knobs as the two half sections of the block are separated with the pallet sections 20 and 21 positioned upon the inclined surfaces forming the upper edges of the rails 24 and 25. Each of the end plates is provided with a series of bolt holes, as indicated by the numeral 51 for receiving bolts or screws by which the end plates are attached to the legs 41 and 42 of the hinges whereby the position of the plates may be adjusted to compensate for blocks of different dimensions.

The knobs, springs, and mounting means of the springs, of the holders 15 are similar to corresponding parts of the holder 10 and for this reason the above description is not repeated.

The inner edges of the sections 20 and 21 of the hinged pallet are provided with strips 52 and 53 having beveled upper edges which, as illustrated in Fig. 4 overlap the inner edges of the sections of the slots whereby continuous holding elements are provided around the peripheral surface of the block and these elements form a continuous groove on the dividing line of the block. When the block is placed upon the upper sloping surfaces of the rails 24 and 25 with the inner edges of the sections 20 and 21 of the hinged pallet positioned on the vertexes of the rails, the small flanges or lips pull against the continuous outer edges of the sections. With an operator gripping the knobs of the end plates of both of the holders a slight outward or separating pressure is applied as the block of green material is positioned upon the rails 24 and 25. This causes a substantially even break but with the exposed surface of the block or brick rough.

The concrete block splitting or breaking device of this invention may be used with concrete blocks formed with any suitable type of mold or form or on machines of different types and design. The machine shown in the drawings of the application is for the purpose of illustration only and, as illustrated in Figs. 1 and 3 concrete blocks are formed in a mold 26 which is mounted on a vibrator plate 27 suspended above a frame 28 by a spring 54 and 55, and after the blocks are formed they are ejected by blocks 56 on vertically actuating rods 57, the lower ends of which are provided with rollers 58. The plate 27 may be vibrated by any suitable means and the rod 57 may also be elevated by suitable means.

After the blocks are formed they are ejected by the blocks 56 with which they are held above a form 26, as shown in Fig. 1 until the rails 24 and 25 are positioned under the pallet and the holders including the panels 10 and 15 are positioned upon the upper surface of the block. With the holders in position the ejecting blocks and rods are lowered and by pressing downwardly on the holders, with the holders gripped by the knobs 49 and 50 the blocks readily break in half forming two sections 59 and 60. These sections are then removed and placed upon tables or other drying means.

Before filling the form with the material of the blocks the inner pallets 18 and 19 are positioned upon the pallets 20 and 21, as shown in Fig. 4, to facilitate removing the sections of the block from the hinged pallet.

It will also be understood that inner pallets may be vertically positioned in the form and held by the flanges 32 and 33 whereby block sections of different thicknesses may be formed and with the pallets held by the flanges 32 and 33 the sections of the blocks may be removed from the hinged pallet and positioned with the rough face extended upwardly whereby the rough or broken face may be worked over for finishing or coloring.

It will also be understood that the roughened faces of the block sections may be formed of different colors and also that a coloring pigment may be used in the material from which the blocks are formed whereby the blocks may be provided in different colors.

It will also be understood that the partitions may be used in the form, as in my co-pending application with the Serial No. 138,433, filed January 13, 1950, whereby the sections may be divided to form blocks of different sizes.

It will also be understood that modifications may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

1. A holder for a block of frangible material comprising an elongated panel, end plates having hand gripping knobs on the outer surfaces hinged to the ends of the panels, means resiliently urging the said end plates against the ends of a block upon which the holder is positioned, said panel and end plates having inwardly extended lips on the inner edges thereof, a pallet also having a lip on the inner edge upon which the block is positioned, and rails having sloping surfaces upon which the pallet with the block of material thereon is positioned.

2. A concrete block splitting device comprising a pair of holders, each of said holders having an elongated panel with a lip on the inner edge, end plates also having lips on the inner edges and hand gripping knobs on the outer surfaces hinged to the ends of the panels, springs on the upper surfaces of the panels urging the said end plates against the ends of sections of a block upon which the holders are positioned, pallets positioned under the sections of the block, a hinged pallet having sections with upwardly extended lips on the inner edges and upon which the concrete block is positioned, and rails with V-shaped upper surfaces upon which the hinged pallet is positioned to break the block into sections.

3. In a concrete block splitting device, the combination which comprises a pair of elongated panels having lips on the inner edges and flanges on the outer edges, hinged plates adjustably

hinged to the ends of the panels, said end plates also having lips on the inner edges, means resiliently urging the end plates toward the end sections of a block upon which the panels are positioned, a pallet having hinged sections with strips extended upwardly from the inner edges of the sections upon which the concrete block is positioned, and spaced rails having V-shaped upper surfaces upon which the pallet is positioned.

4. A fracturing device for a block of frangible material comprising a pair of substantially rectangular shaped panels, means hinging the panels together on meeting edges thereof, and scoring strips extended upwardly from the said meeting edges of the panels.

5. A fracturing device for a block of frangible material comprising a pair of panels substantially rectangular shaped in plan, means hinging meeting edges of the panels together and scoring strips with beveled upper edges carried by the inner meeting edges of the panels whereby a rectangular shaped body of green material positioned on the panels with the panels in a horizontal plane is scored by the scoring strips and broken into a plurality of bodies when the panels are forced downwardly over a supporting device having a high point and wherein the hinges of the panels are positioned over the said high point.

6. A concrete block fracturing device as described in claim 5 wherein material holding

panels with lips on their inner meeting edges and flanges on their outer extended edges are positioned on the upper surfaces of sections of said body of material.

7. A concrete block fracturing device as described in claim 5 wherein material holding panels with lips on their inner meeting edges and flanges on their outer extended edges are positioned on the upper surfaces of sections of said body of material and wherein end plates with scoring lips on their inner meeting edges are hinged to the ends of the panels on the upper surfaces of the sections of the body of material.

8. A fracturing device for a block of frangible material as described in claim 5 wherein material holding panels with lips on their inner meeting edges are positioned on the upper surfaces of the sections of said body of material.

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