March 19, 1940. F. X. MUENZER 2,193,879

CONCRETE BLOCK MACHINE

Filed May 12, 1938 3 Sheets-Sheet 1

FIG. 1.

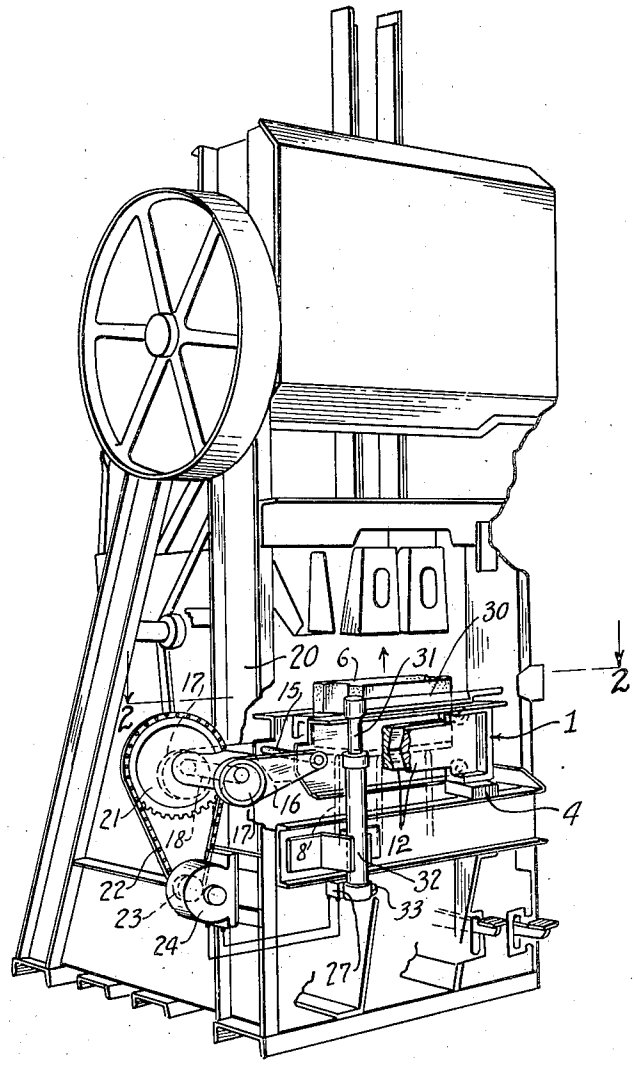
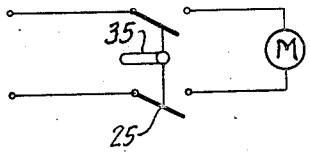


FIG. 6.



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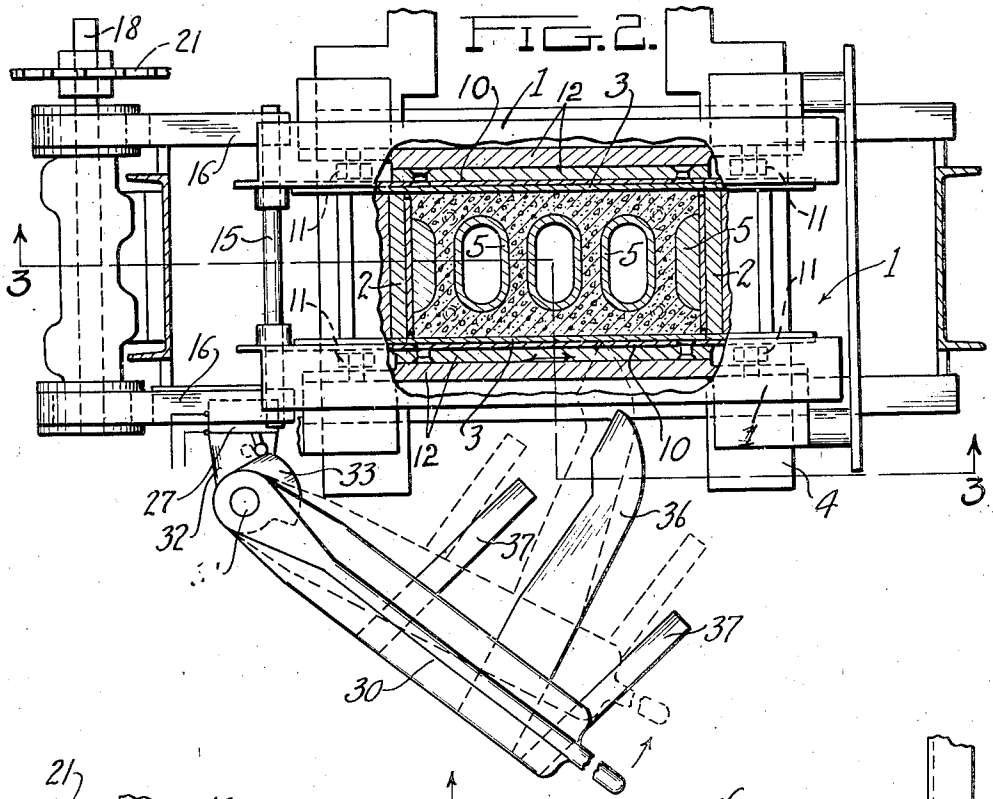
Attorneys

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CONCRETE BLOCK MACHINE

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FIG. 2.



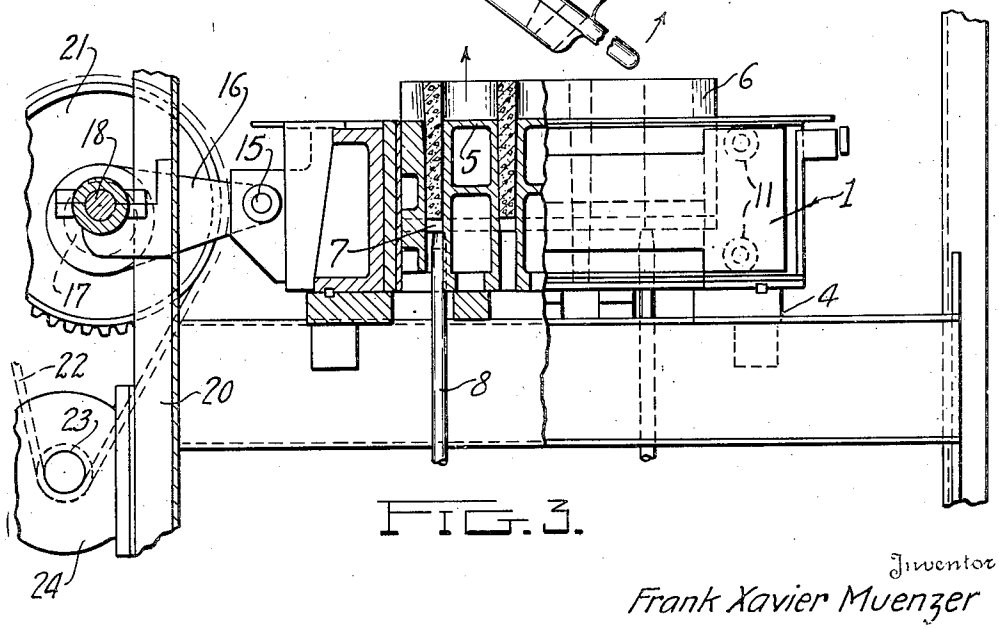


FIG. 3.

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CONCRETE BLOCK MACHINE

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FIG. 4.

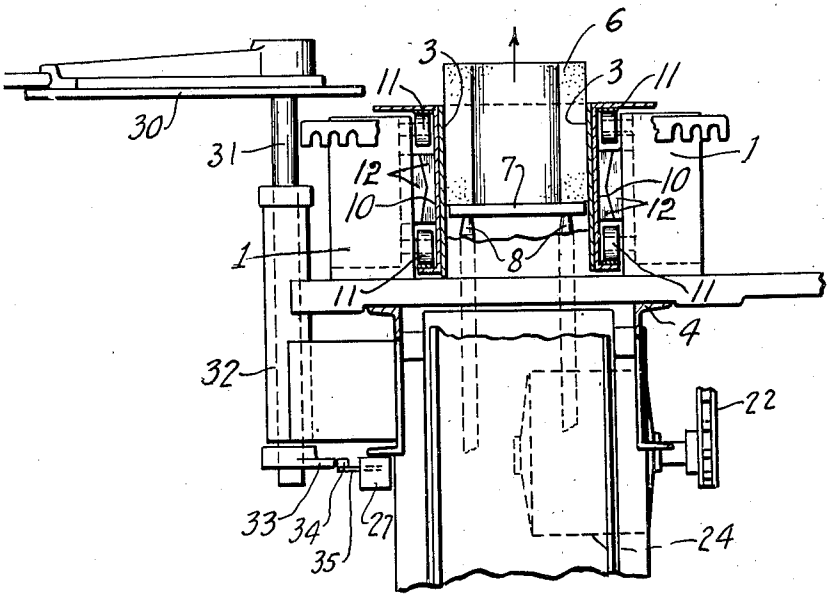
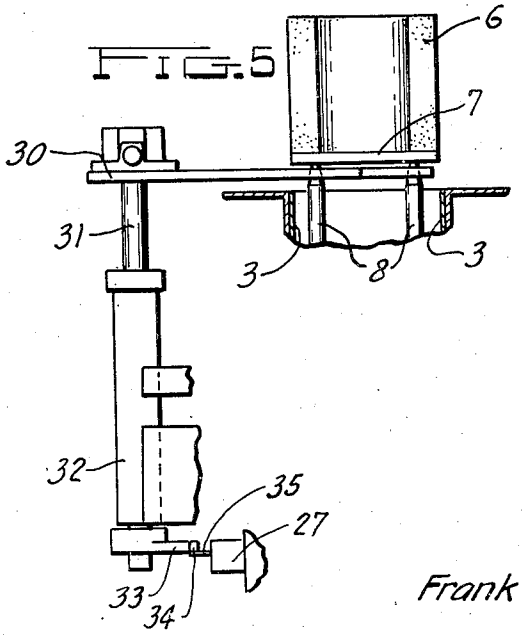


FIG. 5



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Patented Mar. 19, 1940 2,193,879

UNITED STATES PATENT OFFICE

2,193,879

CONCRETE BLOCK MACHINE

Frank Xavier Muenzer, Elmore, Ohio, assignor to The Multiplex Concrete Machinery Company, Elmore, Ohio, a corporation of Ohio

Application May 12, 1938, Serial No. 207,555

2 Claims. (Cl. 25—41)

In machines of this type heretofore used, the troweling means, so far as I am aware, continuously operates during the block forming operations which include pressing, tamping, vibrating or jolting the material in the mold. It has been found in practice that there are objections to troweling the blocks during the forming period, and particularly so when only one side of a block is troweled, as troweling in such cases causes the block to slump, and the vibration from the forming operation will deflect a side of the block due to one side being more compact than the other.

The primary object of my invention is the provision of means to perform the troweling operation on either one or both sides of a block after it has been completely formed, that is, after the pressing, tamping, jolting or vibration operation, thereby obviating the troubles and objections which occur when the forming and troweling operations are simultaneous.

A further object of the invention is the provision in a machine of the character described, of a troweling means which is controlled in its operation by the block take-off means, and is automatically operable, during a predetermined movement of the control for such means, to effect a troweling of a formed block, which troweling preferably takes place during the raising or stripping movement of a block.

Other objects and advantages of the invention will be apparent from the following description, and from the accompanying drawings, illustrating one embodiment of the invention, and in which—

Figure 1 is a perspective elevation of a concrete block forming machine embodying the invention, with parts broken away and with the block shown partly raised, the machine being of a well-known type; Fig. 2 is an enlarged section on the line 2—2 in Fig. 1, with the take-off control arm shown by full lines in inoperative position and in dotted lines as partially moved to block take-off position and in position for effecting automatic operation of the troweling means; Fig. 3 is a section on the line 3—3 in Fig. 2; Fig. 4 is a fragmentary side elevation, with parts broken away and with the block partly raised and the control arm moved to initial troweling position; Fig. 5 is a fragmentary view somewhat similar to Fig. 4, with the block completely raised and the control arm moved to the limit of its inward stroke, and Fig. 6 is a diagram of the electrical wiring for the troweling means.

Referring to the drawings, 1 designates the block mold having the opposed end plates 2, 2, and the opposed interior side plates 3, 3, which are the block troweling members of the troweling means embodying the present invention. The mold 1 is supported by a suitable frame work 4 and may include core members 5, as well understood in the art. A block formed by the mold is designated 6 and during the molding, stripping and take-off operations rests on a pallet 7, as is common in the use of machines of this character.

The stripping or raising mechanism for a formed block includes a set of four or more stripper pins 8, which are disposed vertically below the mold and when raised engage the bottom of the pallet 7 and raise it therewith to block take-off or removing position. This stripping means is common to machines of this character and may be of the hand or power type, as desired and as well understood in the art.

The troweling means in which the present invention resides includes the opposed side troweling plates 3, 3, which are replaceably carried by the web portions of U-shaped or channel strips 10 which extend lengthwise of the mold at the respective sides thereof with their channels facing outwardly. These channeled carriers for the plates 3 are each guided by upper and lower sets of rolls 11, respectively, which are carried on respective studs projecting horizontally from the side portions of the mold frame work with the top set of rolls engaging under the top flange and the lower set of rolls engaging over the lower flange of the respective carrier, as best shown in Fig. 4. The channel form of the strips 10 is important as imparting strength and rigidity thereto.

The outward sliding thrust of each troweling strip 10 is borne by a set of cooperating slide bars 12, one being carried by the strip 10 and the other by the respective side of the mold frame 1, as best shown in Figs. 1, 2 and 4. These bars, in the present instance, have V mating portions.

The carrier members 10 at one end, left in the present instance, are connected by a cross shaft 15, which is connected at opposite ends thereof by pitmans 16 to respective cams 17 on a cross shaft 18 journaled in brackets 19 extending, in the present instance, from a frame upright 20 of the machine. A sprocket wheel 21 is mounted on the shaft 18 at one end and is connected by a sprocket chain 22 to a small sprocket wheel 23 on the shaft of an electric motor 24. The motor is in circuit with and controlled by a switch 25 (Fig. 6), which is located in a switch box 27 on the frame part 4.

The block take-off arm 30, which is of a type commonly used in machines of this character, is

fixed for horizontal swinging movements at the front of the machine to a vertical shaft 31, which is journaled in a suitable bracket 32 projecting forward from the frame part 4 and carries, in the present instance at its lower end, a cam 33 for engagement with a roller 34 on a control part 35 of the switch 25. When the arm 30 is in its neutral or outwardly extended inoperative position, as shown by full lines in Fig. 2 and in Fig. 4, the switch is open. When, however, the arm 30 has been swung inward a short distance from such inward position, and before the main block supporting finger 36 has moved under the pallet of a raised block, the cam 33 will coact with the switch control to move the switch to closed position, which will be maintained during the complete inward movement of the arm 30 and until it has been moved outward to near its neutral position. It is customary to provide a main block supporting finger 36 and one or more shorter fingers 37 which, upon an inward swinging of the take-off arm, will pass under a raised pallet, and upon an outward swinging of the arm carry the pallet and supported block to take-off position, as well understood in the art.

It is apparent with this manner of control for the troweling means that the take-off arm 30 may be moved inwardly sufficiently to close the switch 25 at any stage in the block forming or stripping operations. It is preferable, however, to permit a block to be completely formed before starting the troweling means and then to start the troweling operation either before effecting a raising or stripping movement of the block, or during such movement, depending on the extent of troweling desired. It is also apparent that a block may be troweled on one side only, which is sometimes desirable, by simply disconnecting the connection between one of the troweling plates and the operating means. This may be accomplished by making the shaft 15 in separate sections, one for each carrier member 10, and disconnecting the driving pitman connection between one of said shaft sections and the shaft 18.

I wish it understood that my invention is not limited to any specific construction, arrangement or form of the parts, as it is capable of numerous modifications and changes without departing from the spirit of the claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent, is:

1. A machine of the type set forth, including troweling means, means to mount the troweling means for troweling movements, take-off means, including a rotatable shaft means to mount the take-off means for movement to a position underlying the pallet of the block, means to actuate the troweling means, and means carried by the shaft and associated with the take-off means whereby upon partial movement of the latter preparatory to its final operative position, the actuating means of the troweling means will be rendered operative and upon continued movement the take-off means will itself be moved to operative position to underlie the pallet.

2. A machine as set forth in claim 1, wherein the rotatable shaft of the take-off means is substantially vertically disposed and has take-off members thereon, and wherein the shaft has a cam associated therewith whereby upon partial turning of the shaft the cam will effect operation of the actuating means of the troweling means.

FRANK XAVIER MUENZER.

CERTIFICATE OF CORRECTION.

Patent No. 2,193,879. March 19, 1940.

FRANK XAVIER MUENZER.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 1, first column, before line 1, insert the following paragraph -

This invention relates to machines for making concrete block, and particularly to those of the block troweling type.

and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 9th day of April, A. D. 1940.

Henry Van Arsdale,
Acting Commissioner of Patents.

(Seal)