

Aug. 24, 1954

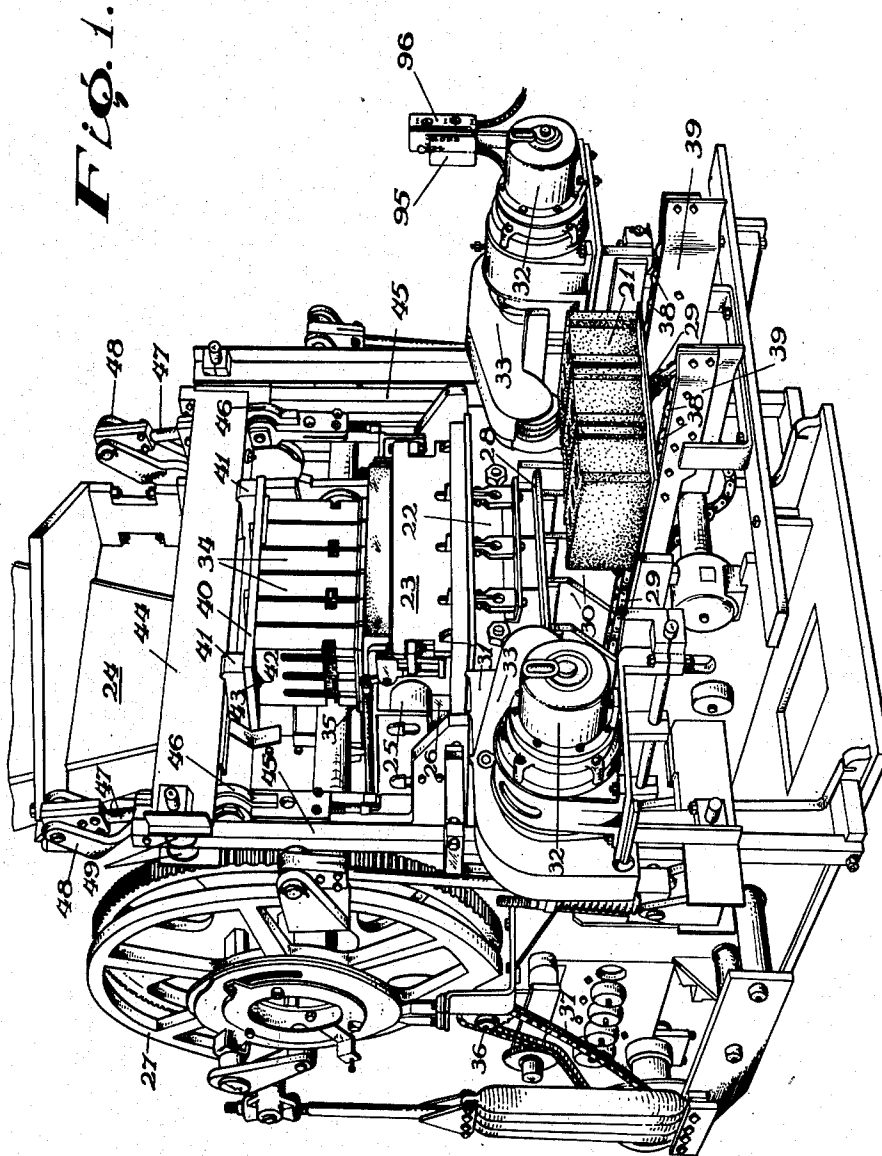
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2,686,950

ADJUSTABLE MIX FEEDING MEANS FOR BLOCK MOLDING MACHINES

Filed Jan. 2, 1951

4 Sheets-Sheet 1



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Fig. 2.

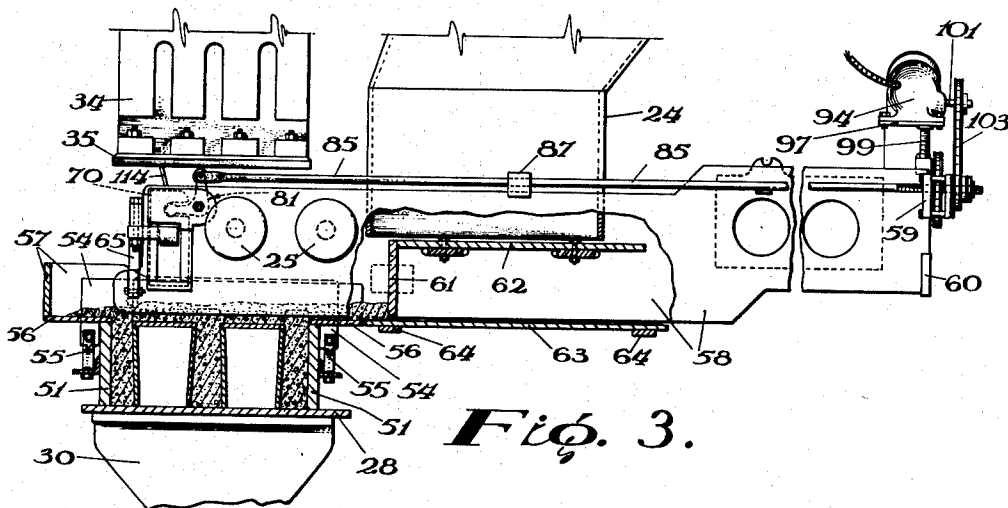
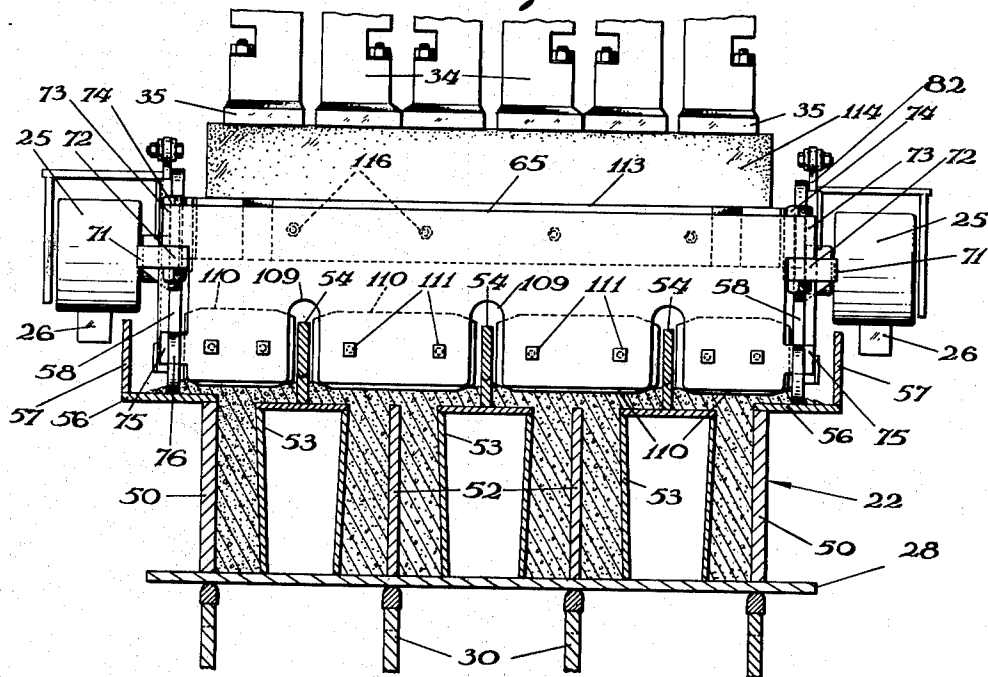


Fig. 3.

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Fig. 4.

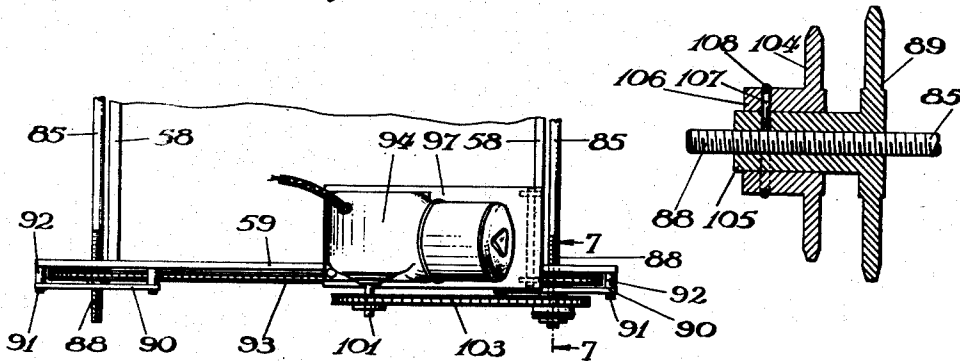


Fig. 7.

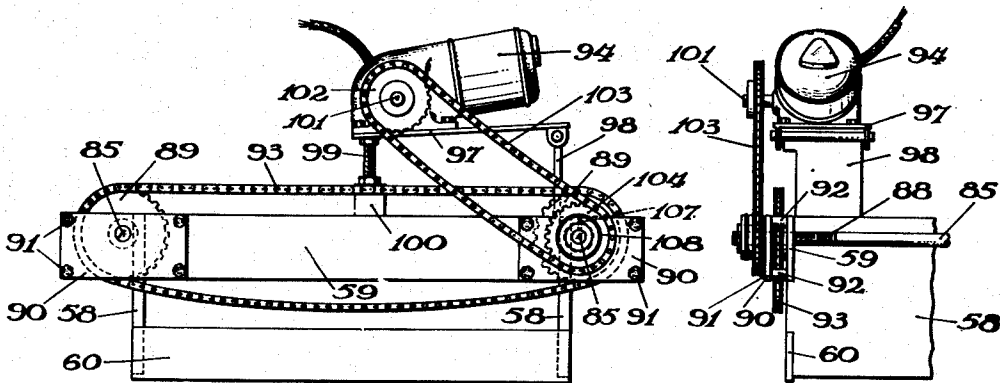


Fig. 5.

Fig. 6.

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4 Sheets-Sheet 4

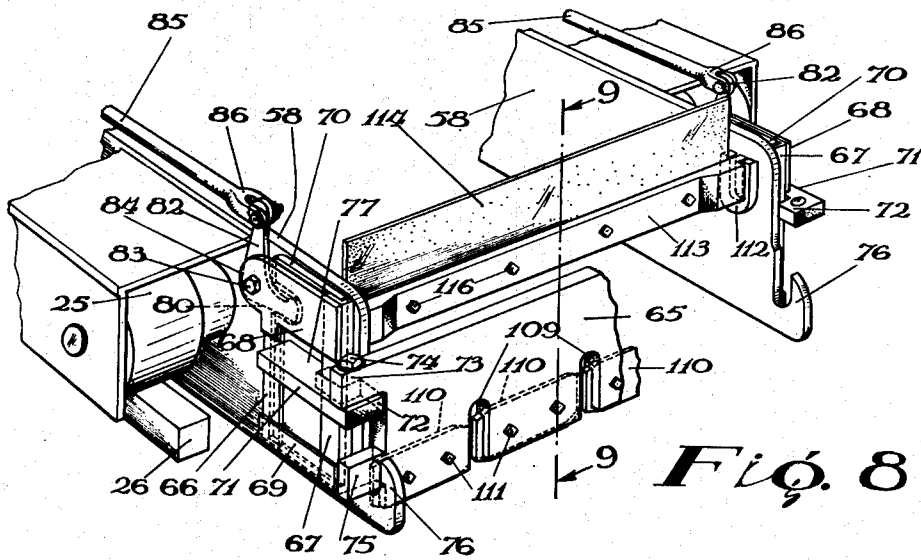


Fig. 8

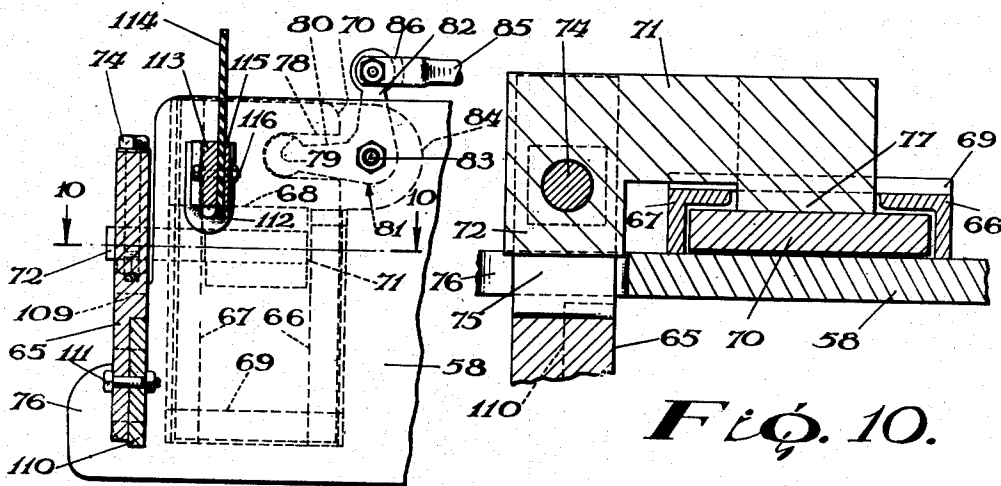


Fig. 9.

Fig. 10.

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ADJUSTABLE MIX FEEDING MEANS FOR
BLOCK MOLDING MACHINES

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Application January 2, 1951, Serial No. 203,937

12 Claims. (Cl. 25—103)

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This invention relates to machines for molding masonry blocks of concrete mixed with cinder, slag and similar materials, and is especially directed to means for controlling the amount of mix supplied to the mold box.

In block molding machines of the conventional type embodying a horizontally reciprocable, open bottom feed pan for transferring charges of moldable material from the delivery spout of a feed hopper to an open top mold box, the bottom edge of the front end wall of the feed pan serves to level off and fix the height of the mix in the mold box and to retain any excess in the pan as the latter moves back under the hopper after filling the mold box. The top edge of said pan wall also usually carries a flexible wiper element which rubs across and cleans the bottom surfaces of the stripper heads on the rearward stroke of the feed pan.

It is necessary that the height of the mix left in the mold box when the feed pan returns to its rearward position be somewhat greater than the desired height of the finished blocks because of the compression which takes place during the tamping or compacting portion of the block molding cycle. It is also necessary that the height of the mix be variable in order to compensate for the differences in compression which result from differences in the composition or density of the aggregate used. Consequently, the front end wall of the feed pan in prior block molding machines has ordinarily been detachably connected to the rest of the pan by bolts or the like in such a manner that the position of its lower edge could be adjusted vertically by the insertion or removal of washers or shims between the bolted together portions of the end and side walls of the pan. Since any such vertical adjustment of the front end wall would vary the position of the wiper element carried thereby relative to the stripper shoes, it has also been necessary to provide an adjustable connection between the wiper element and the pan wall and to reposition the wiper after each adjustment of the wall.

This prior construction for varying the height of the mix in the mold box has several disadvantages. In the first place, it is necessary to stop the entire machine in order to make the desired adjustments of the front end wall of the feed pan and the wiper element, with a consequent loss in production. Secondly, the operations of unbolting and rebolting the parts, inserting and removing washers, and repositioning the wiper element require the expenditure of considerable time and labor which also increases operating costs. The necessity for a separate adjustment of the wiper

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element each time the front pan wall is raised or lowered is another defect of the previously used devices. A further disadvantage resides in the fact that the washer or shim type of adjustment is of limited accuracy and cannot provide the precise control which is sometimes desired.

It is therefore the principal object of the present invention to provide a novel mechanism for readily controlling the height of the mix in the mold box of a block molding machine which will overcome the disadvantages inherent in the prior art devices intended for the same purpose.

Another object is to provide an improved form of feed pan for block molding machines embodying a vertically movable cut-off bar for establishing the height of the mix left in the mold box which forms at least part of the front wall of the pan and is adjustable instantaneously and without interrupting the block molding cycle of the machine.

A further object is to provide a control mechanism of the character described which is electrically actuated and capable of adjusting the position of the cut-off bar with a high degree of accuracy.

Still another object is to provide a feed pan of the type above mentioned which is so constructed that the cut-off bar may be readily adjusted without varying the position of the stripper shoe wiper element.

A still further object is to provide a cut-off bar of the character described having removable scraper shoes of novel form which so shape the upper surface of the mix supplied to the mold box as to leave extra amounts thereof adjacent the core bars for packing therebeneath by the stripper heads.

These and other objects will appear more fully upon consideration of the detailed description of the embodiment of the invention which follows. In this connection, it is to be expressly understood that the specific form of mechanism described and shown in the accompanying drawings is illustrative only and is not to be construed as representing the full scope of the invention, for which latter purpose reference should be had to the appended claims.

Referring now to the drawings, wherein like reference characters indicate like parts throughout the several views:

Fig. 1 is a perspective view of a well known type of automatic block molding machine incorporating one form of adjustable mix feeding means embodying the present invention;

Fig. 2 is a front elevation of the lower portion

of the stripper mechanism, the feed pan and the mold box of the machine of Fig. 1 with the mold box in section and showing the elements in the positions occupied after the mold box has been filled and during the rearward or return stroke of the feed pan;

Fig. 3 is a side elevation corresponding to Fig. 2 with certain parts shown in section and others entirely omitted in order to clearly show the structure of the improved feed pan;

Figs. 4, 5 and 6 are a plan view, a rear elevation and a side elevation, respectively, of the rear end of the feed pan showing the electric motor and associated drive by which the position of the cut-off bar may be adjusted without stopping the machine;

Fig. 7 is an axial sectional view, on an enlarged scale, of the unique sprocket arrangement forming part of the motor drive, taken substantially on line 7—7 in Fig. 4;

Fig. 8 is a perspective view of the front end of the feed pan with the cut-off bar partially broken away;

Fig. 9 is a vertical sectional view through the cut-off bar and wiper element of the feed pan, taken substantially on line 9—9 in Fig. 8; and

Fig. 10 is a fragmentary horizontal section, on an enlarged scale, taken substantially on line 10—10 in Fig. 9.

Referring first to Fig. 1, the block molding machine illustrated therein is, except for the improved feed pan and associated elements, of a well known type for making hollow or cored blocks on plain or imperforate pallets. In this machine, the blocks 21 are formed in a mold box 22, open at both top and bottom, which is stationary except for the movements incident to vibration of the mold during the block forming operations. The moldable material or mix is supplied to the mold box through the open top thereof by a horizontally reciprocable feed pan 23, also open at top and bottom, which is moved forwardly to the position shown in Fig. 1 to fill the mold and rearwardly to receive the next charge of mix from the hopper 24, the feed pan being supported by rollers 25 on tracks 26 and receiving its reciprocating movement in the usual manner from the cam 27 which is mounted on one end of a cam shaft extending transversely across the rear of the machine. During the molding operation, the open bottom of the mold box 22 is closed by an imperforate pallet 28, the pallets being fed automatically by the chains 29 from a pallet stack in the rear of the machine to a position below the mold box and then elevated into engagement with the bottom of the mold by vertically reciprocable anvil bars 30, the latter deriving their movement from a cam (not shown) mounted on the opposite end of the shaft which rotates cam 27. When the pallet engages with the bottom of the mold, the mold box is elevated slightly so that the transversely extending mold bars 31 which support the rest of the elements constituting the mold are out of contact with the portions of the machine framework on which they normally rest. The mold box is then ready to receive the charge of moldable material from the feed pan 23 which moves forwardly over the mold box to the position indicated in Fig. 1 and delivers the charge by gravity through the open bottom of the pan. During delivery of the charge, the mold box and superposed feed pan are vibrated in known manner by the motors 32 through belt drives housed in the casings 33.

When the mold has been filled, the feed pan

23 is moved rearwardly clear of the mold box so as to enable the stripper heads 34, which are normally maintained in the elevated position indicated in Fig. 1, to descend into contact with the upper surface of the mix in the mold to first level and compact said mix, during which time the mold box is again vibrated and the stripper heads gradually sink by gravity as the mix is compacted, and to then move downwardly through the mold box and positively eject or strip the molded blocks therefrom as the latter are supported on the pallet 28 which is in turn resting on the anvil bars 30. The stripper heads cease their downward movement when they reach a position such that the stripper shoes 35 on the lower ends of the heads project slightly below the bottom of the mold box, but the anvil bars 30 continue to descend until the pallet 28 and the blocks 21 supported thereon rest on the pallet chains 29. The chains 29, which are driven from the main drive shaft 36 through a transmission including the chain 37, advance the loaded pallet to the position shown in Fig. 1 where the forward portion of the pallet rests on the rollers 38 of the delivery track 39, whence the pallet and blocks may be removed from the machine, either manually or automatically, and transported to the curing vault. As the loaded pallet is thus moved forwardly after the stripping operation, the chains 29 automatically bring another empty pallet into position beneath the mold box, and the anvil bars are again elevated to lift the empty pallet into engagement with the bottom of the mold. Simultaneously with the upward movement of the anvil bars, the stripper heads 34 are moved upwardly out of the mold box and returned to their initial position illustrated in Fig. 1, the movement of the stripper heads being controlled by another cam (not shown) mounted on the same end of the cam shaft as the cam which raises and lowers the anvil bars.

The stripper heads 34 are rigidly connected at their upper ends to, and supported by, a horizontal plate 40 which is in turn secured to a pair of fore-and-aft bars 41 by bolts 42 and nuts 43, the bars 41 being fixed in any suitable manner, as by welding, to the lower edges of a pair of parallel beams 44 which extend from one side of the machine to the other and embrace between their ends vertical guide posts 45 which are fixed to and form part of the machine frame. Just inside the guide posts 45, the beams 44 are connected by stirrup members 46 which provide pivotal connections between the beams and a pair of links 47 forming part of the cam and lever system by which the stripping mechanism is given its vertical movements in timed relation to the movements of the feed pan 23 and anvil bars 30. The upper ends of the links 47 are pivotally connected to the forked ends of levers 48 which are fixed to a shaft (not shown) journaled in the upper portion of the machine frame, said shaft being oscillated in the usual manner by the previously mentioned cam which controls the movements of the stripper heads. As the levers 48 oscillate, the entire stripping mechanism is lowered and raised by the beams 44, the latter being guided in their vertical movement by shoes 49 which slidably engage the front and rear surfaces of guide posts 45.

In this type of block molding machine, the mold box 22 comprises side plates 50 and end plates 51 (Figs. 2 and 3) which are bolted together and to the mold supporting bars 31 to form the walls of the box, while the interior of the box is sub-

divided by division plates 52 according to the number of blocks to be formed. The mold cores 53 which form the cavities in the blocks 21 are fixed to and suspended from the lower edges of core bars 54, the latter extending across the top of the mold box and being fixed thereto in proper position by clevises 55 in the usual manner. Surrounding the open top of the core box 22 is a mix retaining apron having a horizontal plate 56 extending around all four sides of the box and a vertical wall 57 at the front and sides only, the rear end of the apron being open to enable movement of the feed pan 23 over the mold box for the delivery of mix thereto.

Due to the presence of the core bars 54 and the arrangement of the elements of the mold in such a manner as to simultaneously produce a row of blocks having their long dimensions parallel to the core bars, the stripper heads 34 are arranged in pairs, the heads of each pair being adapted to pass downwardly on opposite sides of a core bar and to receive the core bar between them during the block compacting and stripping operations. In the usual machine of this type, the adjacent edges of each pair of stripper heads 34 and attached shoes 35 are spaced apart in permanently fixed relationship by a distance slightly greater than the width of the associated core bar 54, and each stripper shoe is so shaped and dimensioned that, when in engagement with the mix in the mold box, it contacts approximately half the area of the block top except for the portion immediately underlying the core bar. If desired, however, the conventional rigid stripper head arrangement may be replaced by the improved construction disclosed in my co-pending application Serial No. 88,964, filed April 22, 1949, now Patent No. 2,566,787, dated September 4, 1951, wherein at least some of the stripper heads are pivotally suspended from the plate 40 for limited movement about horizontal, fore-and-aft axes and means are provided for automatically producing, in timed relationship to the vertical movements of the stripping mechanism, pivotal movement of the stripper heads about their axes of suspension so as to separate each pair of shoes sufficiently to enable the core bar to pass therebetween and to then bring the shoes together beneath the core bar.

In block molding machines of the character above described as heretofore known to the art, the front end wall of the feed pan 23, the bottom edge of which serves to level off and fix the height of the mix left in the mold box 22 as the feed pan moves back under the hopper 24, is bolted to the pan side walls in such a manner that the position of its lower edge can be adjusted vertically only by removing the bolts and inserting or removing washers or shims between the cooperating portions of the end and side walls. In these prior machines, the front end wall of the pan also carries a flexible wiper element adapted to remove any adherent mix from the bottom surfaces of the stripper shoes 35 during the rearward movement of the feed pan, the wiper element being so connected to the upper edge of said wall that its position may be adjusted to compensate for vertical adjustments of the wall.

In order to overcome the already mentioned disadvantages of this old structure, the present invention replaces the conventional feed pan with one of improved construction wherein the portion of the front end wall which establishes the height of the mix left in the mold box may be adjusted while the machine is operating and

without varying the position of the stripper shoe wiper element. As shown best in Figs. 2, 3 and 8, the feed pan 23 comprises a pair of elongated side walls 58 which extend substantially the full length of the machine in a fore-and-aft direction and are permanently interconnected at their rear ends by transversely extending plates 59 and 60. The side walls 58 are also tied together intermediate their ends by a vertical plate 61 forming the rear wall of the mix-holding portion of the feed pan which is open at both top and bottom, the portion of the pan rearwardly of plate 61 being provided with a horizontal plate 62 adapted to close the bottom of the hopper 24 when the feed pan moves forwardly to deliver the mix to the mold box 22. The bottom edge of vertical plate 61 slides over a stationary floor plate 63 which is supported by the machine framework in any suitable manner, as on transversely extending beams 64, beneath the discharge end of the hopper 24 and on the same level as the horizontal plate 56 of the apron around the top of the mold box.

In the illustrated embodiment of the invention, the front end wall of the feed pan is formed by a cut-off bar 65 which is movable with the side walls 58 during horizontal reciprocation of the pan, but is so supported from said side walls as to be vertically adjustable relative thereto even while the pan is moving. As shown in Figs. 3, 9 and 10, each side wall 58 has fixed to its outer surface adjacent its forward end a guide formed of a pair of vertically extending angle irons 66 and 67 welded to the side wall and upper and lower horizontal straps 68 and 69 welded to the outer surfaces of the angle irons. Slidably housed in each of the thus formed guides is a vertically movable mounting plate 70 to which is fixed a laterally and forwardly projecting lug 71 having an inwardly turned outer end portion 72 adapted to be connected to and to support one end of the cut-off bar 65. For this purpose, each end of the cut-off bar is recessed intermediate its upper and lower edges to provide an upper arm 73 which rests on the outer end portion 72 of lug 71 and is secured thereto by a bolt 74, and a lower arm 75 which enters the slot formed by the hooked extension 76 of the lower edge of side wall 58. The hooked extension 76 is of such height as to insure engagement with the outer surface of arm 75 at all vertical positions of cut-off bar 65 and thus restrain any tilting tendency of the cut-off bar as the feed pan reciprocates. The inner end portion 77 of lug 71 is welded or otherwise fixed to mounting plate 70 and extends outwardly from the latter through the space defined by the angle irons 66 and 67 and upper and lower straps 68 and 69 of the guide.

Simultaneous vertical movement of mounting plates 70 in their respective guides is produced by a novel arrangement of elements which is operable at the will of the machine operator and without interrupting the block molding cycle of the machine. As shown, the rear edge of each mounting plate 70 adjacent its upper end is recessed as indicated at 78 to receive the rounded end 79 of the approximately horizontal arm 80 of a bell crank lever 81, said lever also having an approximately vertical arm 82 which extends above the upper edge of the associated side wall 58 of the feed pan. Each of bell crank levers 81 is pivotally mounted on a stud bolt 83 which passes through a rearwardly extending ear 84 of upper strap 68 and the adjacent portion of pan side wall 58, the angle iron 66 terminating

below the ear 84 so as to avoid interference with the lever arm 86. The upper end of vertical arm 82 of each bell crank lever is connected to the forward end of a horizontal operating rod 85 by a clevis 86, which rods extend substantially the entire length of the feed pan, as indicated in Fig. 3, and are supported for fore-and-aft axial movement in guide bearings 87 fixed to the upper edges of side walls 58.

Referring now to Figs. 4-7, the rear end of each operating rod 85 is threaded as indicated at 88 and engages the internally threaded hub of a sprocket wheel 89 which is rotatably mounted on the rod but restrained against axial movement therealong by retention between the upper transverse plate 59 connecting the rear ends of side walls 58 and a retainer plate 90 secured to plate 59 by bolts 91 surrounded by spacer sleeves 92. The retainer plates 90 and plate 59 thus form cages for the sprocket wheels 89 which enable the latter to rotate relatively to the threaded ends of operating rods 85 but at the same time prevent said wheels from moving axially along the rods, whereby the rods are caused to move in an axial direction when the wheels are rotated. By making the cooperating threads of the rods 85 and sprocket wheels 89 of a relatively small pitch, the positions of said rods, the mounting plates 70 and cut-off bar 65 may be varied with micrometric accuracy.

In order to effect simultaneous and equal movements of the operating rods 85 and associated elements, the two sprocket wheels 89 are interconnected by a chain 93, and one of said wheels is so arranged as to be driven in either direction by a reversible electric motor 94 which is mounted on and movable with the feed pan and controlled by a suitable "up" and "down" switch 95 (Fig. 1) conveniently located at the front of the machine adjacent the main switch 96 by which the entire machine is started and stopped. As shown, the motor 94 is mounted on a platform 97 having one end pivotally connected to a standard 98 fixed to and extending upwardly from one of the side walls 53 of the feed pan and its other end supported by a jack screw 99 which is threaded into a block 100 suitably fixed to the upper transverse plate 59 interconnecting the rear ends of the pan side walls. The motor 94 is provided with a drive shaft 101 on which is fixed a sprocket wheel 102, the latter being drivably connected by a chain 103 with another sprocket wheel 104 secured to and rotatable with one of the operating rod sprocket wheels 89. The pivotal mounting of motor platform 97 on standard 98 and its support by jack screw 99 provide a readily adjustable means for removing or introducing slack in driving chain 103.

Although the sprocket wheel 104 may be permanently fixed to the wheel 89 which it is adapted to drive, it is preferable to provide a releasable connection between the two wheels in order to avoid damage to the motor 94 in the event that axial movement of the operating rods 85 should be prevented for any reason while the motor is running. To this end, as shown in Fig. 7, the sprocket wheel 89 with which the wheel 104 is associated is provided with an elongated hub 105 on which is mounted the hub 106 of wheel 104, the two hubs being normally fixed to one another by a radially extending shear pin 107 which passes through aligned holes in the hubs and is retained in place by a snap ring 108. Should anything interfere with axial movement of the operating rods 85 at any time while the motor

94 is energized, the shear pin 107 will break and permit the sprocket wheel 104 to rotate freely on the elongated hub 105 of the associated wheel 89 as long as the switch 95 is actuated. The driving connection between wheels 104 and 89 may be readily renewed by simply removing the snap ring 108, extracting the broken shear pin and inserting a new one.

With this arrangement, it is evident that the position of the cut-off bar 65 may be instantaneously and accurately adjusted, even while the machine is operating and the feed pan is moving, by simply moving the control lever of switch 95 to either "up" or "down" position so as to energize and drive the motor 94 in the desired direction, whereupon rotation of motor drive shaft 101 produces axial movement of the operating rods 85 which is in turn converted into vertical movement of the cut-off bar through the bell crank levers 81 and mounting plates 70. If desired, the mounting plate on the side of the feed pan adjacent the control switch 95 may be provided with a suitable indicator (not shown) for informing the operator of the position of the lower edge of the cut-off bar with respect to the top of the mold box and thereby indicating the height of the mix that will be left in the box when the feed pan moves back beneath the supply hopper after filling the box. In many cases, however, it is preferable to determine the proper height of the mix by trial and error, i. e., by running the machine with the cut-off bar at various positions and examining the finished blocks to determine which position produces the desired result. Under such circumstances, the ability of the structure of the present invention to vary the position of the cut-off bar quickly, without interrupting the block molding cycle and by as small increments as may be desired, represents a decided advantage and improvement over the devices heretofore known wherein any adjustment of the cut-off bar was a relatively long and laborious operation which necessitated complete stoppage of the machine for a substantial period of time.

In order that the feed pan 23 may reciprocate freely in spite of the presence of the core bars 54 which extend upwardly above the top of the mold box, the bottom edge of cut-off bar 65 is provided with a plurality of vertically extending slots 109 which receive the core bars as the feed pan moves back and forth over the box. The construction of the cut-off bar may be improved by providing the thus subdivided lower edge portion thereof with a plurality of removable scraper shoes 110 which are detachably connected thereto by bolts 111 (Figs. 2, 8 and 9). The rear faces of the slot-separated sections of the cut-off bar may be recessed to receive the scraper shoes which are so dimensioned that their bottom edges extend downwardly below the bottom edge of the cut-off bar while their side edges project beyond the edges of the slot 109 so as to lie closely adjacent the vertical sides of the core bars 54. An important advantage of using scraper shoes of this character is that all wear occurs on the edges of the replaceable shoes, instead of on the edges of the cut-off bar, thereby avoiding the necessity for replacement of the latter. As shown best in Fig. 2, the lower corners of the scraper shoes are beveled for the purpose of leaving more mix alongside each core bar than elsewhere, these extra amounts of mix being subsequently packed under the core bars by the stripper heads and thus providing more

uniformly finished and compacted blocks, particularly when the machine includes the improved pivoted stripper head construction of my previously mentioned Patent No. 2,566,787. Although it is necessary to bevel only those corners of the scraper shoes which lie adjacent the core bars, it is preferable to make each shoe symmetrical with respect to a median horizontal plane through the holes for the bolts 111 so that the shoes may be inverted when wear occurs and their life thereby increased.

Instead of adjustably connecting a stripper shoe wiping element to the upper edge of the front end wall of the feed pan as in the machines of the prior art, the improved feed pan of the present invention embodies a wiper element which is mounted independently of the cut-off bar and therefore does not require an adjustment of its own position each time that the position of the cut-off bar is varied. As shown in Figs. 8 and 9, each side wall 58 of the feed pan has fixed to its inner face, adjacent the upper edge thereof and slightly to the rear of the plane of the cut-off bar 65, a U-shaped saddle or seat 112 adapted to receive and support one end of a transversely extending bar 113 which forms the base of the stripper shoe wiper element and to which is fastened an upwardly extending flexible wiper blade 114 of rubber or any other suitable composition. The wiper blade 114 may be detachably connected at its lower edge to the bar 113 in any suitable manner, as by a clamping plate 115 and bolts 116, and is of such a height that, when the feed pan moves rearwardly after delivering the mix to the mold box, the upper edge of the blade will wipe across and clean the bottom surfaces of the stripper shoes 35 in the manner indicated in Fig. 3. As is customary in block molding machines of the character described, the cam which controls the vertical movements of the stripper heads is so shaped that the latter occupy a slightly higher position during the forward stroke of the feed pan than during the return stroke so that the wiper blade will not contact the stripper shoes as the feed pan moves forwardly and brush the adherent mix off the shoes outwardly toward the front of the machine. Since the bar 113 simply has a sliding fit in the supporting saddles 112, the wiper element may be easily removed whenever it is desired to replace the blade 114, but otherwise remains in a fixed vertical position which is unaffected by adjustments of the cut-off bar 65.

There is thus provided by the present invention a new and improved feed pan construction for block molding machines which is characterized primarily by its ability to quickly vary the height of the mix left by the feed pan in the mold box at the will of the operator and without interrupting the block molding cycle of the machine. Another feature resides in the provision of a stripper shoe wiper element which is mounted independently of the means by which the height of the mix is controlled and therefore requires no adjustment when the height of the mix is varied. The structure of the invention is relatively simple from a mechanical standpoint and is well adapted for incorporation in machines already in use as well as in new installations, while the savings in labor and lost machine time resulting from its practically instantaneous, electrically actuated adjustability will far offset the cost of the additional mechanism required in comparison with the machines of the prior art.

While only one specific form of the invention

has been illustrated in the accompanying drawings, it will be obvious that the inventive concept is not limited to the particular structure shown, but is capable of a variety of mechanical embodiments and is adaptable to any type of block molding machine employing a horizontally reciprocable feed pan. For example, it should be evident that the cut-off bar can be supported and given its desired movements by various means other than those described and illustrated, and that, if desired, the cut-off bar may comprise only part of the front end wall of the feed pan, or may even constitute an element additional to a fixed front wall. It will also be understood that the cut-off bar may be so constructed as to omit the detachable scraper shoes, and that its lower edge portion may be of any suitable construction depending upon the core and core bar arrangement of the mold box.

Similarly, the stripper shoe wiper element may take other forms, and may be supported by specifically different means, than those herein disclosed.

Various other changes, which will now suggest themselves to those skilled in the art, may be made in the form, details of construction and arrangement of the parts without departing from the spirit of the invention. Reference is therefore to be had to the appended claims for a definition of the limits of the invention.

What is claimed is:

1. In a machine for molding masonry blocks, the combination of an open top mold box, a horizontally reciprocable feed pan open at the bottom for supplying moldable material to said mold box through the open top of the latter, means carried by said feed pan for establishing the height of the moldable material left in said mold box by said pan, means mounted on and movable with the feed pan and operable while said pan is in motion for adjusting the position of said height establishing means to vary the height of the moldable material in said mold box, and means located at a position remote from said feed pan for controlling the operation of said adjusting means.

2. In a machine for molding masonry blocks, the combination of an open top mold box, a horizontally reciprocable feed pan open at the bottom for supplying moldable material to said mold box through the open top of the latter, a vertically movable member carried by said feed pan for establishing the height of the moldable material left in said mold box by said pan, means mounted on and movable with the feed pan and operable while said pan is in motion for vertically adjusting the position of said movable member to vary the height of the moldable material in said mold box, and means located at a position remote from said feed pan for controlling the operation of said adjusting means.

3. In a machine for molding masonry blocks, the combination of an open top mold box, a horizontally reciprocable feed pan open at the bottom for supplying moldable material to said mold box through the open top of the latter, a vertically movable member forming at least part of the front wall of said feed pan adapted to control the height of the moldable material left in said mold box by said pan, electrically actuated means mounted on and movable with the feed pan and operable while said pan is in motion for vertically adjusting the position of said movable member relative to the rest of said

pan to vary the height of the moldable material in said mold box, and means located at a position remote from feed pan for controlling the operation of said electrically actuated means.

4. In a block molding machine of the type including an open top mold box and a horizontally reciprocable, open bottom feed pan for supplying moldable material to said mold box through the open top of the latter, an improved feed pan comprising a pair of side walls, a transversely extending member forming at least part of the front wall of said feed pan and having a bottom edge portion adapted to scrape the upper surface of the moldable material supplied to said mold box by said pan and thereby establish the height of the moldable material left in said box, a pair of vertically movable elements carried by said side walls adjacent the front ends thereof and so connected to said transversely extending member as to support the latter, and means mounted on and movable with the feed pan and operable while said pan is in motion for vertically adjusting the positions of said elements relative to said side walls and thereby varying the height of the bottom edge portion of said transversely extending member, and means located at a position remote from said feed pan for controlling the operation of said adjusting means.

5. In a block molding machine of the type including an open top mold box and a horizontally reciprocable, open bottom feed pan for supplying moldable material to said mold box through the open top of the latter, an improved feed pan comprising a pair of side walls, a transversely extending member detachably connected to said side walls and forming at least part of the front wall of said feed pan, the bottom edge of said member being adapted to scrape the upper surface of the moldable material supplied to said mold box by said pan and thereby establish the height of the moldable material left in said box, and means mounted on and movable with said feed pan and operable while said pan is in motion, including an electric motor and a micro-metrically movable transmission driven by said motor, for vertically adjusting the position of said member with respect to said side walls and thereby varying the height of the moldable material in said mold box, and a switch located at a position remote from said feed pan for controlling the operation of said electric motor.

6. In a block molding machine of the type including an open top mold box and a horizontally reciprocable, open bottom feed pan for supplying moldable material to said mold box through the open top of the latter, an improved feed pan comprising a pair of side walls, a transversely extending member forming at least part of the front wall of said feed pan and having a bottom edge portion adapted to scrape the upper surface of the moldable material supplied to said mold box by said pan and thereby establish the height of the moldable material left in said box, a pair of vertically movable elements carried by said side walls adjacent the front ends thereof and so connected to said transversely extending member as to support the latter, and means for vertically adjusting the positions of said elements relative to said side walls and thereby varying the height of the bottom edge portion of said transversely extending member, said means including a reversible electric motor mounted on and movable with the feed pan and operable while said pan is in motion, a pair of rods carried by and extend-

ing longitudinally of said side walls, means driven by said motor for moving said rods, and means for converting the movement of said rods into vertical movement of said elements.

7. An improved feed pan for block molding machines as defined in claim 9 wherein each of said vertically movable elements comprises a plate slidable in a guide fixed to one of said side walls and a lug to which one end of said transversely extending member is connected, and which includes a pair of bell crank levers pivotally mounted on said side walls for connecting said rods to said plates.

8. In combination, a horizontally reciprocable feed pan for block molding machines comprising a pair of side walls, a transversely extending cut-off bar supported by said side walls and forming at least part of the front wall of the feed pan, and electrically actuated means carried by said side walls and operable while the feed pan is in motion for moving said cut-off bar upwardly and downwardly in a substantially vertical plane relative to said side walls, and a switch located at a position remote from said feed pan for controlling the operation of said electrically actuated means.

9. A horizontally reciprocable feed pan for block molding machines comprising a pair of side walls, a transversely extending cut-off bar forming the front wall of the feed pan, means for supporting the cut-off bar from said side walls including a pair of vertically adjustable elements carried by said side walls to which the end of said bar are connected, and means operable during reciprocation of said feed pan for raising and lowering said elements relative to said side walls, whereby the height of said cut-off bar may be varied.

10. In combination, a horizontally reciprocable feed pan for block molding machines comprising a pair of side walls, a transversely extending cut-off bar forming the front wall of the feed pan, means for supporting said cut-off bar from said side walls including a pair of vertically adjustable elements carried by said side walls to which the ends of said bar are connected and electrically actuated means carried by said side walls and operable while the feed pan is in motion for raising and lowering said elements relative to said side walls, whereby the height of said cut-off bar may be varied, and a switch located at a position remote from said feed pan for controlling the operation of said electrically actuated means.

11. A horizontally reciprocable feed pan for block molding machines comprising a pair of side walls, a transversely extending cut-off bar forming the front wall of the feed pan, means for supporting said cut-off bar from said side walls including a pair of guides fixed to said side walls and a mounting plate vertically slidable in each of said guides to which one end of said bar is connected, and means movable with said feed pan and operable during movement thereof for raising and lowering said mounting plates in said guides and thereby varying the vertical position of said cut-off bar.

12. A horizontally reciprocable feed pan for block molding machines comprising a pair of side walls, a transversely extending cut-off bar forming the front wall of the feed pan, means for supporting said cut-off bar from said side walls including a pair of guides fixed to said side walls and a mounting plate vertically slidable in each of said guides to which one end of said bar is connected, and means for raising and lowering said

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mounting plates in said guides and thereby varying the vertical position of said cut-off bar, said means including a reversible electric motor mounted on and movable with the feed pan, a pair of rods carried by and extending longitudinally of said side walls, means driven by said motor for moving said rods, and connections between said rods and said mounting plates operable to convert the movement of the rods into vertical movement of the plates.

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