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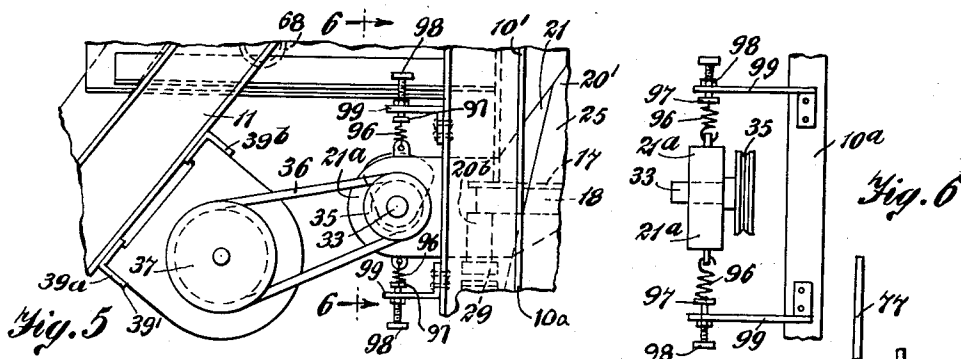
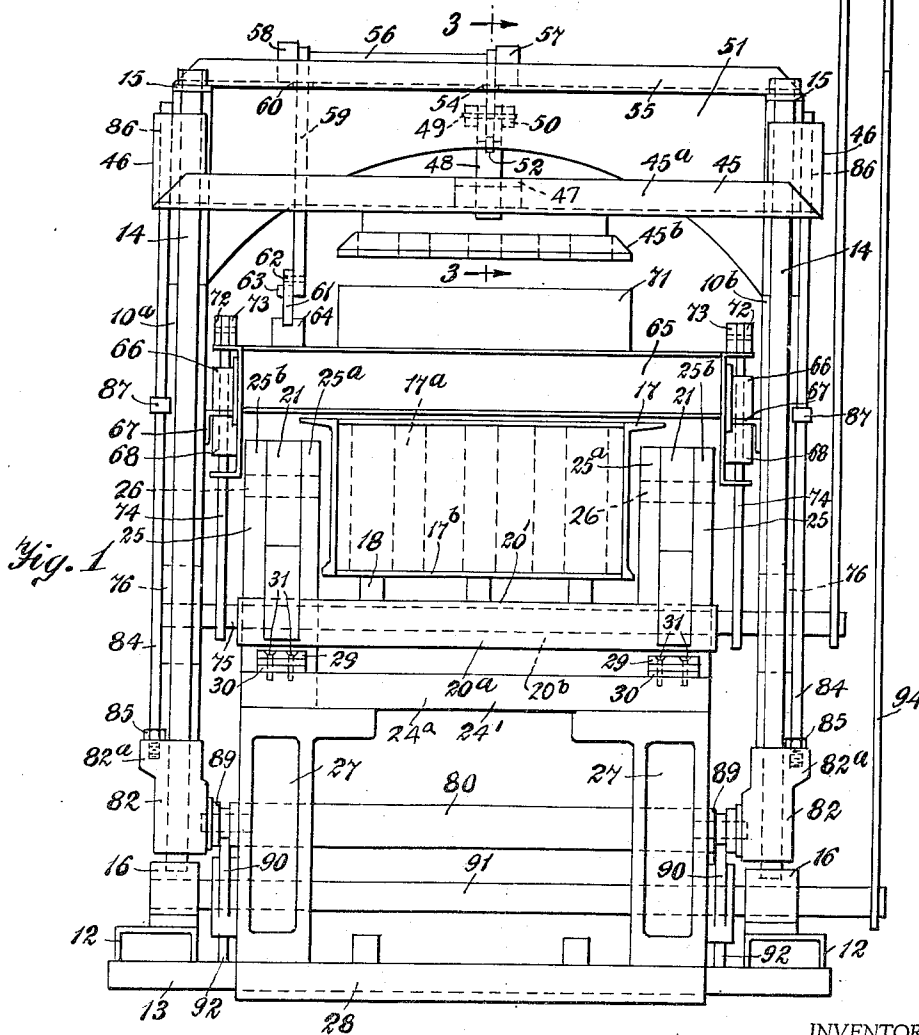
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BUILDING UNIT MACHINE

Filed Aug. 19, 1940

2 Sheets-Sheet 1



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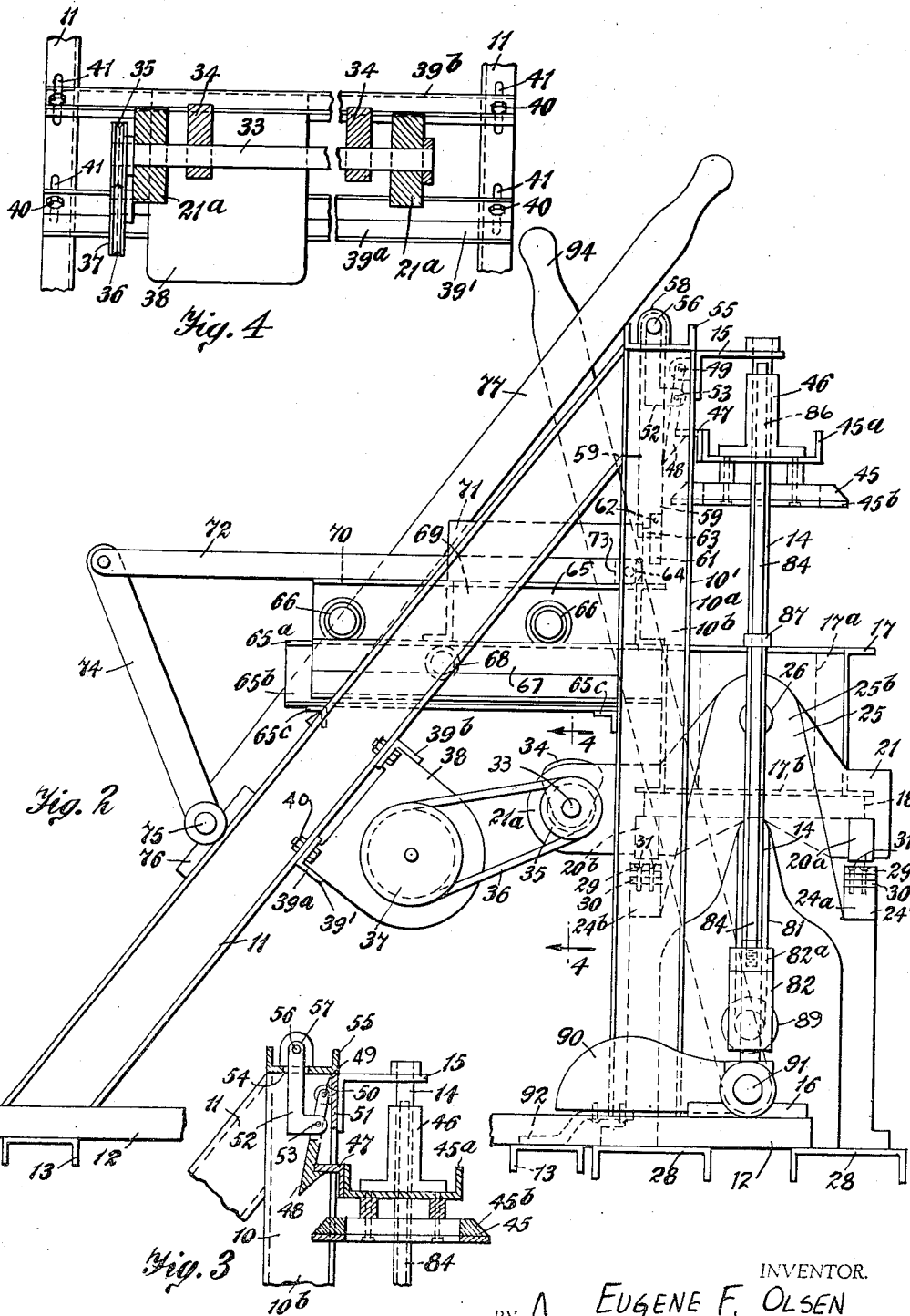
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BUILDING UNIT MACHINE

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,269,955

BUILDING UNIT MACHINE

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Application August 19, 1940, Serial No. 353,198

17 Claims. (Cl. 25—41)

This invention relates to new and useful improvements in a building unit machine.

More particularly the invention proposes the construction of a building unit machine which is capable of producing concrete building units of the same quality as those produced by the best present day building unit machines, and which is of a simple construction so that it may be manufactured at a low cost. Moreover, it is contemplated to so construct the machine that it may be installed with greater ease than present day machines.

The instant building unit machine is of the vibrating or jolting type. The invention proposes to support the mold in an exceptionally simple manner, and yet in such a manner that the mold may be vibrated effectively. More specifically the invention proposes to pivotally support the mold, and to provide simple and effective means for limiting the amplitude of possible oscillation or vibration of the mold. It is furthermore contemplated to provide means for oscillating the mold about its pivot points and normally tending to oscillate said mold through a larger amplitude than the amplitude permitted by the limiting means.

Still further the invention contemplates placing the oscillating (or vibrating) mechanism in a certain relationship with respect to the mold.

Still further the invention proposes the provision of means for balancing the mold to overcome any unbalanced condition thereof.

Another object of the invention resides in the construction of novel means for pivotally supporting the mold, as previously mentioned.

Still further, the building unit machine is of the type which is provided with a pressure head, and it is proposed to provide exceptionally simple means for supporting and operating the pressure head as hereinafter more fully described.

The building unit machine is also of the type which is provided with a feed drawer cooperative with the mold, and it is another object of this invention to support and operate the feed drawer in an exceptionally simple manner.

Still further the invention proposes the construction of a building unit machine as mentioned which is exceptionally sturdy and durable.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a front elevational view of a building unit machine constructed in accordance with this invention.

Fig. 2 is a side elevational view of the machine shown in Fig. 1 looking from the left hand side.

Fig. 3 is a fragmentary vertical sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a fragmentary vertical sectional view taken on the line 4—4 of Fig. 2.

Fig. 5 is a fragmentary side elevational view similar to a portion of Fig. 2 but illustrating a building unit machine constructed in accordance with a further modified form of the invention.

Fig. 6 is a fragmentary elevational view looking in the direction of the line 6—6 of Fig. 5.

The building unit machine in accordance with this invention includes a main frame 10' having a pair of front vertical members 10a and 10b, and a pair of inclined rear members 11, extending downwards and rearwards from the top ends of the front vertical members. The front and rear members are mounted upon horizontal members 12 which are joined together as a unit by several transverse members 13.

A pair of vertical bars 14 are mounted upon the front vertical members 10a and 10b. At the top these vertical bars 14 are supported by angle members 15 which are mounted upon the top portions of the front vertical members 10a and 10b. At the bottom the vertical bars 14 are supported on brackets 16 which are mounted upon the front ends of the horizontal members 12. A mold 17 of the usual type having open top and bottom ends and adapted to be filled through one of these ends and to be stripped from the other of the ends is disposed between said bars 14. More particularly the mold 17 is provided with a plurality of vertical cores 17a which are supported at their bottom ends on support elements 17b mounted across the side walls of the mold. This type of mold must be filled from the top and the finished block must be stripped upwards from the bottom so that the block comes out from the top. The mold 17 is supported by several bars 18 upon a cradle 20'. This cradle is pivotally supported and in turn pivotally supports the mold as will be more particularly described hereinafter.

The cradle 20' includes a pair of side walls 21 extending upwards along and spaced from the sides of the mold 17. The side walls 21 are joined together as a rigid unit by front and rear bars 20a and 20b mounted across the front and

rear ends of the side walls 21. These bars are set into openings extended inwards from the bottom edges of the side walls and are so located that the bottom faces of the bars 20a and 20b extend slightly from the bottom faces of the side walls 21, as clearly illustrated in Figs. 1 and 2.

A frame 24' is provided for pivotally supporting the cradle 20'. This frame 24' includes a pair of side wall members 25 which also extend upwards along the spaced from the sides of the mold 17. The top ends of the side wall members 25 are bifurcated so as to have finger portions 25a and 25b. The side walls 21 extend in between these bifurcated ends. A pintle pin 26 is mounted through the bifurcated ends of each side wall 25 and the side walls 21 for pivotally supporting the cradle 20'. The pins 26 are located at points substantially mid-way between the top and bottom ends of the mold 17. The side walls 25 are tied together as a unit by front and rear bars 24a and 24b. These front and rear bars are located directly below the front and rear bars 20a and 20b of the cradle 20'. The leg portions of the frame 24' are formed with openings 27 merely for reducing the weight of these parts. The side walls 25 are furthermore tied together as a unit by bottom horizontal members 28. These members 28 are adapted to be set into the foundation of the machine with suitable anchorage elements not shown on the drawings. The main frame 10' is also adapted to be set upon a suitable concrete or other type of foundation with anchorage bolts, also not shown on the drawings.

The means for limiting the amplitude of pivoting of the mold 17 includes anvil members 29 which are mounted upon the front and rear bars 24a and 24b at positions directly beneath the front and rear bars 20a and 20b. These anvil members 29 are held at suitable elevated positions by shims 30. Fastening elements 31 engage through the anvil members 29 and the shims 30 and engage the bars 24a and 24b for holding the anvil members in proper positions. It is known from experimentation that the proper tolerance for the pivotally mounted cradle 20' with the mold 17 is .025".

The means of oscillating the mold 17 about its axis, the pintle pins 26, and tending to oscillate said mold through a larger amplitude than the amplitude permitted by said limiting means includes arm portions 21a extending rearwards from the side walls 21 substantially radially of the pintle pins 26. A vibrator shaft 33 is disposed parallel to the axis of the pintle pins 26 and is rotatively supported in the arm portions 21a. The vibrator shaft 33 is located a relatively large radial distance from the pintle pins 26, as illustrated in Fig. 2. The purpose of so locating the vibrator shaft is that then the moment arm with relation to the pintle pins 26 is large. The usual vibrator weights 34 are mounted on the shaft 33. These weights 34 are merely unbalanced weights. The shaft 33 is provided with a pulley 35 which is engaged by a belt 36 engaging over the pulley 37 of an electric motor 38.

The electric motor 38 is mounted upon a frame 39' which includes a pair of parallel side arms 39a and 39b. The ends of these side arms extend across the faces of the pair of inclined rear members 11. Bolts 40 engage through the side arms 39a and 39b and pass through slots 41 formed in the rear members 11 so that the frame 39' may be adjusted upwards and down-

wards along the inclined rear members 11. This adjustment permits proper tensioning of the belt 36. However, the belt 36 is of such a length that the center of the pulley 37 of the motor 38 is above a plane passed through the axes of the pintle pins 26 and the shaft 33, see Fig. 2. Thus the belt 36 has an upward pull upon the arm portions 21a of the cradle 20'. This upward pull is so calculated, and the parts are so designed that the cradle 20' is balanced.

It should be noted that the arm portions 21a make the rear of the cradle 20' heavier than the front. The location of the electric motor producing the upward pull overcomes this unbalanced condition of the cradle 20'. It is important that the cradle 20' be balanced so that the cradle may readily assume a true horizontal position during the stripping of the block from the mold, so that the sides of the block will be true.

A pressure head 45 is disposed above the mold 17 and is provided with side bushings 46 slidably mounted on the said vertical bars 14. The pressure head 45 has a top portion 45a which extends across the entire width of the machine, and it is this top portion upon which the bushings 46 are mounted. The pressure head 45 also has a bottom portion 45b which is adapted to engage slightly into the top of the mold 17 and rest upon the concrete material packed into the mold. A latch is provided for holding the pressure head in its raised position. This latch includes a keeper element 47 mounted upon the rear side of the top portion 45a of the pressure head and normally engaged by a bolt 48.

The bolt 48 is in the form of a hook which is pivotally supported at its top end by a pintle 49 mounted on lugs 50 which in turn are mounted on a front plate 51 mounted between the front vertical members 10a and 10b. The bolt 48 is offset slightly rearwards so that it tends to move forwards due to gravity and so maintains its engagement with the keeper. The bottom edge of the bolt 48 is inclined, see Fig. 3, so that the keeper 47 may ride along this inclined portion and force the bolt rearwards when the pressure head is moved up to its raised position. This causes the bolt to swing forward after the keeper 47 has passed, so as to catch the keeper and hold the pressure head raised.

The front end of an L-shaped arm 52 is pivotally connected by a pintle 53 intermediate of the top and bottom ends of the bolt 48. This L-shaped arm 52 extends upwards through an opening 54 formed in a top member 55 which is mounted across the vertical members 10a and 10b of the main frame 10'. The L-shaped arm 52 is supported at its top end on a rod 56. This rod is pivotally supported in brackets 57 and 58 which are mounted on the top of the member 55. Another arm 59 is mounted on the rod 56 and extends downwards through an opening 60 formed in the member 55. At the bottom end the arm 59 is provided with a finger 61 arranged to pivot in one direction only.

The finger 61 is supported at its stop end by a pintle 62 mounted on the bottom of the arm 59. A block 63 is mounted on the arm 59 behind the finger 61. Thus the finger 61 may pivot forward only. A block 64 is mounted on the feed drawer 65 of the machine and is cooperative with the finger 61 to trip the pressure head 45 as will be hereinafter described more fully. However, the arrangement is such that when the feed drawer 65 moves to its front position, the block

64 will idle past the finger 61 but when the feed drawer moves to its rear position, the block 64 will strike the finger 61, pivoting the arm 59 which turns the rod 56 moving the L-shaped arm 52 which in turn moves the bolt 48 to release the pressure head 45.

The feed drawer 65 is slidably supported by rollers 66 mounted upon its sides and riding on rails 67 which are mounted on the main frame 10'. These rails 67 are secured across the front vertical members 10a, 10b and the inclined rear members 11 of the main frame 10'. The feed drawer is also provided with rollers 68 engaging the bottoms of the rails 67 so as to prevent the feed drawer from moving upwards. The feed drawer 65 is of the usual construction. It has a front portion with an opening 69 extending completely through from the top to the bottom. It has a rear cutoff plate 70. Normally the opening 69 is placed beneath a hopper 71 which is adapted to be connected with a supply line for the concrete material. When the feed drawer 65 moves forwards the cutoff plate 70 closes the bottom of the hopper 71. A cutoff plate 65a is supported on a frame 65b and extended across the bottom of the feed drawer 65 normally closing the bottom of the opening 69. The frame 65b is supported with angle member 65c mounted on the main frame 10'.

The means for operating the feed drawer 65 includes a pair of side links 72 which are pivotally mounted at their front ends on blocks 73 mounted upon the top of the feed drawer 65 at its front portion. These links 72 extend rearwards and pivotally connect with arms 74. These arms 74 are radially mounted on a shaft 75 which is rotatively supported in bearings 76 mounted upon the rear faces of the inclined rear members 11 of the frame 10'. A handle 77 is attached to one end of the shaft 75 by which the shaft may be turned to cause the radial arms 74 to move the links 72 forwards and so move the feed drawer 65 forwards. The handle 77 may be moved rearwards to correspondingly move the feed drawer.

A stripper bar 80 adapted to support the usual stripper rods, not shown on the drawings since they are notoriously old and generally known to those skilled in the art, is disposed beneath the mold 17 and has its ends engaged through vertical slots 81 formed in the bottom portions of the side walls 25 of the frame 24'. Bushings 82 are mounted upon the ends of the stripper bar 80. These bushings 82 are slidably mounted on the vertical bars 14. These bushings 82 have offset top portions 82a into which the bottom ends of vertical rods 84 are threadedly engaged. Lock-nuts 85 are mounted on these rods 84 and engage the top portions of the offset portions 82a for locking the rods 84 fixedly on the brackets 82. The rods 84 extend upwards parallel to the vertical bars 14. The rods 84 extend through guiding vertical openings 86 formed in the top bushings 46.

Collars 87 are fixedly mounted on the rods 84 and act as stops for the pressure head 45. The arrangement is such that when the pressure head is released and goes down to its bottom position, the ends thereof will strike the collars 87 which stop the downward motion of the pressure head. The exact bottom position of the pressure head may be controlled by vertical adjustment of the rods 84 on the bushings 82. The collars 87 are also utilized to raise the pressure head 45 to its

top position as will be hereinafter more fully explained.

A pair of rollers 89 are mounted upon the ends of the stripper bar 80 and are engaged by cams 90 which are mounted on a shaft 91. This shaft 91 is extended across the machine and is rotatively supported in the brackets. Each cam 90 is provided with a small tail 92 which normally rests on one of the cross members 13 of the main frame 10' to hold the cams in their lowered positions. A handle 94 is mounted upon one end of the shaft 91 by which the shaft may be turned and thus the cams 90 may be operated. The cams 90 are so arranged that they are adapted to lift the stripper bar 80 from the bottom position shown on the drawings, to a raised position in which the stripper rods not shown on the drawings, strip the block from the mold.

The operation of the machine is as follows:

The feed drawer 65 may be moved from its rear position beneath the hopper 71 to its front position over the mold 17 by pulling the handle 77 forwards and downwards. In this way a charge of concrete may be supplied to the mold 17. Preferable during this filling operation of the mold 17, the motor 38 is running driving the vibrator shaft 33. This off balanced shaft 33 oscillates the cradle 20'. This off balance shaft 33 would oscillate the cradle 20' through a relatively large amplitude but it is stopped by the front and rear members 20a and 20b, respectively, of the cradle 20' striking the anvil members 29. Thus during each stroke of the oscillation, the oscillation will be abruptly interrupted producing a vibration or jolt which packs the mold. The amplitude of the oscillation may be controlled by adjusting the anvil members 29. This may be done by removing some of the shims 39, or adding shims, as may be necessary.

When the handle 77 is moved upwards and rearwards, back to its original position, the feed drawer 65 will be correspondingly moved back to its original position, and as it reaches this position, the block 64 will strike the finger 61 pivoting the arm 59 rearwards and causing the operation of the trip mechanism, which moves the bolt 48 rearwards, releasing the pressure head 45. The pressure head falls down on top of the material in the mold, and the vibration caused by the unbalanced shaft 33 continues for a short period. The building unit is now finished and ready to be stripped out of the mold.

The vibrator is stopped in the usual way, by mechanism not shown on the drawings. The handle 94 is now pulled forwards turning the shaft 91 which moves the cams 90 causing the stripper bar 80 to be moved upwards to its top position. This causes the stripper rods, not illustrated on the drawings, to engage against the pallet which was dropped into the mold prior to its being filled with the concrete material, to move upwards and strip the block from the mold.

An important feature of the building unit machine resides in the location of the pintle pins 26. It should be recalled that these pintle pins were described as being located specifically at points intermediate of the height of the mold 17. The location of these pivoted points are very important since with the specific location a superior block can be produced, or at least a block can be produced which does not have certain inherent defects. With the pivot pintles 26 located at the points mentioned, the tendency of the molded block cracking in the mold will be eliminated, or greatly reduced. With the pintle

pins 26 located as mentioned, the aggregate in the mold will be oscillated back and forth across the top of the mold above the pintle pins 26, back and forth across the bottom of the mold below the pintle pins 26, simultaneously in opposite directions and vertically upwards and downwards along the sides of the mold to the sides of the pintle pins 26. With this action the block will be packed, and may be stripped from the mold without any cracks being visible in it. With the particular location of the pintle pins 26 the whipping or vibrations of the cores 17a of the mold 17 will be reduced to a minimum if not entirely eliminated. The pintle pins 26 are located substantially at the midway points of the height of the core 17a and therefore the moment of pivoting of the cores 17a will be at a minimum. The tendency of the cores whipping is thus reduced or eliminated.

It is pointed out that if the pintle pins 26 were located beneath the mold 17, an entirely different state of affairs would exist. In the first place, the cores 17a will have a tendency to whip or vibrate because their moment arms have now been materially increased. Moreover, there will be a different packing action of the aggregate in the mold. The aggregate above and below the pintle pins 26 will move forwards and rearwards, simultaneously in the same direction, and not in opposite directions as previously described. The up and down motion of the aggregate at the sides will also be somewhat different. In general, the location of the pintle pins 26 beneath the mold is objectionable since then there is an exceptionally great tendency for reasons explained and other reasons, for the blocks when stripped from the molds to have cracks.

Another important feature of the construction of the machine resides in the particular location of the vibrator shaft 33 with relation to the mold 17. It should be noted that it is offset from one side of the mold, and not located beneath the mold. If located beneath the mold its moment arm will be materially reduced. When located as shown in Fig. 2, the moment arm of the vibrator is more advantageously situated so that the vibrations are more effective.

Another important feature of the machine resides in the balancing of the pivotally mounted mold. One way of accomplishing this balancing is to locate the axis of the motor pulley 37 above the plane extended through the centers of the pintle pins 26 and the shaft 33. When the mold 17 is well balanced, there will be a tendency for the mold to assume a truly horizontal position during the stripping operation. If the mold 17 stops in a position in which it is tilted in one direction by the other, the sides of the block will not be true since the stripper mechanism strips truly vertically. When the mold and the cradle 20' is substantially balanced, the mold 17 will automatically assume a truly horizontal position as soon as the stripper goes into operation.

Other important features of the construction of the machine have been presented in the objects and in the body of this specification.

In Figs. 5 and 6, a modified form of the invention has been disclosed distinguishing from the prior form in the provision of auxiliary means for properly balancing the cradle 20' and the mold 17 supported by this cradle. In accordance with this form of the invention each arm portion 21a is resiliently supported by an adjustable arrangement, adjustable to normally re-

turn each arm portion 21a to a position in which the cradle 20' is truly horizontal. This means includes a pair of springs 96 connected with the top and bottom of each arm portion 21a and connected with swivel joints 97 which are supported by screws 98 adjustably mounted in brackets 99 mounted upon the vertical bars 10a and 10b of the main frame 10'. The arrangement is such that the screws 98 may be turned to properly tension the springs 96 so as to balance the cradle 20' and the mold 17. These springs 96 may be tension springs, or compression springs depending upon design. In other respects this form of the invention is identical to the prior form and identical parts may be recognized by identical reference numerals.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

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

1. In a building unit machine, a mold, means for pivotally supporting said mold about an axis located centrally, horizontally and vertically of said mold, means for limiting the amplitude of pivoting of said mold to a small angle, and means for oscillating said mold about said axis and tending to oscillate said mold through a larger amplitude than the amplitude permitted by said limiting means and including a rotative shaft with an off-balanced weight and extending parallel to said axis and located to one side of said mold.

2. In a building unit machine, a mold, means for pivotally supporting said mold about an axis, means for limiting the amplitude of pivoting of said mold to a small angle, and means for oscillating said mold about said axis and tending to oscillate said mold through a larger amplitude than the amplitude permitted by said limiting means and including a rotative shaft with an off-balanced weight and extending parallel to said axis and located to one side of said mold, said mold being open at the top and bottom ends and adapted to be filled through one of these ends and stripped out through one of these ends, said axis being disposed on the horizontal and at a point substantially intermediate of the top and bottom ends of the mold and vertically, centrally of the sides of said mold.

3. In a building unit machine, a mold, means for pivotally supporting said mold about an axis located centrally, horizontally and vertically of said mold, means for limiting the amplitude of pivoting of said mold to a small angle, and means for oscillating said mold about said axis and tending to oscillate said mold through a larger amplitude than the amplitude permitted by said limiting means and including a rotative shaft with an off-balanced weight and extending parallel to said axis and located to one side of said mold, said limiting means including anvils, and said anvils being held in adjusted positions with shims.

4. In a building unit machine, a mold, means for pivotally supporting said mold about an axis, means for limiting the amplitude of pivoting of said mold, and means for oscillating said mold about said axis and tending to oscillate said mold through a larger amplitude than the amplitude

permitted by said limiting means, comprising a vibrator shaft laterally supported on one side of said mold, and means for causing said shaft to vibrate.

5. In a building unit machine, a mold, means for pivotally supporting said mold about an axis, means for limiting the amplitude of pivoting of said mold, and means for oscillating said mold about said axis and tending to oscillate said mold through a larger amplitude than the amplitude permitted by said limiting means, comprising a vibrator laterally mounted on one side of said mold.

6. In a building unit machine, a mold, means for pivotally supporting said mold about an axis, means for limiting the amplitude of pivoting of said mold to a small angle, and means for oscillating said mold about said axis and tending to oscillate said mold through a larger amplitude than the amplitude permitted by said limiting means and including a rotative shaft with an off-balanced weight and extending parallel to said axis and located to one side of said mold, said axis being at a point substantially midway between the top and bottom ends of said mold and midway between the sides of said mold.

7. In a building machine, a mold, means for pivotally supporting said mold about an axis, means for limiting the amplitude of pivoting of said mold, and means for oscillating said mold about said axis and tending to oscillate said mold through a larger amplitude than the amplitude permitted by said limiting means, comprising arms extending substantially radially of said axis, a shaft rotatively mounted on said arms and parallel to said axis, weights eccentrically mounted on said shaft, and means for rotating said shaft.

8. In a building unit machine, a mold, means for pivotally supporting said mold about an axis, means for limiting the amplitude of pivoting of said mold, means for oscillating said mold about said axis and tending to oscillate said mold through a larger amplitude than the amplitude permitted by said limiting means, and means for balancing said mold to tend to make it come to rest in a truly horizontal position.

9. In a building unit machine, a mold, a cradle member supporting said mold, a frame member pivotally supporting said cradle member at a point intermediate of the height of said mold, anvils mounted on certain of said members for limiting the amplitude of pivoting of said cradle member and mold member, and means for oscillating said cradle member.

10. In a building unit machine a mold, a cradle member supporting said mold, a frame member pivotally supporting said cradle member at a point intermediate of the height of said mold, anvils mounted on certain of said members for limiting the amplitude of pivoting of said cradle member and mold member, and means for oscillating said cradle member, said cradle member comprising side walls extending upwards along the sides of said mold, and bars connecting said side walls together as a unit.

11. In a building unit machine a mold, a cradle member supporting said mold, a frame member pivotally supporting said cradle member at a point intermediate of the height of said mold, anvils mounted on certain of said members for limiting the amplitude of pivoting of said cradle member and mold members, and means for oscillating said cradle member, said cradle mem-

ber comprising side walls extending upwards along the sides of said mold, and bars connecting said side walls together as a unit, said frame member comprising side walls extending upwards along the sides of said mold, and bars connecting said side walls together.

12. In a building unit machine a mold, a cradle member supporting said mold, a frame member pivotally supporting said cradle member at a point intermediate of the height of said mold, anvils mounted on certain of said members for limiting the amplitude of pivoting of said cradle member and mold members, and means for oscillating said cradle member, said cradle member comprising side walls extending upwards along the sides of said mold, and bars connecting said side walls together as a unit, said frame member comprising side walls extending upwards along the sides of said mold, and bars connecting said side walls together, the side walls of said cradle member and frame member being pivotally connected together with pintle pins located at points substantially intermediate the top and bottom ends of said mold.

13. In a building unit machine a mold, a cradle member supporting said mold, a frame member pivotally supporting said cradle member at a point intermediate of the height of said mold, anvils mounted on certain of said members for limiting the amplitude of pivoting of said cradle member and mold members, and means for oscillating said cradle member, said cradle member comprising side walls extending upwards along the sides of said mold, and bars connecting said side walls together as a unit, said frame member comprising side walls extending upwards along the sides of said mold, and bars connecting said side walls together, said anvils being mounted upon one set of said bars and being adapted to arrest the motion of the other set of said bars.

14. In a building unit machine a mold, a cradle member supporting said mold, a frame member pivotally supporting said cradle member at a point intermediate of the height of said mold, anvils mounted on certain of said members for limiting the amplitude of pivoting of said cradle member and mold members, and means for oscillating said cradle member, said cradle member comprising side walls extending upwards along the sides of said mold, and bars connecting said side walls together as a unit, said frame member comprising side walls extending upwards along the sides of said mold, and bars connecting said side walls together, said anvils being mounted upon one set of said bars and being adapted to arrest the motion of the other set of said bars, said anvils being adjustably supported with removable shims, whereby the amplitude of pivoting of said arm may be controlled.

15. In a building unit machine, a mold, a cradle member supporting said mold, a frame member pivotally supporting said cradle member at a point intermediate of the height of said mold, anvils mounted on certain of said members for limiting the amplitude of pivoting of said cradle member and mold member, and means for oscillating said cradle member, comprising arm portions radially projecting from one of the sides of said cradle member, and a vibrator mounted upon said arms.

16. In a building unit machine, a mold, a cradle member supporting said mold, a frame member pivotally supporting said cradle member at

a point intermediate of the height of said mold, anvils mounted on certain of said members for limiting the amplitude of pivoting of said cradle member and mold member, and means for oscillating said cradle member, comprising arm portions radially projecting from one of the sides of said cradle member, and a vibrator mounted upon said arms, and comprising a shaft rotatively mounted between the arms and parallel to the axis of pivoting of said frame member, and provided with off balanced weights, a pulley on said shaft, a belt engaging said pulley, and a motor adjustably mounted on said building unit machine and having a pulley engaging said belt and positioned to cause an upward pull on the shaft 15

side of said cradle member for balancing the cradle member.

17. In a building unit machine, a mold, a cradle member supporting said mold, a frame member pivotally supporting said cradle member at a point intermediate of the height of said mold, anvils mounted on certain of said members for limiting the amplitude of pivoting of said cradle member and mold member, means for oscillating said cradle member, and means for balancing said cradle member comprising resilient means acting on top and bottom portions thereof, and means for controlling the tension of said resilient means.

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