J. C. DOBBINS.

BRICK MACHINE.

APPLICATION FILED OCT. 29, 1919.

1,352,056.

Patented Sept. 7, 1920.

3 SHEETS—SHEET 1.

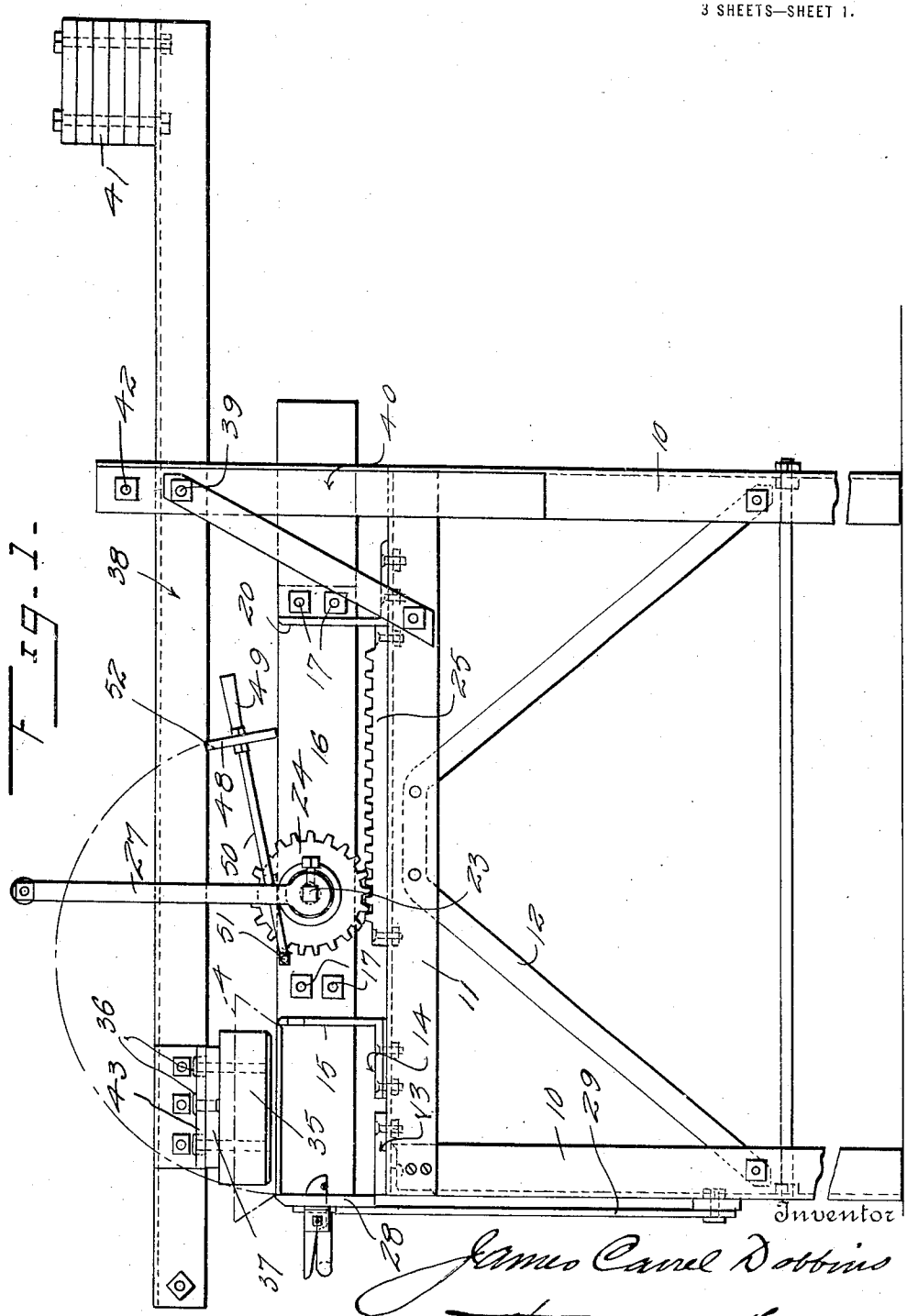


Fig. 1.

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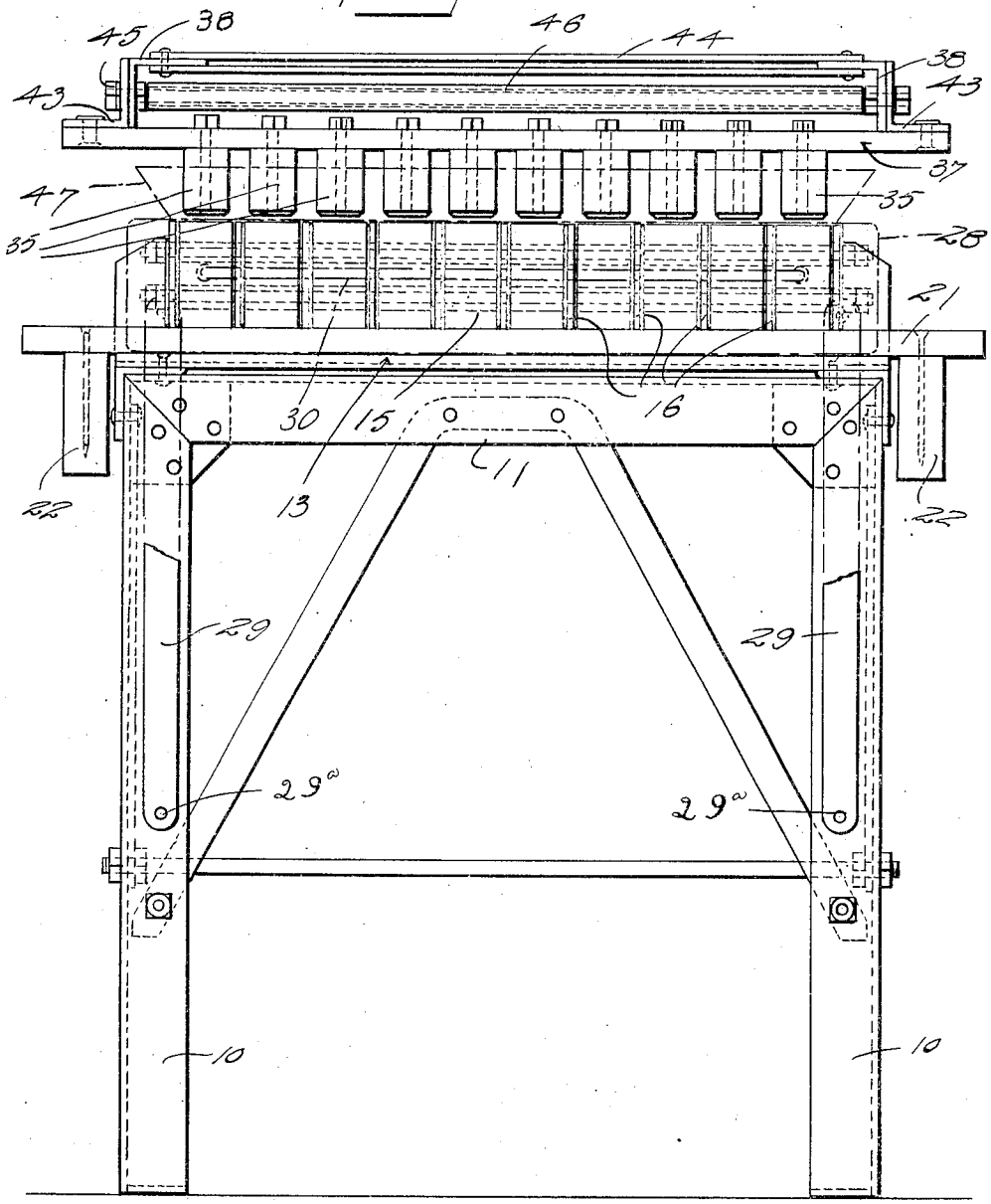
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3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 3.

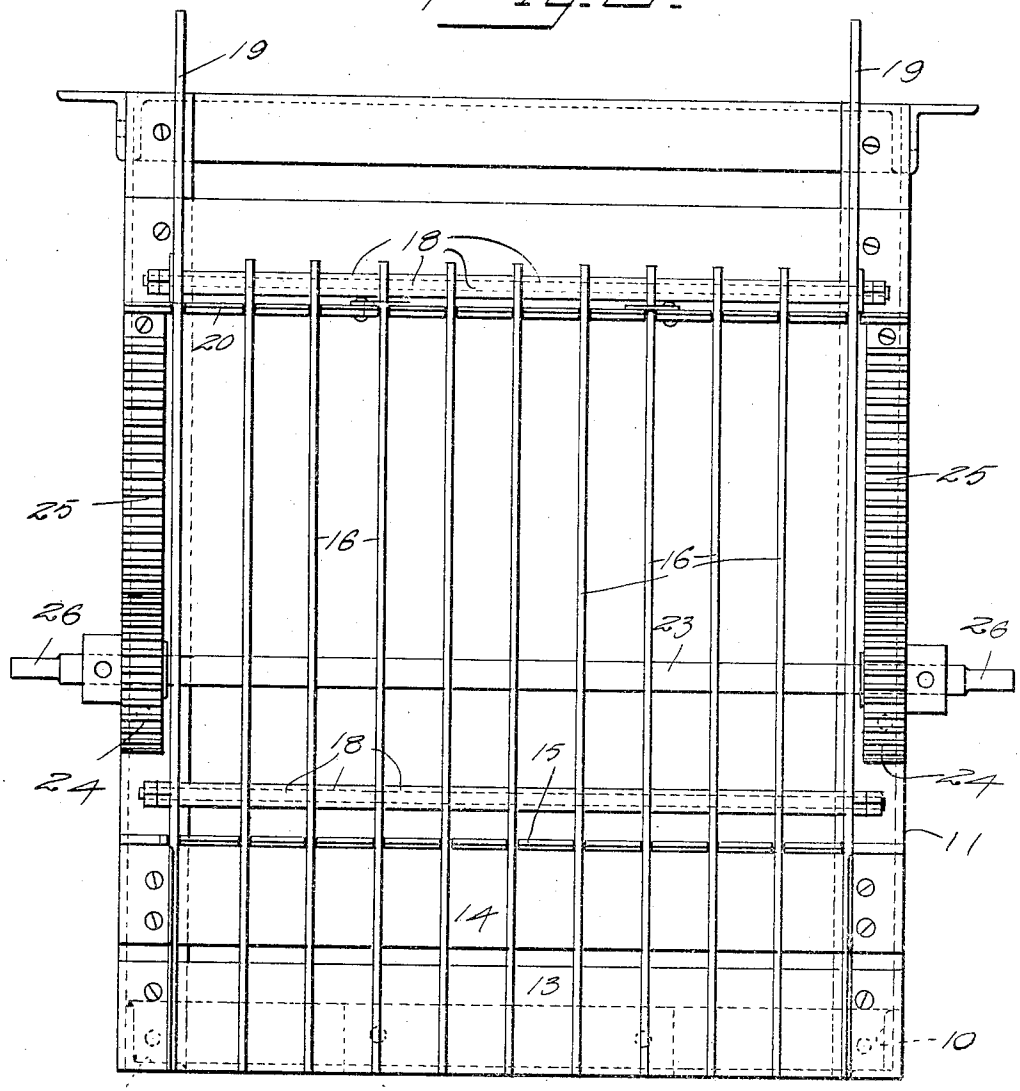
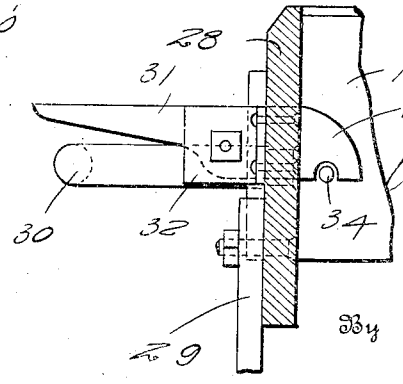


Fig. 4.



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UNITED STATES PATENT OFFICE.

JAMES CARREL DOBBINS, OF ROCK HILL, SOUTH CAROLINA.

BRICK-MACHINE.

1,352,056. Specification of Letters Patent. Patented Sept. 7, 1920.

Application filed October 29, 1919. Serial No. 334,216.

To all whom it may concern:

Be it known that I, JAMES CARREL DOBBINS, a citizen of the United States of America, residing at Rock Hill, in the county of York and State of South Carolina, have invented certain new and useful Improvements in Brick-Machines, of which the following is a specification.

My present invention relates generally to brick machines and more particularly to hand operated machines of this character for forming cement or concrete bricks, my object being the provision of an apparatus of this character which is generally improved with respect to quality of the product, uniformity of action, reduction of labor, and elimination of waste.

A further and more specific object of my invention is the provision of a machine including an attachment by means of which the ends of the formed bricks may be sized or similarly finished without marring the exposed side faces uppermost on the molding board or pallet.

These and other objects, as well as the resulting advantages of my improvements will more clearly appear from the following description, in which reference is made to the accompanying drawings, forming a part of this specification and wherein—

Figure 1 is a side elevation complete,

Fig. 2 is a front elevation,

Fig. 3 is a top plan view with the tamping frame removed, and

Fig. 4 is a detail vertical section through the front mold wall.

Referring now to these figures, my invention includes an upright rectangular main frame including corner standards 10, joined at their upper ends by connecting horizontal bars 11 and braced by braces 12 whose upper central portions are rigidly secured to the horizontal bars and whose ends are secured to the frame standards.

The several frame members are preferably in the nature of angle irons and upon the inturned horizontal flanges of the bars 11, crossing the front of the frame, is secured a bed strip 13 in parallel spaced relation to the forwardly turned lower horizontal flange 14 of an angle bar whose rear upright flange 15 forms the rear mold wall and has a longitudinal series of spaced parallel slots for the reception of the forward ends of a series of partitions 16.

The series of partitions 16 are rigidly connected by transversely extending bolts 17, with thimbles 18 on these bolts between the several partitions so as to maintain the latter in spaced relation, the rear ends of the two outer partitions projecting rearwardly as seen at 19 to form guides, and which coöperate in these functions with a vertical slotted guide plate 20 which as seen in Fig. 3 operates as a guide to receive the rear portions of the several partitions 16.

By reference to Fig. 1, it will be noted that the lower edges of the partition 16 are disposed in a plane spaced above the bed strip 13 and the lower flange 14 of the rear mold wall, to provide for the reception of a mold board or pallet 21, the opposite ends of which are preferably provided with depending angular extensions 22 by which the mold boards or pallets may be supported in a spaced relation in a stack. One of these mold boards or pallets is shown in position in Fig. 2.

The several partitions 16 are adapted to assume either a forward operative position as shown in Figs. 1 and 3, or a retracted position in which their forward vertical edges are alined with the rear mold wall 15 and this movement is brought about by a shaft 23 journaled transversely through the series of partitions intermediate their ends and provided with gear wheels 24 at opposite sides of the series of partitions. These gear wheels are in engagement with stationary horizontal racks 25 secured upon the side frame bars 11 as particularly seen in Fig. 1, between the rear mold wall 15 and the rear guide wall 20 of the partition. Beyond the gears 24, the shaft 23 has reduced extensions 26 so that either or both may receive a crank, one of which is shown in Fig. 1 at 27, provided for manual rotation of the shaft 23, the result of which is to rotate the gears 24 and by the engagement of these gears with the racks 25, cause either forward or rearward shifting movement of the several partitions, depending upon the direction of such rotation.

It is thus obvious that when the several partitions 16 are shifted forwardly over the mold board or pallet 21 disposed as in Fig. 2, and as previously described, the mold spaces of the several bricks will be complete except for the front wall 28 which latter is pivotally supported upon the upper ends of

a pair of supporting arms 29 pivotally connected at 29ª at their lower ends to the forward standards 10 so as to thus adapt the front mold wall to lateral swinging movement toward and away from its upper operative position seen in full lines in Fig. 1 and in dotted lines in Fig. 2. This front mold wall 28 has a handle 30 and also carries a pivoted latch member 31 mounted in connection with a bracket 32 and having a notched inner portion 33, as best seen in Fig. 4, engageable with the lateral pin 34 of one of the partitions 16.

The front mold wall, in its upper operative position receives against its rear face the forward ends of the partition 16 and, after the bricks have been molded the front wall is released by disengaging the latch and is dropped downwardly upon its supporting arms 29 to a position at one side of the frame, after which the several partitions 16 are retracted through the connections previously described, leaving the bricks standing edgewise in a longitudinal series upon the mold board or pallet 21, so that the entire series can be readily removed with the mold board or pallet.

It will also be noted that the several mold spaces formed between the rear mold wall 15, front mold wall 28 and partitions 16, open upwardly so as to provide for the reception of tamping blocks 35, the latter of which are secured in a lengthwise series by rigid connections 36 to the forward cross bar 37 of a tamping frame which also includes longitudinal side bars 38.

The side bars 38 of the tamping frame are fulcrumed at 39 to the upper extensions 40 of the rear standards 10, which extensions project above the horizontal frame bars 11 as seen in Fig. 1, and the rear end of the tamping frame, rearwardly of the main frame, has counterbalancing weights 41, which in practice are just sufficient to swing the forward portion of the tamping frame with the several tamping blocks 35, upwardly away from the main frame. This upward movement of the forward portion of the tamping frame is limited by a cross rod 42 connecting the upper extremities of the extensions 40 of the rear standards so that the forward end of the tamping frame will not proceed upwardly to a point beyond ready reach of the operator.

At the forward portion of the tamping frame, its side bars 38 are secured to the cross beam 37 by brackets 43 and the side bars at this point are also connected by rigid cross pieces 44 and a cross bolt 45, the latter of which rotatably supports a sleeve or pipe 46 extending between the side bars 38 and forming a handle by means of which the forward portion of the tamping frame may be readily shifted upwardly and downwardly to respectively withdraw the tamping blocks thereof from the mold spaces and shift the tamping blocks downwardly into the mold spaces.

The functions of these tamping blocks 35 are of course to pack the moist material tightly into the mold spaces, the material being just sufficiently wet so that after packing and the release of the front mold wall 28 and retraction of the several partitions the complete bricks will stand alone.

After the material of which the bricks are formed is fed to the mold spaces as for instance within a hopper shaped feed box indicated at 47 in Figs. 1 and 2, and after tamping of the material downwardly in the mold spaces and removal of the feed box the tamping frame is simply released by the operator and swings vertically to its upper inactive position by the counter-balancing weights 41.

The front mold wall 28 is then let down and if the upper side edges of the molded bricks are to be faced by the application of a size including a color, this is done preferably before the partitions 16 are retracted.

In case the side edges of the bricks are to be faced or sized, it is obvious that some at least of the bricks will have to have their ends similarly or differently sized and particularly in case of sizing the ends differently from the side edges, it is obviously a difficult matter to do this without spattering the sizing on the side edges. In order to obviate this disadvantage, I provide a cross strip 48 which forms a shield, having a handle 49 and supported rigidly in connection with arms 50 which are pivotally connected at 51 to certain of the partitions 16. This cross piece or shield is normally disposed in a rearward inactive position as shown in Fig. 1, resting upon the upper edges of partition 16 and may be swung on its pivots 51 forwardly in the arc indicated by the broken line in Fig. 1, so that one edge 52 of the shield which is preferably beveled, will engage the upper portions of the forward ends of the several partitions 16 and the shield will thus stand in such a position that size may be sprayed or thrown against the exposed ends of the several bricks without danger of spattering or marring the previously sized upper edge faces.

It is thus obvious that my invention provides a comparatively simple economical brick machine which will be practical and useful in connection with the formation of cement or concrete bricks, either of plain or of an ornamental nature, although particularly those bricks of an ornamental nature, the ornamental character of which is brought about by the application of a coloring size to certain portions of the bricks which are left exposed for the reception thereof when the front mold wall is let down. In this position, the several bricks will still

be supported to a sufficient extent by the partition 16 and the sizing may be carried out without danger of a mis-shapen or broken product.

It is also obvious that my invention provides a machine, which in addition to its effectiveness and efficiency for the purposes above stated will be strong and durable in use and one which may be readily handled by unskilled persons with the most elemental instruction.

I claim:—

1. A brick machine of the character described, comprising a main frame including a horizontally disposed upper portion having a forward mold board support, an upright slotted wall along the rear of said support forming the rear mold wall, a front mold wall having a pivoted connection with the main frame and shiftable with respect thereto into and out of position opposing the rear mold wall, a series of lengthwise shiftable partitions rigidly connected to one another and the forward ends of which are movably disposed in the slots of the rear mold wall, a mold board or pallet removably disposed between the front and rear mold walls, rigid connections between the said partitions, and manually actuated means for shifting the partitions forwardly and rearwardly on the main frame, as described.

2. A brick machine of the character described, comprising a main frame including a horizontally disposed upper portion having a forward mold board support, an upright slotted wall along the rear of said support forming the rear mold wall, a front mold wall having a pivoted connection with the main frame and shiftable with respect thereto into and out of position opposing the rear mold wall, a series of lengthwise shiftable partitions rigidly connected to one another and the forward ends of which are movably disposed in the slots of the rear mold wall, a mold board or pallet removably disposed between the front and rear mold walls, rigid connections between the said partitions, and manually actuated means for shifting the partitions forwardly and rearwardly on the main frame, said last named means including a shaft rotatable in connection with the partition, having gears thereon and a crank handle, and stationary racks carried by the main frame and engaged by said gears.

3. A brick machine comprising a main frame, means forming mold spaces including a rear slotted mold wall on the main frame, a series of rigidly connected partitions the forward portions of which are shiftable forwardly and rearwardly through the slots in the rear mold wall, and a front mold wall hingedly connected to the main frame and shiftable laterally with respect thereto toward and away from an operative position opposite the rear mold wall.

4. A brick machine comprising a main frame, means forming mold spaces including a rear slotted mold wall on the main frame, a series of rigidly connected partitions, the forward portions of which are shiftable forwardly and rearwardly through the slots in the rear mold wall, and a front mold wall hingedly connected to the main frame, and shiftable laterally with respect thereto toward and away from an operative position opposite the rear mold wall, and a latch for securing the front mold wall in operative position.

5. A brick machine comprising a main frame, means forming mold spaces including a rear slotted mold wall on the main frame, a series of rigidly connected partitions the forward portions of which are shiftable forwardly and rearwardly through the slots in the rear mold wall, and a front mold wall hingedly connected to the main frame and shiftable laterally with respect thereto toward and away from an operative position opposite the rear mold wall, and a shield pivoted to certain of the said partitions intermediate their ends and shiftable toward and away from a position engaging the upper portions of the several partitions at their forward extremities.

In testimony whereof I affix my signature.

JAMES CARREL DOBBINS.