

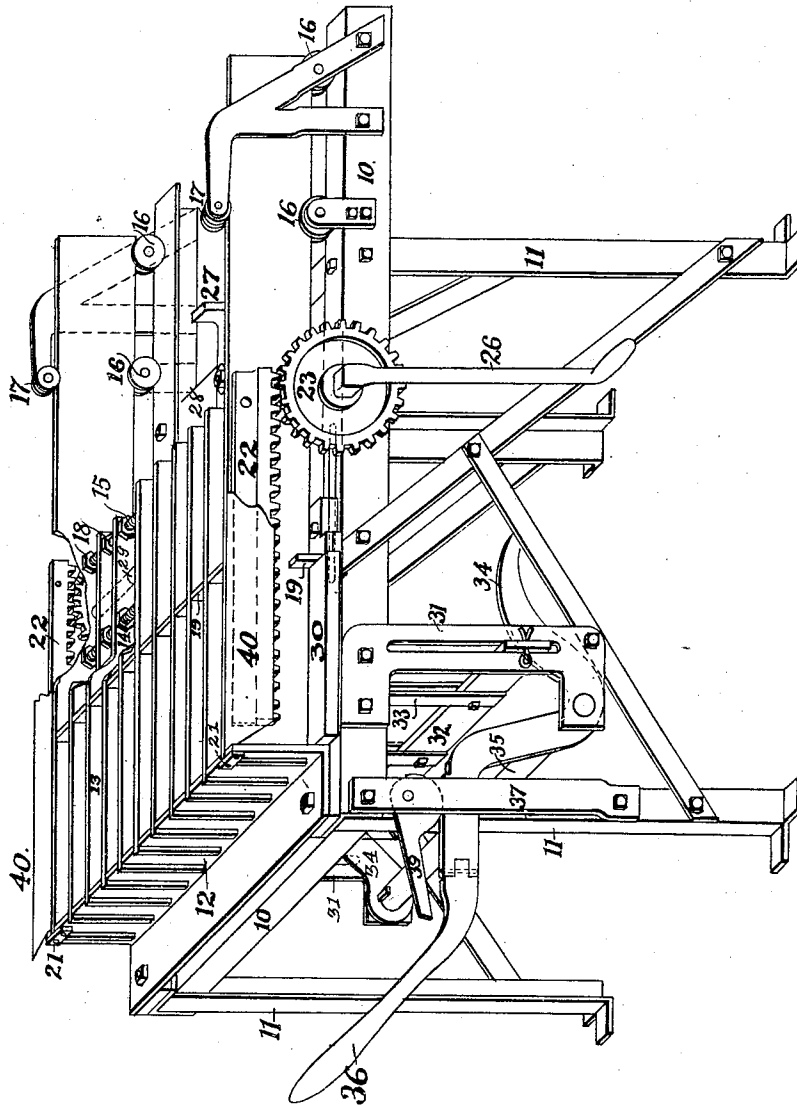
D. F. SHOPE.
CEMENT BRICK MACHINE.
APPLICATION FILED FEB. 27, 1909.

965,027.

Patented July 19, 1910.

2 SHEETS—SHEET 1.

Fig. 1.



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28 SHEETS—SHEET 2.

Fig. 3.

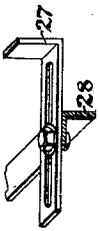


Fig. 2.

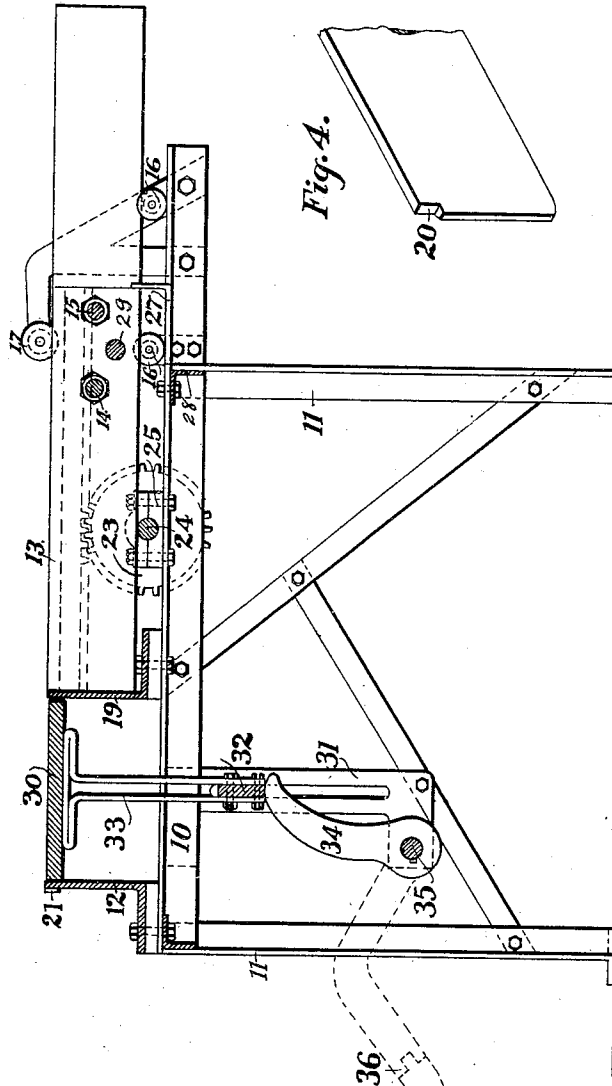
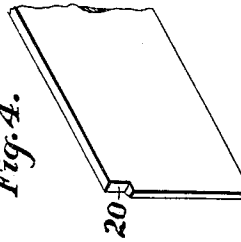


Fig. 4.



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UNITED STATES PATENT OFFICE.

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CEMENT-BRICK MACHINE.

965,027.

Specification of Letters Patent.

Patented July 19, 1910.

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To all whom it may concern:

Be it known that I, DAVID F. SHOPE, a citizen of the United States, residing in St. Paul, county of Ramsey, and State of Minnesota, have invented a new and useful Improvement in Cement-Brick Machines, of which the following is a specification.

This invention relates to that class of brick machines which are adapted to receive a plastic substance, usually cement or the like, and to mold the same into bricks. My object is to provide a machine for this purpose which will be adapted to mold a number of bricks, at one and the same time, and to be released therefrom in an even, uniform and simultaneous manner so as to not injure any one of the bricks, and to permit them to remain standing on the pallet on which they were molded, the pallet being removed from the machine and the bricks remaining thereon until thoroughly hardened.

Another object is to provide a machine of this class which may be so changed and adjusted that bricks of various sizes, as to lengths and widths, may be manufactured.

A further object is to provide a machine of this character in which all of the releasing, from the sides of the brick, will be a sliding movement.

My invention consists of certain details of construction, hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure I shows a perspective view of my machine complete, small portions thereof being broken away to show important parts of the mechanism; Fig. II shows a longitudinal sectional view of my machine; and, Figs. III and IV show detail views of their respective parts.

Referring to the accompanying drawings the reference numeral 10 is used to indicate the frame of my machine which is supported, in a horizontal position, by the legs 11. Extending transversely across the forward part of the frame is a slotted plate 12, the slots therein being evenly spaced and arranged and extending vertically upward.

The numerals 13 indicate a plurality of plates, adjustably secured to screw threaded bolts 14 and 15, said plates being mounted longitudinally on the frame parallel to each other, and being so spaced and arranged that, when the parts of the machine are in position to receive the substance to be

molded, their forward end will project into, and slightly through, their respective slots in the plate 12. Each of the end plates of this series are considerably longer than the balance and their rear extremities are supported in position, and in a permanent horizontal plane with the balance of the machine, by the roller bearings 16, which engage their lower edge surfaces, and the roller bearings 17, which engage their upper edge surfaces, as shown. Each of the plates 13 between the two end plates are adjustably secured to the shafts 14 and 15, by means of taps 18 which engage each longitudinal side of each plate.

The numeral 19 indicates a plate adjustably secured, in slots, in the longitudinal side members of the frame 10, said plate being slotted to conform to the slots in the plate 12.

The construction of my machine is such that, when the parts are in position to receive the plastic substance to be molded, the plates 13 will be extending transversely through the slots in the rear plate 19, and into, and slightly through, their respective slots in the plate 12, and the height of the various plates are such that their upper edge surfaces are all on a like plane, as shown in Fig. I. Each of the end plates is provided with a small shoulder 20, at its upper forward extremity, which is designed to engage its respective lug 21, one of which is secured on each end of the plate 12 at the upper extremity of each of the end slots, the purpose of these lugs and shoulders being to provide a stop for the forward progress of the plates 13, after their forward ends have projected slightly through their respective slots.

Each of the end plates 13 is provided, on its outer surface, with a longitudinal rack 22, the teeth of said racks being deposed downwardly and designed to engage, and mesh with, its respective gear wheel 23, secured to a shaft 24 extending transversely across the machine, said shaft being journaled in bearings 25, secured to each longitudinal member of the frame. These gear wheels are adapted to be rotated by a handle 26, and such rotation will cause the plates 13 to move simultaneously forward or backward, as the case may be. The rear limit of movement of the plates 13 is determined by an adjustable lug 27, which is secured to a cross bar 28, extending transversely across

the machine in the rear of the plates 13, one of said plates being designed to engage said lug, when the limit of movement is reached. This lug is made adjustable by a bolt extending transversely through the cross bar and through a longitudinal slot in the lug.

By the construction described, which is clearly shown in the drawings, it is obvious that the plates 13 are in perfect horizontal alinement at all times, whether in position to receive the substance to be molded or in the position they assume when the release has been effected. This alinement may be aided by additional shafts extending transversely through the plates 13, in the rear of the partition plate 19, if desired, and I have chosen to show one additional shaft 29. All of the transverse shafts extending through the plates 13 must be in close proximity to the rear thereof, in order that there will be no obstruction in projecting the plates forwardly through the slots in the partition plate 19 and to, and slightly through, their respective slots in the forward plate 12. The lug 27 is so arranged that the rear limit of movement of the plates 13 will be reached when the extreme forward ends of the plates have been entirely withdrawn from the forward plate 12 but before they have passed entirely through the thickness of the plate 19. This provision avoids any obstruction to the subsequent forward movement of the plates 13, which might be occasioned by one of the said plates becoming slightly sprung, for it is obvious that if such should be the case and the said plates would be entirely withdrawn from the slots in the cross plate 19 the slightest defect in the alinement might cause the plates to bind. To further avoid this the ends of the plates may be slightly beveled and it is my purpose so to do.

The lower edge surfaces of the plates 13 are supported, in a horizontal plane, slightly above the frame 10 so as to provide for a pallet 30 to rest on the horizontal members of the frame between the slotted plate 12 and the slotted plate 19. The pallet is designed to fit flush between the said plates and to be of sufficient thickness to fit practically flush between the longitudinal members of the frame 10 and the lower edge surfaces of the end plates 13.

The numerals 31 indicate brackets, depended from each longitudinal member of the frame 10 and in the rear of the forward plate 12, said brackets being slotted to receive a cross bar 32, mounted for upward and downward movement therein. The cross bar 32 is designed as a support, or bearing, for upwardly projecting T shaped members 33 which, in normal position, are designed to lightly engage the lower surface of the pallet 30, there being several of these members distributed along the said cross

bar. The cross bar 32 is operated, vertically, by means of eccentrics 34, secured to a shaft 35, mounted, for rotary movement, at the lower extremity of the brackets, the rotation of said shaft being accomplished by movement of the handle 36 secured thereto. The said handle extends rearwardly from said shaft, passing in close proximity to one of the legs 11, and I have mounted a bar 37 parallel with the said leg, said bar being secured, at its upper and lower extremity, thereto and thus providing a slot through which the said handle extends. Mounted, for rotary movement, in the said slot and above the handle 36, is an outwardly projecting weighted lever 39. The construction of the handle, the slot and the lever, and their relation to each other is such that the weighted lever operates automatically and moves downwardly to engage the handle, and when the said handle has been lowered sufficiently to raise the pallet above the plates 12 and 19, as shown in Fig. II, the said lever engages it and firmly holds it in this position supporting the said pallet. The forward portion of the lever 39 is curved downward, as shown, to form an eccentric to engage the upper surface of the handle 36, when the handle is at its upper limit of movement, and just prior to molding the brick and while the plates 13 are projected forwardly between the plates 12 and 19 the handle 36 is forced downwardly as far as possible, thus forcing the pallet 30 firmly against the lower surfaces of the said plates, and as the weighted eccentric operates automatically it will engage the said handle and hold it firmly in this position. By this means it is possible for me to use pallets of various thicknesses. When the bricks have been molded the partition plates 13 are withdrawn, by the rearward sliding movement produced by the operation of the handle 26, as described, until the extreme forward edges of the said plates are in the rear of the forward surface of the plate 19. The handle 36 is then forced downwardly, raising the pallet 30 above the plates 12 and 19, and the lever 39 engages the handle and holds it in this position. The pallet, supporting the freshly molded brick is then removed from the T shaped members 33. The lever 39 is then released and the handle 36 raised lowering the T shaped members 33, and a fresh pallet placed between the plates 12 and 19, and the plates 13 projected forwardly to their limit of movement and the parts of my mold are again in position for forming new bricks.

By shifting the position of the adjustable cross plate 15 and also the lug 27 I can mold brick of different lengths. If it is desired to change the width of the bricks this may be accomplished by removing the plates 12 and 19 and substituting plates containing

slots which are differently spaced and by also adjusting the positions of the plates 13 to conform to the alinement of the slots in the substituted plates. In doing this, however, it is obvious that the positions of the two end plates bearing their respective racks 22, must not be changed.

The numeral 40 indicates shields secured to the end plates 13 immediately above the racks 22 said shields being designed to protect the racks from being spattered or clogged by a surplus of the plastic substance.

Having thus described my invention what I claim and desire to secure by Letters Patent of the United States is:

1. A brick machine, comprising, in combination, a frame-work, parallel correspondingly slotted front and back end plates, a gang of parallel side plates operative in said slots and mounted to be withdrawn, means for withdrawing said gang of plates from said front and back plates, a vertically movable pallet extending transversely across said frame-work and between said front and back plates, and means to move said pallet when said gang of plates is withdrawn, said pallet moving means consisting of depending vertically slotted hangers supported by said frame-work, a cross-bar operative in said slotted hangers, T-bars supported

ported on said cross bar and supporting said pallet, and cam mechanism pivoted on said hangers below said cross bar and operative in a guide-way formed on said frame-work for raising and lowering said cross bar.

2. A brick machine, comprising, in combination, a frame-work, parallel correspondingly slotted front and back end plates, a gang of parallel side plates operative in said slots and mounted to be withdrawn, means for withdrawing said gang of plates from said front and back plates, a vertically movable pallet extending transversely across said frame-work and between said front and back plates, and means to move said pallet when said gang of plates is withdrawn, said pallet moving means consisting of depending vertically slotted hangers supported by said frame-work, a cross bar operative in said slotted hangers, T-bars supported on said cross bar and supporting said pallet, cam levers bearing below said cross bar and pivoted to said hangers, a lever in connection with said cam bars for actuating the latter, and a weighted lever adapted to engage and lock said last named lever in any desired position.

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Witnesses:

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