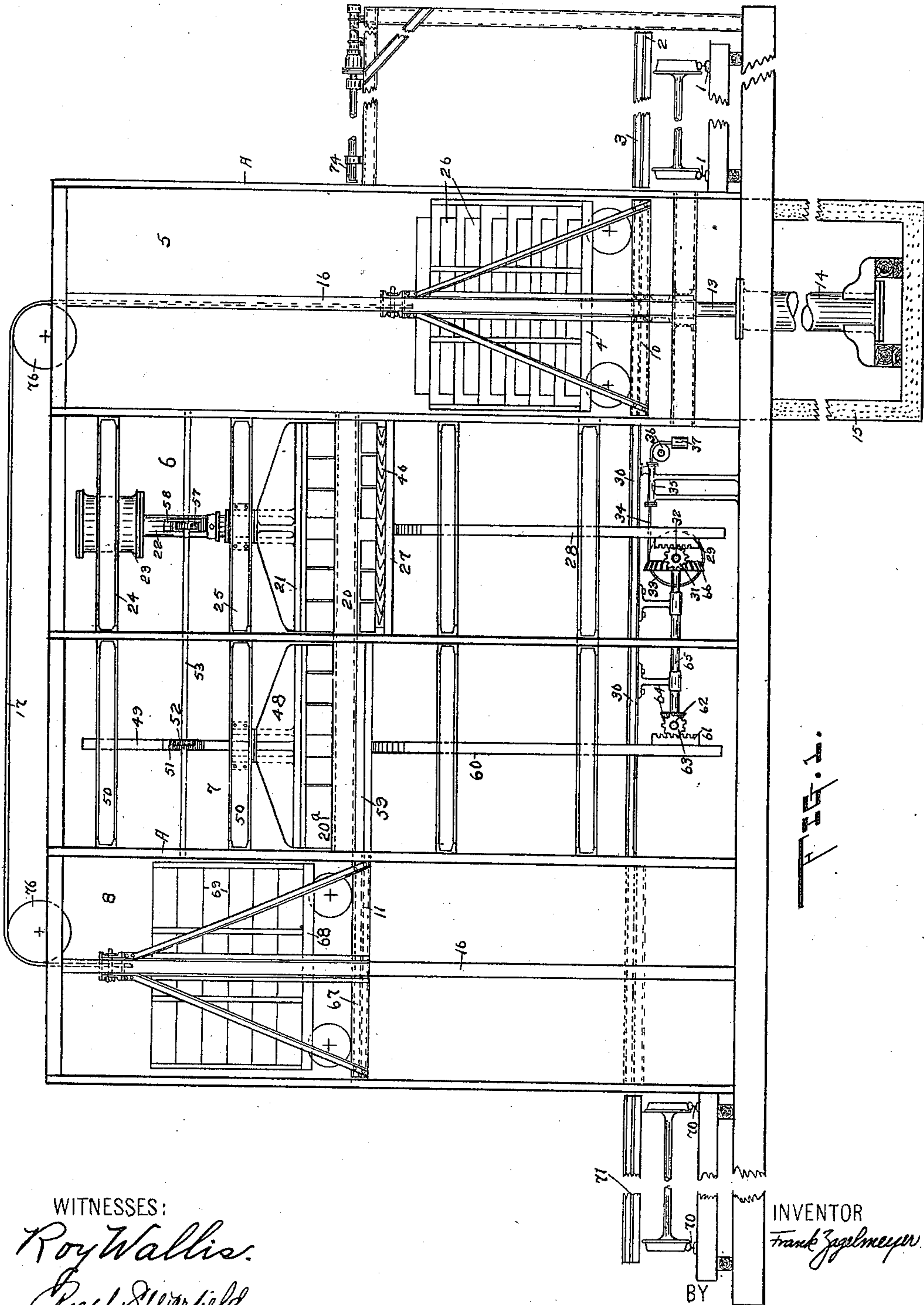


976,243.

F. ZAGELMEYER.
BRICK EJECTING MECHANISM.
APPLICATION FILED JULY 23, 1906.

Patented Nov. 22, 1910.

3 SHEETS-SHEET 1.



WITNESSES:

Roy Wallis.
Chas. S. Warfield.

Geo. B. Willcox.

INVENTOR

Frank Zagelmeyer.

BY

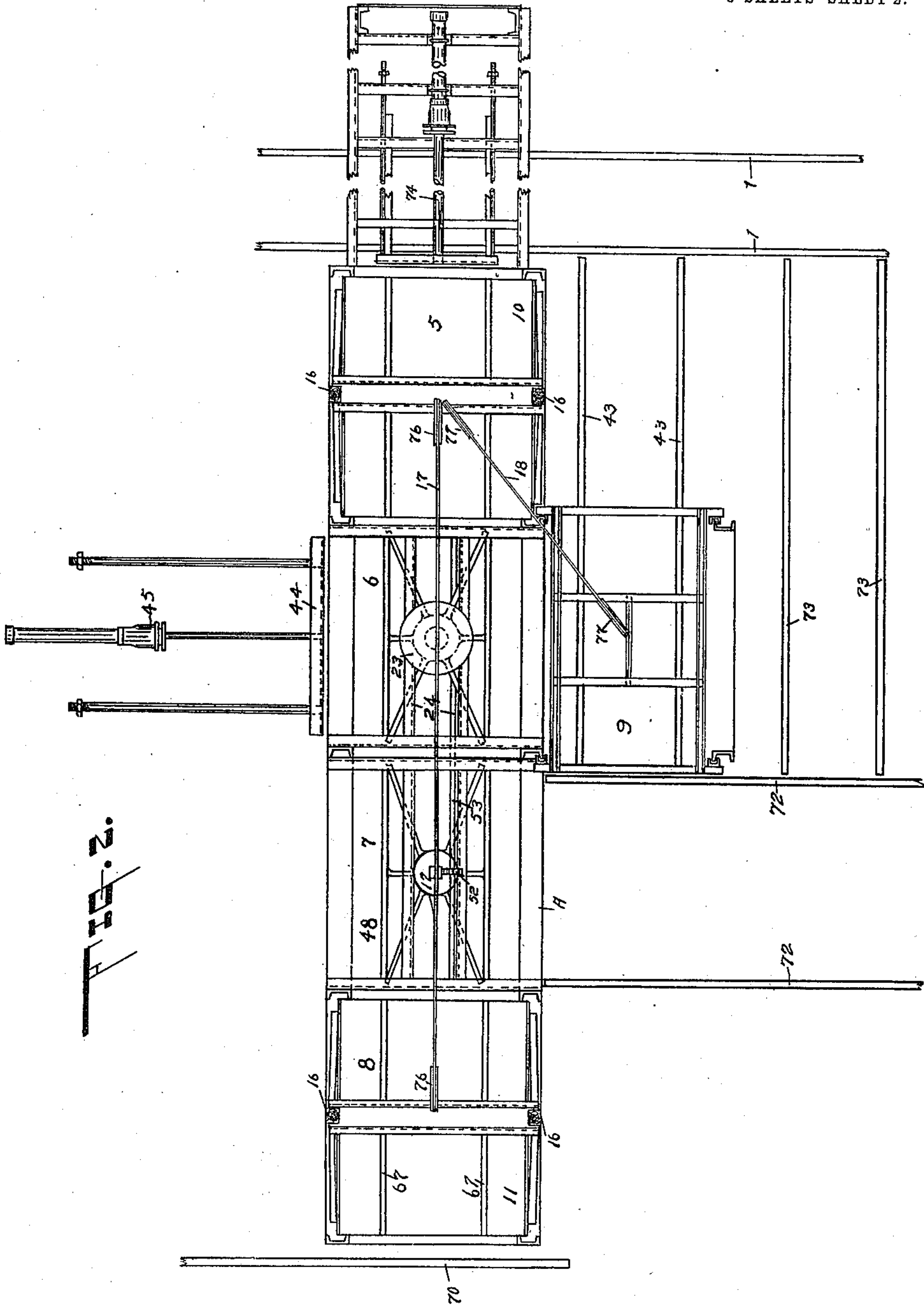
ATTORNEY

976,243.

F. ZAGELMEYER.
BRICK EJECTING MECHANISM.
APPLICATION FILED JULY 23, 1906.

Patented Nov. 22, 1910.

3 SHEETS—SHEET 2.



WITNESSES:

Roy Wallis.
Ralph Silverfield.

INVENTOR

Frank Zagelmeyer

BY

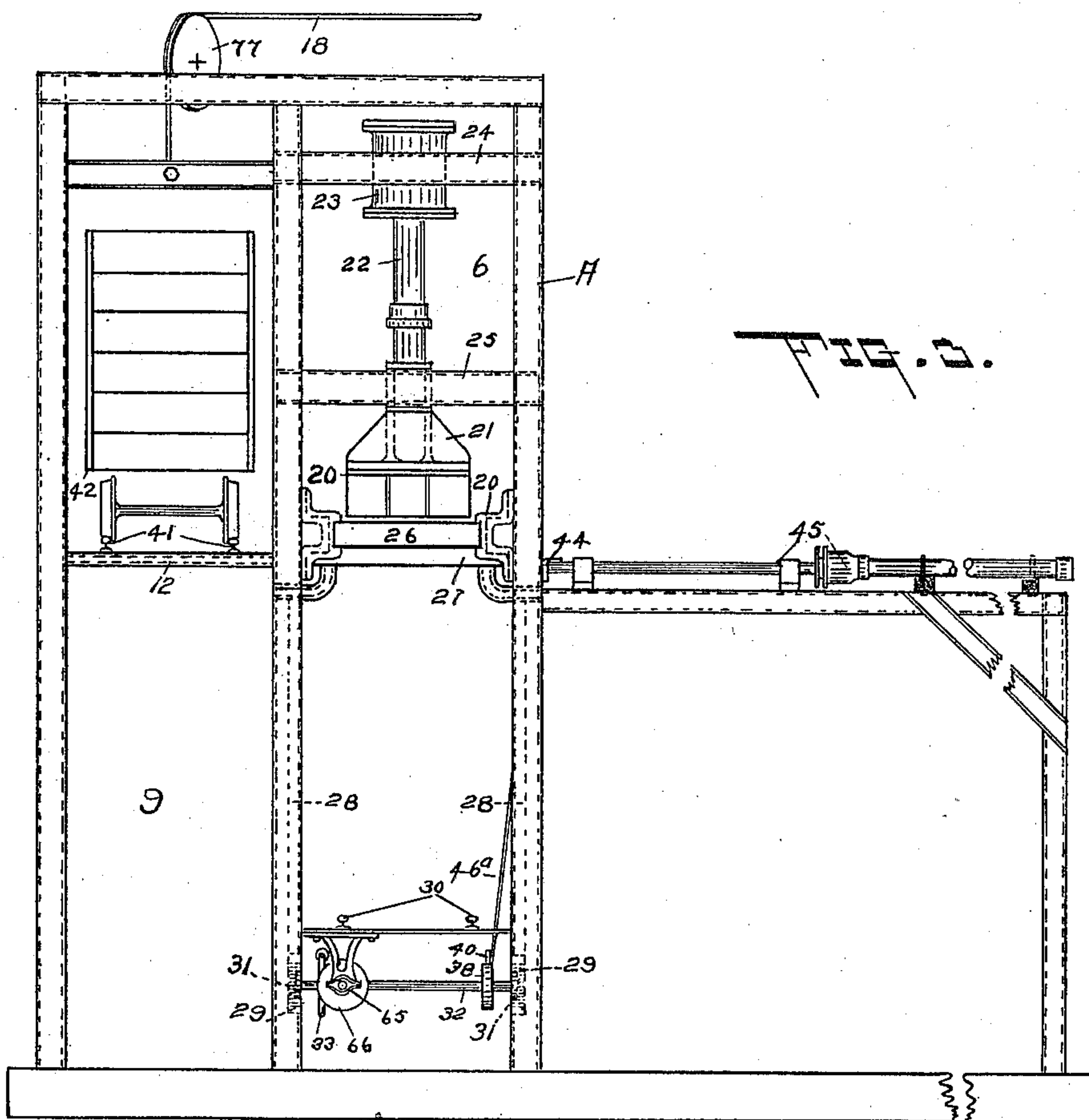
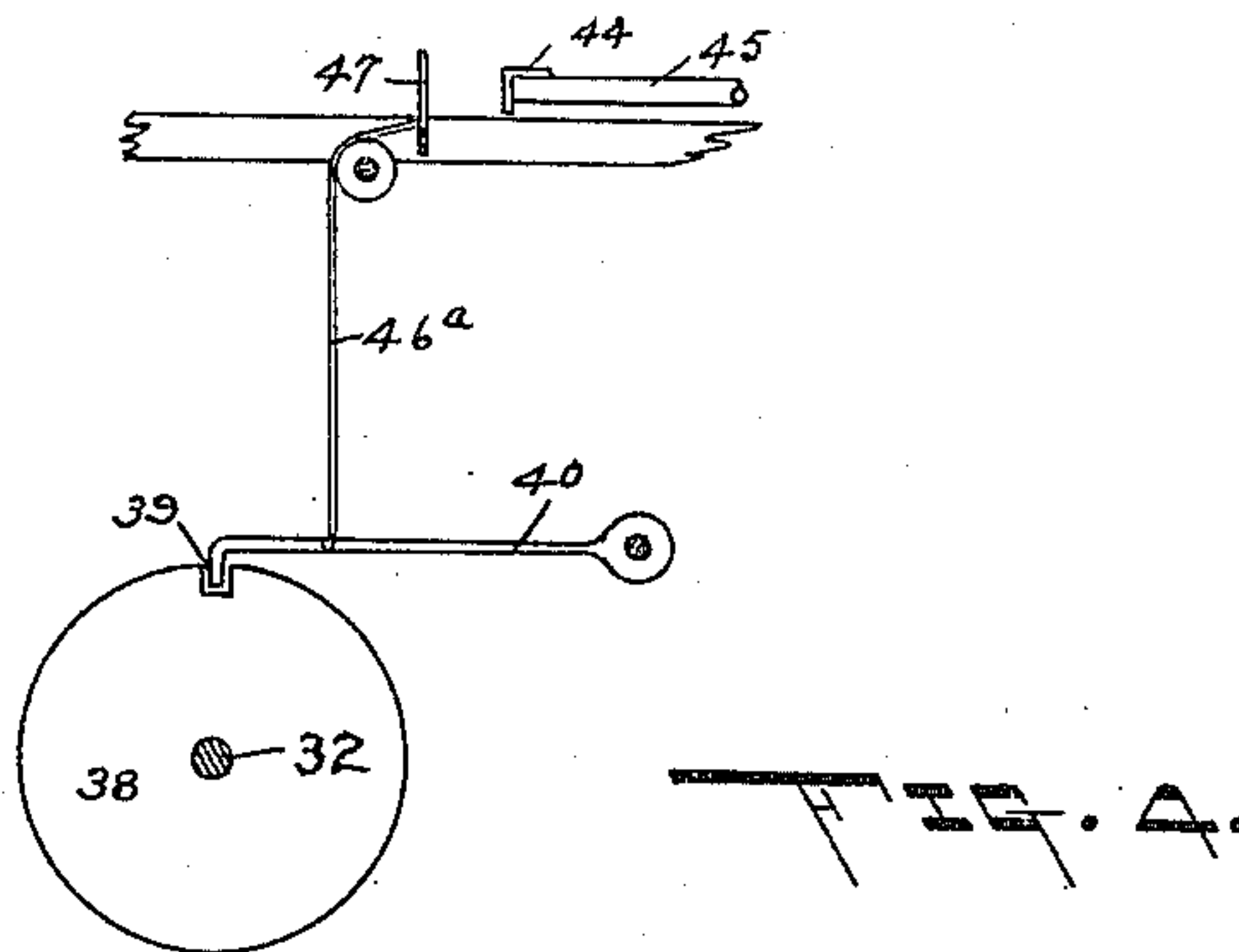
Geo. B. Willcox
ATTORNEY

976,243.

F. ZAGELMEYER.
BRICK EJECTING MECHANISM.
APPLICATION FILED JULY 23, 1906.

Patented Nov. 22, 1910.

3 SHEETS—SHEET 3.



WITNESSES:
Roy Wallis.
Ralph S. Warfield.

INVENTOR
Frank Zagelmeyer.
BY

Geo. T. Wilcox. ATTORNEY

UNITED STATES PATENT OFFICE.

FRANK ZAGELMEYER, OF BAY CITY, MICHIGAN.

BRICK-EJECTING MECHANISM.

976,243.

Specification of Letters Patent. Patented Nov. 22, 1910.

Application filed July 23, 1906. Serial No. 327,394.

To all whom it may concern:

Be it known that I, FRANK ZAGELMEYER, a citizen of the United States, residing at Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Brick-Ejecting Mechanisms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to brick making plants, and more particularly to that class of brick making wherein the brick are cast in molds, the cementitious material of which the brick are composed being mixed in a wet state until of a creamy consistency, whereupon it is poured into molds comprising a number of cells, each cell being of the size and shape of brick desired. It then becomes necessary to permit the material to set in the molds until it has attained a sufficient degree of hardness to be operated upon by suitable ejecting means whereby the brick are forced out of the mold, after which the brick are set away to season and the molds receive a further supply of the "wet mix." This process of "casting" brick instead of tamping or pressing a "dry mix" material into molds is a comparatively new idea so far as concrete brick are concerned, the difference between a "wet mix" and a "dry mix" being that the former is poured into the molds in a creamy liquid state while the latter is merely moist as, for instance, the "dry mix" used in laying concrete side walks and must be tamped into the mold. The "wet mix" also has many other inherent advantages over the "dry mix."

Hitherto it has been customary so far as I am aware, to fill one mold at a time and convey the single mold to an ejecting mechanism, after the operation of which the single mold is returned to any suitable filling machine and another single mold brought to the ejecting mechanism. The prior art will also disclose a series of empty molds arranged in line and adapted to be filled one at a time by means of a traveling filling machine. Such molds, after the material has set therein, are conveyed singly to the ejecting machine. Naturally this consumes considerable time and labor and also requires a very large space to permit the filled molds to stand until conveyed to the ejecting mechanism, providing the

brick are to be produced in commercial quantities.

It is therefore one object of my invention to provide means for conveying a number of filled molds to the ejecting machine at one time and after the ejection of the brick from the molds, to convey a plurality of empty molds back to the filling apparatus.

It is a further object of my invention to provide means whereby the filled molds are fed through the ejecting mechanism in rapid succession.

It is still a further object of my invention to provide means for rapidly removing the successive mold contents subsequently to their ejection from the mold so that a number of such mold contents are conveyed at one time to the seasoning room.

Another object of my invention is to provide means for replacing the pallet boards which with the mold contents are ejected from the molds.

A further object is the provision of a perfectly timed mechanism, whereby the filled molds are brought into alinement with the ejecting mechanism simultaneously with the bringing of a suitable support opposite the previously emptied mold in combination with means whereby the placing of a filled mold beneath the ejecting mechanism causes an empty mold reëquipped with a pallet board to enter upon the support.

A still further object is the provision of means for supporting the mold contents, either throughout its ejection from the mold or at some time during and after its ejection from the mold. This is quite important since the brick are yet unseasoned while being ejected and unless they are supported, at least at some time, during such ejection, injury to the brick is almost sure to result and it is preferable as hereinafter described and shown, to support those faces of the brick opposite the faces engaged by the plunger at all times during the ejection.

Still another object of my invention is the provision of means whereby the yielding movement of the brick supporting means is accompanied by a yielding movement of a pallet supporting means, to permit a pallet to be placed on such supporting means, the return movement of the brick and pallet supporting means operating to supply a previously emptied mold with a pallet and at the same time afford a support for the brick in the succeeding filled mold.

Another object of my invention is the provision of means whereby the brick and pallet supports are releasably held in their lowered positions to afford time in which to remove the ejected brick from one support and to place a pallet on the other support.

A further object is the provision of mechanism for attaining these results in a systematic step by step manner.

To these and other ends, my invention consists in certain novel features and combinations of parts together with their equivalents such as will be more fully described hereinafter and particularly set forth in the claims.

In the accompanying drawings, which are intended to illustrate one embodiment of my invention, Figure (1) is a view in side elevation of the brick receiving elevator, parts being omitted to better disclose the plunger, Fig. (2) is a top plan view of the entire mechanism and Fig. (3) is an end view, the filled and empty mold elevators being omitted to better disclose the construction.

Referring to these drawings which disclose but one of a number of constructions in which my invention might be embodied (1) indicates a suitable transfer track on which travels a transfer car (2) provided with transversely extending rails (3) adapted to receive a mold truck (4), said truck adapted to contain a tier of molds slidably supported, one above the other, on said truck. The molds after being filled in any suitable manner (not shown) are placed upon these mold trucks (4) in tiers to allow the creamy "wet mix" to set, after which such filled mold trucks are brought to the ejecting mechanism. It will be seen right here that by arranging the filled molds in tiers I economize considerable space which was hitherto occupied by the single molds during the setting of the "wet mix" therein, and hence, I can use a much smaller plant and produce a greater number of brick, the number of brick in each mold being limited only by the strength of the truck and the sizes of the filling and ejecting apparatus respectively.

In practice, I preferably place fourteen filled molds in pairs on each truck and as soon as the contents of the molds have sufficiently set, the trucks are rolled upon a transfer car (2) and conveyed to the ejecting mechanism. This ejecting mechanism consists of a suitable framework (A) which is preferably divided into five shafts, 5, 6, 7, 8, and 9 as shown.

Shafts (5) (8) and (9) are equipped with elevators (10) (11) and (12), the elevator platform (10) of shaft (5) being connected to the piston (13) of a hydraulic or other motor (14) preferably located in a pit (15) below the elevator shaft (5), the platforms (10) (11) and (12) being suitably guided in

their travel as by the strips (16, 16) or in any other convenient manner. Of course another lifting motor might be used in place of that shown.

In the present instance, I have shown the elevators (11) and (12) as being independently connected to the elevator (10) by means of the cables or other flexible connections (17, 18) so that, as the platform elevators (11) and (12) are loosely suspended in the shafts, a movement in one direction or the other of the filled mold elevator (10) will cause the remaining elevators to move in the opposite direction, but it is plainly obvious that I might arrange the elevators to all move in the same direction and accomplish the same results through practically the same instrumentalities.

Located intermediate the upper and lower ends of shaft (6) are the ways (20), which are secured to opposite sides of the shaft and on the same horizontal plane, the ways being adapted to receive opposite sides of the mold to retain the latter stationarily in place while the brick are being ejected therefrom.

Above the ways is located a multiple plunger (21), the members of which are adapted to register with the cells of the mold, the plunger being supported by a piston (22) operated by any suitable motor (23) mounted on a cross brace (24), the piston being guided by a cross bar (25).

It is obvious that the downward movement of the piston will cause the members of the multiple plunger to enter the cells of the molds (26) as they are held stationary in the ways (20) to eject the mold contents.

It has been found in practice that unless the mold contents is supported from the bottom throughout, or at least at some time during the process of the ejection, the contents, which is yet soft, will crack, break off at the corners or be otherwise injured owing to the binding of the contents in the cells, one portion being, perhaps, more easily forced out than another. In view thereof, I provide a table (27) which supports the bottom face of the mold contents as it is pressed out of the mold. In this regard, I would state that while it is perfectly feasible to supply the filled molds without pallet boards to the ejecting mechanism and is quite within the scope of my invention, I prefer to supply the molds and pallet boards to the ejecting mechanism, the ways (20, 20) merely engaging the mold frames and permitting the pallet boards and mold contents to be separated from the molds when the plunger is operated. In this manner, the face of the brick remain upon their original bed (the pallet board) until thoroughly seasoned and I am enabled to obtain a much smoother faced brick than if the original pallet boards were removed from the molds,

prior to the ejection of the brick from the molds.

The table may be yieldingly supported in any suitable manner, but in the drawings I have shown it as being slidingly mounted in the shaft (6), the table being provided with depending rods (28, 28) located at the side of the shaft so as to leave a clear space therebetween for the track (30) which receives the trucks (4) after they have been emptied.

The lower ends of the rods are equipped with racks (29, 29) engaged by the pinions (31, 31) carried by a shaft (32). A drum (33) is mounted on shaft (32) and has a flexible connection (34), one end of which is secured to the drum, the connection passing through a retarding cylinder (35) and thence over an idle pulley (36) the opposite end of the connection having a weight (37) secured thereto. It will thus be seen that as the plunger (21) is forced downward onto the mold contents, the latter is pressed against the yielding table which in its upper position lies against the pallet board of the mold (or if no pallet board is used then in direct contact with the mold contents) and as a result the table yields downwardly as the mold contents is ejected from the mold until the table is at its lowest limit of movement. The plunger (21) is deeper than the mold so that the mold contents are forced downward a suitable distance beneath the mold itself to avoid contact therewith.

The downward movement of the table has operated the racks and pinions to rotate shaft (32) and drum (33) whereby the flexible connection (34) is wound on the drum raising the weight (37) and it is obvious that unless some locking means were provided, the table would be raised by the weight (37) as the plunger (21) is raised, to avoid which I preferably provide a suitable locking mechanism for releasably retaining the table in its lowered position. Such locking mechanism may be of any suitable form, and as one means I have provided the shaft (32) with a notched disk (38); the notch (39) being below the upper periphery of the disk when the table is in raised position, a dog (40) being pivoted to the side of the shaft (6), the free end of the dog resting on the periphery of the disk. Now when the table is forced downwardly, the disk rotates with the shaft and as the table reaches its lowest limit of movement the notch is brought beneath the free end of the dog, which free end immediately drops into the notch and prevents a rotation of the shaft in the reverse direction, thereby locking the table in its lowered position.

Located laterally of the shaft (6) is the shaft (9) in which the elevator platform (12) travels, said platform being provided with a track (41) on which a pallet truck

(42) is receivable from the track (43). The pallet truck is adapted to receive the pallet boards and mold contents which have been forced out of the mold and onto the table (27) by the plunger (21). Of course, where the pallet boards are removed prior to the reception of the filled molds on the stationary ways (20, 20) it is advisable to provide the table (27) with pallet boards removably placed thereon each time the molds are to be operated upon by the plunger.

A reciprocating pusher (44) comprising a suitable cross piece actuated by a piston motor (45) is situated on the opposite side of the shaft (6) from that occupied by shaft (9). The pusher being actuated horizontally and located on a plane with the table (27) when the latter reaches its lowest position, serves to push the pallet boards (46) and the mold contents thereon off of the table (27) and onto the pallet truck (42), one of the tiers or shelves of which lies opposite the table (27) when in lowered position, as will be explained hereinafter.

Obviously as soon as the mold contents has been removed from the table (27) it becomes necessary to release the lock so that the weight (37) may cause the table to ascend to its normal position to which end I may connect the dog (40) by means of a flexible connection (46^a) with a pivotal trip (47), the upper free end of which projects into the path of movement of the pusher (44), the lower end being suitably pivoted to the frame of the machine. The connection is secured to the trip at a point intermediate the ends of the latter. As the pusher travels forwardly to shove the mold contents onto the pallet truck, it will engage the upper end of the trip which is swung forwardly and loosens the flexible connection, but upon its return movement, the pusher engages the trip and moves it rearwardly to tauten the connection (46^a) and thus raise the dog (40) whereupon the weight can operate to cause the ascent of the table. The further return movement of the pusher will cause it to ride off the upper end of the trip and the weight of the parts will permit the dog to assume its normal position with its free end on the periphery of the disk.

It will be observed that by reason of the two rods (28) and the connecting shaft (32) the table is raised evenly and does not bind in the shaft, and the retarding cylinder (35) operates to prevent a too rapid ascent of the table and cushions its contact with a mold. The ways, (20, 20) extend along the two opposite sides of the next adjacent shaft (7), the extensions (20^a, 20^a) of the ways being adapted to receive the empty molds subsequent to the ejection of the brick therefrom. At this point it may be desirable to provide some means for cleaning the

molds of the residue which may be left sticking to the sides, after the ejection of the brick therefrom and for oiling the molds, to which end I may provide a cleaning and oiling plunger (48), the plunger rod (49) of which is slidably mounted in suitable cross guides (50, 50) and is provided with a rack (51) with which meshes a pinion (52) mounted on a cross shaft (53), said cross shaft having a pinion (57) on its opposite end adapted to mesh with a rack (58) on the plunger piston (22). It will thus be seen that as the ejecting plunger (21) descends, the cleaning plunger (48) will also descend, the cleaning plunger being so formed as to engage the sides of the cells of the mold and effectively remove any particles adhering thereto.

As the ejecting plunger ascends, the cleaning plunger will move parallel therewith to its raised position, the plungers moving in the same direction. Furthermore the mold when it arrives in shaft (7) is not equipped with a pallet board, wherefore it is desirable to provide it with such pallet board, to which end, I provide a table (59) quite similar to the table (27) and having rods (60) which carry racks (61) in mesh with pinions (62) on a shaft (63), said shaft also having a gear wheel thereon meshing with a gear (64) on countershaft (65) which is provided with a second gear wheel (66) meshing with a gear wheel on the shaft (32). It is evident that as the table (27) descends, movement will be imparted to shaft (63) to cause the table (59) to descend also, but preferably I arrange the gears so that the table (59) has a shorter movement than table (27). As soon as the table (59) has arrived at its lower limit of movement an operator places pallet boards thereon and when table (59) again ascends, it carries the pallet boards into place and applies them to the empty molds, it being understood that the mold frames only are held by the way extensions (20^a, 20^a) so that the pallet boards are receivable in the molds.

The shaft (8) is located adjacent the shaft (7) and is provided with the elevator platform (11) equipped with rails (67) on which a mold receiving truck (68) stands, the truck provided with shelves (69) to receive the empty molds from the extension ways (20^a, 20^a). At the lower end of the shaft (8) is a track (70) on which a transfer car (71) travels, the car adapted to convey the trucks (68) to any suitable filling machine.

It will be understood that the shafts (5) (6) (7) and (8) are in alinement with each other, the shaft (9) lying laterally of shaft (6) and the track (30) extends from one side of shaft (6) to the opposite side of shaft (7). The tracks (1) and (70) are

parallel with each other and a third track (72) parallel with tracks (1) and (70) leads to the shaft (7), whereby a transfer car carrying a truck having a plurality of pallet boards may be run close to shaft (7) so that the operator may place the pallet boards on the table (59) as needed. There are also a pair of parallel tracks (43, 73) extending alongside track (30), track (43) lying in position to receive and deposit pallet trucks from or upon the elevator platform (12). There is also a suitably supported pusher (74) located in alinement with the series of shafts (5) (6) (7) and (8) and adjacent shaft (5).

The general operation of this device is as follows: A filled mold truck (4) is brought to the shaft (5) by the transfer car (2), the elevator (10) being in its lowest position and the elevators (11) and (12) in their highest positions, whereupon the truck (4) is rolled onto the elevator (10), which is then raised until the upper pair of molds (26) are in alinement with the ways (20, 20), whereupon the elevator is stopped and the pusher (74) operated to push the molds into the ways. As the molds are pushed into the ways, they engage the previously emptied molds in the ways (20) and force such molds into the way extensions (20^a). The passage of the latter molds into the extensions (20^a) will move the emptied molds which have been cleaned and reequipped with pallet boards, onto the empty mold truck (68) on elevator (11).

Returning to the filled molds (26), as soon as the latter are in place in the ways (20) the table (27) being in its raised position (shown in Fig. 3) and abutting the pallet boards of the filled mold (or the mold contents itself) the plunger (21) is operated to eject the mold contents onto the table (27) which yields downwardly, the table (59) moving parallel therewith by reason of the connecting mechanism, whereby to permit the operator to place the pallet boards on the table (59) preparatory to its upward movement. The tables upon attaining their lowest positions are locked therein as heretofore set forth.

Simultaneously with the descent of the ejecting plunger (21) the cleaning plunger (48) descends and passes through the empty cells of the molds supported on the extensions (20^a) to remove any adhering substance. The plungers (21) and (48) are almost immediately raised after their descent, and the pusher (44) is then actuated, the pusher engaging the pallet boards carrying the mold contents supported on the table (27) when in lowered position, and shoving the same onto an empty tier of the pallet truck on elevator (12). The return of the pusher (44) trips the locking mechanism to release the tables, whereupon the

latter automatically ascend, the table (27) coming to rest directly beneath the position occupied by the filled molds when in the ways (20) and the table (59) forcing the pallet boards which it carries, into the molds on the extension ways (20^a, 20^a). Of course, a single mold might be treated in this manner instead of two or more molds at a time. The elevator (10) then ascends another step so as to bring the next tier of the filled mold truck (4) in alinement with the ways (20), whereupon the foregoing operation is repeated.

It will be observed that the elevator (10) is the only one positively operated, the remaining elevators (11) and (12) being connected therewith by the separate flexible connections (17) and (18) passing over the pulleys (76, 76) and (77, 77), so that as the elevator (10) ascends step by step, the elevators (11) and (12) will descend step by step, the former elevator bringing the tiers of filled molds successively from the top downward into alinement with the ways, (20, 20), whereas the elevators (11) and (12) bring the empty tiers of trucks (68) and (42) from the bottom upward successively into alinement with the empty molds in ways (20^a, 20^a) and with the mold contents and pallet boards on the table (27) when in lowered position, respectively. It is quite obvious, however, that I might arrange the elevators so as to move simultaneously in the same direction rather than in opposite directions, and such arrangement is quite within the scope of my invention.

When all the filled molds have been pushed onto the ways (20, 20) it will be seen that the elevator (10) is at the top of the shaft (5) while elevators (11) and (12) are at the lower ends of the shafts, whereupon the empty mold truck (68) is rolled onto the transfer car (71) and conveyed to the filling apparatus and the truck (42) carrying the pallets and brick is rolled off onto the track (43), from whence it is conveyed by a transfer car (2) to the seasoning shed. A new supply of pallet boards is brought onto track (72) from track (73) and a previously emptied truck (4) which has been standing on the track (30) is rolled onto the elevator (11) and an empty pallet truck (42) which contained the previous supply of pallet boards is rolled onto elevator (12). The motor (14) is then operated to simultaneously hoist elevators (11) and (12) and lower elevator (10), whereupon the empty mold truck (4) is rolled onto track (30) and a new filled mold truck rolled onto the elevator, whereupon the operation above described is repeated.

It will be observed that by my arrangement, I avoid the use of turntables, which would add considerably to the expense of installing such a plant, and run the trucks in

continuous circuits through the ejecting and filling mechanisms. The trucks and transfer cars can be easily pushed along by the operators so that motors for doing this are unnecessary.

From the foregoing, it is evident that I have devised a simple yet highly efficient plant for manufacturing brick, and as many alterations and changes might be made in the form and arrangements of the several parts described, I do not wish to limit myself to the exact construction herein set forth.

Having thus fully described my invention, what I claim as new is:

1. A brick ejecting machine comprising a plunger, a stationary mold support located directly beneath the plunger, and adapted to receive a plurality of independent molds, the plunger movable into and out of the molds to eject their contents and a yielding support for the contents of the mold during its ejection.

2. A brick ejecting machine comprising a plunger, a stationary mold support located directly beneath the plunger, and adapted to temporarily sustain a plurality of independent filled molds, the plunger movable into and out of the molds to eject their contents and a yielding support for the mold contents during its ejection from the mold.

3. A brick ejecting mechanism comprising a plunger, a stationary mold support located directly beneath the plunger, and adapted to receive and sustain independent molds, the plunger movable into and out of the molds to eject their contents, a yielding support in constant engagement with the mold contents during its ejection, and means for releasably locking the yielding support stationary at a point removed from the mold support to permit the removal of the mold contents.

4. A brick ejecting mechanism comprising a stationary support for a mold, a plunger movable into and out of the mold, to eject its contents, a yielding support for the mold contents during its ejection, means for automatically moving the support in one direction, and means for releasably locking the support at one limit of its movement against the tendency of the first named means, to permit the removal of the mold contents.

5. A brick ejecting mechanism comprising a stationary support for a mold, a plunger movable into and out of the mold to eject its contents, a yielding support for the mold contents during its ejection, means normally tending to hold the support against the bottom face of the mold during the ejection of the mold contents and means for releasably locking the support at a distance from the lower face of the mold, to permit the mold contents to be removed from the support.

6. A brick ejecting mechanism comprising a mold support, a plunger movable relative to the support, a yielding table located on that side of the support opposite the plunger, for supporting the mold contents, the table adapted to be moved in one direction by the pressure of the plunger against the mold contents and means for returning the table to its normal position adjacent the mold support.
7. A brick handling apparatus comprising an ejecting mechanism, an elevator for successively supplying the mechanism with filled molds, means for cleaning the molds, an elevator for receiving the emptied molds and an elevator for receiving the mold contents.
8. A brick handling apparatus comprising an ejecting mechanism, an elevator adapted to support a plurality of filled molds, means for supplying the ejecting mechanism with successive filled molds, means for receiving the mold contents discharged from the molds, means for supplying the emptied molds with pallet boards, a second elevator arranged to move simultaneously with the filled mold elevator for receiving the emptied molds, and a third elevator arranged to move in step with the remaining elevators for receiving the ejected mold contents.
9. A brick handling apparatus comprising an ejecting mechanism, a filled mold elevator, an emptied mold elevator and a mold contents elevator adapted to move approximately in step with each other to supply filled molds to the ejecting mechanism, to receive the emptied molds and to receive the ejected mold contents respectively.
10. A brick handling apparatus comprising an ejecting mechanism, a filled mold elevator adapted to support a plurality of molds in tiers, and means for supplying the ejecting mechanism with the filled molds successively.
11. A brick handling apparatus comprising an ejecting mechanism, means for supporting a plurality of filled molds arranged in series thereon, means for bringing each tier step by step into position relative to the ejecting mechanism and means for successively supplying the ejecting mechanism from the filled mold support.
12. A brick handling apparatus comprising an ejecting mechanism, means for supporting a plurality of filled molds arranged in series thereon, means for bringing the series of filled molds successively into position relative to the ejecting mechanism and a pusher for feeding the filled molds successively to the ejecting mechanism.
13. A brick handling apparatus comprising an ejecting mechanism, means for supporting a plurality of filled molds arranged in series thereon, means for bringing the series of filled molds successively into position relative to the ejecting mechanism, a support for receiving a plurality of emptied molds, said support operating approximately synchronously relative to the means for supporting the filled molds and means for simultaneously supplying the ejecting mechanism with a filled mold and moving an emptied mold onto the emptied mold support.
14. A brick handling apparatus comprising an ejecting mechanism, a support adapted to receive a plurality of filled molds arranged in series, a support operating synchronously therewith for receiving a plurality of emptied molds and means for successively supplying the ejecting mechanism with filled molds and the last named support with emptied molds.
15. A brick handling apparatus comprising an ejecting mechanism, a filled mold elevator, an emptied mold elevator operating synchronously therewith, a mold contents elevator operating in approximate step with the remaining elevators, means for supplying the ejection mechanism with a filled mold and simultaneously moving a previously emptied mold onto the emptied mold elevator and means for supplying the mold contents elevator with the contents of the successive molds operated upon by the ejecting means.
16. A brick handling means comprising an ejecting mechanism, a filled mold elevator carrying a plurality of molds arranged in tiers, an emptied mold elevator adapted to receive a plurality of emptied molds tier by tier, a mold contents elevator adapted to receive the contents of successive molds tier by tier, means connecting the filled mold elevator with the emptied mold elevator and with the mold contents elevator, whereby to cause the elevators to move simultaneously, a motor controlling the movement of one of the elevators and means for supplying filled molds to the ejecting mechanism, emptied molds to the emptied mold elevator and mold contents to the mold contents elevator.
17. A brick handling apparatus comprising an ejecting mechanism, a truck, shelves on the truck for supporting a plurality of molds superposed above one another and means for supplying the molds successively to the ejecting mechanism.
18. A brick handling apparatus comprising an ejecting mechanism, a truck, shelves on the truck for supporting a plurality of molds superposed one above another, means for moving the truck step by step relative to the ejecting mechanism.
19. A brick handling apparatus comprising an ejecting mechanism, a truck adapted to support a plurality of filled molds, an elevator for conveying the truck of filled molds to the mechanism, a transfer car for

supplying the elevator with trucks of filled molds, and means for feeding the molds successively from the truck to the ejecting mechanism.

5 20. A brick handling apparatus comprising an ejecting mechanism, an elevator adapted to convey a plurality of filled molds thereto, step by step, means for successively feeding the molds to the ejecting mechanism, 10 a second elevator adapted to move approximately synchronously with the first named elevator and adapted to receive the ejected mold contents, and means for moving the successively ejected mold contents onto the 15 second elevator.

21. A brick handling apparatus comprising an ejecting mechanism, means for successively supplying the mechanism with filled molds, a mold contents elevator movable step by step relative to the ejecting mechanism, and means for supplying the elevator with the successively ejected mold contents.

22. A brick handling apparatus comprising an ejecting mechanism, means for supplying filled molds successively to the mechanism, means for receiving the successively ejected mold contents and means movable step by step relative to the ejecting mechanism for receiving the emptied molds. 25 30

23. A brick handling apparatus comprising an ejecting mechanism adapted to have filled molds supplied thereto, means for receiving the emptied molds and the mold contents respectively, and means interposed between the ejecting mechanism and the emptied mold receiving means for supplying the molds with pallet boards. 35

24. A brick handling apparatus comprising an ejecting mechanism adapted to have filled molds supplied thereto, means for receiving the emptied molds and the mold contents respectively, and means interposed between the ejecting mechanism and the emptied mold receiving means for cleaning the molds. 40 45

25. A brick handling apparatus comprising an ejecting mechanism, adapted to have filled molds supplied thereto, means for receiving the mold contents, means for supporting the emptied molds, and means for cleaning the empty molds subsequent to the ejection of their contents. 50

26. A brick handling apparatus comprising an ejecting mechanism adapted to have filled molds supplied thereto, means for receiving the mold contents, means for supporting the empty molds and means for supplying the empty molds with pallet boards. 55 60

27. A brick handling mechanism comprising an ejecting mechanism adapted to have filled molds supplied thereto, means for supporting the empty molds out of line with the ejecting mechanism, and separate means 65 for successively cleaning a previously emp-

tied mold and for supplying a pallet board thereto.

28. A brick handling apparatus comprising an ejecting mechanism, a truck supporting a plurality of filled molds, an elevator 70 for conveying the truck toward and from the mechanism, a second elevator, a truck adapted to receive empty molds carried thereby, means for feeding the filled molds successively to the ejecting mechanism and 75 simultaneously pushing a previously emptied mold onto the truck of the second elevator, and means for moving the elevator synchronously relative to each other, the truck on the first named elevator adapted to 80 supersede the truck on the second named elevator, means for supplying the first named elevator with another filled truck, and means for removing the truck on the second named elevator. 85

29. A brick handling apparatus comprising an ejecting mechanism, adapted to be supplied with filled molds, an elevator moving step by step relative to the ejecting mechanism, a truck on the elevator adapted 90 to receive the successive mold contents, a truck adjacent the ejecting member adapted to support a series of pallet boards, means for supplying the successively emptied molds with pallet boards, the successive pallet board supporting trucks adapted to become the mold contents receiving trucks as the latter are filled and removed from the elevator. 95

30. A brick handling apparatus comprising a suitable frame, ways carried by the frame, a plunger supported adjacent one side of the ways, a movable mold contents support located on the opposite side of said ways, and means for supplying the ways 100 105 with filled molds.

31. A brick handling apparatus comprising a suitable frame, ways carried by the frame, a plunger located above the ways, a movable mold contents support located below the ways, the ways extending some distance past the plunger and adapted to receive the successively emptied molds. 110

32. A brick handling apparatus comprising suitably mounted ways, synchronously 115 operating elevators movable toward and from opposite sides of the ways, a plunger located on one side of the ways, a movable mold contents support located on the opposite side of said ways, one elevator adapted 120 to convey filled molds to the ways step by step, the other elevator adapted to receive the successively emptied molds and means for feeding the filled molds successively to the ways and simultaneously pushing a previously emptied mold onto the last named 125 elevator.

33. A brick handling apparatus comprising suitably mounted ways, synchronously operating elevators movable toward and 130

from opposite sides of the ways, a plunger located on one side of the ways, a movable mold contents support located on the opposite side of said ways, one elevator adapted to convey filled molds to the ways step by step, the other elevator adapted to receive the successively emptied molds and means for feeding the filled molds successively to the ways and simultaneously pushing a previously emptied mold from beneath the plunger.

34. A brick handling apparatus comprising an ejecting plunger, a support located beneath the plunger for slidably receiving molds, an extension support connected with the mold receiving support, means for supplying filled molds to the support, the succeeding filled molds operating to push the previously emptied molds onto the extension support, a cleaning plunger located above the extension support and means connecting the ejecting mechanism and cleaning plungers to cause their synchronous operation into and out of the filled and emptied molds respectively.

35. A brick handling apparatus comprising an ejecting plunger, a support located beneath the plunger for slidably receiving molds, an extension support connected with the mold receiving support, means for supplying filled molds to the support, the succeeding filled molds operating to push the previously emptied molds onto the extension support, a cleaning plunger located above the extension support, racks on the ejecting and cleaning plungers and a gear carrying shaft connecting the plungers.

36. A brick handling apparatus comprising an ejecting plunger, a mold support for receiving filled molds, an extension support for receiving the emptied molds, a movable table for receiving and supporting the mold contents during and subsequent to its ejection and a table movable toward and from the extension support for supplying the emptied molds with pallet boards.

37. A brick handling apparatus comprising an ejecting plunger, a mold support for receiving filled molds, a movable support for sustaining the mold contents during and subsequent to its ejection, means for locking the movable support at one limit of its movement, means for removing the mold contents therefrom and means actuated by the last named means for releasing the lock.

38. A brick ejecting mechanism comprising a plunger, a mold support for receiving filled molds, a movable table adapted to sustain the mold contents during and subsequent to the ejection thereof from the mold, means for normally retaining the table adjacent the mold support in contact with the filled molds, a locking mechanism for retaining the table at its opposite limit of movement, a pusher for removing the mold

contents from the table and a trip mechanism connected to the locking mechanism and actuated by the pusher to release the locking mechanism and permit the table to be moved to its normal position.

39. A brick ejecting mechanism comprising a plunger, a mold support, a table movable toward and from the support for receiving and sustaining the mold contents during and subsequent to its ejection from the mold, a shaft rotated by the movement of the table, a notched disk on the shaft, a dog adapted to engage the notch in the disk, means normally tending to hold the table at one limit of its movement, means for removing the mold contents from the table and a trip mechanism actuated by the last named means for releasing the engagement of the dog and disk and permitting the table to be moved to its normal position by the first named means.

40. A brick handling apparatus comprising a plunger, a mold support, an extension support adapted to receive empty molds from the mold support, a mold contents receiving table beneath the mold support, a pallet board receiving table beneath the mold extension, and means connecting the tables for causing their synchronous operation.

41. A brick handling apparatus comprising a plunger, a mold support, an extension support adapted to receive empty molds from the mold support, a mold contents receiving table beneath the mold support, a pallet board receiving table beneath the mold extension, a shaft rotated by the movement of one of the tables, and mechanism connecting the shaft with the opposite table for imparting movement thereto synchronously with the movement of the first named table.

42. A brick handling mechanism comprising a plurality of shafts, synchronously operated elevators in three of the shafts, means for supplying one of the elevators with a plurality of filled molds arranged in tiers, an ejecting mechanism, means for feeding the tiers of filled molds successively to the ejecting mechanism, means for supporting the emptied molds out of alinement with the ejecting mechanism, means for supplying pallet boards to the successive empty molds, means for supplying another of the elevators with the successively ejected mold contents, the third elevator adapted to receive the emptied molds in tiers, the elevators each having a synchronous step by step movement until filled, means for conveying the tiers of emptied molds from the apparatus, means for bringing a supply of filled molds to the apparatus, means for conveying the mold contents from the apparatus and means for bringing a supply of pallet boards to the apparatus.

43. The combination with a mold having a removable pallet board, of an ejecting mechanism comprising a plunger, a support on which the molds are held stationary, and
5 a movable table adapted to receive and sustain the mold contents on its original bed as it is ejected from the mold.

44. The combination with a mold having a removable pallet board, of an ejecting
10 mechanism comprising a plunger, a support on which the molds are removably held stationary, and a movable table adapted to receive and sustain the mold contents on its original bed as it is ejected from the mold,
15 and means for removing the mold contents on its original bed from the table and conveying it to a suitable seasoning chamber.

45. The combination with a truck having several decks adapted to receive filled molds,
20 of an ejecting mechanism, and means for feeding the molds successively to the ejecting mechanism.

46. In a brick handling machine, a movable table adapted to receive brick on their
25 original pallets at one level and transfer the brick and pallets to another level, and means operating at such last named level for moving the brick and pallets off the table.

47. In a brick handling machine, a movable
30 table adapted to receive brick on their

original pallets at one level and transfer the brick and pallets to another level, a truck and means operating at such last named level for moving the brick from the table to the truck.

35

48. In a brick handling machine, a movable table adapted to receive brick on their original pallets at one level and transfer them to another level, a truck having several
40 decks, means for varying the level of the truck, and means operating at such last named level for moving the brick and pallets from the table onto the respective decks of the truck.

49. A brick-handling apparatus comprising an ejecting mechanism and a vertically
45 movable elevator for supplying the same with filled molds.

50. A brick handling apparatus comprising an ejecting mechanism for simultaneously
50 ejecting brick on their original pallets from a plurality of molds, and means for simultaneously loading a plurality of pallets onto a car.

In testimony whereof, I have affixed my
55 signature in presence of two witnesses.

FRANK ZAGELMEYER.

Witnesses:

GEO. B. WILLCOX,

RALPH S. WARFIELD.