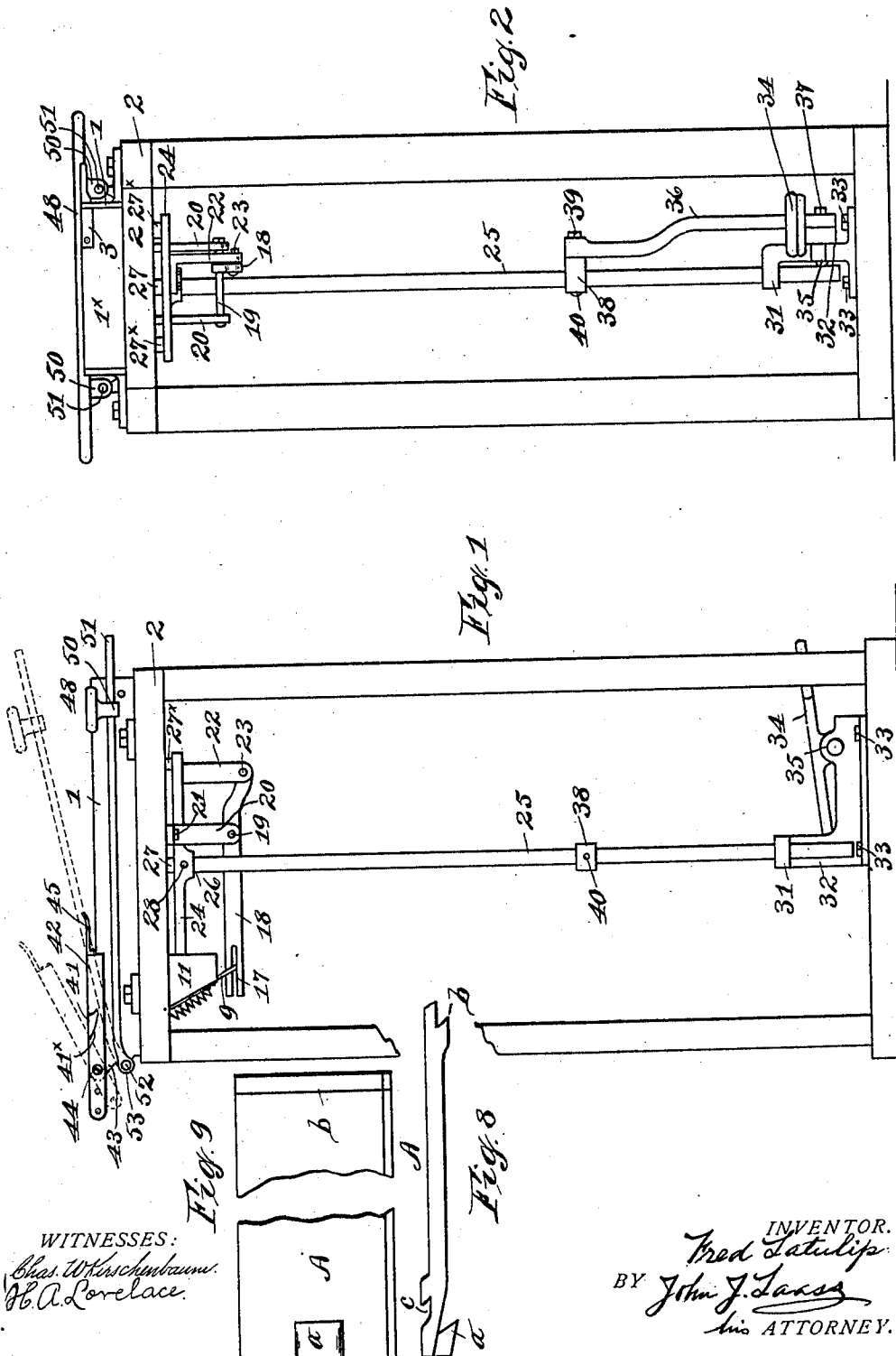


F. LATULIP.
MACHINE FOR MOLDING CONCRETE SHINGLES.
APPLICATION FILED APR. 28, 1910.

970,243.

Patented Sept. 13, 1910.

2 SHEETS—SHEET 1.



WITNESSES:
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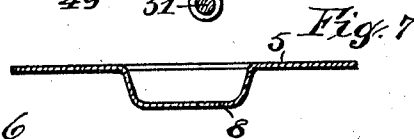
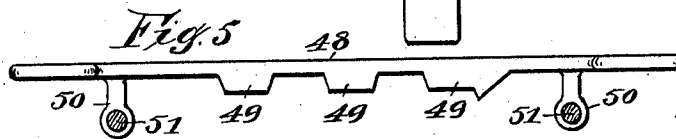
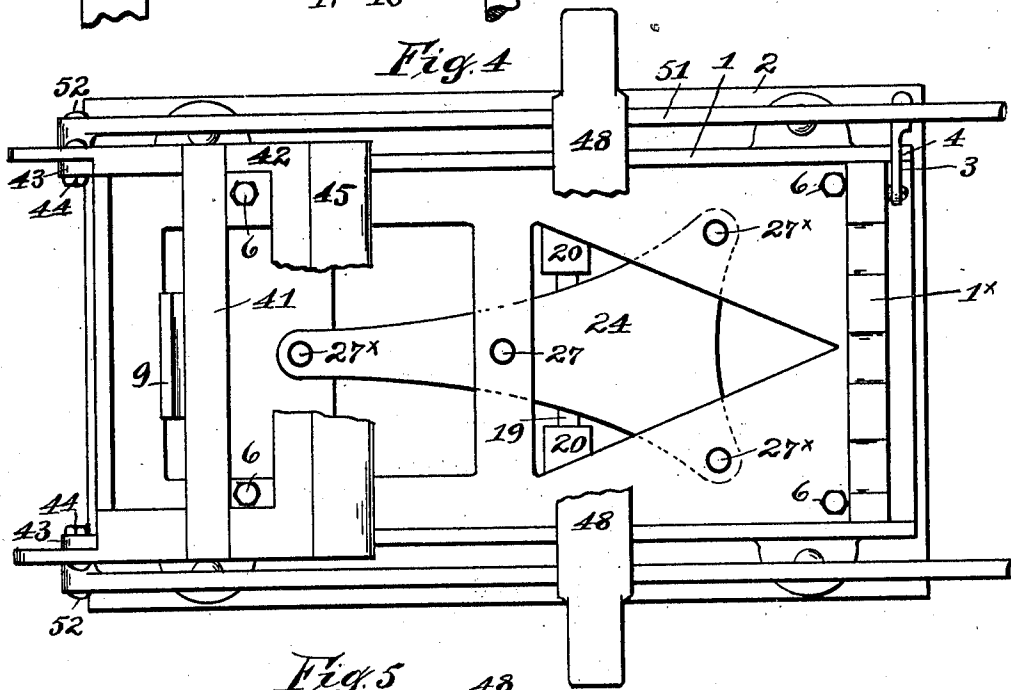
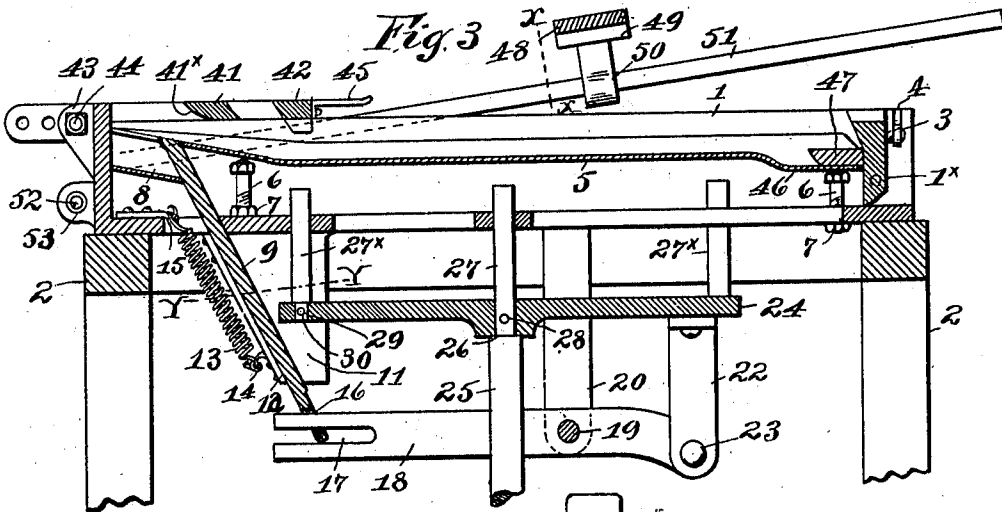
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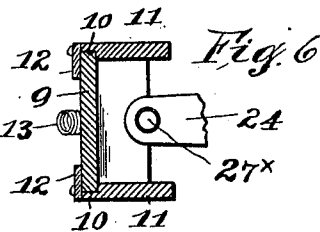
970,243.

Patented Sept. 13, 1910.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR MOLDING CONCRETE SHINGLES.

970,243.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed April 28, 1910. Serial No. 558,106.

To all whom it may concern:

Be it known that I, FRED LATULIP, a citizen of the United States, and resident of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Machines for Molding Concrete Shingles, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to the manufacture of composite shingles and more particularly to the type of shingle shown and described in my U. S. Letters Patent No. 907,824 issued on the 29th day of December, 1908, the object of this invention being to produce a simple, inexpensive and efficient machine for molding such shingle.

To that end the invention consists in the novel construction and arrangement of the component parts of the machine hereinafter fully described and set forth in the claims.

In the accompanying drawings Figure 1 is a side elevation of the machine embodying my present invention; Fig. 2 is a front view of the same; Fig. 3 is an enlarged vertical longitudinal section of the upper portion of the machine; Fig. 4 is an enlarged plan view of the machine, the bed-plate upon which the concrete shingle is molded having been removed; Fig. 5 is a transverse section on the line —X—X— in Fig. 3; Fig. 6 is a horizontal section on the line —Y—Y— in Fig. 3; Fig. 7 is a detail transverse section of the rear end portion of the bed-plate; Fig. 8 is a side view of the shingle molded by the machine; and Fig. 9 is a back view of the shingle.

Like characters of reference indicate like parts in the several views of the drawings.

My molding-machine comprises essentially a horizontally disposed box —1— mounted upon a suitable frame —2— which may be of any desired construction. This box is of rectangular shape and is preferably composed of cast-metal and has its front end-wall —1*— hinged at its lower portion to the side walls for the purpose hereinafter explained. This front end-wall has pivoted to it a lever —3— adapted to engage a vertical slot —4— in one of the side walls to lock the said end wall in vertical position as more clearly illustrated in Figs. 3 and 4. Within this box is provided a bed-plate —5— which is preferably composed of cast-

metal and upon which the concrete shingle is formed. This bed-plate is supported removably upon vertical pins —6—6— fastened to the bottom of the box and said pins consist preferably of bolts secured into the bottom of the box and provided with nuts —7—7—. The purpose of employing the bolts is to permit the bed-plate to be adjusted vertically in order to increase or decrease the thickness of the shingle to be molded thereupon.

My patented shingle —A— which is represented in Figs. 8 and 9 and which is produced by this machine has its back formed with a hook —a— extending across the upper end thereof for hanging it on a purlin and a similar locking-hook —b— in proximity to the lower end of the shingle, and an undercut groove —c— across the front of the shingle for receiving the locking-hook of the correspondingly formed overlying shingle. To produce the hook —a— of the shingle the aforesaid bed-plate is formed at its rear end with a depression —8— which becomes filled with the concrete deposited upon the said plate. Said depressed portion is open at its rear side to accommodate an obliquely disposed elongated core-plate —9— which is longitudinally movable and has its upper edge beveled and normally flush with the correspondingly inclined upper face of the rear end portion of the bed-plate as clearly shown in Fig. 3. This core-plate serves to produce the undercut on the hook formed in the said depression. The said core-plate —9— has its longitudinal edges fitted in guides —10—10— formed on two oppositely disposed vertical plates —11—11— depending from the bottom of the box —1—, and the said core-plate is retained in said guides by means of metal-strips —12—12— secured onto the edges of the plates —11—11— and bearing against the core-plate as shown more clearly in Fig. 6.

The core-plate has attached to it one end of a spiral-spring —13— by means of a hook-shaped member —14— secured onto the plate, the opposite end of which spring is connected to a similar hook-shaped member —15— secured onto the bottom of the box as clearly shown in Fig. 3. This spring serves to draw the core-plate upwardly to retain the same in the required position during the operation of molding. The lower

end of the core-plate —9— is provided with a transverse opening —16— in order to engage a longitudinal slot —17— provided in one end of a longitudinally extending lever —18— which is pivoted to a shaft —19— rigidly fastened at its ends to the lower end portions of two bars —20—20— depending from the bottom of the box —1— and fastened thereto by means of bolts —21—21—.

The opposite end of the lever —18— is pivotally connected to the lower end of a vertical bar —22— by means of a bolt —23—, the upper end of which bar is rigidly fastened to the underside of an elongated plate —24— disposed flatwise below the bottom of the box —1—. This plate —24— is fastened to the upper portion of a vertically disposed rod —25— which is designed to be lifted. To connect the plate —24— to the rod —25—, I circumferentially reduce the upper end portion of the rod so as to provide a shoulder —26— upon which the plate is seated, and at the same time produce a post —27— extending through the bottom of the box —1—, through which reduced portion and a boss on the plate passes a transverse pin —28—. Extending upwardly from the end portions of the plate —24— are additional posts —27*—27*—27*— corresponding in length to the post —27— and extending through the bottom of the box —1—. The posts —27*—27*— may be attached to the plate —24— in any suitable manner, however for convenience I circumferentially reduce the end portions of the said posts and insert the same in apertures —29—29—, through which reduced portions and plate extend pins —30—30— as clearly represented in Fig. 3 of the drawings. The posts —27—27*—27*— are normally out of contact with the bed-plate —5— and they serve to elevate the said plate for the purpose of removing the latter when the molding operation is completed which will be shortly explained.

The rod —25— has its lower end portion passing through a suitable guide —31— formed on the upper end of a post —32— which is fastened to the bottom of the frame —2— by means of bolts —33—33—, to which post is pivotally connected a foot-lever —34— as indicated at —35—. Said foot lever serves to lift the rod —25— and may be attached thereto in any convenient manner. In the present instance I show the said foot-lever connected to the said rod by an auxiliary rod —36— which is pivotally connected at one end to the lever as indicated at —37— and pivotally connected at its opposite end to a collar —38— on the rod as indicated at —39—, said collar being fastened to the rod —25— by means of a transverse pin —40— passing through the parts as clearly illustrated in Figs. 1 and 2.

In order to form the undercut groove

—c— across the shingle, I provide a correspondingly shaped core-plate —41— extending across the top of the box at the rear end thereof. This core-plate is supported at its ends removably on opposite sides of a rectangular frame —42— which is pivoted at its rear end to the corresponding end-wall of the box —1—. To effect the attachment of the said frame —42— I form the rear-wall of the box with two oppositely disposed perforated ears —43—43— and provide the side members of the said frame with coinciding apertures through which apertures pass bolts —44—44—. This frame is adapted to rest upon the side walls of the box —1— and by pivoting the same as shown it may be thrown upwardly as is required for the purpose of removing the bed-plate from the box and replacing it therein. The aforesaid core-plate —41— is preferably seated in correspondingly shaped recesses —41*—41*— in the side members of the frame —42—. The front end of the frame —42— has attached to it a sheet-metal plate —45— having its top surface disposed flush with the top of the frame to serve as a guard. To produce the locking-hook —b— of the shingle as represented in Fig. 9 of the drawings, the bed-plate —5— has its forward end portion slightly depressed as indicated at —46— and upon this depressed portion is disposed a removable transverse core-plate —47— as clearly illustrated in Fig. 3. The rear edge of this core-plate is beveled correspondingly with the front edge of the aforesaid core-plate —41— so that the locking-hook thus formed will fit the undercut of the groove produced by the plate —41*—.

In the operation of the machine the frame —42— is swung upward, and after placing the bed-plate —5— in the box —1— the core-plate —47— is placed upon the said plate so as to abut against the front wall of the box. The concrete or other plastic composition is deposited in the box in sufficient quantity to fill the box with exception of a small portion of its rear end. When the box is thus filled a smoothing-plate —48— is drawn forwardly along the top of the box —1— for finishing the upper or front surface of the shingle. This smoothing-plate is preferably provided on its under side with a series of ribs —49—49— for the purpose of forming longitudinal grooves in the said surface. This smoothing-bar is formed on its under side with two perforated lugs —50—50— disposed at opposite end portions thereof and through said lugs pass parallel rods —51—51— which are pivoted at their rear ends by means of bolts —52—52— to perforated ears —53—53— formed on the rear end of the box, said rods serving as guides for the said lugs incident to the movement of the bar. By pivoting the said

rods as described the smoothing-bar may be swung up out of the way. After this smoothing-bar has been manipulated, the operator deposits an additional amount of the concrete into the box so as to completely fill the rear end portion thereof, whereupon the aforesaid frame —42— is swung downward and then the core-plate —41— is set in the recesses —41*— in the side members of the frame whereby the said core-plate is caused to form the undercut groove in the front of the shingle. A trowel or other implement may be then used to remove the superfluous amount of concrete which may be above the frame so as to produce a surface which is flush with the said frame. Following this operation the attendant removes the core-plate —41— and swings the frame —42— upward as before stated in which position it may be retained by any suitable means. It will also be understood that any convenient device may be employed for retaining the smoothing bar in its raised position. It is obvious that by packing the concrete firmly in the rear end portion of the box, the aforesaid depression or recess —8— in the corresponding end portion of the bed-plate will become filled with the concrete so as to form the hook on the back of the shingle —a— as represented in Figs. 8 and 9, and at the same time the inclined plate —9— disposed at the rear side of the depression will produce the undercut surface of the hook. It will be understood that the bottom side of the transverse member of the frame —42— is shaped to conform to the groove formed in the upper or front surface of the shingle which was produced by the aforesaid smoothing-bar —48—. When the shingle is thus molded the frame —42— is swung upward out of the way and the lever —3— is lifted from the slot —4— in the side wall of the box so as to unlock the front wall —1*— to allow the latter to be swung forwardly. The operator now depresses the foot-lever —34— whereby the rod —25— is caused to lift the plate —24—. By this movement of the plate —24— the lever —18— draws the core-plate —9— downward so as to clear the depression —8— of the bed-plate, and at the same time the posts —27—27*—27*— are caused to come in contact with the bottom of the bed-plate so as to lift the latter and thus allow the bed-plate to be readily removed from the box. It will be understood that when the bed-plate is thus removed it is to be placed in any suitable locality to allow the molded shingle to become firmly hardened. Upon removing the bed-plate, the operator releases the foot-lever whereupon the spiral-spring —13— draws the core-plate —9— up to its normal position and at the same time causes the plate —24— to be lowered to its normal position.

I prefer to provide the bottom of the box —1— with openings in order to allow the box to be readily cleaned as required.

What I claim is:—

1. In a machine for molding composite shingles of the type specified, the combination of a suitably supported horizontally disposed box, a bed-plate disposed removably in said box, means supported below the box for lifting said bed-plate, an inclined sliding core-plate supported on the box and drawn downward by the said lifting-means, means automatically drawing said core-plate upward, and a manually operated lever for actuating said lifting-means as set forth.

2. In a machine for molding composite shingles of the type specified, the combination of a suitably supported rectangular box disposed horizontally, a bed-plate supported removably in said box, inclined guides depending from the box, a core-plate sliding in said guides, transverse core-plates disposed removably above the bed-plate, a spring drawing said sliding core-plate upwardly, and manually operated means for simultaneously drawing the latter core-plate downward and lifting the said bed-plate as set forth.

3. In a machine for molding composite shingles, the combination of a suitably supported horizontally disposed box, a bed-plate disposed removably in said box, a smoothing-bar supported longitudinally movable upon the box, and adapted to be removed therefrom, a pair of parallel rods pivotally connected at one end to the box and engaging the smoothing bar for guiding the latter, and means for lifting said bed-plate as set forth.

4. In a machine for molding composite shingles of the inter-locking type, the combination of a suitably supported horizontally disposed rectangular box, a bed-plate supported removably in said box, and provided with an opening in one portion, a sliding core-plate movable through the said opening, transverse core-plates disposed removably above the bed-plate a smoothing-bar supported longitudinally movable upon the box, and means for lifting said bed-plate and actuating said sliding core-plate as set forth.

5. In a machine for molding composite shingles, the combination of a suitably supported rectangular box disposed horizontally, a bed-plate supported removably and vertically adjustable in said box, a smoothing bar movable along the top of the box and having a hinged connection therewith, a mechanism for lifting said bed-plate, and a manually operated lever for actuating said mechanism as set forth.

6. In a machine for molding composite shingles, the combination of a horizontally

disposed rectangular box, a bed-plate supported removably in said box and provided at one end portion with a transverse opening, inclined guides on the bottom of the box, a core-plate sliding in said guides movable through the bottom of the box and having its upper end adapted to enter the opening of the bed-plate, means for raising and lowering the said core-plate and for lifting the bed-plate as set forth.

7. In a machine for molding composite shingles, the combination of a suitably supported rectangular box disposed horizontally, a bed-plate disposed removably in said box and provided at one end with a depression and a transverse opening at the back side of the depression, an inclined core-plate movable through the bottom of the box and having its upper end adapted to enter the opening in the bed-plate, a spring drawing the core-plate upwardly, and manually operated means for moving the said core-plate downwardly as set forth.

8. In a machine for molding composite shingles, the combination of a suitably supported

rectangular box disposed horizontally, a bed-plate disposed in the box, means for adjusting said bed-plate vertically, a vertically movable plate disposed below the box and provided with posts passing through the bottom of the box for engaging the bed-plate, and means for lifting said lower plate whereby the posts are caused to lift the bed-plate as set forth.

9. In a machine for molding composite shingles, the combination of a suitably supported rectangular box disposed horizontally, a bed-plate supported vertically adjustable in the box and removable therefrom, a transverse core-plate disposed removably upon the bed-plate, at one end of the box, an upwardly swinging frame pivoted to the opposite end of the box and adapted to rest upon the side walls thereof, and a transverse core-plate mounted detachably on said frame as set forth.

FRED LATULIP.

Witnesses:

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