

I. J. WEBSTER,
HEEL BUILDING MACHINE.
APPLICATION FILED FEB. 10, 1909.

1,137,041.

Patented Apr. 27, 1915.

4 SHEETS—SHEET 1

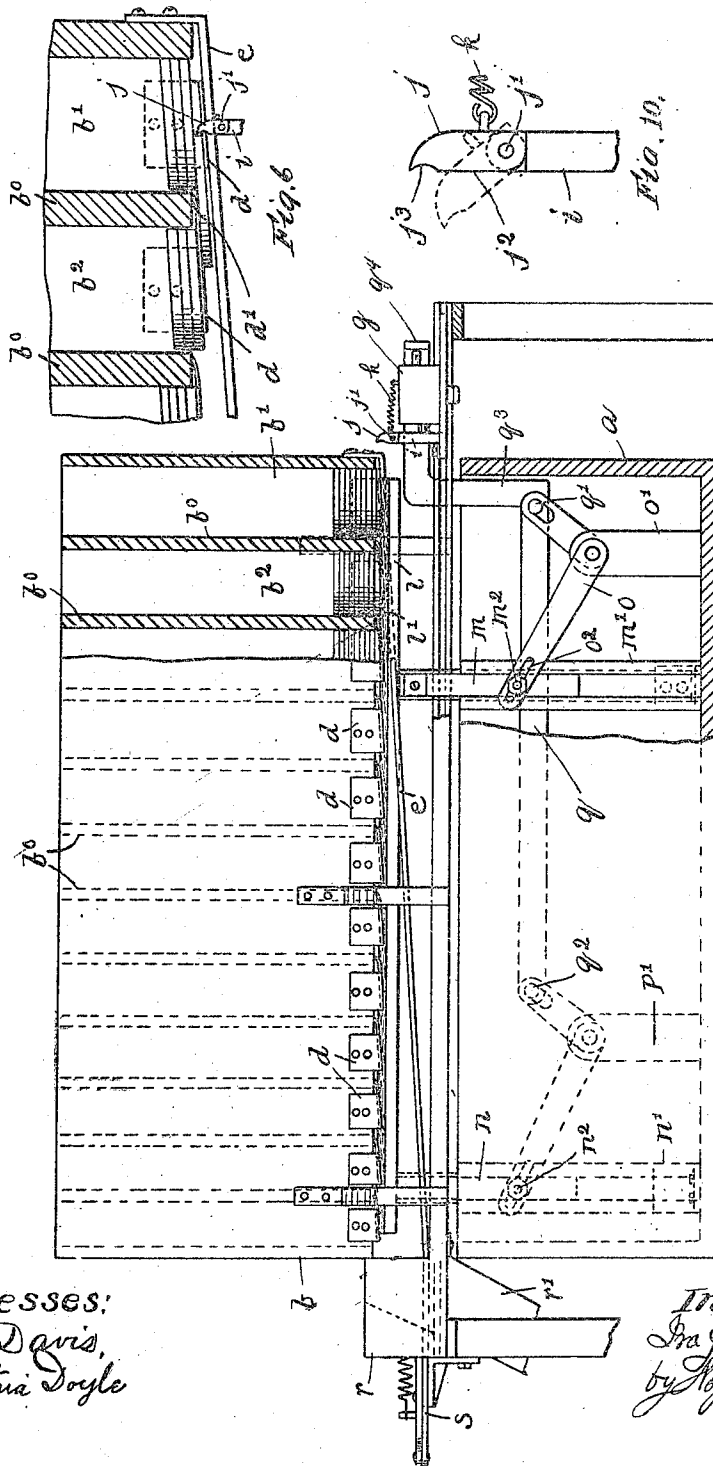


Fig. 1.

Inventor,
Ira J. Webster
by Roger H. Hamlin
Att'y

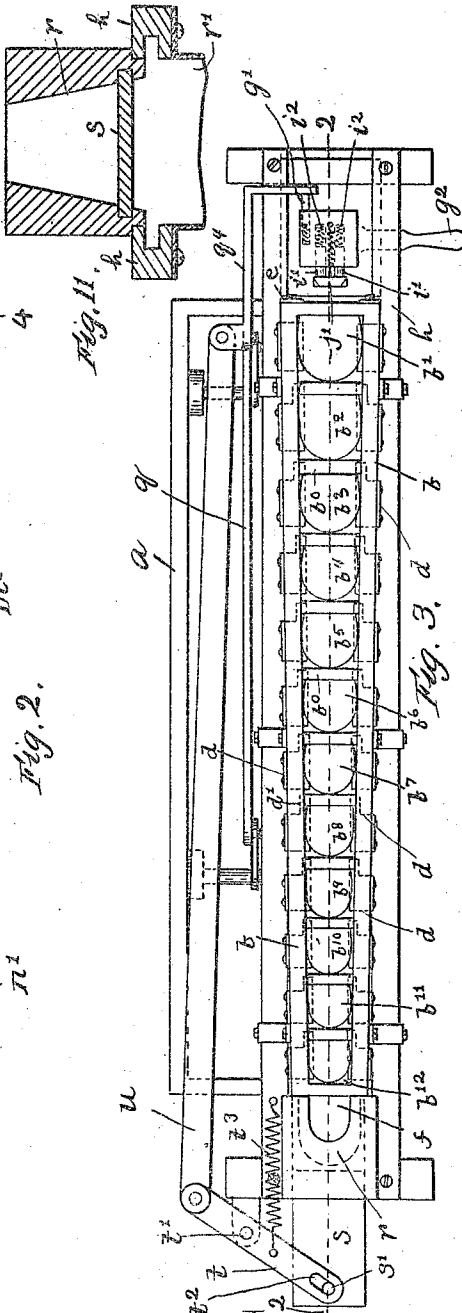
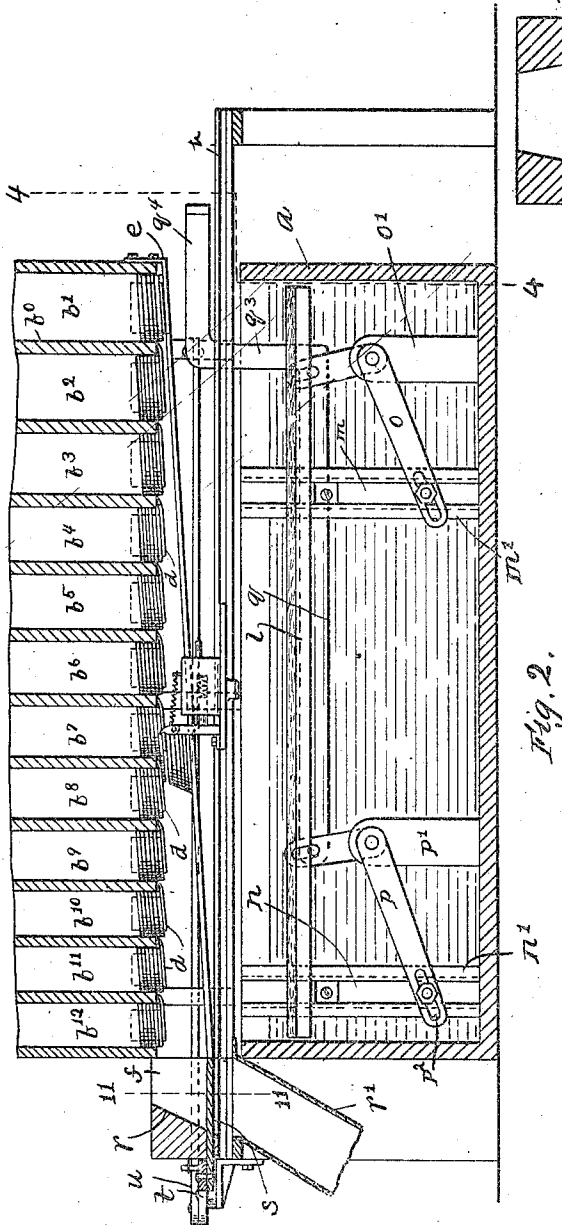
Witnesses:
H. B. Davis,
Cynthia Doyle

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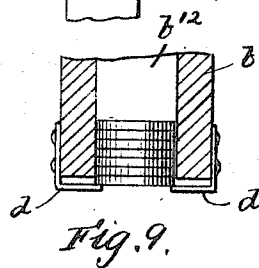
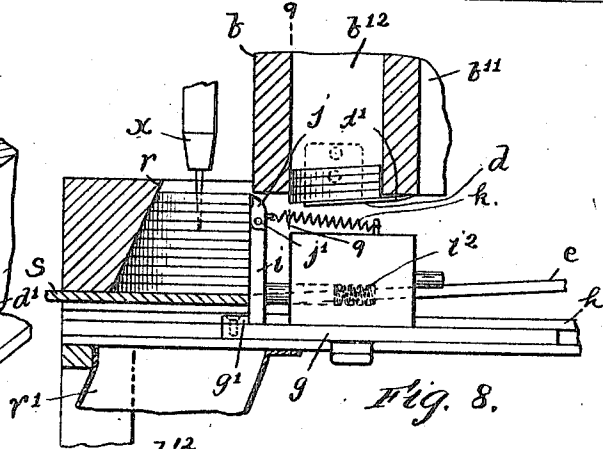
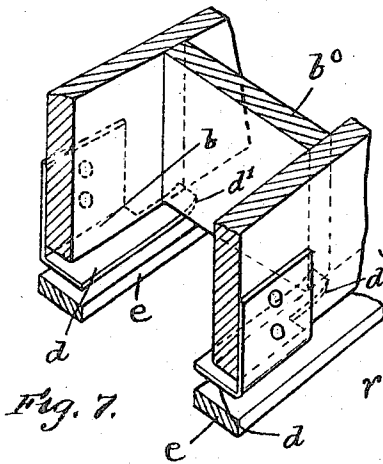
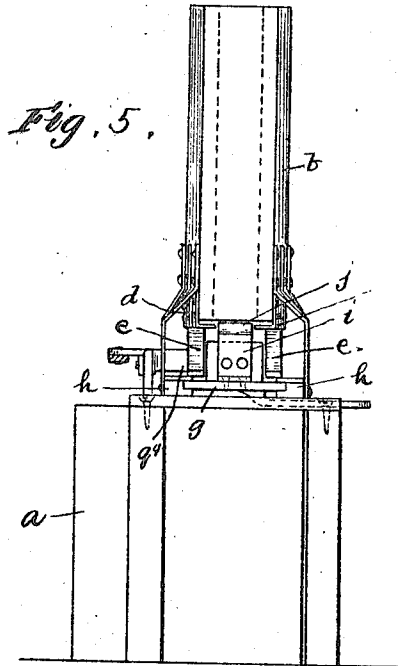
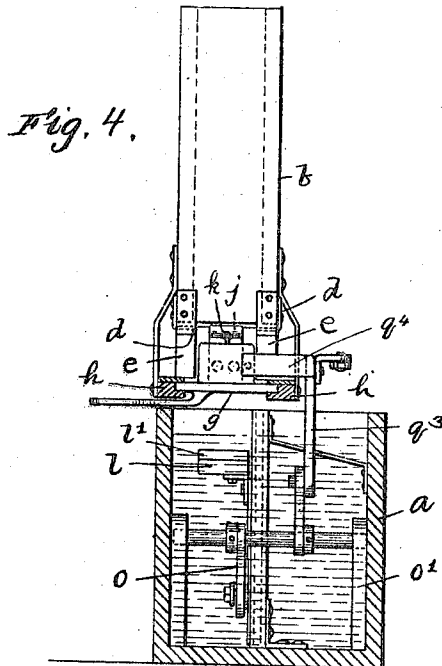
Witnesses:
H. B. Davis
Cynthia Doyle

Inventor.
I. J. Webster
By Robert Harriman
Att'y

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4 SHEETS—SHEET 3.



Witnesses:
H. B. Davis,
Cynthia Doyle

Inventor:
Ira J. Webster
by *Hoyes & Kinnison*
Attys

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4 SHEETS—SHEET 4.

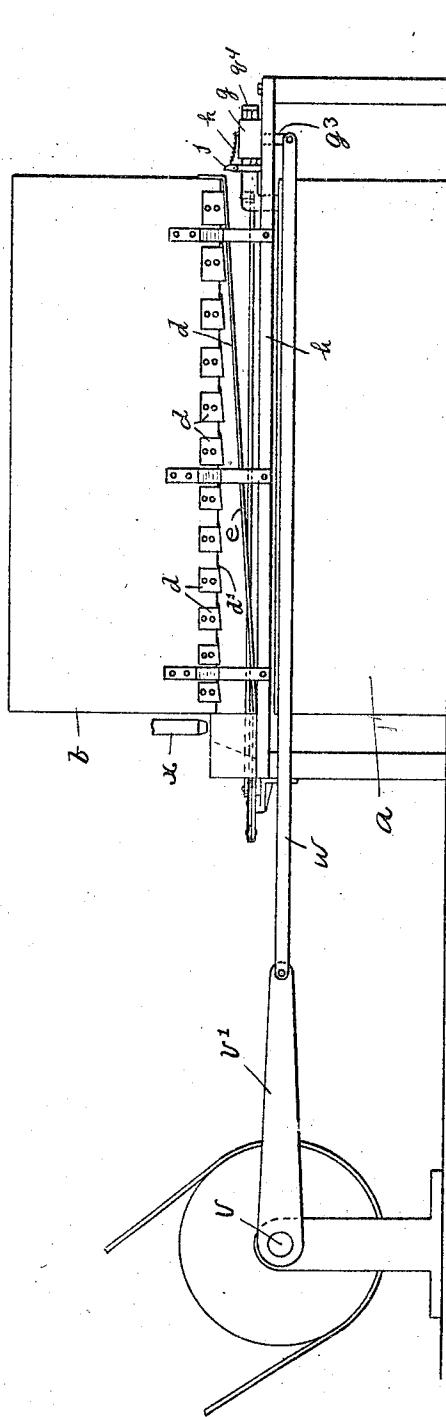


Fig. 12.

Witnesses:
H. B. Davis,
Cynthia Doyle.

Inventor:
Ira J. Webster
by Royce Hamman
Atty's

UNITED STATES PATENT OFFICE.

IRA J. WEBSTER, OF HAVERHILL, MASSACHUSETTS.

HEEL-BUILDING MACHINE.

1,137,041.

Specification of Letters Patent.

Patented Apr. 27, 1915.

Application filed February 10, 1909. Serial No. 477,064.

To all whom it may concern:

Be it known that I, IRA J. WEBSTER, of Haverhill, county of Essex, State of Massachusetts, have invented an Improvement in Heel-Building Machines, of which the following is a specification.

This invention relates to that class of machines which are used in assembling, cementing, and fastening together the lifts of heels, this operation being one of the steps in the process of heel manufacture.

So far as I am aware, the devices for this purpose, which are in most general use, merely comprise a form into which the lifts are placed by hand, and which acts to hold the lifts in their desired relative positions, while they are being nailed together.

The object of my invention is to produce a heel-assembling machine which will automatically cement and then collect the different lifts which are designed to make up a single heel and deliver them, already assembled, to the heel form, so that the whole operation of building the heel will be greatly facilitated.

I accomplish this object by providing a series of chambers, each adapted to contain a stack of heel-lifts, and a cement-applying means, which is adapted to apply cement to the bottom lift of each stack, in connection with an operating device which is adapted successively to remove one lift from the bottom of each stack and deliver said lifts assembled in the desired relation to a heel-form, in which the lifts may be fastened together.

For a more complete description of my device, reference is made to the accompanying drawing, in which,

Figure 1 is a side elevation, partly in section, of a heel-assembling machine made according to my invention. Fig. 2 is a sectional view thereof on the line 2—2 of Fig. 3. Fig. 3 is a plan view. Fig. 4 is a cross sectional view on the line 4—4 of Fig. 2. Fig. 5 is an end elevation. Fig. 6 is a detail sectional view of the bottom portion of the first two chambers, taken at the line 2—2 of Fig. 3. Fig. 7 is a detail perspective view of a pair of the heel-supports. Fig. 8 is a detail view, similar to Fig. 6, of the discharge end of the machine. Fig. 9 is an enlarged section on line 9—9 of Fig. 8. Fig. 10 is a detail view of the lift-engaging dog. Fig. 11 is an enlarged sectional view at the line

11—11 of Fig. 2. Fig. 12 is a side elevation showing my device as provided with automatic reciprocating mechanism.

According to my invention I provide a rectangular cement tank *a*, which is preferably much longer than it is wide, and a flat casing *b*, which is of the same length as said tank, and is supported directly thereover. Said casing is open at top and bottom and is provided with a series of vertical partitions *b'* therein, forming vertical heel-lift receiving chambers *b'*, *b*², *b*³, *b*⁴, *b*⁵, *b*⁶, *b*⁷, *b*⁸, *b*⁹, *b*¹⁰, *b*¹¹, *b*¹² therein, the number of said chambers corresponding to the number of lifts of which any heel which is to be assembled is to be composed and said chambers being adapted to receive lifts of different sizes which regularly decrease from the right hand chamber *b'* to chamber *b*¹², according to the successive sizes of lifts which are employed in building the heel. The height of said chambers is sufficient to enable a large number of lifts to be placed therein at one time. The size of each chamber is so proportioned to the particular heel lift which it is adapted to receive, that the lift, when placed flat therein, with its breast edge to the right, will be held from horizontal movement, but will be free to fall. At each side of each chamber, and at the lower end thereof, I provide a pair of oppositely disposed supports *d* in the form of thin plates which extend for a short distance beneath the open end of the chamber at each side thereof, so that, when a lift is placed in the chamber, it will be supported at its side edges upon said supports, as shown in Fig. 9. Said supports are arranged so that the under sides of the lifts which are directly supported thereon are adjacent the same horizontal plane, each being arranged in a slightly downwardly inclined position, the lower ends thereof being next the left or discharge end of the machine, and, as each support is inclined to the same extent said supports are held in parallel and the lifts which they support are correspondingly inclined. The inclination and arrangement of said supports is such that the perpendicular distance between the planes of each pair of supports is slightly greater than the thickness of the lifts to be assembled. The right hand ends of all of said supports *d* except those beneath the first chamber *b'*, are provided with extensions *d'* having slightly upturned ends, as best shown

in Figs. 6 and 7, each of said extensions d' extending beneath the next adjacent partition b^o and the upturned ends thereof bearing against the lower ends of said partitions.

- 5 Said supporting plates d are so arranged with relation to the thickness of the lifts which are to be placed in said chambers, that the bottom lifts of each stack will be held below the level of the lower ends of the sides
10 of the casing b and its partitions b^o . The inclination of said plates d is sufficient to hold the upper sides of said lower lifts, at their lower ends, well below the lower ends of the next adjacent partitions, so that they will
15 be free to be slid down said plates beneath said partitions, and the upturned ends of said extensions d . The lifts which are directly supported on the bottom lifts are held above the lower ends of the partitions, as
20 best shown in Fig. 6, and will, therefore, be retained in the chambers when the bottom lifts are slid from beneath them.

- A pair of supporting guideways e are also provided at each side of the chambers
25 directly beneath the corresponding supporting plates d , see Figs. 5 and 7, said guideways extending the entire length of the casing and being inclined downwardly to the same extent as said supports, and carried to
30 the level of the bottom of a receiving-chamber or reel-form f at the discharge or left hand end of the casing. Said guideways e at their upper ends extend close to the under sides of the supports d which are located
35 beneath the first chamber b' , as shown in Fig. 6.

- A carrier g is mounted to slide in guideways h secured to the upper edges of the sides of the tank, said guideways being so
40 arranged that said carrier may slide thereon, directly beneath the lower ends of said chambers throughout the entire length of the casing, and also for a suitable distance to the right thereof, as shown in Fig. 1. A
45 lift-engaging abutment plate i is mounted on said carrier g in a vertical position, said plate having a pair of supporting pins i' at the rear side thereof which are reciprocally mounted in said carrier g , springs i^2 being
50 provided between the rear ends of said pins and the bottoms of the chambers in which they are located, and acting normally to hold said plate against a stop g' on the carriage, see Fig. 8. A dog j is pivotally con-
55 nected to the upper end of the plate i by a rule joint j' , and said dog has a lift engaging face j^2 at its left hand side, which, in the normal or upright position of said dog, is continuous with the face of said plate i .
60 The face j^2 is preferably provided with a transverse lift-engaging groove j^3 as shown in Fig. 10. The upper end of said dog is beveled or rounded from its face side, as best shown in Fig. 10, and a spring k acts
65 to hold said dog in upright position with

the shoulder of its joint j' in engagement with the shoulder of the plate i , said spring permitting said dog to swing forwardly, as indicated in dotted lines in Fig. 10. The width of said plate i and dog j is slightly 70 less than the distance between the opposite edges of the supporting ways e , and the opposite edges of each pair of supports d , to permit said plate and dog to pass freely therebetween when said carrier g is moved 75 on its guideways.

A cement carrier is mounted in the tank which comprises a bar l having a soft absorbent pad l' on its upper surface, said bar l being mounted on the upper ends of a
80 pair of vertically disposed bars m , n , said bars being adapted to slide longitudinally in vertical slots formed in brackets m' , n' mounted on the bottoms of the tank.

A pair of bell-crank levers o and p are
85 mounted on brackets o' , p' , also mounted on the bottom of the tank, one arm of the lever o being pivotally connected to the sliding bar m by means of a pivot m^2 and the corresponding arm of the lever p being con-
90 nected to the bar n by a pivot n^2 , said pivots passing through slots o^2 , p^2 , in said levers respectively to permit a loose motion therebetween. The other arm of said levers o
95 and p are respectively connected to a horizontal bar q by means of pivots q' , q^2 , said bar being bent and extended at its end to provide an upwardly extending portion q^3 , and a horizontal angular portion q^4 , the
10 end portion of which extends transversely of the path of the carrier g , which is provided with a spring pressed buffer g' , disposed to engage said end portion q^4 , as the carriage nears the end of its return move-
105 ment, as hereafter explained.

The heel form f , the sides of which conform to the shape of the heel to be built, is arranged at the opposite end of the path of said carrier, beyond the lower end of the
110 last chamber b^{12} , and a supporting slide s is provided which forms a continuation of the supporting ways e and acts as a bottom to the form, and closes the upper end of a discharge tube r .

An operating lever t is mounted on a pivot
115 t' and is connected to the slide s at one end by a pivot s' which engages said lever in a slot t^2 , and at the other end is connected by a link u to the bar extension q^3 . A spring t^3 acts normally to hold said slide in position
120 to close the opening leading to tube r .

Means for reciprocating the carrier g automatically are preferably provided, as shown in Fig. 12, although it may, obviously, be reciprocated by hand, in which instance the carrier is provided with a handle
125 g^2 which preferably projects from the front side thereof. The automatic means shown in Fig. 12 comprise a constantly driven shaft v having a crank v' and a connecting
130

rod *w* which is pivotally connected to said crank and an arm *g*³ on the carrier.

The tank *a* having been filled with cement to the desired depth, and each chamber having been partly or nearly filled with heel lifts of sizes corresponding to the chambers, the operation is as follows. The carrier *g* is moved back to its extreme right hand position, and as it approaches said position its buffer *g*¹ engages the bar extension *q*⁴, causing the same to draw the bar *q* in the same direction. This movement causes the levers *o* and *p* to be swung on their pivots from the position of Fig. 2 to the position of Fig. 1, thereby causing the pad *l*¹ which has previously been submerged in the cement and become thoroughly saturated therewith, to be raised into engagement with the bottom lift of the stack, in each chamber, so that the under side of each lift is completely covered with cement, with the exception of the small side edge portion thereof, which rests on the corresponding support *d*, and which is covered by the excess of cement when the lifts are finally pressed together. The carrier *g* is then moved to the left, and, as soon as it is moved from its extreme retracted position of Fig. 1, the cementing bar will be permitted to fall back to the position of Fig. 2, out of the path of the carrier. As the carrier is advanced the grooved portion *j*³ of the face of dog *j* will be carried into engagement with the breast edge of the lowest lift in the first chamber *b*¹, and push the same from beneath the other lifts in this chamber. The upturned ends of the adjacent extensions *d*¹ will deflect the lift downward beneath the supporting plate *d* of the next chamber *b*², as best shown in Fig. 6, and, as soon as it is pushed beyond the end of the supports *d*, which are beneath the first chamber *b*¹, it will fall onto the inclined guideways *e*, and be pushed along on said guideway, by the dog *j*, directly beneath the lift on the supports *d* of the next chamber *b*². The dog *j* then engages said lowest lift in said chamber *b*², and likewise pushes it from beneath the stack of lifts therein, and, in the meantime, the first lift has been pushed along to the same extent, so that the second lift will fall on the first lift when it is pushed free of its supports. This operation is continued successively as the carrier is moved beneath each chamber, the dog *j* and plate *i* being pressed against the breast portions of the lifts, and pushing the lifts along on the guideways *e*, so that a heel is assembled as the carrier is advanced, as shown in Fig. 2, and is completely assembled as the carrier passes beneath the last chamber *b*¹². The distance between the guideway *e* and the supports *d* is increased at the same rate as that at which the heel increases in thickness, as it is advanced, so that each lift is carried directly on the next

lift and has no opportunity to become misplaced. The movement of the carrier is sufficient to enable the plate *i* to press the back of the heel thus built firmly against the corresponding sides of the form *f*, and, so that the lifts will all be moved into the desired relation, the springs *i*² permitting the plate *i* to yield if necessary. While the heel is thus firmly pressed into the form *f* and held in this position by the plate *i*, the lifts are secured together by a nail, a nailing device, indicated at *x*, being provided over the form *f* for this purpose, and being adapted to drive a nail through the middle of the heel. The carrier is then returned to the initial position and, in the latter portion of said movement, its buffer *g*¹ engages the end portion *q*⁴ of bar *q*, causing said bar *q* to be drawn in the same direction, and again raising the cement pad *l*¹ into engagement with the bottom lifts as the carrier finishes its movement. This movement of the bar *q* also draws link *u* in the same direction, and throws the lever *t* so as to withdraw the slide *s*, and permit the heel to fall from the form. As soon as the carrier is moved out of engagement with the bar *q* on the next forward movement of the carrier *g*, the spring *t*³ acts to return the slide to its normal position and the cementing bar *l* is lowered, as before described, and the operation repeated. The heel lifts may thus be rapidly assembled with the cement therebetween and then fastened and discharged from the machine.

It will be noted that as the dog *j* extends above the level of the lowest lifts in the stacks, it would engage said lifts on the return movement of the carrier, but, as it is permitted to swing forward, by reason of its jointed connection with the plate *i*, it may be swung down by the lifts, as it engages them on the return movement, so that said movement will not be interfered with.

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

1. In a heel-building machine, a series of heel-lift holders arranged in a row, means for applying cement simultaneously to the lifts held by said holders, and means to move said lifts one over another, to collect them in a pile.

2. In a heel-building machine, a series of heel-lift holders arranged in a row, means for simultaneously applying cement to a series of lifts while held by said holders, and means, movable longitudinally of said row, to remove the cemented lifts from their respective holders, successively, and to move one onto the next, as they are removed, to form an assembled heel.

3. In a heel-building machine, a series of holders constructed to hold a series of heel-

lifts with one side thereof exposed, means to apply cement simultaneously to the exposed faces of the lifts while held by said holders, and means to assemble the cemented lifts in heel form.

4. A heel-building machine comprising a series of heel-lift holders, means for simultaneously applying cement to a series of lifts held by said holders, means for successively removing a cemented lift from each holder, and means for receiving the lifts and holding them face to face as they are removed, substantially as described.

5. A heel-building machine comprising means for supporting a series of stacks of superimposed heel lifts means for simultaneously applying cement to the under sides of the bottom lifts of said stacks, means for successively removing the cemented lifts, and supporting means for receiving the lifts in superimposed position as they are removed, substantially as described.

6. A heel-building machine comprising means for supporting a series of stacks of superimposed heel lifts with a portion of the lower sides of the lower lifts exposed, means for simultaneously applying cement to said exposed portions of said lower lifts, means for successively removing the cemented lifts from each stack, and means for receiving and supporting said cemented lifts in superimposed position as they are removed, substantially as described.

7. A heel-building machine comprising means for supporting a series of vertically disposed stacks of superimposed heel lifts, means to apply cement to the under side of the bottom lift of each stack, an engaging device horizontally movable beneath each stack successively to engage the bottom lift thereof and slide the same from beneath the stack, and means for conducting each lift beneath the discharging position of the succeeding lift to hold the discharged lifts in superimposed position, substantially as described.

8. A heel-building machine comprising a series of lift-holders, means to apply cement to the under sides of the lifts held in said holders, a lift receiving guideway extending beneath said holders, and means for successively sliding the lifts from said holders, to permit the lifts to fall on said guideway, and for simultaneously moving the discharged lifts along said guideway beneath the discharging position of the succeeding lifts to cause the same to become superimposed on the guideway, substantially as described.

9. A heel-building machine comprising a series of lift-holders having the delivery ends thereof arranged approximately in the same plane, a stationary lift receiving guideway extending beneath said holders,

and a lift-engaging device movable in a path approximately parallel to said plane, successively to slide the lifts from said holders, to permit the lifts to fall on said guideway and for simultaneously moving the discharged lifts along said guideway beneath the discharging position of the succeeding lifts to cause the same to become superimposed on the guideway, said guideway being arranged to extend obliquely to said plane from a position adjacent the point at which the first lift is discharged to a position at a distance below the point at which the last lift is discharged as great as the height of the heel which is assembled, substantially as described.

10. A heel-building machine comprising a series of vertically disposed chambers arranged side by side and each adapted to contain a stack of superimposed lifts, a pair of supports disposed at the sides of each chamber at the lower end thereof to engage opposite edge portions of the bottom lifts therein, a cement-carrier movable between said supports into engagement with the under sides of said bottom lifts, a lift-engaging device horizontally movable between said supports to slide said bottom lifts therefrom successively in the direction in which said device is moved, and means for receiving the lifts in superimposed position as they are discharged from said supports, substantially as described.

11. A heel-building machine comprising a series of vertically disposed chambers arranged side by side and each adapted to contain a stack of superimposed lifts, a pair of supports disposed at the sides of each chamber at the lower end thereof to engage opposite edge portions of the bottom lifts therein, a pair of guideways extending beneath said supports at the sides of said chambers, a cement carrier vertically movable between said supports and said guideways into engagement with said bottom lifts, and a lift-engaging device extending between said guideways and said supports and movable to engage the cemented lifts to discharge them from said supports, successively, onto said guideways and to slide the discharged lifts along said guideways into position to receive the succeeding lifts thereon as they are discharged, substantially as described.

12. A heel-building machine comprising a series of adjacently disposed heel-lift supports arranged adjacent the same horizontal plane, means to cement the under sides of the lifts supported thereon, and an engaging device movable horizontally successively to engage a lift and slide the same from its support, and conduct it beneath the positions at which the succeeding lifts are discharged, substantially as described.

13. A heel-building machine comprising a

series of adjacently disposed holders for containing a plurality of superimposed heel lifts and having lift-supporting plates at their bottoms arranged in approximately parallel, declining positions and at distances apart sufficient to permit a lift to be passed therebetween, a lift-engaging device movable beneath said plates at an approximately uniform distance therefrom successively to engage the lifts supported thereon and to discharge them therefrom beneath the succeeding plates, and a lift-support arranged beneath said series of plates to receive the lifts successively as they are removed from the plates by said engaging device, and extending divergently from the path of movement thereof, substantially as described.

14. A heel-building machine comprising a series of lift-supporting plates adjacently disposed in approximately parallel planes, the corresponding ends of said plates being respectively arranged adjacent and above the opposite ends of the next preceding plates and at perpendicular distances therefrom sufficient to permit a lift to pass therebetween, and a lift-engaging device movable in a path oblique to the planes of said plates successively to engage the lifts supported on said plates to slide the lift on one plate beneath the lift of the next succeeding plate, substantially as described.

15. A heel-building machine comprising a series of declining lift-supporting plates disposed in approximately parallel planes with the upper end of each plate adjacent the lower end of the next adjacent plate and at a distance thereabove sufficient to permit the lifts to pass therebetween, and a lift-engaging device movable in an approximately horizontal path into successive engagement with the lifts on said plates to slide the lifts downwardly thereon beneath the succeeding plates, substantially as described.

16. In a heel-building machine, a series of heel-lift holders arranged in a row to hold a series of heel lifts in correspondingly disposed positions, a stationary abutment at one end of said row, and lift-engaging means, movable from the opposite end of said row to collect the lifts, successively, therefrom into a pile, and push them against said abutment at the end of its collecting movement, thereby to assemble the lifts and hold them in heel-form between said abutment and said engaging means.

17. In a heel-building machine, a series of holders arranged in a row to hold a series of heel lifts in correspondingly disposed positions, a heel receiver at end of said row having a heel-forming abutment shaped to correspond to the ends of the lifts which face toward said abutment when on said supports, and lift-engaging means movable in line with said row, to engage the opposite

ends of the lifts held on said holders and move them from said holders one onto the other, to collect them in a pile, and press the pile against said abutment and hold the lifts in heel form.

18. A heel-building machine comprising a series of lift-holders adapted to hold a series of lifts in approximately the same plane with the breast edges thereof facing in the same direction, a heel-form disposed at one end of, and opening at its breast side toward said series, and a lift engaging device movable toward said form in a path successively to engage the breast edges of the lifts in said holders and to discharge the same in superimposed position into the heel-form, substantially as described.

19. A heel-building machine comprising a series of lift-holders adapted to hold a series of lifts in approximately the same plane with the breast edges thereof facing in the same direction, a heel-form disposed at one end of, and opening at its breast side toward said series, a lift-engaging device movable from the opposite end of said series into successive engagement with said lifts to discharge the same from said holders, supporting means for receiving said lifts as they are discharged, and means connected to said engaging device for moving the discharged lifts beneath the discharging positions of the succeeding lifts and for thereafter forcing the lifts in superimposed position into said form through its open side, substantially as described.

20. A heel-building machine comprising a series of lift-holders arranged in line, a heel-form at one end of said line of holders and opening thereto at its adjacent side, and lift-engaging means movable from the opposite end of said line successively to remove a lift from each holder and deliver said lifts in superimposed position into said form, substantially as described.

21. A heel-building machine comprising a series of lift-holders arranged in line, a heel-form at one end of said line of holders, and opening at its side toward said holders, and a lift-engaging means movable from the opposite end of said line of holders successively to remove a lift from each holder, said engaging means having a pressure plate for engaging corresponding edges of said lifts after they have been removed from the holders to conduct them through the open side of said form and press them against the opposite walls thereof, substantially as described.

22. A heel-building machine comprising a series of lift-holders, a lift-engaging device reciprocally mounted beneath said holders for successively removing the lifts therefrom, a cement-carrier disposed beneath said holders, and connections between said engaging device and said carrier for lifting

said carrier into engagement with said lifts in a predetermined position of the engaging device, substantially as described.

23. A heel-building machine comprising a series of lift-holders, a lift-engaging device reciprocally mounted beneath said holders for successively removing the lifts therefrom, a cement-carrier disposed beneath said holders, and connections between said engaging device and said carrier for lifting said carrier into engagement with said lifts when said device is adjacent one end of its reciprocal movement, substantially as described.

24. A heel-building machine comprising a series of lift-holders each adapted to hold a stack of superimposed heel-lifts, a lift-engaging device reciprocally mounted beneath said holders and movable to remove a lift from the bottom of each stack successively, and to one side thereof at one end of its movement, a cement-carrier disposed beneath said holders, and means, operated by said engaging device when in position at one side of said holders for moving the carrier across the path of said engaging device into engagement with the lower lifts of said stacks and for moving it away from said lifts and out of said path as the engaging device is advanced to remove the lifts, substantially as described.

25. A heel-building machine comprising a series of lift-holders, a lift-engaging device reciprocally movable beneath said holders for successively discharging the lifts therefrom, a heel-form disposed at one end of the path of movement of said engaging device, means, coacting with said engaging device for moving the discharged lifts into said form in superimposed position, and means operated by said engaging device for discharging the heel from said form, substantially as described.

26. A heel-building machine comprising a series of lift-holders, a reciprocally mounted lift-engaging device movable in one direction beneath said holders successively to discharge the lifts therefrom, a heel form disposed at one end of the path of said movement, means, coacting with said engaging device for moving the discharged lifts into said form in superimposed position at the end of said movement, and means for discharging the heel from said form, operated by said engaging device as it is moved in the opposite direction, substantially as described.

27. A heel-building machine comprising a series of lift-holders arranged in line, a carrier reciprocally mounted beneath said holders, said carrier having a lift-engaging dog pivotally mounted thereon, and a spring for normally holding said dog in position to engage the edges of the lifts to discharge them from said holders, as said carrier is moved in one direction and permitting the

dog to swing to one side of its engaging position as the carrier is moved in the opposite direction, substantially as described.

28. A heel-building machine comprising a casing having a series of vertically extending partitions therein providing a series of chambers each adapted to contain a stack of superimposed heel-lifts, a pair of supports disposed at opposite sides of said chambers at the lower ends thereof in position to hold corresponding ends of the bottom lifts in said stacks, each below the lower end of the adjacent partition and the next lift thereabove in engagement with said partition, and an engaging-device movable into successive engagement with the ends of said bottom lifts opposite said corresponding ends of said lifts to slide the same from said supports, substantially as described.

29. A heel-building machine comprising a casing having a series of vertically extending partitions therein providing a series of chambers each adapted to contain a stack of superimposed heel-lifts, a pair of supports disposed at opposite sides of said chambers at the lower ends thereof in position to hold corresponding ends of the bottom lifts in said stacks, each below the lower end of the adjacent partition and the next lift thereabove in engagement with said partition, an engaging-device movable into successive engagement with the ends of said bottom lifts opposite said corresponding ends of said lifts to slide the same from said supports, and deflecting devices extending from said supports to the lower ends of said partitions in position to direct each lift beneath the next succeeding support as it is moved from the support on which it is held, substantially as described.

30. A heel-building machine comprising a series of chambers arranged in line, each adapted to hold a stack of superimposed heel-lifts therein, a heel-form arranged at one end of said line of chambers and opening at one end thereto, a lift-engaging device, and means for automatically reciprocating said device beneath said chambers and for causing the same when moved toward said receiver, to discharge the bottom lift from each chamber and move the discharged lifts in superimposed position into said receiver, substantially as described.

31. A heel-building machine comprising a series of chambers arranged in line, each adapted to hold a stack of superimposed heel-lifts therein, a heel-receiver at one end of said line of chambers, a lift-engaging device, means for automatically reciprocating said device beneath said chambers and for causing the same, when moved toward said receiver, to discharge the bottom lift from each chamber and move the discharged lifts in superimposed position into said receiver, and means actuated by said reciprocating

means, for automatically discharging the heel from said receiver on the return movement of said engaging-device, substantially as described.

5 32. A heel-building machine comprising a series of chambers arranged in line, each adapted to hold a stack of superimposed heel-lifts therein, a heel-receiver at one end of said line of chambers, a lift-engaging device, means for automatically reciprocating
10 said device beneath said chambers and for causing the same, when moved toward said receiver, to discharge the bottom lift from each chamber and move the discharged lifts

in superimposed position into said receiver, 15 a cement-carrier, and means actuated by said reciprocating-means, for automatically moving said carrier into engagement with the bottom lifts of said stacks on the return movement of said engaging device, substan- 20 tially as described.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

IRA J. WEBSTER.

Witnesses:

L. H. HARRIMAN,
H. B. DAVIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."