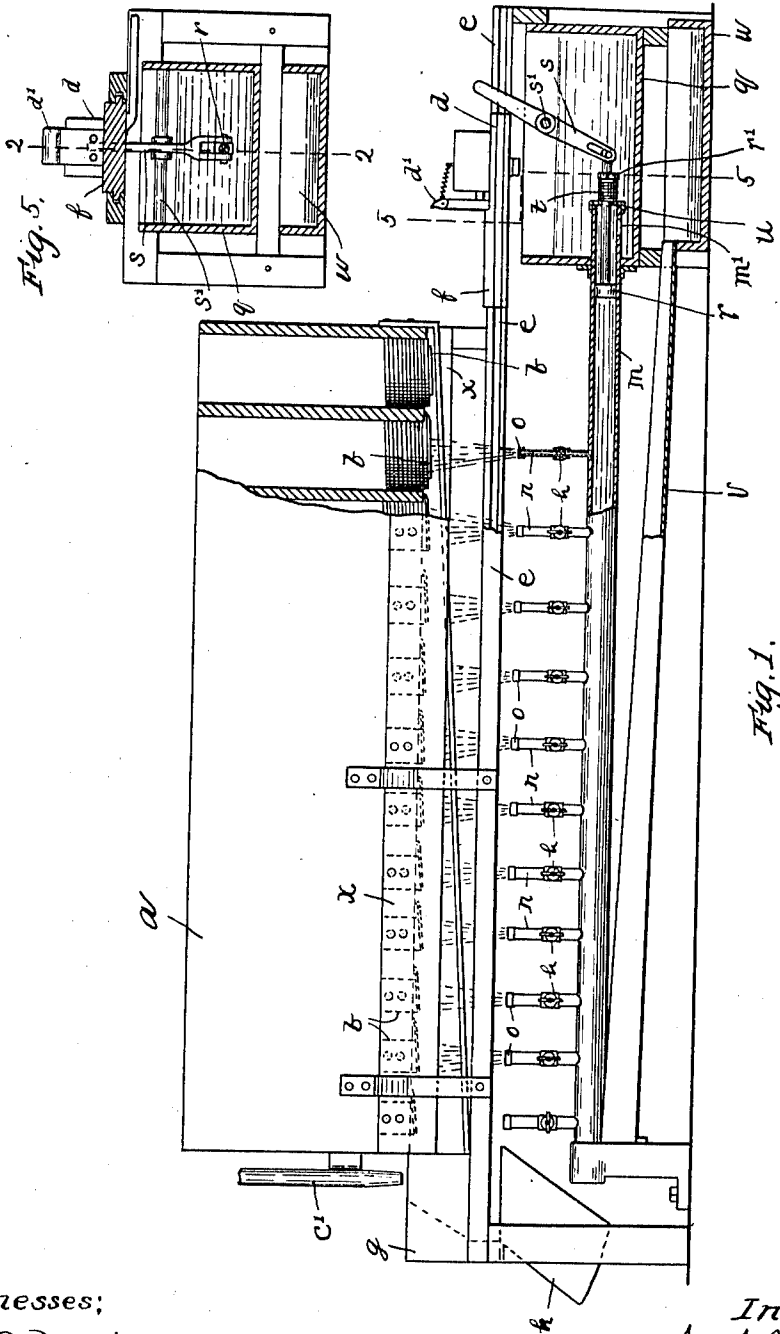


I. J. WEBSTER.
HEEL ASSEMBLING MACHINE.
APPLICATION FILED MAR. 12, 1909.

1,012,306.

Patented Dec. 19, 1911

2 SHEETS-SHEET 1.



Witnesses;
H. B. Davis.
H. A. Boyle.

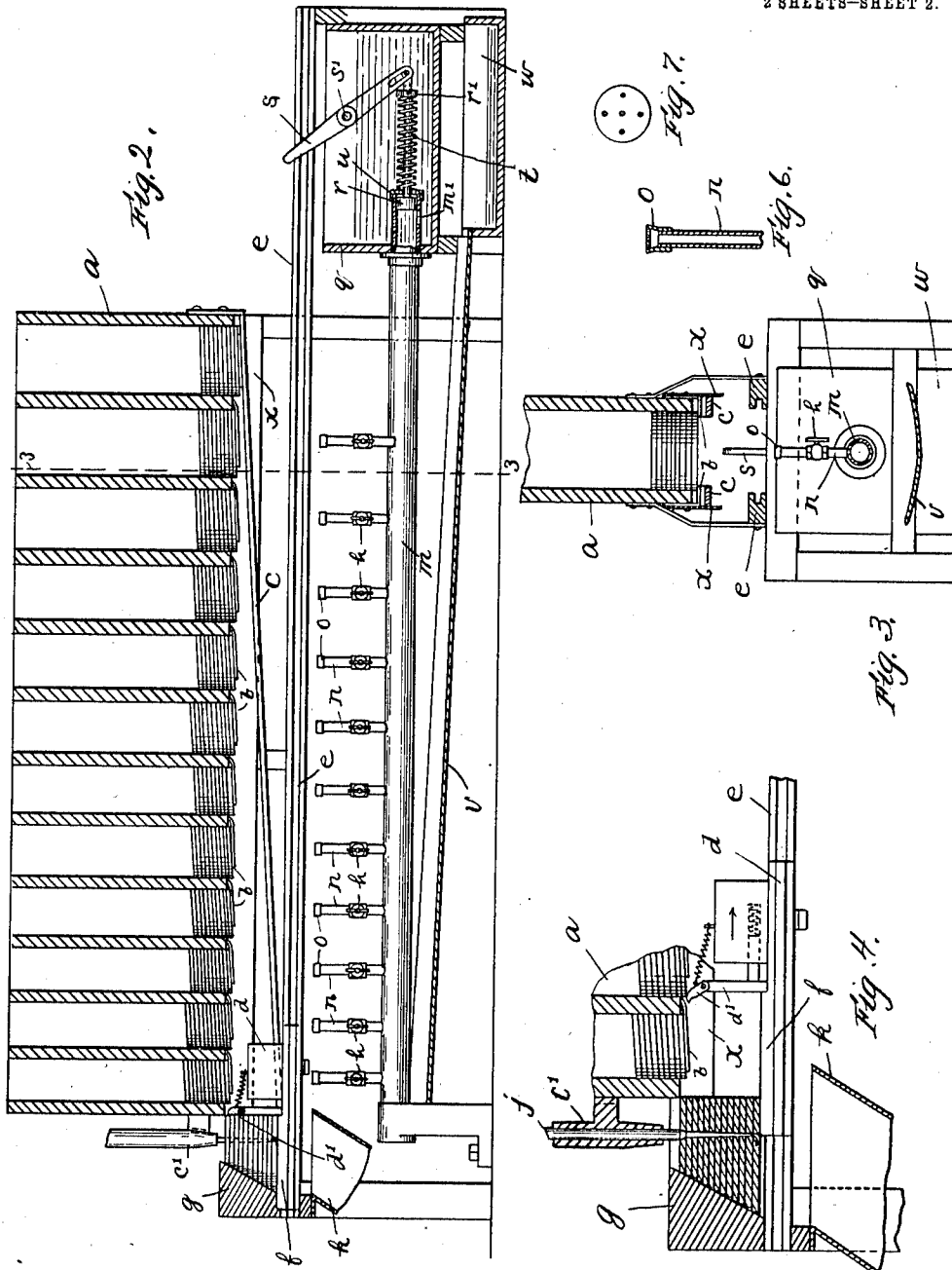
Inventor;
Ira J. Webster,
by Royce Hamman
Att'y.

I. J. WEBSTER.
HEEL ASSEMBLING MACHINE.
APPLICATION FILED MAR. 12, 1909.

1,012,306.

Patented Dec. 19, 1911.

2 SHEETS-SHEET 2.



Witnesses:
H. B. Davis.
H. A. Boyle.

Inventor:
Ira J. Webster,
by August L. Linneman
Atty's.

UNITED STATES PATENT OFFICE.

IRA J. WEBSTER, OF HAVERHILL, MASSACHUSETTS.

HEEL-ASSEMBLING MACHINE.

1,012,306.

Specification of Letters Patent.

Patented Dec. 19, 1911.

Application filed March 12, 1909. Serial No. 482,927.

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-Assembling Machines, of which the following is a specification.

This invention relates to certain improvements in the heel building machine disclosed in my pending application Serial No. 477,064, filed February 10, 1909.

The objects of the present invention are to provide a simple and efficient means for applying an ample quantity of cement to each lift previous to the assembling operation, so that the lifts will be thoroughly cemented together when the heel is assembled, and to improve said prior device in other particulars, as will hereafter more fully appear. I accomplish these objects by the means shown in the accompanying drawing, in which,

Figure 1 is a side elevation, partly in section, of a device made according to my invention. Fig. 2 is a longitudinal section on the line 2—2, of Fig. 5. Fig. 3 is a cross section on line 3—3 of Fig. 2. Fig. 4 is an enlarged detail view of the heel form portion of the machine. Fig. 5 is a cross section on line 5—5 of Fig. 1. Figs. 6 and 7 are a detail sectional and end views of one of the nozzles.

As shown in the drawing, I provide a casing *a* having a series of chambers therein adapted to receive heel lifts of different sizes, the lower ends of said chambers being open and heel supports *b* being provided at each side of each chamber to engage the edge portions of a lift and support a stack of lifts therein. I further provide a pair of lift-supporting guideways *c* which extend downwardly directly beneath the supports *b* from one end of the casing to the other. A carrier *d* is mounted to slide on and between horizontal guideways *e* supported directly below the lift supporting way *c*, said carrier having a lift-engaging device *d'* mounted thereon, said device being adapted to extend between said ways *c* and supports *b* and to remove the bottom lifts successively from the stacks contained in said chambers. A supporting plate *f* is connected to said carrier in front of said engaging device, said plate being supported in said guideways *e* and being adapted to

fit into the bottom of the heel form *g* when said carrier is moved into its extreme left hand or advanced position.

The apparatus thus far described operates in substantially the same manner as the apparatus described in said prior application. The bottom lifts of the stacks are successively removed and superimposed on the ways *c* by the carrier *d*, and, when the lift of the last stack has been removed, the assembled heel is slid from the ways *c* onto the plate *f* and pressed into the form *g*. A nailing device is mounted over the form and comprises a throat *c'* having a driver *j* therein, which is adapted to force a nail through the middle portion of the heel and to bear against the heel after the nail is driven, so that, when the carrier is moved rearwardly, it will hold the heel in the form, thereby enabling plate *f* to be withdrawn from beneath the heel, to permit the latter to fall through the open bottom of the holder, into the chute *k*, as shown in Fig. 4.

The cement applying means which I preferably employ comprises a horizontal pipe *m* having a series of upright tubes *n* leading vertically from the upper side thereof, one of said tubes being disposed directly beneath each chamber of the casing *a*, except the first, and each being arranged to direct a jet of liquid directly against the under side of the lift which is supported directly thereabove. The outlet of each branch pipe is preferably provided with a spraying device or nozzle *o* which tends to break up the liquid as it is forced therethrough, and each pipe *n* is also preferably provided with a valve *h* for closing the same, or varying the passageway therethrough. The pipe *m* leads horizontally into a tank *q* and is connected thereto by an opening *m'*, in its side, and a piston or plunger *r* is mounted in the end portion of said pipe, the stem of said plunger being connected to the lower end of a lever *s*, by a pin and slot connection, said lever being pivoted at *s'* to swing in a vertical plane midway between the guideways *e*, and in position to be engaged by the carrier *d*. A spring *t* is mounted on the stem of said plunger *r* in engagement with a perforated cap *u* on the end of the tube *m* and a collar *r'* on the plunger stem, and acts normally to hold the plunger in the with-

drawn position of Fig. 1, in which position the front end of the plunger is withdrawn to one side of the opening m' in the pipe m , through which the cement in the tank may flow into the pipe and fill the same.

With the above described device when the carrier is moved, back after performing the operation already described, and when it has nearly reached the end of its backward movement, it engages the upper end of the lever s , swinging the same so as to cause a quick impulse of the plunger r , forcing the latter forwardly beyond the opening in and causing a series of jets of cement to be forced through the nozzles o against the bottom lifts of the stacks, thus causing the under sides of said lifts to be covered with an ample quantity of cement, as shown in Fig. 1. Any surplus of cement will be received by an inclined drip trough v arranged below the pipe m , said trough being adapted to conduct the cement into a receptacle w at its lower end.

To prevent spattering at the sides of the casing, when the cement strikes the lifts, I provide a pair of plates x , which are connected to the casing at each side, and depend from the under side thereof for a short distance below the lift supports b .

As soon as the carrier is advanced to remove the cemented lifts, as before described, and moves out of engagement with the lever s , the spring t will force back the plunger to the initial position of Fig. 2, and during the time in which the carrier is moving to the opposite end of the casing, and returning, the cement will flow into and fill the tube m through the aperture m' , so that the operation may be repeated on the return of the carrier.

With the above described construction, if all the branch pipes were of the same size the jets delivered from the nozzles nearest the plunger would be of greater volume than those at a greater distance therefrom. This difficulty may be avoided by gradually increasing the area of the passage-ways through said branch pipes, from the tank end of the pipe to the opposite end thereof. This may be conveniently accomplished by adjusting the valves with which said pipes are provided. In case one or more of the lift-receiving chambers should not be used it is merely necessary to close the valve in the corresponding branch pipe.

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

1. In a heel-assembling machine, the combination of a series of lift-holders, and means for ejecting liquid cement simultaneously against corresponding sides of the lifts held by said holders, substantially as described.

2. In a heel-assembling machine, the com-

bination of a series of lift holders, a corresponding series of nozzles, and means for ejecting liquid cement from said nozzles against corresponding sides of the lifts held by said holders, substantially as described.

3. In a heel-assembling machine, the combination of a series of lift-holders, a corresponding series of nozzles, and means for ejecting liquid cement from said nozzles simultaneously against corresponding sides of the lifts held by said holders, substantially as described.

4. In a heel-assembling machine, the combination of a series of supports for holding a series of heel lifts with one of the sides of each facing downwardly and partly exposed, a series of nozzles opening upwardly beneath the lifts held on said supports, and means for forcing liquid cement through said nozzles against said sides of said lifts, substantially as described.

5. A heel-assembling machine comprising a series of supports for holding a series of heel lifts in approximately horizontal position with the under sides thereof partly exposed, a series of vertically directed nozzles disposed beneath the lifts held by said holders, and means for forcing liquid cement through said nozzles to throw the same against the lifts, substantially as described.

6. In a heel-assembling machine, the combination of a series of supports for holding a series of heel lifts with one of the sides of each facing downwardly and partly exposed, a series of nozzles opening upwardly beneath the lifts held on said supports, a pipe connected to said nozzles, and means for forcing liquid cement into said pipe to cause the same to be discharged against said exposed portion of said lifts, substantially as described.

7. In a heel-assembling machine, the combination of a series of supports for holding a series of heel lifts with one of the sides of each facing downwardly, and partly exposed, a pipe extending beneath the lifts held by said supports and having openings in its upper side directly beneath said lifts, and means for forcing liquid cement into said pipe to throw the same through said openings against said exposed portions of said lifts, substantially as described.

8. A heel-assembling machine comprising a series of supports adapted to engage opposite edge portions of a series of heel lifts to hold the same in an approximately horizontal position with the middle portions thereof exposed, and a series of nozzles disposed beneath the lifts held on said supports in position to direct a jet of liquid cement against said middle portion of said lift, substantially as described.

9. In a heel-assembling machine, the combination of a series of supports for holding a series of heel lifts with one of the sides

of each facing downwardly and partly exposed, a series of nozzles opening upwardly beneath the lifts held on said supports, means for forcibly ejecting liquid cement
 5 from said nozzles against said exposed portions of said lifts, and means, located beneath said nozzles, for collecting the superfluous cement discharged therefrom, substantially as described.

10 10. In a heel-assembling machine, the combination of a series of supports for holding a series of heel lifts with one of the sides of each facing downwardly and partly exposed, a series of nozzles opening upwardly
 15 beneath the lifts held on said supports, and a liquid forcing device for simultaneously ejecting liquid cement through all of said nozzles against the exposed portion of said lifts, substantially as described.

20 11. In a heel-assembling machine, the combination of a series of supports for holding a series of heel lifts with one of the sides of each facing downwardly and partly exposed, a series of nozzles opening upwardly
 25 beneath the lifts held on said supports, a pipe connected to all of said nozzles, a liquid forcing device connected to said pipe, means for automatically supplying said forcing device with liquid cement, and means for
 30 operating said forcing device to force liquid cement through said pipe and simultaneously eject the same through said nozzles

and against the exposed portions of said lifts, substantially as described.

12. A heel-assembling machine comprising a series of supports for holding a series
 35 of heel lifts in approximately horizontal position with the under sides thereof partly exposed, a series of vertically directed nozzles disposed beneath the lifts held by said
 40 holders, a tank, a cylinder connected to said nozzles and opening into said tank, a piston in said cylinder, and means for operating said piston to eject the cement from said
 45 nozzles, substantially as described.

13. In a heel-assembling machine, the combination of a series of supports for holding a series of heel lifts with one of the sides
 50 of each facing downwardly and partly exposed, a series of nozzles opening upwardly beneath the lifts held on said supports, a main pipe, a series of branch pipes leading from said main pipe to said nozzles respectively, valves for controlling the passage-
 55 way through said branch pipes, and means for forcing liquid cement into said main pipe, substantially 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. HANIMAN,
 H. B. DAVIS.