No. 614,443. Patented Nov. 22, 1898.

D. J. CHARBONNEAU.

LATHING MACHINE.

(Application filed Nov. 22, 1897.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

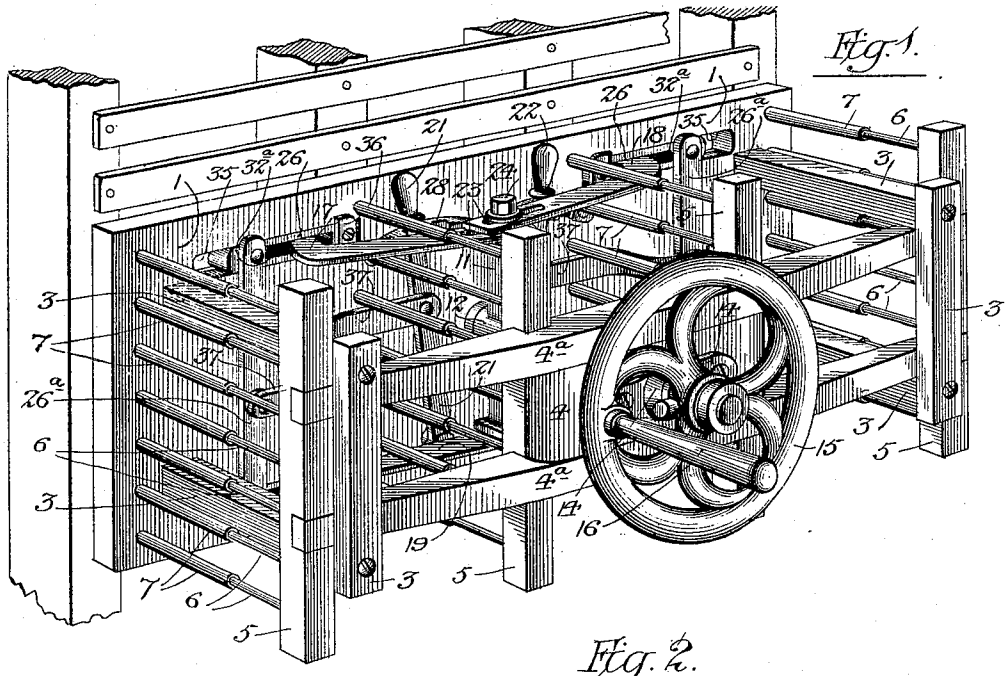


Fig. 2.

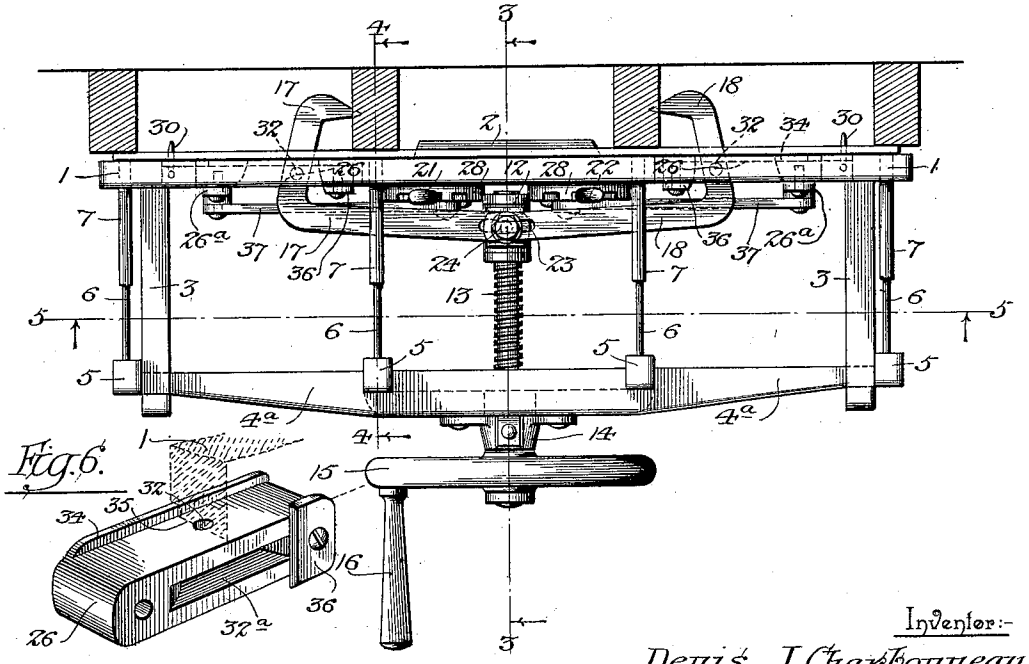


Fig. 6.

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Fig. 5.

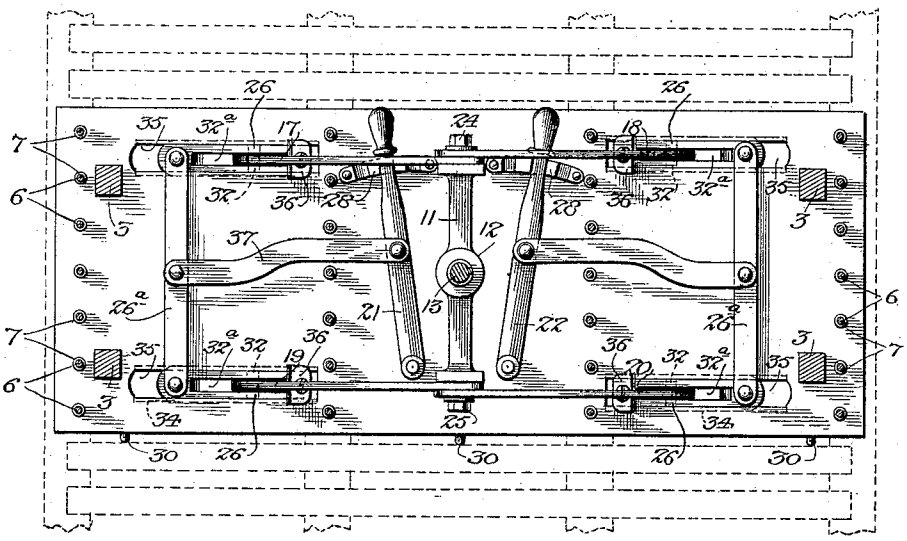


Fig. 3.

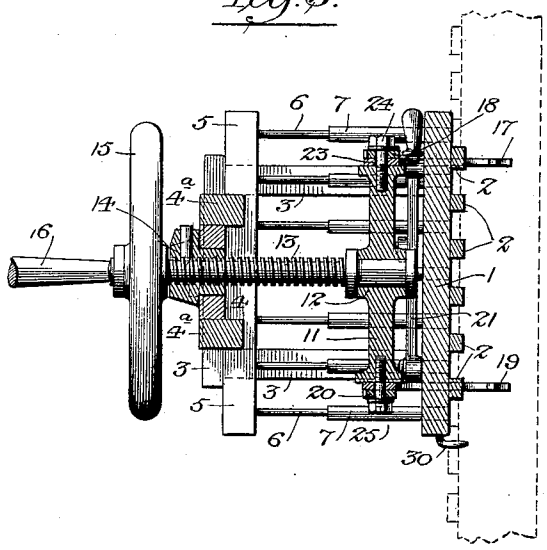
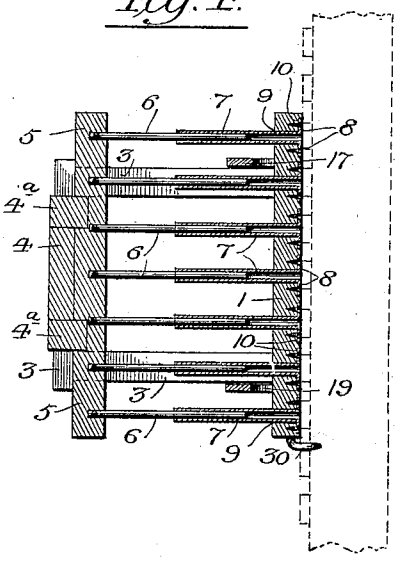


Fig. 4.



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UNITED STATES PATENT OFFICE.

DENIS J. CHARBONNEAU, OF WILLIAMSTOWN, KENTUCKY.

LATHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 614,443, dated November 22, 1898.

Application filed November 22, 1897. Serial No. 659,471. (No model.)

To all whom it may concern:

Be it known that I, DENIS J. CHARBONNEAU, a citizen of the United States, residing at Williamstown, in the county of Grant and State of Kentucky, have invented a new and useful Lathing-Machine, of which the following is a specification.

My invention relates to improvements in machines for fastening laths at regular spaced intervals on the studdings of buildings; and the primary object that I have in view is to provide a simple and easily-operated structure by which the laths may be quickly and securely fastened to the studding.

A further object of the invention is to provide a machine with an appliance by which the machine may be easily connected to and quickly removed from the studding, said appliance operating to hold the machine steadily in place while the nails are being forced through the laths and into the studding.

A further object of the invention is to make the holding appliance adjustable to accommodate itself to studdings which may be spaced at different intervals from each other.

With these ends in view the invention consists in the combination, with a base provided with a series of lath ways or guides, of a series of tubular nail holders and guides fixed to the base, a reciprocating frame, a series of driving-plungers attached to said frame to be movable with the same and fitted in the tubular nail holders and guides to force the nails therefrom when the frame and plungers are moved in one direction, means for imparting reciprocating motion to the frame, and a holding appliance.

The invention further consists in a holding appliance for attaching the lathing-machine to the outside faces of two adjacent studdings in which I have embodied oppositely-working pairs of grab-hooks having their inner ends slidably attached to a guiding cross-head and independent levers arranged on opposite sides of the cross-head and operatively connected with said grab-hooks to move the same into and out of engagement with the studdings.

The invention further consists in the combination, with the cross-head which serves as a guide for the grab-hooks, of an adjusting-screw for the reciprocating frame and having one end of said screw journaled in said cross-head, whereby the screw for moving the reciprocating frame and the plungers pulls on the cross-head for the grab-hooks; and the invention further consists in the novel combination and construction of parts, which will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated the same in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view showing my improved lathing-machine in operative relation to the studdings. Fig. 2 is a plan view thereof. Fig. 3 is a vertical transverse section on the plane indicated by the dotted line 3 3 of Fig. 2. Fig. 4 is a similar transverse section on the plane indicated by the dotted line 4 4 of Fig. 2, the plane of section being taken through a series of the tubular nail-holders and the plungers corresponding thereto. Fig. 5 is a vertical longitudinal section on the plane indicated by the dotted line 5 5 of Fig. 2. Fig. 6 is a detail view, partly in perspective and section, of one of the slidable boxes for one grab-hook.

Like numerals of reference denote corresponding parts in all the figures of the drawings.

1 designates the base of the lathing-machine, which base is of a length corresponding to the distance between four of the studdings and the length of the laths which are to be applied to said studdings; but it is evident that the size of the base is not material so long as it is large enough to carry a series of laths which are to be applied and fastened at one operation to the studdings by a machine constructed in accordance with my invention. This machine is constructed to be loaded or charged with the proper number of laths and with the nails for fastening the laths in position, and after the machine has been thus loaded it only remains for the operator to properly adjust the machine to present the laths to the studdings, fasten the machine in position, and then expel the fastening-nails from the machine through the laths and into the studdings.

On that face of the base 1 which is to be presented to the studdings I provide a series of lath ways or guides, which in the present instance are formed by blocks or cleats 2,

which are secured to the rear side of the base, near the ends thereof, and which are spaced at intervals representing the width of the laths, the thickness of the blocks or cleats 2 representing the intervals between the laths. This construction of the base provides means for receiving and retaining the laths in their properly-spaced positions for application in a proper manner to the studdings.

Projecting from the front side of the base 1, near or at the ends thereof, are the guides 3, and within these guides is fitted a reciprocating frame 4, to the longitudinal bars 4^a of which are fastened a series of cross-bars 5, spaced at suitable intervals apart. These cross-bars are preferably four in number, and they are spaced at distances between the studdings, so that the cross-bars when the machine is properly loaded, applied, and fastened will come directly opposite the studdings to which the laths are to be nailed.

Each cross-bar 5 of the reciprocating frame carries a series of plungers 6, which are rigidly fastened to the cross-bars in any suitable manner. I have shown four series of these driving or expelling plungers 6, one series being attached to each cross-bar at suitable intervals one from the other, and each series consists, preferably, of seven plungers, thus making twenty-eight plungers in the machine; but it is evident that the number of plungers may be varied, either increased or diminished, as the manufacturer or mechanic may prefer.

The base 1 carries a series of tubular holders and guides 7, which are designed to contain the nails to be driven through the laths and into the studdings and to serve as guides for the nails and the driving-plungers. These tubular holders and guides 7 are fastened to the base 1 to form a plurality or series of guides corresponding to the plungers, and each guide is fastened to the base to be in a position to receive one of the plungers on the cross-bar of the reciprocating frame. I prefer to provide each guide and holder 7 with a flanged foot 8 at the rear end, and said tubular guide or holder is passed through an opening 9 in the base to have its flanged foot 8 fitted in a recess or groove 10 in the rear face of the base, so as to be flush therewith. The flanged foot of the tubular guide or holder is fastened in place by nails, screws, or other suitable fastenings, which also are flush with the base; but the detailed construction of the guides and holders by which they are fastened to the base is immaterial.

On the front side of the base, preferably at the middle thereof, is mounted a cross-head 11, and in the center of this cross-head is formed a central journal or bearing 12 for one end of an adjusting screw-shaft 13. The inner end of the screw-shaft has a flange or collar by which it is connected to the journal-bearing of the cross-head in a manner to prevent the screw-shaft from moving endwise. The reciprocating frame 4 carries a threaded bearing or nut 14, with which engages the screw-shaft 13, so as to operatively connect the screw-shaft with the reciprocating frame, and as this frame is guided by the guides 3 to be limited to sliding movement or play the rotation of the screw-shaft in one direction or the other imparts the desired movement or play to the reciprocating frame.

The outer end of the screw-shaft carries a hand-wheel 15, to which is connected a hand-crank 16, by which the operator is able to rotate the wheel and the screw-shaft, and this crank and wheel are situated outside of the reciprocating frame, so as to be easily accessible.

As will be understood, the screw-shaft is supported in the bearing of the cross-head and in the nut carried by the reciprocating frame, and as this shaft is held from endwise movement by its flanged connection with the cross-head the screw-shaft is adapted to actuate the reciprocating frame, limited to sliding movement by the guides 3 on the base 1.

I will now proceed to describe the appliance for holding the machine detachably attached to the studdings to which the laths are to be fastened, and in passing I desire to remark that the grab-hooks of the holding appliance are arranged to engage with the outer sides of two adjacent studdings, instead of engaging with the opposing sides of the studdings, and that the grab-hooks are connected with the cross-head to which the inner end of the screw-shaft is connected, so that the pull of the screw-shaft is exerted on the cross-head, whereby the action of the plungers on the nails to be driven into the studdings exerts a strain on the grab-hooks to force them tightly into engagement with the studdings.

The holding appliance consists of an upper pair of hooks 17 18, a lower pair of hooks 19 20, independent levers 21 22, and operative connections between said levers and the said hooks. The hooks are of the angular form shown to enable them to be passed through the base 1, and the inner ends of said hooks are slotted, as at 23. The slotted ends of the upper hooks 17 18 are overlapped and connected to the upper end of the cross-head by means of a bolt 24. In a similar manner the slotted ends of the lower hooks 19 20 are arranged to lap each other and the lower end of the cross-head, and said hooks 19 20 have their slotted lapped ends attached to the lower end of the cross-head by a bolt 25. The slotted ends of the two pairs of hooks are confined by their bolts or attaching devices 24 25 on the respective ends of the cross-head, so that the hooks of the respective pairs may adjust toward and from each other in the operation of adjusting the hooks into and out of engagement with the studdings.

The grab-hooks are carried independently of each other by slidable boxes 26, and one box is provided for each grab-hook. Each box is slotted, as at 32, to receive its grab-hook, which is pivoted to the box by a verti-

cal bolt or pin 32. The box is provided on one side with guide-ribs 34, fitted in recesses in the base, adjacent to the slot 35 in said base which receives the box, and said box is further provided with a pivoted guide-piece 36, adapted to bear against the front side of the base, said guide-ribs, the guide-piece, and the draw-bar 26^a serving to hold the box slidably in position in the base.

The slidable boxes for the grab-hooks are connected in pairs on opposite sides of the cross-head by means of the draw-bars 26^a, the ends of each draw-bar being pivoted to the pair of slidable boxes, and to each draw-bar 26^a is pivoted a link 37. One link 37 is pivoted to an adjusting-lever 21, while the other link 37 is pivoted to an independent adjusting-lever 22. It will thus be seen that one draw-bar 26^a connects the slidable boxes which carry the grab-hooks 17 19, while the other draw-bar 26^a connects the boxes which carry the other pair of grab-hooks 18 20. The grab-hooks have their pointed or barbed ends adapted to engage with the studdings, and they may be adjusted by the levers 21 22 to adapt them to fit to studdings of different thicknesses. The levers 21 22 are fulcrumed on the base 1, and they are adapted to engage at their free ends with suitable holding devices 28, mounted on the base 1.

This being the construction of my machine the operation may be described as follows: The machine is first loaded by fitting the laths in the ways formed between the cleats or blocks 2 and by inserting the nails, head end foremost, into the tubular holders and guides. The machine is now applied against the studdings, and the grab-hooks hold the machine, the laths, and nails steadily in place on the studdings, and the operator now turns the crank to rotate the screw-shaft and force the frame and plungers inward toward the base. The plungers slide through the tubular holders and guides and they force the nails out of the holders through the laths and into the studdings. The whole series of laths are thus fastened to the studdings at one operation, after which the machine is detached from the studdings for the purpose of reloading it with laths and nails.

One operator supplied with two or more of these machines and with the assistance of a helper or helpers, who may be boys or apprentices, is able to perform much more labor in a given time than under the methods heretofore commonly pursued of fastening the laths by hand, because the machine or machines may be reloaded while another machine is in service.

In the embodiment of the machine illustrated by the drawings I have shown the base provided with the hooks 30 at the lower edge thereof. These hooks are spaced at suitable intervals along the lower edge of the base in a manner to engage with the top lath of the series of laths on the studdings.

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

1. In a lathing-machine, the combination of a base equipped with lathways and with nail-holders, a series of simultaneously-operated plungers operatively fitted to said nail-holders, and a holding or fastening appliance mounted on said base, as and for the purposes described.

2. In a lathing-machine, the combination with a base having lathways, of a series of tubular nail holders and guides mounted on said base in line with the lathways thereon, a reciprocating frame, a series of plungers fitted in said holders and guides, and attached to said frame to be movable therewith, and means for reciprocating the frame, as and for the purposes described.

3. In a lathing-machine, the combination with a base having guideways and a plurality of nail-holders, of a reciprocating frame having a series of plungers fitted in said nail-holders, and a screw-shaft operatively connected with said frame for imparting reciprocating motion thereto, as and for the purposes described.

4. In a lathing-machine, the combination with a base, and a nail-driving mechanism mounted thereon, of fastening-hooks attached to said base and arranged in pairs to engage with adjacent studdings, and adjusting-levers connected with said hooks, as and for the purposes described.

5. In a lathing-machine, the combination with a base, and a nail-driving mechanism thereon, of grab-hooks mounted on the base and having their inner ends provided with slots, a cross-head, devices for slidably attaching the slotted ends of the grab-hooks to said cross-head, and levers operatively connected with said grab-hooks, as and for the purposes described.

6. In a lathing-machine, the combination with a base, and a frame having nail-driving plungers, of a cross-head, grab-hooks loosely connected with said cross-head, and a screw-shaft operatively connected with said frame and having one end supported in the cross-head, as and for the purposes described.

7. In a lathing-machine, the combination with a base, of the nail holders and guides thereon, a reciprocating frame guided on said base and having a nut and a series of plungers, a cross-head, grab-hooks having their slotted ends loosely connected with the extremities of said cross-head, levers for adjusting said grab-hooks, and a screw-shaft operatively connected with the cross-head and with the nut of the reciprocating frame, substantially as described, for the purposes set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

DENIS J. CHARBONNEAU.

Witnesses:
E. B. CLARK,
J. W. WEBB.