(No Model.)

D. J. LATTIMORE.

EMBOSSING MACHINE.

No. 490,912. Patented Jan. 31, 1893.

Fig. 1.

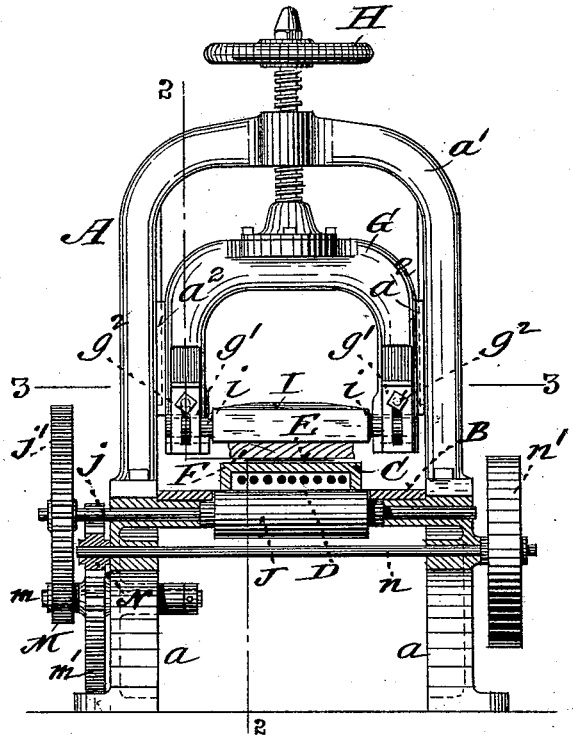


Fig. 2.

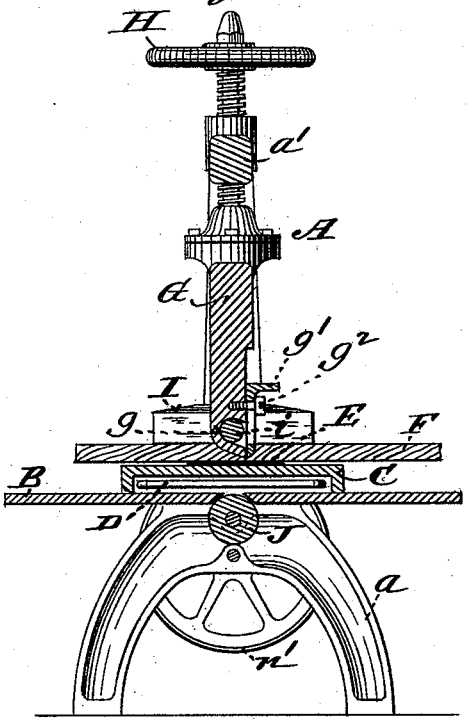


Fig. 3.

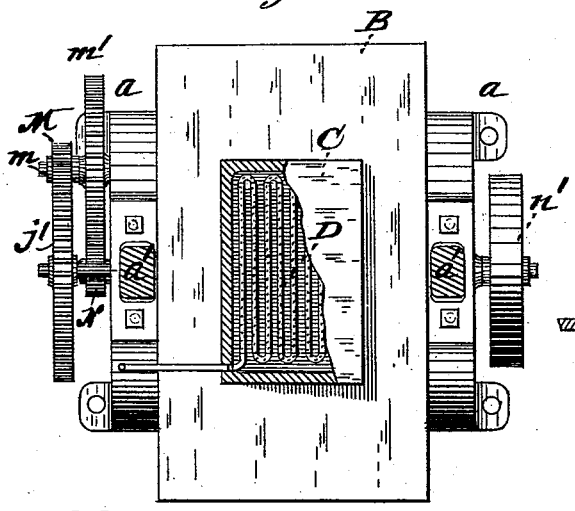


Fig. 4.

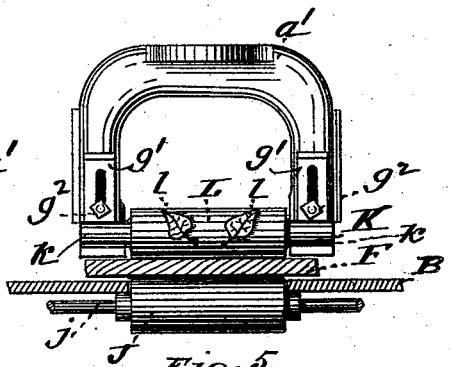
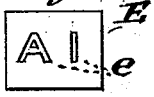


Fig. 5.



WITNESSES:
Edward C. Purnell
A. Bonville

INVENTOR
Daniel J. Lattimore
by Edmonds
his atty

UNITED STATES PATENT OFFICE.

DANIEL J. LATTIMORE, OF ST. LOUIS, MISSOURI, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF THREE-FOURTHS TO EMMA C. HAMMACK AND MINA TUCKER, OF SAME PLACE.

EMBOSSING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 490,912, dated January 31, 1893.

Application filed January 15, 1892. Renewed January 7, 1893. Serial No. 457,650. (No model.)

To all whom it may concern:

Be it known that I, DANIEL J. LATTIMORE, of St. Louis, Missouri, have made a new and useful Improvement in Embossing-Machines, of which the following is a full, clear, and exact description.

The present machine is adapted more especially, but not exclusively to the embossment of wood.

It consists partly in the means whereby the embossing is accomplished with the work operated upon held stationary in the machine, partly in the provision by which a portion of the machine is adapted both to work that is held stationary in the machine while being embossed and to work which is moved through the machine as it is being embossed, and partly to minor details of construction, all substantially as is hereinafter set forth and claimed, aided by the annexed drawings, making part of this specification, in which—

Figure 1 is a front sectional elevation of the improved machine arranged as when the piece of wood, or other material being embossed is held stationary during the operation: Fig. 2 a vertical section on the line 2—2 of Fig. 1: Fig. 3 a horizontal section on the line 3—3 of Fig. 1, a portion of the stencil-support being broken away to exhibit the means for heating the same: Fig. 4 a view analogous to that of Fig. 1, but exhibiting the means and arrangement employed when the wood is moved through the machine during the operation; the view includes only that portion of the machine which is essential to an understanding of the particular feature referred to: and Fig. 5 a top view of the stencil plate.

The same letters of reference denote the same parts.

The frame-work, A, of the machine resembles that often used in wood-working machinery, presses, &c. consisting largely of the base, a, and the arch, a', which rises from the base, substantially as shown.

B represents the table of the machine. It is supported on the base a, in any suitable manner.

C represents a plate flat on top and adapted to rest upon the table, and at a sufficient elevation above the table to provide for heating it from beneath, as by means of a perforated tube or gas burner, D, arranged beneath the plate substantially as shown. In practice the plate assumes a box-like form, and it is of a sufficiently thick piece of metal to enable it to withstand the pressure imposed on it in operating the machine, and to contain a sufficient amount of heat to accomplish the embossing for the relief is produced upon the work by means of both pressure and heat. The plate, C, which is of any suitable dimensions, is, by means of the burner referred to or other equivalent means, heated, say to a red heat, and a thin plate E, usually of copper, and in the nature of a stencil, laid upon it. The work, usually a piece of wood, F, is then placed upon the stencil and pressed against it and the plate C, and the desired embossing thereby accomplished, the heat of the plate, C, serving to burn the wood opposite the openings, e, in the stencil.

The desired pressure is produced as follows: G represents a yoke adapted to be worked upward and downward in the arch a', and guided in its movement by means of a tongue-and-groove connection, a^2, at each side of the yoke, with the arch. The adjustment vertically of the yoke, and the desired pressure upon the work, is accomplished by means of the screw, H, which can be worked upward and downward through the arch and whose lower end is attached to the yoke, substantially as shown. The yoke, at or toward its lower end is adapted to carry a pressure plate, I, and by depressing the yoke the pressure plate is caused to bear upon the work sufficiently to enable the embossing to be accomplished. The yoke carrying the pressure plate is raised and lowered as described whenever a new piece of work is inserted. The plate, I, is provided with arms, i, i, which, when the plate is used, are held in bearings, g, g, in the yoke. Said bearings are open, say at the front, to enable the plate, I, to be inserted in and withdrawn from the yoke. The keepers, g', g', with the aid of the screws g^2, g^2, serve to confine the plate arms, i, i, in their bearings. They are slotted to permit of their being raised to uncover the bearings, without wholly withdrawing the screws from the yoke.

When the above described mechanism is in use the piece of wood being embossed remains stationary while under the described pressure. It is sometimes necessary however to move the piece of wood being operated upon past the points of pressure during the operation. To this end the yoke above mentioned is used as before, but the plates I, C and E, and the means for heating the plate C are dispensed with, and the arrangement such as shown in Fig. 4 is adopted. The work, namely the wood, F, is laid directly upon the table with its end resting upon an ordinary feed roller J whose top in practice is slightly above the table. The pressure plate I, being removed, a roller, K, carrying a die in the form of a sleeve L, is inserted in its place in the yoke, and the yoke is lowered to cause the die L to bear with sufficient force upon the work to accomplish the embossing, and the operation proceeds as follows: The roller, J, serves to feed the work through the machine; the combined roller, K, and die, L, coact with the roller J in effecting the movement of the work, and they also serve to emboss the work, to which end the roller, K, and die, L, are suitably heated and while hot inserted as described in the yoke, and secured therein by lowering the keepers, from the position of Fig. 4 into that of Figs. 1 and 2; the die bears any desired design in relief substantially as indicated at *l*, and it is impressed into the wood as it passes the die; the roller J, is rotated by any suitable means and preferably as shown, the roller, J, being attached to a shaft, *j*, which is provided with a gear, *j'*, which in turn engages with a pinion, M, upon a shaft *m*, which carries the gear *m'*; this last named gear engages with a pinion, N, upon a shaft *n*, carrying a pulley *n'*, and by applying power to said pulley the feed-roller, J, is rotated at a suitable rate to accomplish the desired movement of the work between the roller J, and the die, and the embossing of the work thus effected. Whenever the roller J and die L require heating they are removed from the yoke for that purpose and then replaced, and as often as may be necessary. The journals, *k*, *k*, of the roller K when heated as described, fit the bearings *g*, *g*, in the yoke, and as the roller cools, and the journals *k*, *k*, accordingly shrink in diameter, the keepers serve to confine the roller, K, in place in the yoke. The entrance to said bearings is necessarily sufficiently large to admit the roller bearings when expanded by heat as described.

I claim:—

1. In an embossing machine, the combination of the plate C adapted to be heated, the stencil, and an adjustable pressure plate I, substantially as described.

2. In an embossing machine, the combination of the plate C the burner D, the stencil, and the adjustable pressure plate, I, substantially as described.

3. The combination of the frame A, the table B, the flat plate C, adapted to be heated, the stencil, the pressure plate, I, the adjustable yoke, and the screw H, substantially as described.

4. The combination of the frame A, the table B, the flat plate C, the burner D, the stencil, the pressure-plate, the adjustable yoke, and the screw, said yoke having the bearings for said pressure plate and provided with the keepers, substantially as described.

Witness my hand this 12th day of January, 1892.

DANIEL J. LATTIMORE.

Witnesses:
C. D. MOODY,
A. BONVILLE.