

(No Model.)

2 Sheets—Sheet 1.

C. H. TREAT & A. B. BANGHART.

MACHINE FOR PRESSING WOOD DISHES.

No. 489,399.

Patented Jan. 3, 1893.

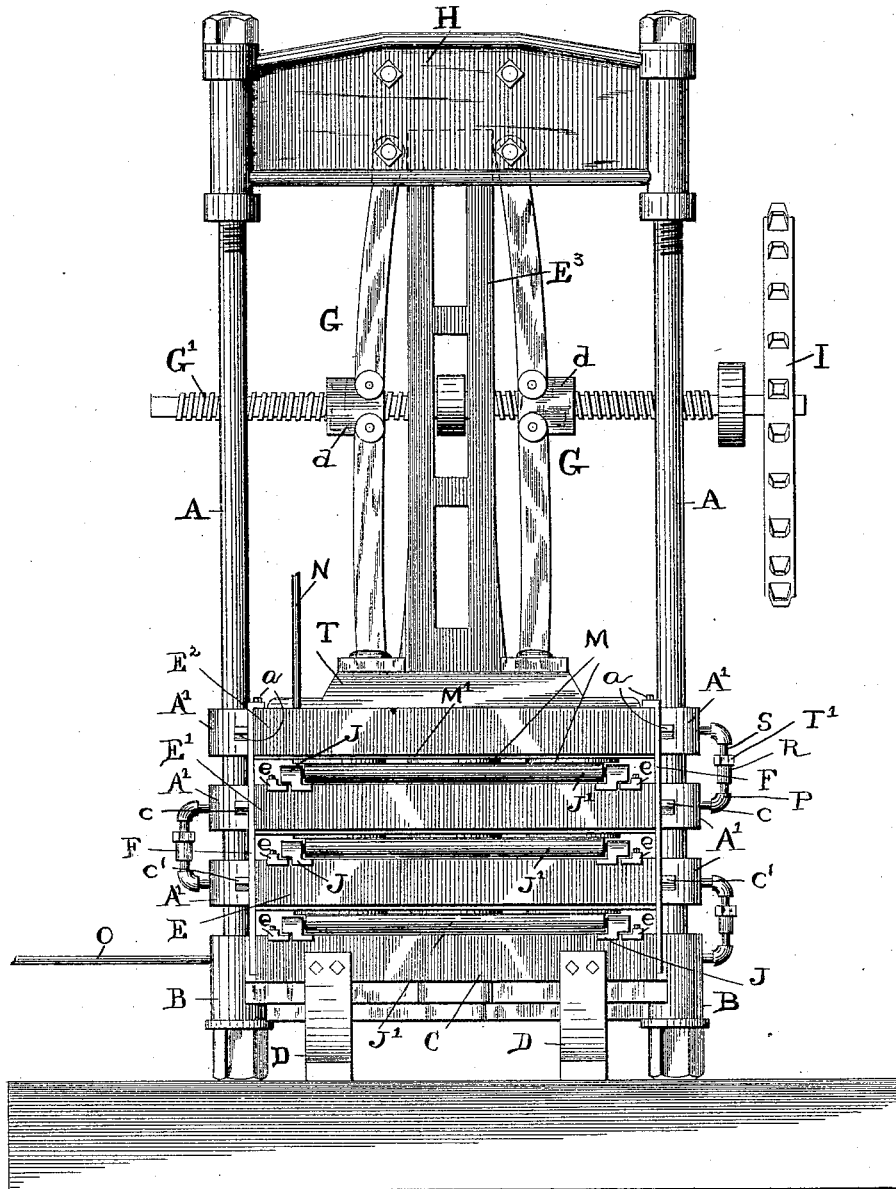
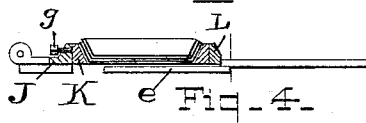


Fig. 1.

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By *Chas B. Mann*
Attorney.

(No Model.)

2 Sheets—Sheet 2.

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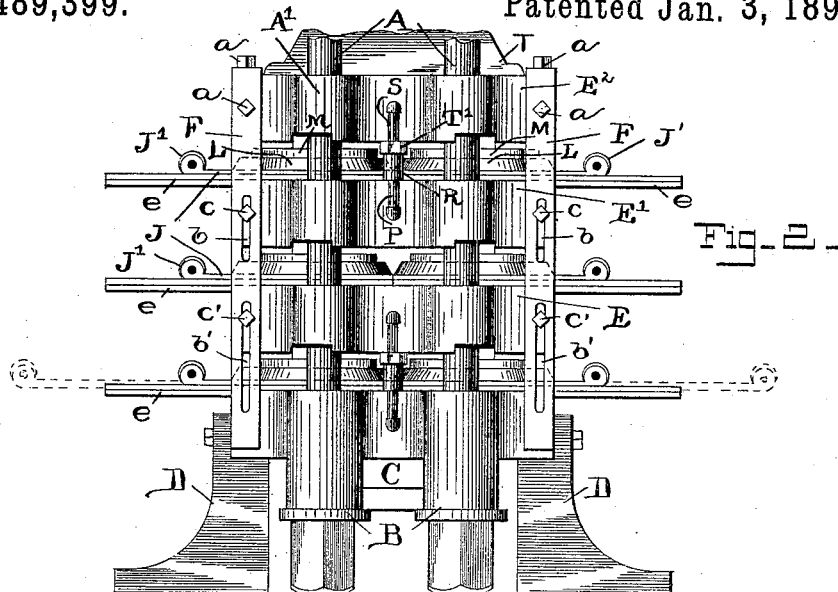


Fig. 2.

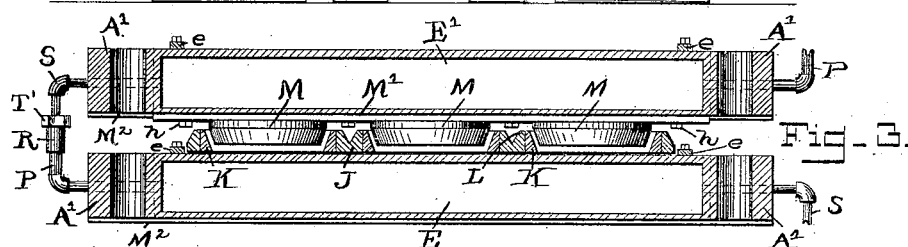


Fig. 3.

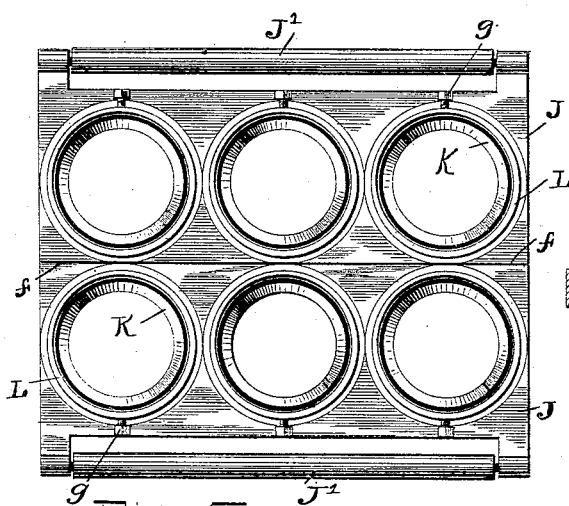


Fig. 5.

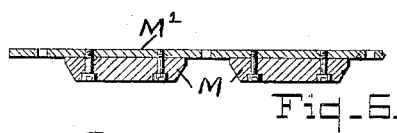


Fig. 6.

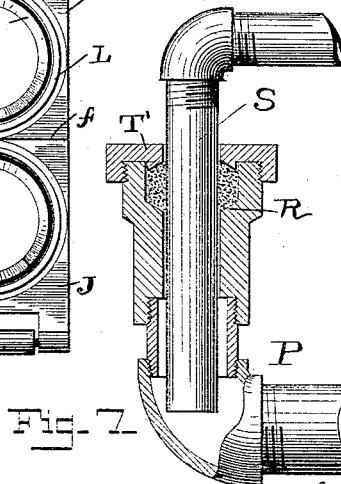


Fig. 7.

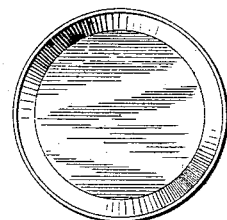


Fig. 8.

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UNITED STATES PATENT OFFICE.

CHARLES H. TREAT AND ANDREW B. BANGHART, OF BALTIMORE, MARYLAND; SAID BANGHART ASSIGNOR TO SAID TREAT.

MACHINE FOR PRESSING WOOD DISHES.

SPECIFICATION forming part of Letters Patent No. 489,399, dated January 3, 1893.

Application filed February 4, 1892. Serial No. 420,336. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. TREAT and ANDREW B. BANGHART, citizens of the United States, residing at Baltimore city, in the State of Maryland, have invented certain new and useful Improvements in Machines for Pressing Wood Dishes, of which the following is a specification.

This invention relates to an improved steam heated press for making single-blank wood dishes out of veneer, and has for its object to expedite and economize production by providing a machine which will press a large number of dishes at once and occupy a very small space as compared with the number of single presses (such as now used for the purpose) required to make the same number.

With this end in view the invention consists in the novel construction and combinations of parts hereinafter described and claimed.

The invention is illustrated in the accompanying drawings in which,—

Figure 1 shows a front elevation of the complete press closed as when forming the dishes; Fig. 2, a side view of the press in the same condition; (in this figure the top portion of the press comprising the actuating mechanism is removed to economize space on the drawings;) Fig. 3 is an enlarged longitudinal section through two of the press-followers showing the dies and molds and the steam space in the followers; Fig. 4 is a cross-section of one of the mold-carrying trays showing it drawn out from the press as when filling the molds with blanks or removing the finished dishes; Fig. 5, a detail plan view of two of such trays as they fit up to each other during the operation of pressing; Fig. 6, a sectional view of dies used to form the dishes; Fig. 7, a sectional view of a steam joint employed; Fig. 8 is a top view of a completed dish.

The machine comprises two pairs of vertical guide-posts, A, at each end, rising from pillars, B, which rest on a suitable base; a rectangular hollow casting or platen, C, is supported between the pillars, B, and preferably formed integral therewith; this platen connects the four pillars and is stationary; it is provided with an additional support by standards, D, at the front and back on which it rests.

Above the platen, C, is arranged a number of similar rectangular steam boxes, E, E', E², (in the present instance three are shown) one above the other and each having at its ends bosses, A', with guide holes through which the posts, A, loosely extend to allow the bosses to slide on them, and thus the steam boxes constitute the followers of the press. These several steam boxes are connected together by straps or plates, F, extending vertically across their ends, there being two of such plates or straps at each end; these straps serve to lift the several steam boxes or followers without interfering with their independence under compression. The straps are secured rigidly by bolts, a, to the top steam box, E², and have vertical slots, b, b', at the other two lower followers, E, E', which slots are loosely engaged by bolts, c, c', screwed into the ends of the boxes. The upper slots, b, at the second followers, E', from the top are short, about half the length, as compared with the slots, b', at the follower, E, next below. When the press is closed as in Figs. 1 and 2, the engaging bolts, c, c', are at the upper ends of their respective slots, as shown.

Toggles, G, are connected at their lower ends with a truss-plate, T, on the upper side of the top follower, E², and at their upper ends to girders, H, (one only appears the other being behind it) connecting the guide-posts, A. The toggles have screw-threaded nuts, d, at their elbow-joints and are operated by means of a right-and-left-hand screw, G', extending through the said nuts and provided with suitable means, such as sprocket-wheel, I, for receiving power. The top follower, E², has a central guide-stem, E³, projecting upward and which slides between the girders, H, connecting the posts.

The platen, C, and the two followers, E, E', next above it, have guide-strips, e, secured across their top surfaces and projecting forward so as to form horizontal slides for trays, J, there being two trays between each two steam boxes, which trays slide from opposite sides of the press and rest on the tops of said boxes; the inside edges, f, of the trays abut against each other, as shown in Fig. 5. The

trays are made of metal and have wooden handles, J', by which they are slid in and out; they carry the molds in which the veneer dishes are formed; these molds in the present instance consist of inside flared rings, K, which fit in openings through the trays, which openings have raised rims, L, around them. Set screws, g, in the raised rims hold the mold-rings in place and it will be obvious molds of different patterns and sizes may be used the same being readily interchangeable by this arrangement. In the present instance each tray has three molds and as two trays are used between adjoining steam boxes six molds are in the same horizontal plane.

Each steam follower carries plunger dies, M, on its under side to fit the molds; these dies are fastened on strips, M', which fit in longitudinal recesses, M², in the followers and are secured therein by screws, h; the plunger dies may be changed by removing said screws and allowing the strip, M', to drop out of the recess, when it and the dies may be taken out of the front of the machine.

Steam is supplied to the press through a pipe, N, entering the top follower, E², and is conducted through all the followers and the platen, C, and exhausts through a pipe, O, leading out of the latter. A sliding or telescope steam-pipe connection is provided between the followers and between the lower follower and the platen. This connection consists, in this instance of a pipe, P, leading out of one steam box and having a stuffing-box, R, and another pipe, S, leading out of the other steam box and fitting in the said stuffing box, R, and free to slide therein. A gland, T', screws over the stuffing box and holds the packing tight around the pipe, S. The said pipe, S, is of sufficient length to permit the movement of the followers, and it will be seen a sliding joint or a telescoping connection is thereby provided to permit this movement of the steam-boxes or followers without breaking the steam connections. Through these connections the platen and followers are kept full of steam which enters through the pipe, N, passes through the sliding connections above described, and discharges through the pipe, O.

The operation is as follows:—In opening the press the top follower, E², first raises and continues to move away from the second or next follower below until the bolts, c, arrive at the lower ends of the slots, b, in the plates, F, when the second follower, E', begins to raise away from the follower, E, below it; this continues until the bolts, c', arrive at the lower ends of the slots, b', (said slots being longer than the ones above as before mentioned) when the third or lower follower, E, will be lifted away from the platen. To fill the press the trays, J, are drawn out on the slides, e, and blanks in their flat state are placed on the ring-molds, K. The trays with the blanks in position are then slid back under the followers and the toggle operated to lower the latter. The length-

ening or straightening of the toggle lowers the followers, and the dies, M, on the bottom one will come down on the wood blanks which rest on the molds, K, above the platen, and when the second follower, E', comes to a position where its dies, M, are in contact with the molds on the lowermost follower, E, then the bolts c', are at the middle of the slots, b'; when the top follower, E², comes to a position where its dies rest on the molds of the second follower then the bolts, c, c', are at the upper parts of their respective slots. Now the continued lengthening of the toggles applies pressure to all the followers and the dies press the wood blanks into the molds, and thereby impart to said blanks the form desired. At the same time the wood blanks are subjected to the action of the steam-heat by reason of the steam passing through the followers and platen; thus the dies impart the form and the heat sets the thin wood so as to retain the form. When sufficiently pressed and dried the dishes are removed by opening the press as before, drawing out the bottomless trays on each side and raising the wood dishes out of the molds by the operator's hand tipping up the dishes, when they may be readily lifted out.

It will be observed in the pressing operation the lower set of mold-rings, K, rest on the platen and the upper sets on the tops of the followers next below them and none of the downward strain or compression is borne by the set-screws, g; they simply serve to prevent the rings from tipping up.

It will now be seen that with our improved machine a large number of dishes may be made at one pressing with great economy of steam, and the press occupies but little floor space as compared with the number of single presses that would be required to do the same amount of work.

It is obvious the construction here shown and described is susceptible of numerous changes, and hence we do not confine ourselves thereto.

Having thus described our invention what we claim as new and desire to secure by Letters-Patent is:—

1. In a press for making veneer dishes, the combination of a stationary platen; a number of followers above the same carrying dies and arranged one above another with suitable connections between them; upright guides for said followers; trays which slide in and out between the followers on projecting guide-strips and have openings through them and mold-rings about said openings whereby the molds are bottomless when the trays are drawn out on the projecting guide-strips, for the purpose described.

2. In a press for making veneer dishes, the combination of a stationary platen; three or more followers carrying dies and arranged one above another; plates extending vertically across the ends of said followers and secured rigidly to the uppermost follower and having

slots at the follower next below engaged by
projections therefrom, and having longer slots
at the follower next below the last-named fol-
lower engaged by projections from said third
5 follower; upright guides for the followers;
molds resting on the platen and the upper sides
of the followers; and actuating mechanism
connected with the uppermost follower.

In testimony whereof we affix our signatures
in the presence of two witnesses.

CHARLES H. TREAT.
ANDREW B. BANGHART.

Witnesses:

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F. PARKER DAVIS.