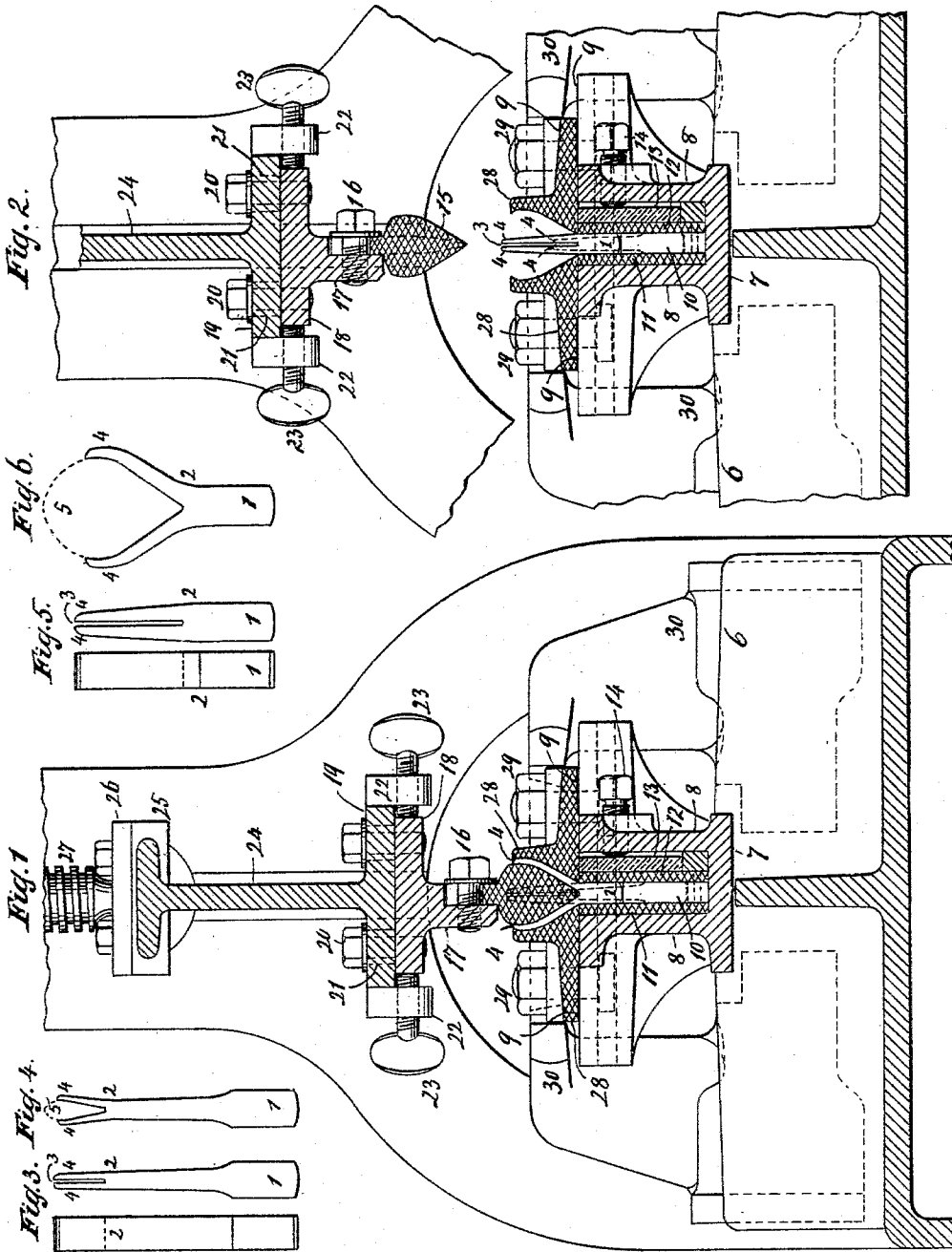


(No Model.)

A. DOLGE.
BENDING OR FORMING MACHINE.

No. 584,212.

Patented June 8, 1897.



WITNESSES:

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ALFRED DOLGE, OF DOLGEVILLE, NEW YORK.

BENDING OR FORMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 584,212, dated June 8, 1897.

Application filed January 29, 1897. Serial No. 621,197. (No model.)

To all whom it may concern:

Be it known that I, ALFRED DOLGE, a citizen of the United States, residing at Dolgeville, in the county of Fulton and State of New York, have invented new and useful Improvements in Bending or Forming Machines, of which the following is a specification.

This invention relates to a bending or forming machine for shaping the moldings for piano-hammers; and the invention resides in the novel features of construction set forth in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 is a sectional elevation of the machine after having formed a molding. Fig. 2 is a sectional elevation of the machine before having formed a molding. Fig. 3 shows a side and edge view of a treble-hammer molding before having been shaped or bent. Fig. 4 shows such a molding when shaped. Fig. 5 shows a side and edge view of a bass-hammer molding before having been shaped or bent. Fig. 6 shows such a bass-hammer molding when shaped.

These hammer-moldings, as seen in Figs. 3 and 5, comprise a stem 1 2 and have a cut or kerf 3, forming a fork or tines 4. The cut 3 in the treble-hammer moldings, Fig. 3, is of less depth than in the bass-hammer moldings, Fig. 5. When the tines 4 have been suitably spread, Figs. 4 and 6, the hammer-felt 5 can be glued or secured in such fork or molding. By forming the moldings of wood with the grain running in the direction of the bend or spread or along the stem and tines such moldings are not liable to break or split.

The wood for the moldings is obtained in pieces, which are glued together at the edges, making a piece long enough for a set of hammers—as, for example, a bass or treble set—the grain of the wood running the short way of the piece, or lengthwise of the finished hammer. These pieces are then respectively run through a molding-machine, where they are brought to the form shown in Figs. 3 and 5. The moldings being then held in a suitable clamp or fixture have the slots 3 cut thereinto by a circular saw or cutting-tool. The moldings for the sets of hammers are

then sliced or cut into pieces forming single-hammer moldings of suitable thickness—say thirteen thirty-seconds of an inch thick. These hammer-moldings can be suitably assembled for steaming and bending to form the hammers for a piano.

The machine for bending or shaping the piano-hammer moldings is shown in Figs. 1 and 2. The machine has a table or support 6, onto which can be slid or placed a box-like or trough-shaped holder or form comprising a base 7, sides 8, and tops 9, and adapted to receive the moldings for all the hammers of a piano. The molding-stems 1 are placed in the holder, suitable strips or pieces 10 of proper width being laid under the stems as required to bring the bottoms of the various cuts 3 of bass and treble moldings to a level. The strips or pieces 11 and 12 sit against the sides of stems 1 and are held in place by a piece of steel gib 13, pressed against piece 12 by set-screws 14, extended through a side of the form or holder. By having the pieces 10 and 12 suitably doweled together the piece 12 cannot be removed while putting the moldings in place.

In Fig. 2 the bass-hammer moldings are shown in full lines and the treble-hammer moldings in dotted lines. The strips or pieces 10, 11, and 12, when made of brass, it has been found, will not stain the moldings. The moldings, as understood, are sufficiently steamed or softened, and the trough or holder, with the steamed moldings, is placed on the machine-table 6. Said machine comprises a spreader 15, the outline of which for spreading the bass-hammer moldings is shown in full lines in Fig. 2, the dotted lines showing the outline of the spreader part which spreads the treble-hammer moldings. The spreader 15 is detachably secured by screws or fastenings 16 to a rib 17. By extending the slots in spreader 15 for the passage of screws 16 out through the top edge of the spreader a loosening of the screws will detach the spreader from the rib 17. The rib 17 forms a part of a plate or carrier 18, which being connected to plate 19 by screw and slot connections 19 and 20 can be laterally adjusted to center the spreader 15 relatively to the hammer-moldings or kerf 3. The plate 19 has flanges 22 with set-screws

23, enabling accurate adjustment or centering of the spreader. The plate 19 or its beam or rib 24 connects by plates 25 and 26 with the actuating or press screw 27 for running the spreader toward and from the moldings. As the spreader enters the kerf 3 it spreads the tines 4 from the position shown in Figs. 2, 3, and 5 to the shape shown in Figs. 1, 4, and 6. The spreader 15, when made of brass, has been found not to stain the molding or wood.

The form or trough on its tops or upper faces 9 carries slides or pressure-pieces 28, which can be slipped or run against the tines 4 and then secured by set-screws 29. The slides or compression-pieces 28 can be run against the tines or fork 4 by jaws 30, which can be actuated by suitable means, such as right and left hand screw-threads. (Not shown.) The slides 28 having been run with suitable pressure against the fork 4 and secured by screws 29, and the jaws 30 having been then withdrawn or backed off, and the spreader 15 in the fork 4 having been detached from rib 17, and such spreader being left in the fork, the form, with the fork 4 thus confined, can be slid off the table 6 and put to one side for the moldings to dry or set or become fixed in the required shape, the machine being in the meantime able to receive other forms. The capacity of the machine may thus be considered limited only by the number of available forms at hand.

The operation is readily understood. The moldings for the hammers of a piano ready for steaming being secured between the pieces 10 11 12, which are suitably clamped together, are put into a steam box or chest until sufficiently steamed, after which said steamed moldings, with the pieces 10 11 12, are slipped into the form 7 8 and the clamp removed and the pieces 10 11 12 secured by the screws 14. This form 7 8, with the contained moldings, is then slid or placed in the machine or onto table 6 and the spreader 15 fed to the moldings by the screw 27, which can be rotated by suitable means, such as a friction-pulley, worm-gears, and screws. (Not shown.) The former having spread the moldings or their forks 4 and having moved to the bottom of kerf 3, and the side pieces 28 having been brought to compressing position by the screws or jaws 30, and the holding-bolts 29 tightened, and the screws 16 slackened, the motion of the machine is reversed to cause the rib 17 to return to its starting-point, leaving piece 15 in the moldings, and the jaws 30 are backed off, the form 7 8 being removed to a dry box for the moldings to dry.

What I claim as new, and desire to secure by Letters Patent, is—

1. A box-like or trough-shaped holder or form for piano-hammer moldings, said form comprising a base, sides and tops, said sides being provided with clamping-screws for securing the contents of the form, and said tops being provided with slides or pressure-pieces

and with fastening-screws for said pieces substantially as described.

2. Holding-pieces for piano-hammer moldings during steaming comprising lateral pieces 11 and 12 and a base-piece 10, said lateral pieces being adapted to be clamped together and said base-piece and a lateral piece being doweled or secured together substantially as described.

3. The combination in an apparatus for shaping piano-hammer moldings, of a holder constructed to receive the molding, laterally-adjustable side pieces mounted on the holder, means for rigidly securing the molding in the holder between the laterally-adjustable side pieces, a spreader-carrier, and a spreader detachably secured to the carrier, so that when inserted into the molding to spread the same the spreader and the molding are removable together, substantially as and for the purposes described.

4. The combination in an apparatus for forming piano-hammer moldings, a holder constructed to receive the molding, means for securing the molding in the holder, laterally-adjustable side pieces constructed to shape the molding when it is spread, a reciprocatory spreader-carrier, and a spreader attached to the carrier and forced into engagement with the molding when the carrier is advanced and coöperating with the laterally-adjustable side pieces to shape the molding, substantially as and for the purposes described.

5. The combination in an apparatus for forming piano-hammer moldings, of a holder constructed to receive the molding, devices for rigidly securing the molding in the holder, laterally-adjustable side pieces mounted on the holder and constructed to shape the molding when it is spread, a spreader-carrier, a spreader attached to said carrier and moved into engagement with the molding when the carrier is advanced and coöperating with the laterally-adjustable side pieces to shape the molding, and means for moving the carrier back and forth, substantially as and for the purposes described.

6. The combination in an apparatus for forming piano-hammer moldings, of a holder constructed to receive the molding, laterally-adjustable side pieces mounted on the holder and constructed to shape the molding when spread, a reciprocatory spreader-carrier, and a spreader connected with and laterally adjustable on said carrier for centering the spreader, and means for moving the carrier back and forth, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ALFRED DOLGE.

Witnesses:

WILLIAM DOLGE,
E. F. KASTENHUBER.