Dec. 8, 1925. 1,565,147

W. J. HERSCHEDE ET AL

CLOCK CABINET

Filed Aug. 23, 1923

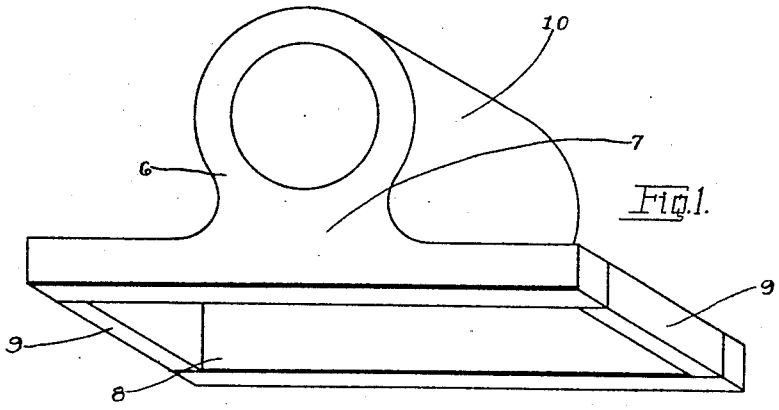


Fig. 1.

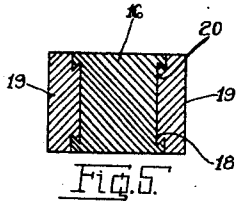


Fig. 5.

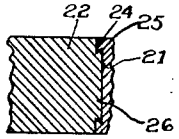


Fig. 4.

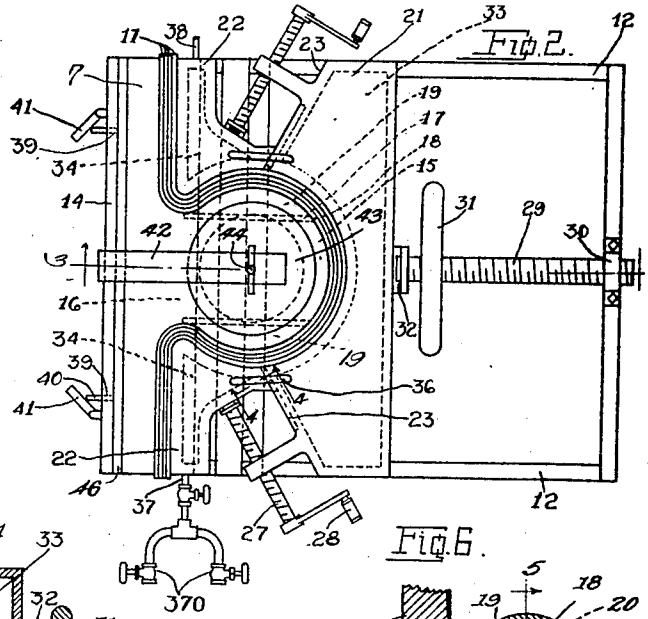


Fig. 2.

Fig. 6.

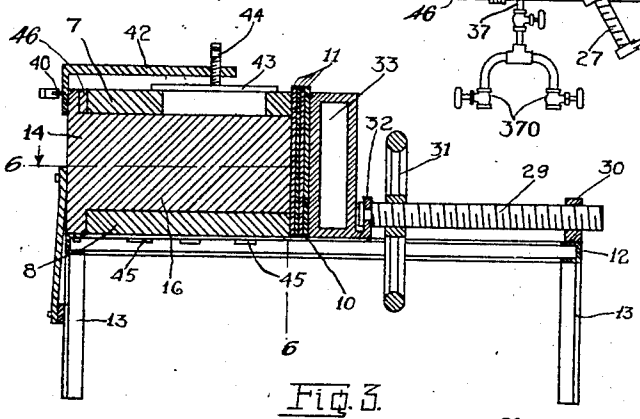
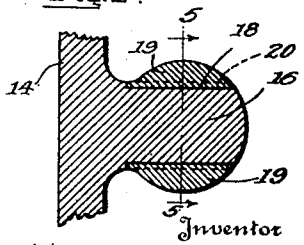


Fig. 3.



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UNITED STATES PATENT OFFICE.

WALTER J. HERSCHEDE AND WALTER EBERHARDT, OF CINCINNATI, OHIO, ASSIGNORS TO THE HERSCHEDE HALL CLOCK COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

CLOCK CABINET.

Application filed August 23, 1923. Serial No. 658,867.

To all whom it may concern:

Be it known that we, WALTER J. HERSCHEDE and WALTER EBERHARDT, citizens of the United States of America, and residents of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in a Clock Cabinet, of which the following is a specification.

Heretofore in the manufacture of the cabinets of the type in which the top portion is bent in compound curves, it has been customary to form the top portion first and that operation was only accomplished with difficulty and at a sacrifice of much time.

An object of our invention is to provide a process and apparatus by means of which a cabinet may be formed and assembled at one operation.

Another object is to provide a device for carrying out this process that is simple and efficient in its operation.

Another object is to provide a device of this kind by means of which a great saving of time may be effected.

These and other objects are attained by the means and process described herein and disclosed in the accompanying drawings, in which—

Fig. 1 represents a perspective view of a cabinet to be made in a device of our invention.

Fig. 2 is a plan view of the device of the invention.

Fig. 3 is a cross sectional view on line 3—3 of Fig. 2.

Fig. 4 is a cross sectional view on line 4—4 of Fig. 2.

Fig. 5 is a cross-sectional view on line 5—5 of Fig. 6.

Fig. 6 is a view taken on line 6—6 of Fig. 3 and showing a cross-sectional view of the stationary mold only.

For example let it be supposed that a clock cabinet shown in Fig. 1 is to be made. The clock cabinet 6 comprises a face 7, a back 8, sides 9 and top 10. The top 10 comprises a number of layers or laminations 11 of veneer. The device comprises a rectangular base 12 which may be constructed of angle iron or channel iron and supported upon suitable uprights 13. Mounted on top of the base is a pair of relatively movable molds, the first or fixed mold 14 is substantially T-shaped, the end 15 of the stem 16 being formed to conform with the inside central portion of the top 10 of the clock cabinet. The sides 17 of the stem 16 carry dove-tailed grooves 18. Complementary slidable sections 19 carry upon their flat sides suitable dove-tailed slides 20 which engage in the dove-tailed grooves 18 of the stem as is shown in Fig. 5. The sections 19 when slidably fitted upon the stem 16 conform to the inner curved portion of the cabinet 6 which may be substantially cylindrical as is shown in Fig. 1 or of any other desired shape. The second or movable mold 21 and its adjustable members or molds 22, are capable of adjustment to conform with the outer contour of the cabinet 6. The movable mold 21 has diagonal faces 23 extending from the central opening thereof, the sides 24 of which are provided with dove-tailed grooves 25. The adjustable members 22 are provided with dove-tailed slides 26 which engage in the dove-tailed grooves 24 of the mold 21. A suitable adjusting screw 27 is mounted in a threaded bore in a frame of the mold 21 and its one end is swivel mounted to the adjustable mold 22. The other end of the screw 27 is provided with a suitable actuating handle or crank 28. The movable mold 21 carrying adjustable molds 22 is slidably actuated as a unit by means of a jack screw 29, the threads of which engage in a threaded bore of a block 30 mounted at the end of the frame 12. The end of the screw 29 is swivel mounted at 32 to the mold 21. A hand wheel or lever 31 is secured to the screw 29 whereby the mold 21 may be moved into and out of engagement with mold 14. The movable mold and its adjustable members 22 have chambers 33 and 34 therein and these chambers are connected with one another with suitable flexible hose or pipes 36. Suitable ports 37 and 38 are located at the extreme sides of the mold 21 and a valve 370 is provided whereby a suitable heating medium such as hot water may be admitted to the chambers 33 and 34 and exhausted therefrom. A suitable cooling medium is arranged to be likewise admitted to and exhausted from these chambers through the same ports. The fixed mold has bores 39 through the upper portions of its extreme upper side through which extend ejectors or ejector pins 40 ac-

tuated by levers 41 hingedly mounted to the outer side of the fixed mold 14. The purpose of these ejectors is to remove work from the mold after completion. A loose bar 46 of any suitable material is inserted between the mold 14 and the portion 7 of the work and is adapted to be engaged by the pins 40 when they are employed to separate the work from the mold 14. The purpose of the bar 46 is to preclude damaging the cabinet. A suitable clamp 42 is mounted above the top of mold 14 and carries a flanged disc 43 which may be brought into contact with the portion 7 of the work by any suitable means such as a hand screw 44 threadedly mounted in the clamp 42. The purpose of the clamp and disc is to prevent the work from warping while in the mold. The work is supported at the bottom with suitable cross bars 45.

As a summary, the apparatus of the invention consists in a pair of relatively movable composite molds each having relatively movable sections associated therewith. The first mold with its complementary sections 19 corresponds to the interior of the cabinet to be made, while the second mold and its adjustable molds 22 are adapted to conform to the outer shape of the cabinet.

The process of making the cabinets and operation of the mold is as follows. Complementary sections 19 are slidably mounted upon the first or fixed mold 14. The wood to be used in making the cabinet is cut to dimension and placed in position in the mold, having previously had its joints coated with glue. The several layers of veneer 11 are coated with glue and placed centrally in position against the rounded portion 15 of the first mold. The second mold 21 having its adjustable sections 22 drawn back within the lines of its curved surface, is then brought forward so as to hold the layers 11 of the top 10 between the two molds. The other component portions of the cabinet, namely sides 7 and 8 and ends 9 are then properly positioned and the disc 43 inserted into the face opening of the front 6 of the cabinet. These parts having been positioned, the adjustable molds 22 are then screwed into place, the entire cabinet then being tightly clamped on all sides. A heating fluid such as hot water is then admitted into the chambers after which the molds may be tightened somewhat. After the mold and the work therein has been sufficiently heated a cooling medium such as cold water is then admitted in the same manner as was the heating medium, whereupon the glue or bonding substance will be chilled and set. The second mold 21 is then withdrawn and carries with it the cabinet. The ejector pins and levers 40 and 41 being used to loosen the work from the first mold 14, the sections 19 of the first mold will be withdrawn therefrom by the cabinet as it is withdrawn and may then be easily removed from the cabinet and replaced upon the first mold for making another cabinet. It will be readily noted that the device need not be confined to making only the type of cabinet shown, but with such modifications as are well within the skill of an ordinary mechanic, may be used for making various types of cabinet work. The process and method just described requires about 15 or 20 minutes of time to assemble a cabinet, while by the older method five or six hours of time was required to form the top alone.

Another advantage attained by the method and device described, is that the work accomplished is uniform and more accurate than that made by the old method, because the joints are more firmly and evenly united and the parts are not subject to the distortions incident to piece-meal construction of the cabinet.

What we claim is:

1. In a device of the class described, the combination of a fixed mold mounted on a base, a movable mold mounted for cooperative adjustment with the fixed mold, the fixed and movable molds having adjustable sections slidably mounted thereon, means carried by the base and movable mold for adjusting and clamping said movable mold and means carried by the movable mold for actuating the adjustable portions thereof.

2. In a device of the class described, the combination of a fixed mold having slidable sections mounted thereon, a movable mold, adjustable members mounted on the movable mold, means for bringing the movable mold into and out of operative adjustment with the fixed mold and means for actuating the adjustable members of the movable mold.

3. In a device of the class described, the combination of a fixed mold, having slidable sections mounted thereon, a movable mold having chambers therein, adjustable members on the movable mold, having chambers therein, means for connecting the chambers in the movable mold and the adjustable members for admitting and exhausting a fluid, a valve for controlling the flow of fluid, means for actuating the adjustable members in relation to the movable mold and means for moving said movable mold into and out of cooperative relationship with the fixed mold.

4. In a device of the class described, the combination of a pair of relatively movable molds, between which work may be clamped, the fixed mold having complementary slidable sections mounted thereon and means for ejecting work from the mold, the movable mold having adjustable molds associated therewith, the movable mold and the adjustable molds having chambers therein for containing a fluid, means for conveying

the fluid to the chambers and means for actuating the movable and adjustable molds.

5. The process of assembling a composite mold, applying a bonding substance to several layers of veneer and to the component parts of an object to be formed and placing said veneer and parts about said composite mold, then bringing a second complementary composite mold into engagement with the parts positioned about the first mold, adjusting the parts of the second mold into clamping engagement with the parts on the first mold, heating the parts and bonding substance therein, tightening the molds upon the said parts, then chilling the bonding substance, releasing portions of the second composite molds, drawing said second mold out of engagement with the object on the first mold withdrawing the object from the first mold and with it portions of said first composite mold and removing from the object said portions of said first composite mold.

6. The process for forming laminated veneer work comprising applying a bonding substance to the several layers of veneer, clamping the same between a pair of composite molds, heating and then chilling the bonding substance and removing one mold then removing the work and parts of the second composite mold and then removing said parts of said second mold from the work.

7. In a device of the class described, the combination of a fixed mold having slidable sections mounted on opposite sides thereof, a movable mold comprising a large-chambered mold adapted to engage substantially an end of the fixed mold, and auxiliary slidable chambered members adapted to engage the slidable sections on the fixed mold, means for moving the movable molds into and out of operative relation with the fixed mold, means for actuating the adjustable members of the movable mold, and means for conducting heating and cooling mediums into the chambers in the movable mold.

In testimony whereof, we have hereunto subscribed our names this 17th day of August, 1923.

WALTER J. HERSCHEDE.
WALTER EBERHARDT.