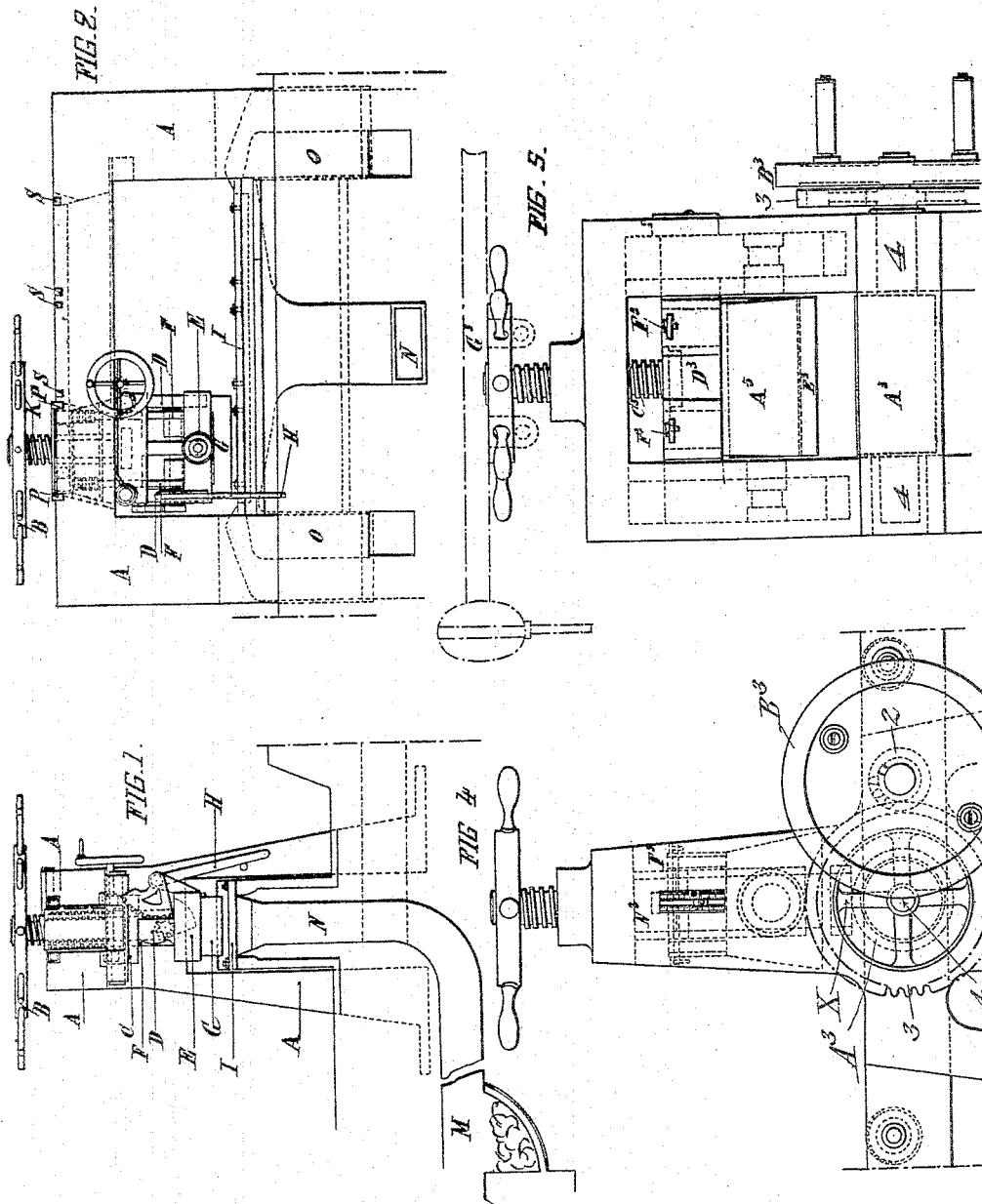


A. GUATTARI.

PROCESS OF AND APPARATUS FOR PRODUCING ORNAMENTAL WOODWORK.

No. 491,283.

Patented Feb. 7, 1893.



Witnesses:
Henry C. Cording,
J. M. Hachschlager.

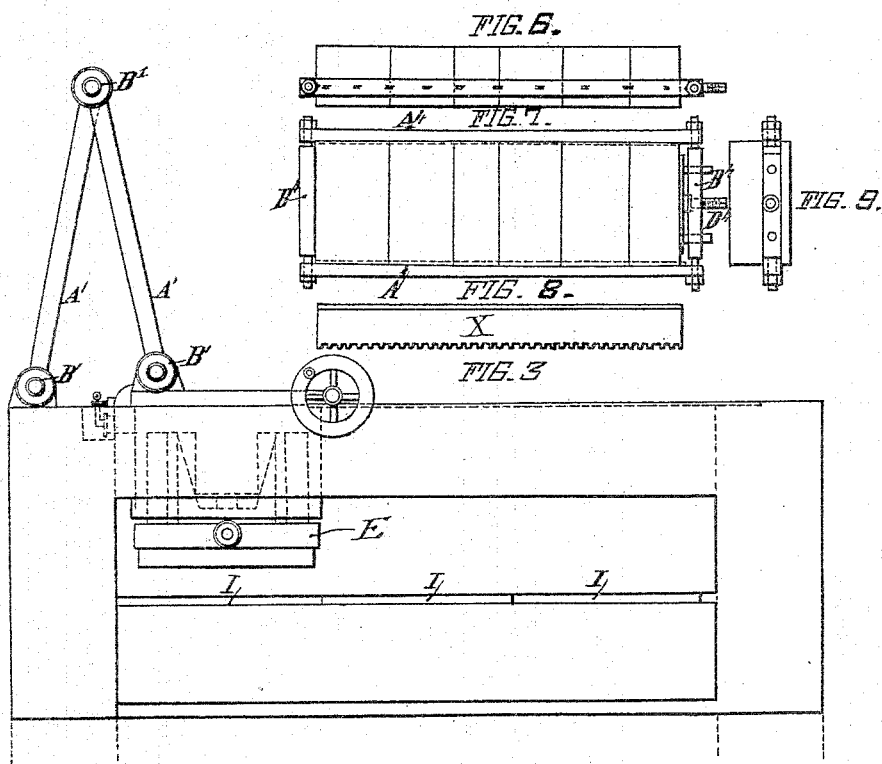
Inventor
Auguste Guattari,
By Briesen & Knautz
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UNITED STATES PATENT OFFICE.

AUGUSTE GUATTARI, OF MILAN, ITALY.

PROCESS OF AND APPARATUS FOR PRODUCING ORNAMENTAL WOODWORK.

SPECIFICATION forming part of Letters Patent No. 491,283, dated February 7, 1893.

Application filed December 17, 1891. Serial No. 415,338. (No model.) Patented in France September 22, 1888, No. 193,143; in Belgium September 25, 1888, No. 83,366; in England September 27, 1888, No. 13,931; in Germany October 28, 1888, No. 48,680, and in Italy December 31, 1888, XLVIII, 346.

To all whom it may concern:

Be it known that I, AUGUSTE GUATTARI, of the city of Milan, Italy, have invented a Process of and an Apparatus for Producing Ornamental Woodwork, (for which I have obtained Letters Patent in France for fifteen years, dated September 22, 1888, No. 193,143; in Belgium for fifteen years, dated September 25, 1888, No. 83,366; in England for fourteen years, dated September 27, 1888, No. 13,931; in Germany for fifteen years, dated October 28, 1888, No. 48,680, and in Italy for fifteen years, dated December 31, 1888, Vol. 48, No. 346,) of which the following is a full, clear, and exact description.

According to my invention the wood to be ornamented is operated on perpendicularly to the direction of the grain, the burned surfaces being then subjected in hot water to a cleaning or brushing, dried, again brushed, and then finally pressed in a finishing press.

The invention will be described with reference to the accompanying drawings, forming part of this specification, in which

Figure 1 is a side elevation of a combined mold-heating and pressing apparatus embodying my invention; Fig. 2, is a front elevation of the same; Fig. 3, represents a press adapted to be operated by steam, water or any other power; Fig. 4, is a side elevation of the finishing apparatus; Fig. 5, is a front elevation of the same; Fig. 6, is a side elevation of an attachment for binding small pieces of wood together in a mold; Fig. 7, is a top plan view of the same; and Fig. 8 is an end view of the same; and Fig. 9, is a side view of a finishing mold used in the press shown in Figs. 4 and 5.

Referring to Figs. 1 and 2, the press is actuated by hand. I represent a series of molds each having upon its face in relief the designs or ornaments to be produced upon the block of wood G which designs, however, are not shown in the drawings, it being obvious that any suitable design may be used. To prevent cooling of the molds I (which would lead to their oxidation and the consequent deterioration of the pattern surface) they are constantly exposed to the heat of a furnace M conveyed to them through a flue N and thence through other flues O to a chimney.

The press by which the block of wood G is brought with great pressure into contact with the molds is carried by a frame A upon which it may be moved as hereinafter described. It comprises a hand screw K Fig. 2 turned by a hand wheel B and terminating in a head C Fig. 1 acting as an abutment for cams D on a shaft mounted on the holder E which carries the block of wood G to be operated on. This block holder E is shown as suspended by spring rods F and is forced by means of the hand screw K, and hand-wheel B, toward, and against the molds I, carrying with it the wood to be operated upon and can be suddenly withdrawn therefrom by rotating the cam shaft through the medium of the hand lever H which gears by a toothed sector with a pinion on the shaft as shown in Fig. 1, the cams in their rotation producing the separation of the holder E from the abutment plate C whereby the wood is brought down toward the molds. After this movement it is only necessary to apply the pressure proper, by turning the hand wheel B.

The particular arrangement of the cam and spring arrangement above described is designed to insure the immediate removal of the wood from contact with the mold, which being heated to redness would injure the work by excessive charring were the contact too prolonged. As it is necessary that the mold should be heated to a bright red and as after applying several pressures it becomes cooled down so far as to prejudice the result of the operation, a series of molds I having the same design are provided arranged in a rectilinear or circular series as shown in Figs. 2 and 3 and the press is made movable on its supporting frame so that when a mold has been used a sufficient length of time the press may be shifted and brought into position over one of the adjacent molds which has been heated while the former has been in use. In order to insure the exact correspondence of the work with the mold to be brought into use, the frame A is provided with notches S Fig. 2 in which lugs P on the press, are received.

In Fig. 3 the press is operated by hydraulic, steam compressed-air or other power, the motive fluid being conveyed through pipes A' connected by joints B' to permit of the nec-

essary motions of the press, as above described. The wood after being thus treated is scoured in warm water by any suitable means such as revolving brushes immersed in a bath whereby the loose carbonized particles are removed. The wood after being cleaned is completely dried and then subjected to the action of another cleaning by any suitable means such as a rotary metallic brush whereby any particles that may remain in the hollows of the design are removed.

The wood after being cleaned is subjected to the action of a finishing press, represented in Figs. 4 and 5. This finishing operation is performed by means of a finishing or smoothing mold X and constructed with regard to the action of the heat on the first of the series of molds I by which the work has been roughed out.

Upon a stud secured to the frame is arranged to rotate a balance or hand wheel B³, to which is secured a pinion 2, meshing into a gear-wheel 3 secured to a revolving shaft 4 carrying a cylinder A³. This cylinder in rotating carries with it through the press by frictional contact or by teeth (not shown) the finishing mold X, shown in Fig. 4, this mold being provided with corresponding teeth on the under side as shown. The required pressure is obtained by means of an upper cylinder A⁵, supported in a frame provided with an upward projecting stud or boss D³ provided with a threaded socket in which works a screw shaft C³ having a hand wheel G³ secured to its upper end. The degree of pressure is shown by an indicator N³ seen in Fig. 4. If it is desired in certain cases to substitute flat surfaces for the cylinder A⁵, a plate E³ may be connected to the stud D³ by links F³, as shown in Figs. 4 and 5, while another flat plate, to support the finishing mold X, can be placed over the cylinder A³.

For small work the waste pieces from larger work are utilized and in this case the same mold may bear several subjects and to utilize the waste pieces they are combined as shown as to form a surface equal to the area of the mold, each piece of end grain wood being large enough to receive a complete design

from the mold. The various pieces are firmly bound together in a single block by means of a frame composed of side bars A⁴ spiked on the inner surface and connected at the ends by cross bars B⁴ bolted to the side bars A⁴ and provided at one end of the frame with a pressure screw and clamping plate D⁴ whereby the necessary pressure is applied.

I claim—

1. The herein described process of producing ornamental wood-work by means of a series of heated molds, having the same design, consisting in submitting a piece of wood to the successive and consecutive action of each newly heated mold of the series as desired, and without removing the piece of wood from the mold press, substantially as described.

2. The herein described process of ornamenting wood which consists in burning the design, subjecting it to a bath while cleaning and finally subjecting it to pressure in a finishing press, substantially as described.

3. In an apparatus for producing ornamental wood-work, the combination with the die, and a die-pressing mechanism adapted to be adjusted in a horizontal plane of means for raising the die from the wood when desired, and of a mold and apparatus for heating the same, all said parts being arranged and adapted to operate substantially as described and for the purpose set forth.

4. In an apparatus for producing ornamental wood work, the combination with a series of molds having the same design, of a die press adapted to be moved forward in a horizontal plane and means for regulating the extent of motion of said die press, all of said parts being arranged to operate, substantially as described, and for the purposes set forth.

The foregoing specification of my process of and apparatus for producing ornamental woodwork signed by me this 30th day of November, 1891.

AUGUSTE GUATTARI.

Witnesses:

ANT. BIANCHI CARLE,
MAY S. PEPPER.