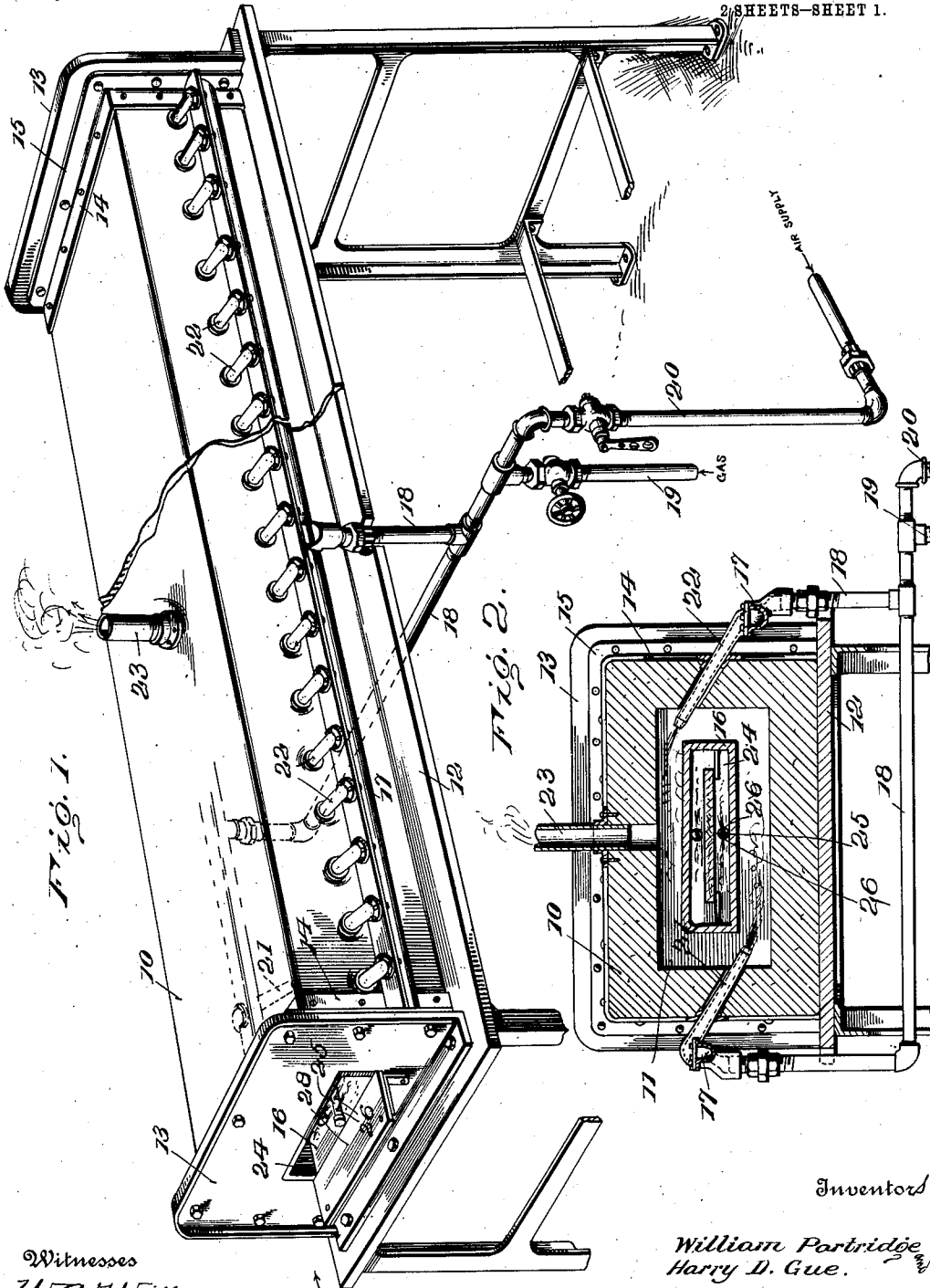


W. PARTRIDGE & H. D. GUE.  
METHOD OF FINISHING OR ORNAMENTING WOOD.  
APPLICATION FILED JULY 12, 1911.

1,009,436.

Patented Nov. 21, 1911.

2 SHEETS-SHEET 1.



Witnesses  
W. A. Williams.  
Dudley Browne.

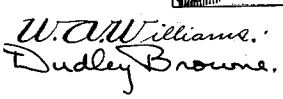
By  
Browne & Phelps.

Inventors  
William Partridge  
Harry D. Gue.

Attorneys

**1,009,436.**

2 SHEETS—SHEET 2.



Brown & Phelps

Attorneys

# UNITED STATES PATENT OFFICE.

WILLIAM PARTRIDGE AND HARRY D. GUE, OF BROOKLYN, NEW YORK.

## METHOD OF FINISHING OR ORNAMENTS WOOD.

1,009,436.

Specification of Letters Patent.

Patented Nov. 21, 1911.

Application filed July 12, 1911. Serial No. 638,170.

*To all whom it may concern:*

Be it known that we, WILLIAM PARTRIDGE and HARRY D. GUE, citizens of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Methods of Finishing or Ornamenting Wood, of which the following is a specification.

Our invention relates to certain new and useful improvements in the method of finishing or ornamenting wood, which consists in burning or charring the surface thereof and then removing more or less of the charred portion of the wood, by rubbing or brushing said surface.

The process of finishing wood as heretofore carried out has consisted in applying a torch or other heat-producing medium, in the open air, to the surface of the wood to be finished. This has resulted in an uneven burning of the wood, due to the fact that the temperature at any point is dependent upon the applied heat, together with the heat generated by the burning of the wood itself, and it is evident that in the open air this amount of heat will vary with each change of air current, so that it is impossible to evenly burn the wood. As a piece of wood tends to contract at the point or points of greatest carbonization, it is evident that such uneven burning will alter the internal stresses of the wood, making the same differ at different parts thereof, consequently warping or distorting the pieces of wood from their original or unburned shape.

The object of our invention is to burn the wood on both surfaces evenly by applying an equal amount of heat to all portions of the surface for the same length of time, and to apply the same without the disturbing effects of varying air currents, whereby an even burning of the wood is effected, and consequently the same stresses are produced at all portions of the piece of wood, so that the relation of the internal stresses in the wood is not changed and its original shape maintained.

With these and other objects in view our invention consists in passing a piece of wood through a chamber heated up to or beyond the temperature at which the wood ignites, so that all portions of the wood are subjected to the same temperature for the same length of time, and an even burning is produced.

Our invention further consists in supplying to the chamber a controlled amount of air, whereby the rapidity with which the wood is carbonized can be regulated by the amount of air supplied to the chamber.

In the accompanying drawings forming part of this application, wherein the same part is designated by the same reference numeral wherever it occurs, we have illustrated a construction that is capable of carrying out our invention.

Referring to the drawings—Figure 1 is a perspective view of a device capable of carrying out the steps of our method with parts of the device broken away; Fig. 2 is a central cross section of Fig. 1, so taken as to show the flue and two of the burners in cross section, and Fig. 3 is a central longitudinal section of the construction shown in Fig. 1.

10 designates the shell of the muffle or chamber, preferably formed of terra cotta, or other suitable material, and provided with a central extending combustion chamber 11. This shell is preferably supported on top of the table 12 and secured to end plates 13 bolted to the ends of the table. In the form shown the ends of the shell are surrounded by a pair of flanged straps 14 suitably secured thereto with the flanges 15 bolted to the inner faces of the plate 13. Extending through the central portion of the combustion chamber 11 is a shell 16 preferably formed of cast iron or similar heat-conducting material, the ends of the shell 16 being supported in openings formed in the end plates 13 so that the ends close the combustion chamber 11.

Mounted at each side of the shell 10 of the muffle is a longitudinally extending pipe 17, connected by pipes 18 to a gas supply pipe 19 and with an air supply pipe 20. Extending through the shell of the muffle into the combustion chamber 11 are a series of burners 21, 22. Preferably the burners 21 project downwardly so as to cause the flame from these burners, which are all located on one side of the muffle, to pass below the shell 16, while the burners 22 on the other side of the muffle extend above the shell 16 to cause the flame to pass over the top of the shell, whereby the products of combustion in the combustion chamber circulates around the shell 16 and evenly heats all parts of the same.

23 is a flue by which the products of com-

bustion escape from the combustion chamber 11.

In order to supply a regulable quantity of air to the heating chamber 24 within the shell 16, we have illustrated a pipe 25 extending centrally along the bottom of the chamber 24, the pipe being provided with a series of perforations 26 for the escape of air from the pipe into the heating chamber. We also provide a valve 27 in the pipe 25, so that the amount of air supplied by the chamber can be regulated, and consequently the rate of combustion of the wood being treated in the chamber controlled. In order to assist in the feeding of boards, or pieces of wood through the heated chamber a shelf 28 may be provided at each end of the muffle, on which the board or piece of wood rests in being passed through the chamber. The construction which has just been described merely illustrates one device by means of which our method may be carried out, and we desire to have it understood that any other construction capable of carrying out our method may be used instead of the construction illustrated.

In carrying out our method by the use of the construction shown and described the burners 21 and 22 in the combustion chamber 11 are lighted and the chamber 24 heated up to a temperature at least as high as the ignition temperature of the wood to be treated. A board or other piece of wood to be treated is now passed through the chamber which it will be noted, in the construction shown, is open at its ends. As the heat within the heating chamber 24 is above the ignition temperature of the wood, the surface of the board takes fire and burns evenly throughout its entire surface while passing through the chamber. As the heat

supplied to all portions of the board is the same this results in an even burning of the entire surface thereof, and consequently does not alter the relation of the various stresses in the wood, and the burning of the surface is effected without any warping, or changing in shape of the board or other piece of wood. After the burning operation is completed the surfaces may be brushed, or rubbed, in order to remove a greater or less portion of the charred part thereof to produce the desired effect. If desired the part after treatment may be split or sawed, in order to produce two parts, each having one surface in the manner described, or the board may be used with both sides finished.

What we claim as new and desire to secure by Letters Patent is:

1. The method of ornamenting wood which consists in introducing the same into a chamber having a temperature as great as the ignition temperature of the wood, whereby both sides of the wood are burned continuously from one end to the other thereof, and all portions of the wood subjected to the same temperature.

2. The method of ornamenting wood which consists in introducing the same into a chamber having a temperature as great as the ignition temperature of the wood and simultaneously supplying air to the chamber, whereby equal carbonization is produced at all points on the surfaces of the wood.

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

WILLIAM PARTRIDGE.  
HARRY D. GUE.

Witnesses:

D. J. GUE,  
T. L. BAYNE.