(No Model.) 2 Sheets—Sheet 1.

F. KUKKUCK.

APPARATUS FOR DRYING VENEERS.

No. 457,281. Patented Aug. 4, 1891.

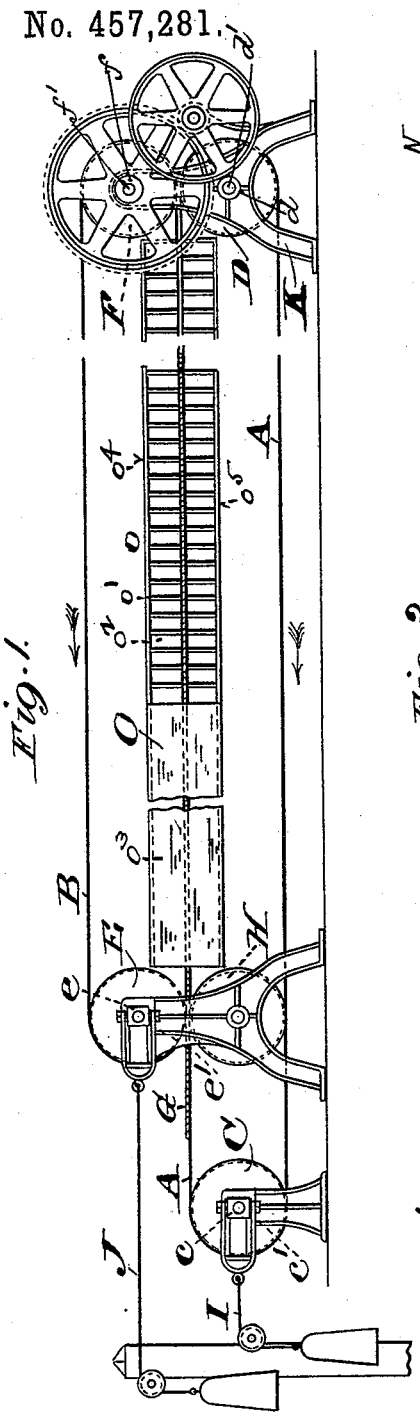

Fig. 1.

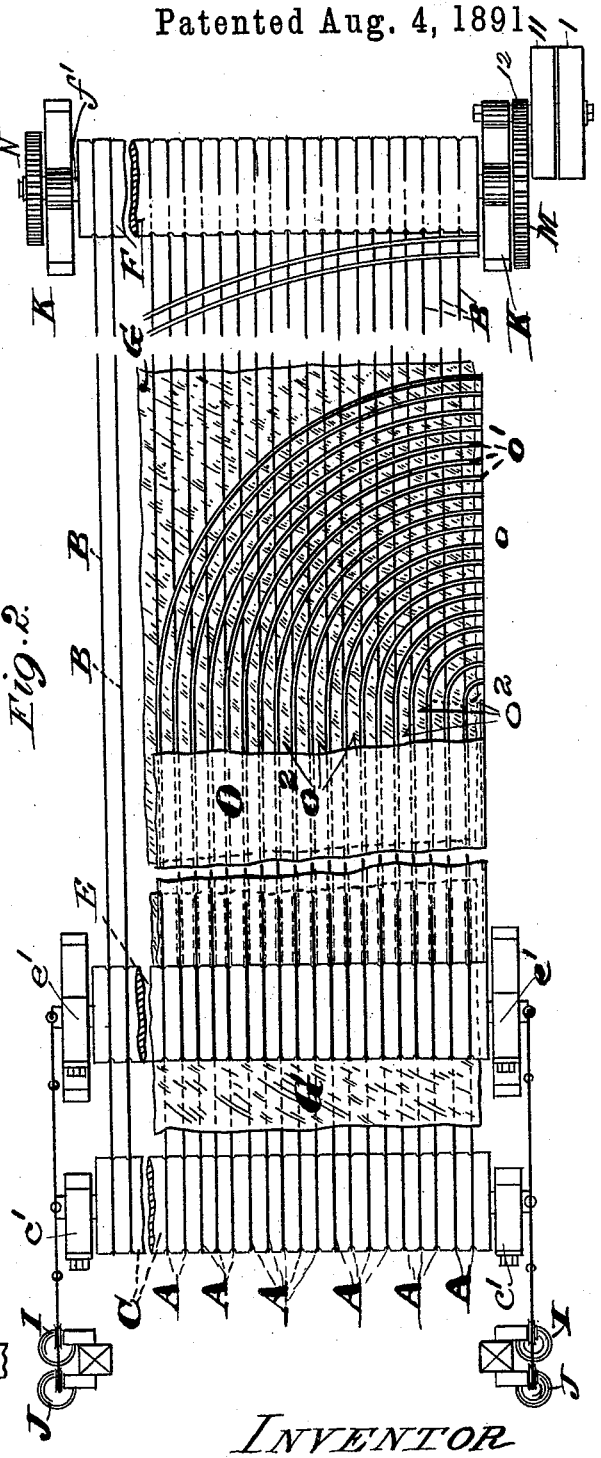

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

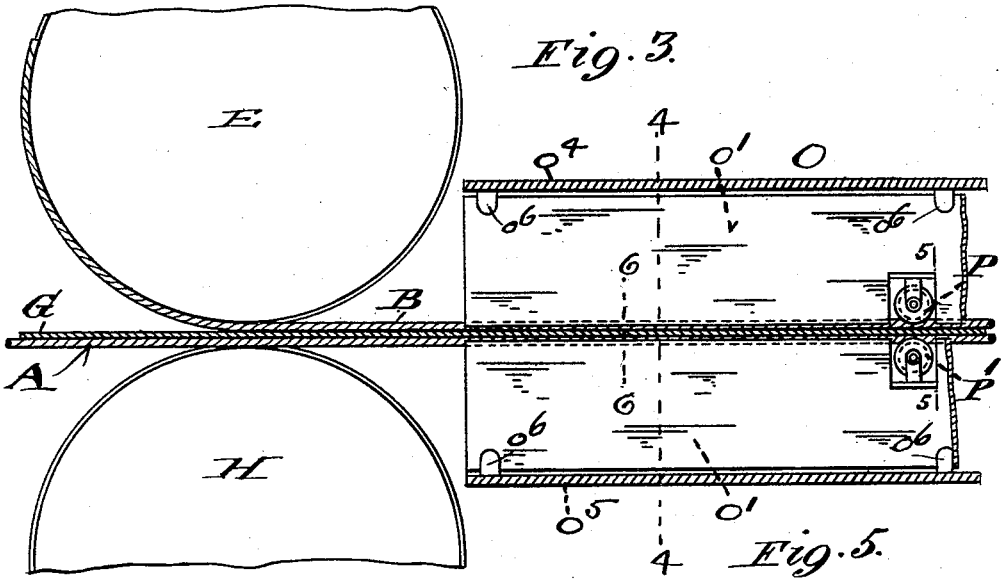


Fig. 5.

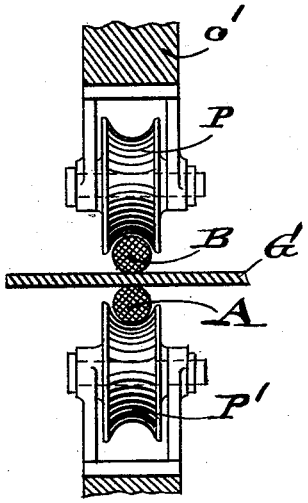


Fig. 4.

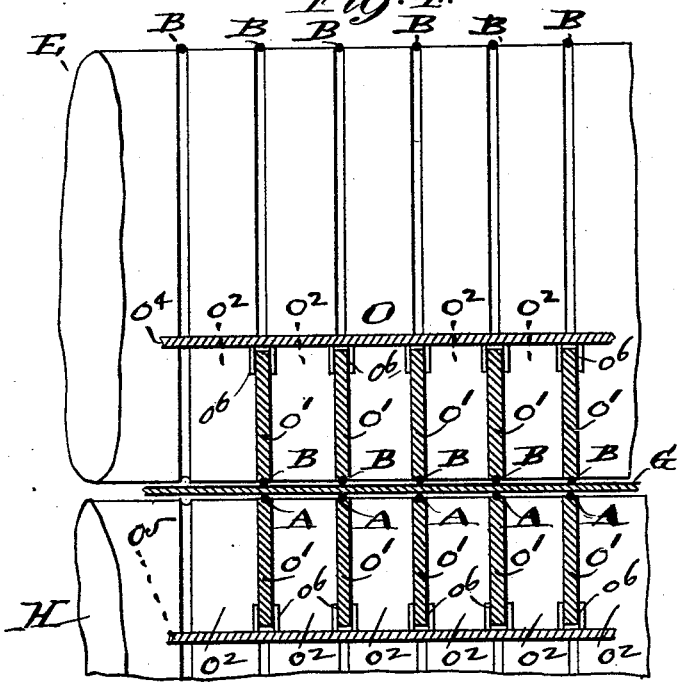
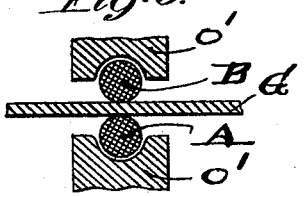


Fig. 6.



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UNITED STATES PATENT OFFICE.

FREDERICK KUKKUCK, OF ST. LOUIS, MISSOURI.

APPARATUS FOR DRYING VENEERS.

SPECIFICATION forming part of Letters Patent No. 457,281, dated August 4, 1891.

Application filed December 29, 1890. Serial No. 376,119. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK KUKKUCK, of St. Louis, Missouri, have made a new and useful Improvement in Methods and Appliances for Drying Veneers and other Material, of which the following is a full, clear, and exact description.

The present improvement is carried out substantially as follows: Two systems of endless traveling laterally-separated bands are employed—a lower and an upper system. The two systems are spaced far enough apart vertically—that is, the lower portions of the bands of the upper system are far enough above the upper portions of the bands of the lower system—to admit the veneers or other material to be dried between them. The bands bind the veneers sufficiently to carry them along with the bands in their movement and to discharge the veneers at the farther end of the machine. A chamber incloses the bands, which support and carry the veneers, and a current of hot air is caused to flow through the chamber. As the veneers are borne along they are exposed to the hot air, and are thereby dried. The bands constitute an open-work clamp, which provides for the access of the heated air to the veneers and also holds them flat while being subjected to the heat. The machine may be of any width and of any length suitable for the purpose in question. The air-current is introduced at or toward the delivery end of the machine, and preferably at the side thereof, and to enable the heat to be applied uniformly throughout the width of the machine it is caused to traverse the chamber in a divided form, all substantially as is hereinafter described and claimed, aided by the annexed drawings, making part of this specification, in which—

Figure 1 is a side elevation of the improved machine, partly broken away; Fig. 2, a plan thereof, a portion of the roof of the hot-air chamber being removed; and Figs. 3, 4, 5, and 6, details upon an enlarged scale, Fig. 3 being a vertical longitudinal section showing the rollers at the receiving end of the machine and the adjacent end of the hot-air chamber; Fig. 4, a vertical cross-section on the line 4 4 of Fig. 3; Fig. 5, a section on the line 5 5 of Fig. 3, and Fig. 6 a section on the line 6 6 of Fig. 3.

The same letters of reference denote the same parts.

A A A represent the bands constituting the lower system, and B B B represent the bands of the upper system.

The bands A A A are carried around the rollers C and D and the bands B B B are carried around the rollers E and F. The roller E at the receiving end (the left-hand end, as shown in Figs. 1 and 2) of the machine is not directly over the roller C, but is set back therefrom toward the discharging end of the machine, substantially as shown, to provide for readily placing the veneers G upon the lower system of bands preparatory to entering them between the lower and upper bands. An additional roller H is preferably used to support the lower bands directly beneath the position of the roller E.

The bands A B are preferably wire ropes. To provide for keeping them taut, the bearings *c* and *e* of the rollers C E, respectively, are adapted to slide in their respective bearings *c' e'*, and are connected with weighted cords I and J, respectively, which serve to produce the proper tensions upon the bands, substantially as shown. The bearings *d f* are fixed in their supports K K. The driving-shaft L is provided with the fast and loose pulleys *l l'*, and also with a pinion l^2, which engages with the gear M, attached to the shaft *f'* of the roller F. This last-named shaft is also provided with a gear N, which in practice engages with a gear (not shown) upon the shaft *d'* of the roller D. By this means motion is imparted to the system of wire-rope bands, causing them to move in the direction indicated by the arrows in Fig. 1.

In practice the machine is, say, seventy-five feet long, partly to obtain sufficient capacity and partly to prolong the time during which the veneers are subjected to the drying-current.

O represents the hot-air chamber. While it might be variously constructed to effect the purpose in question, it is better to adapt it to inclose the space which is more immediately in the vicinity of the veneers. To this end the chamber extends between the rollers E H at one end of the machine, and the rollers F D at the other end of the machine, and in a vertical direction to include the lower por-

tion of the upper bands and the upper portion of the lower bands, and also a space, substantially as shown above and beneath said band portions.

The inlet to the chamber O is at *o* toward the delivery end of the machine at the side thereof, and the outlet therefrom is toward the receiving end of the machine. The air-current in traversing the chamber O inclines to follow the shortest course therein, and hence if allowed to flow in one body through the chamber, the heat given out by the current would not be uniformly distributed in the chamber; and to obviate this difficulty, and to provide a desirable means for directing the air-current the chamber is by means of longitudinally-extended partitions *o'* *o'* divided into a series of compartments o^2 o^2, substantially as shown. These partitions extend substantially throughout the length of the chamber to obtain the best results, and owing to the inlet *o* being at the side of the machine the partitions lead from said side first inward laterally into the box and then longitudinally therein, and the partitions in thus leading into the box may be curved, as shown in Fig. 2 or may be otherwise suitably extended to join with that portion of the partitions which extend longitudinally through the chamber.

Some details of the construction are as follows: The chamber O, through the instrumentality of its partitions, may serve as a guide for the bands in supporting the veneers. For this purpose the partitions in that part of the chamber which is above the upper bands may bear, and preferably through the instrumentality of the friction-rollers P, upon the upper bands, and the partitions in the lower part of the chamber, and preferably through the friction-rollers P', may press upward against the lower bands. The sides o^3 of the chamber serve to connect the roof o^4 with the bottom o^5 of the chamber. The chamber may be, by any suitable means, (not shown), supported in position for the purpose described. The partitions, so far as their connection with the roof and bottom of the chamber is concerned are conveniently held in place by means of the clips o^6, which are attached to the roof and bottom of the chamber and hold the partitions edgewise, as shown.

The veneers are fed from the left-hand end of the machine, as represented in the drawings, between and by means of the wire-rope bands through the machine and exposed while thus being fed or passed to the drying action of hot-air currents introduced into the series of compartments o^2 o^2 at the side of the machine in any suitable manner.

I claim—

The above-described machine for drying veneers and other materials, having its drying-chamber provided with a series of longitudinal compartments formed of a series of opposite spaced-apart partitions, the upper series being secured to the top of said chamber and the lower series being secured to the bottom of said chamber, the opposite edges of said series of partitions being adapted to form guides for the series of traveling wire-rope bands carrying the veneers or material through said chamber, substantially set forth.

Witness my hand this 16th day of December, 1890.

FREDERICK KUKKUCK.

Witnesses:
C. D. MOODY,
A. BONVILLE.