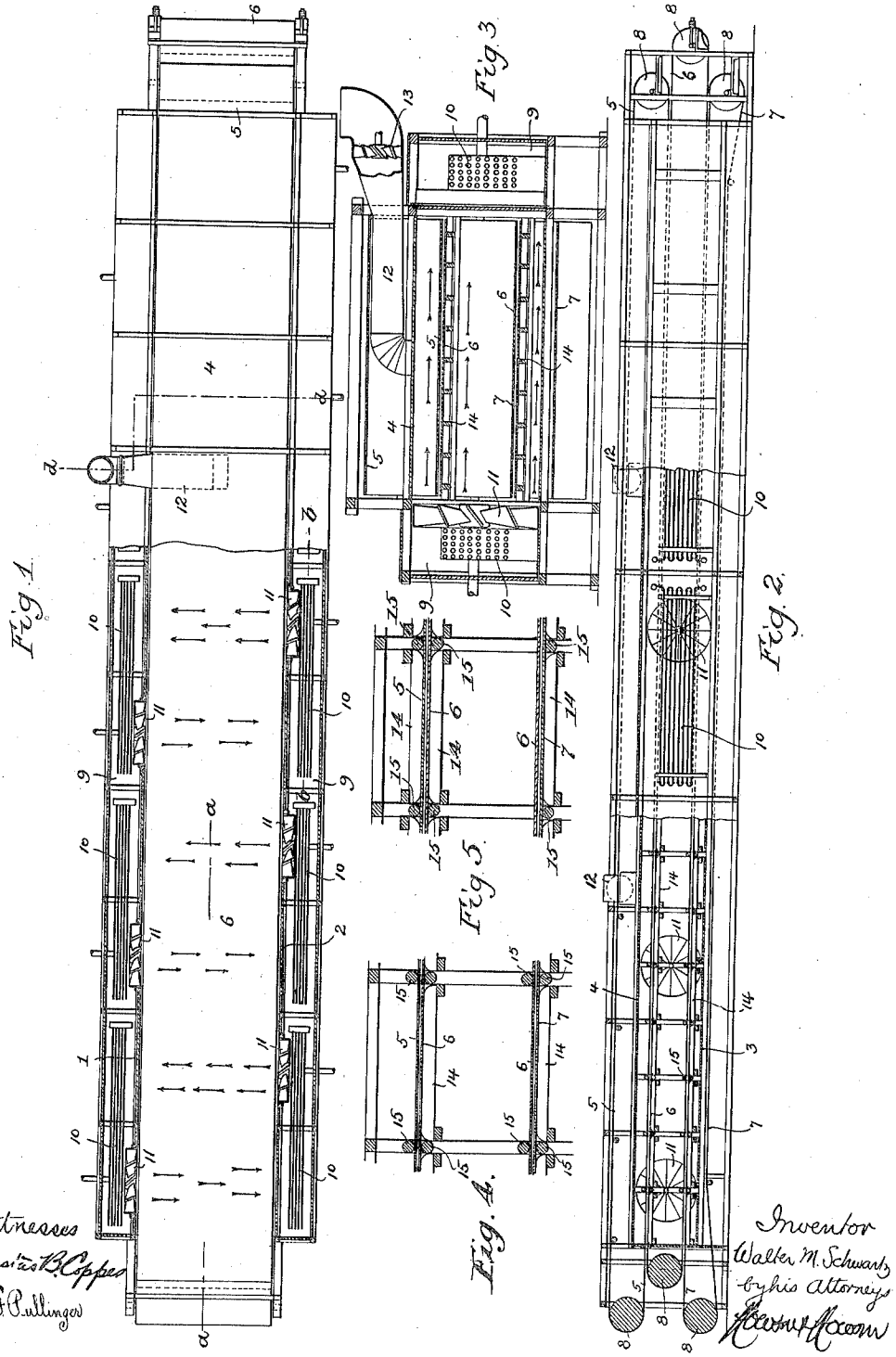
No. 811,446. PATENTED JAN. 30, 1906.

W. M. SCHWARTZ.

VENEER DRIER.

APPLICATION FILED JULY 29, 1905.



Witnesses
Augustus B. Coppee
Walter J. Bullinger

Inventor
Walter M. Schwartz
by his Attorneys
Brown & Brown

UNITED STATES PATENT OFFICE.

WALTER M. SCHWARTZ, OF PHILADELPHIA, PENNSYLVANIA.

VENEER-DRIER.

No. 811,446. Specification of Letters Patent. Patented Jan. 30, 1906.

Application filed July 29, 1905. Serial No. 271,747.

To all whom it may concern:

Be it known that I, WALTER M. SCHWARTZ, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Veneer-Driers, of which the following is a specification.

The object of my invention is to provide a machine for rapidly and effectively drying strips or sheets of wood veneer without causing the same to warp, curl, or be otherwise distorted. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a view, partly in plan and partly in section, of a veneer-drying machine constructed in accordance with my invention. Fig. 2 is a view, partly in side elevation, partly in section, on the line *a a*, Fig. 1, and partly in section on the line *b b*, Fig. 1. Fig. 3 is a transverse section on the line *d d*, Fig. 1, on an enlarged scale. Fig. 4 is a longitudinal section, on a still larger scale, of part of the machine; and Fig. 5 is a like view illustrating certain modifications of the invention.

The machine consists, essentially, of a long box or casing having opposite sides 1 and 2, bottom 3, and top 4, so as to form a drying-chamber, through which pass conveyer-belts of wire-gauze, perforated sheet metal, or other foraminous material, between whose adjoining runs the strips or sheets of wood veneer are confined during their passage from one end of the box to the other, being subjected during such passage to the action of currents of heated air which pass through the drying-chamber. In the present instance I have shown three aprons 5, 6, and 7, mounted upon drums 8 at the opposite ends of the machine, said drums being so located that both the upper and lower runs of the central apron 6 will pass through the drying-chamber, the upper run of said apron 6 coacting with the lower run of the upper apron 5 and the lower run of said apron 6 coacting with the upper run of the lower apron 7, the upper run of the apron 5 extending over the top of the box and the lower run of the apron 7 extending under the bottom of the box, so that only the operative runs of the aprons are contained within the drying-chamber, and the dimensions of the latter can therefore be reduced to a minimum.

At each side of the drying-chamber is an inclosed heating-chamber 9, these chambers containing banks of steam-coils 10 or other equivalent air-heating devices, and in the opposite side walls of the drying-chamber casing are formed openings for the reception of rotary fans 11, which are arranged first on one side of the chamber and then on the other side of the same and are driven so as to direct the currents of heated air from the chambers 9 first across the drying-chamber in one direction and then in the opposite direction. Hence there is no tendency to dry the veneer strips or sheets at one side of the conveyer more thoroughly than those at the other side of the same, as there would be if the currents of heated air were carried across the drying-chamber in one direction only. As the air absorbs moisture from the strips or sheets of veneer it is advisable to remove it from the machine. Hence I locate at intervals along the top of the drying-box suction-pipes 12, each provided with exhaust-fan 13, two of these pipes being shown in the present instance, fresh air to take the place of that thus drawn off from the drying-chamber entering with the conveyer-aprons or through the other openings always to be found in the casing of a machine of this character, although special dampered openings in said casing to maintain and regulate such supplies of fresh air may be provided, if desired.

In order to prevent curling or warping of the strips or sheets of veneer while the same are under treatment, I support the upper runs of the intermediate and lower aprons 5 and 7 upon slats 14, suitably mounted in the drying-chamber, and similar slats may be located above the lower runs of the aprons 5 and 6, if desired, as shown at the top of Fig. 5. I prefer, however, to locate between successive slats pairs of transverse rollers 15, the upper roller of one pair being above the lower run of one apron and the other beneath the upper run of the coöperating apron, as shown in Figs. 2 and 4, so that not only is the upper run of either apron 6 or 7 prevented from sagging in any part, but the lower run of either apron 5 or 6 is likewise prevented from being lifted in any part, as by the tendency of the wood veneer strips or sheets to warp, curl, or twist in their passage through the machine. The slats and rollers thus aid the tension of the aprons in maintaining the strips or sheets of veneer in a flat condition during the drying operation.

The method of mounting and driving the

shafts of the various fans and drums I have not considered it necessary to illustrate or describe, as this is the ordinary work of the mechanic and forms no essential part of my invention.

The strips or sheets of wood veneer are first placed between the lower run of the upper apron 5 and the upper run of the intermediate apron 6 and are firmly confined between them while passing through the machine from end to end, being during such passage acted upon by the streams of hot air which are caused to circulate from side to side of the drying-chamber and above and below the veneer-carrying runs of the aprons. After passing through the machine in one direction the strips or sheets of veneer are then passed through the machine in the opposite direction by being fed between the lower run of the intermediate apron and the upper run of the lower apron, so that when they emerge from between these aprons at the delivery end of the machine they will be thoroughly dry and seasoned, the restraint to which they have been subjected during their entire passage through the machine effectually preventing any warp, twist, or curl, so that the strips or sheets when delivered are in the flat condition, which is desirable.

I may in some cases only locate the rollers 15 on one side of the operative runs of the aprons and the slats 14 on the other side, as shown at the lower portion of Fig. 5; but it is preferable to locate the rollers both above and below the conveyer-runs of the aprons.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. A veneer-drying machine having, in combination, a drying-chamber casing, means for carrying the strips or sheets of veneer through said chamber and retaining them in a flattened condition during such travel, and means for causing passage of air across said flattened strips or sheets of veneer in a direction transverse to their direction of movement, substantially as specified.

2. A veneer-drying machine having, in combination, a drying-chamber casing, means for carrying the strips or sheets of veneer through said chamber and retaining them in a flattened condition during their travel, and means for causing flow of air across the drying-chamber, first in one direction and then in the opposite direction, substantially as specified.

3. A veneer-drying machine having, in combination, a drying-chamber casing, means for carrying the strips or sheets of veneer through said chamber and maintaining them in a flattened condition during their travel, and means for causing repeated reverse flows of air across the drying-chamber, substantially as specified.

4. A veneer-drying machine having, in combination, a drying-chamber casing, means for carrying the strips or sheets of veneer through said chamber and maintaining them in a flattened condition during such travel, the heating-chamber on one side of said casing, and means for drawing heated air from said chamber and forcing it across the drying-chamber in a direction transverse to the direction of movement of the veneer, substantially as specified.

5. A veneer-drying machine, having, in combination, a drying-chamber casing, endless aprons having conveyer-runs for carrying strips or sheets of veneer through said chamber, heating-chambers on opposite sides of the casing, and means for drawing air from said chambers and forcing it across the heating-chamber and across the conveyer-runs of the aprons therein, first in one direction and then in the opposite direction, substantially as specified.

6. A veneer-drying apparatus, having, in combination, a drying-chamber casing, endless aprons having conveyer-runs carrying strips or sheets of veneer through said chamber, means for causing circulation of air across the chamber from side to side and means for withdrawing air from the chamber at intervals in its length, substantially as specified.

7. A veneer-drying apparatus, having, in combination, a drying-chamber casing, endless aprons having conveyer-runs for carrying strips or sheets of veneer through said chamber, and slatted supports for said conveyer-runs, substantially as specified.

8. A veneer-drying apparatus, having, in combination, a drying-chamber casing, endless aprons having conveyer-runs for carrying strips or sheets of veneer through said chamber, slatted supports on one side of said conveyer-runs and transverse rollers on the other side of the same, substantially as specified.

9. A veneer-drying apparatus, having, in combination, a drying-chamber casing, endless aprons having conveyer-runs for carrying strips or sheets of veneer through said chamber, and slatted supports for said conveyer-runs alternating with upper and lower rollers between which said conveyer-runs pass at intervals, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WALTER M. SCHWARTZ.

Witnesses:

WALTER CHISM,

JOS. H. KLEIN.