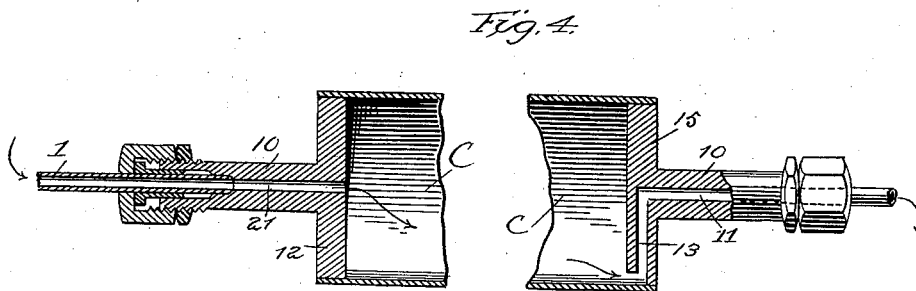
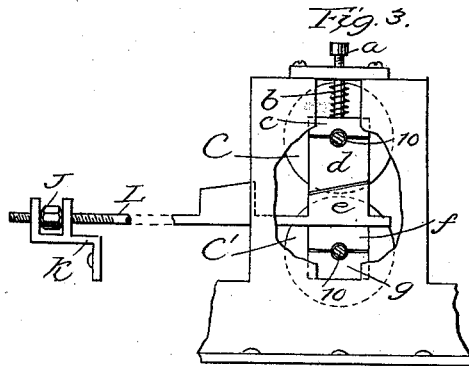
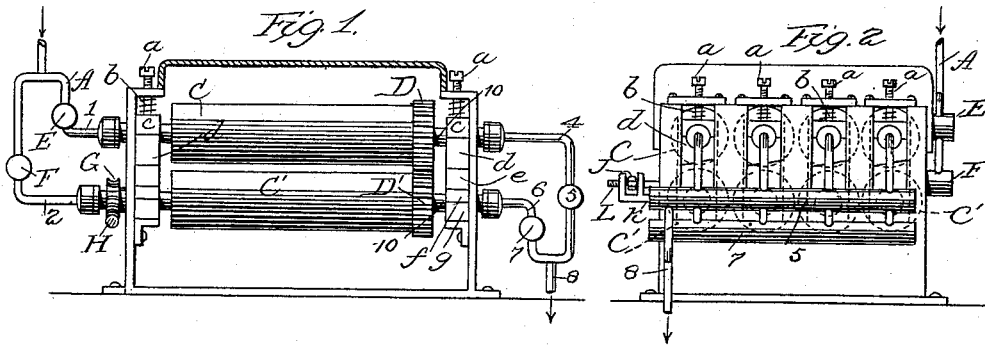


(No Model.)

E. DENSMORE.
MACHINE FOR DRYING VENEERS.

No. 347,330.

Patented Aug. 17, 1886.



ATTY: *Walter D. Madison*
J. L. Middleton

INVENTOR: *Edwin Densmore*
by *J. J. Spear*
ATTY:

UNITED STATES PATENT OFFICE.

EDWIN DENSMORE, OF GRAND RAPIDS, MICHIGAN.

MACHINE FOR DRYING VENEERS.

SPECIFICATION forming part of Letters Patent No. 347,330, dated August 17, 1886.

Application filed January 13, 1886. Serial No. 188,465. (No model.)

To all whom it may concern:

Be it known that I, EDWIN DENSMORE, of Grand Rapids, in the county of Kent and State of Michigan, have invented a new and useful Improvement in Apparatus for Drying Veneers; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improvement upon an apparatus for drying veneers and other thin material requiring like treatment.

The improvement relates, first, to the hollow steam-heated rollers, and is for the purpose of keeping them free from water of condensation; second, to the mechanism for adjusting the pairs of rollers in their relation to each other, whereby all the pairs may be simultaneously and equally separated or brought together to adapt them to the greater or less thickness of the veneer or other sheet which is to be passed between them.

In the accompanying drawings, Figure 1 represents an end view of the apparatus, showing one pair of rollers in side elevation. Fig. 2 represents a side elevation of the apparatus. Fig. 3 shows the adjusting devices for the rollers. Fig. 4 shows (in larger view) a roller in central longitudinal section.

The hollow rollers C C' are adapted to perform the functions of full rolls and drying-drums. They are mounted in suitable bearings on tubular journals 10, in pairs, one of each pair being above the other, and the pairs near each other in the same horizontal plane. The lower rollers are provided each with a worm-gear, G, which meshes with a screw, H, and the same motion is transmitted to the upper rolls by cog-wheels D' D. As usual, steam is passed to the rollers through pipes A, having upper and lower branches, 1 and 2, with stop-cocks E and F, said pipes being connected to the tubular journals by suitable stuffing-boxes, which allow the journals to turn over the pipes. Like stuffing-boxes on the other ends connect branches 4, having cocks 5 and 7, with the exhaust-pipe 8.

I have improved the construction of the rollers or drums of the above-described apparatus, as illustrated in Fig. 4.

The body of the roller is made of gas or other pipe, of suitable diameter and length.

It is provided with heads 12 and 15, to which the pipe ends are welded. The journal of the head 12 is bored directly through to the interior, the bore 21 communicating with the branch pipe. The bore 11 of the other head, 15, terminates below the inner surface, and communicates with a lateral passage, 13, in the head, which passage opens to the interior near the side. The passage 11 communicates with the discharge or exhaust pipe. The same construction is applied to all the rollers.

In the operation of the machine the steam (generally superheated) passes through the discharge-pipe without obstruction by the water of condensation, except when the opening of the passage 13 to the interior is at the lowest point of its revolution. Then if there be any water in the roller it obstructs the mouth of the opening 13, and is forced out of the discharge-pipe by the steam-pressure within the roller. This occurs at every revolution as long as there is water—to any considerable amount within the roller—and thus the rollers are kept clear and radiation of heat permitted on all sides.

The journals of the upper roller of each pair rest on movable bearings d, and those of the lower on fixed bearings g. A follower, c, rests on the upper bearing, and is pressed down by an adjusting-screw, a, and spring b. A block, f, also rests on the bearing g, forming the upper half of the bearing. This has a horizontal upper face, and on its sides a wedge-block, e, the upper inclined face of which bears against the reversely-inclined lower face of the bearing d. The same construction is for all the journals and bearings, and the blocks e on each side are all connected by rods, of which that at the end (marked L) is threaded and passes through ears, between which is a nut, J, for adjusting the blocks, and thus raising the upper bearings and rollers, or lowering the same under pressure of the springs. Thus the distance between the upper and lower rollers of each pair may be determined accurately by turning a nut, J, on each side.

It will be understood that the strip of veneer or other material is entered at one end between the rollers of the first pair, and is carried on and dried as it is moved.

I claim as my invention—

In a steam-drying machine, a series of pairs
of rollers having movable upper bearings
and wedge-blocks interposed between the up-
5 per and lower bearings, said wedge-blocks be-
ing connected to each other on each side, all
substantially as described.

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

EDWIN DENSMORE.

Witnesses:

F. L. MIDDLETON,

CHAS. L. STURTEVANT.