F. DIEHL.

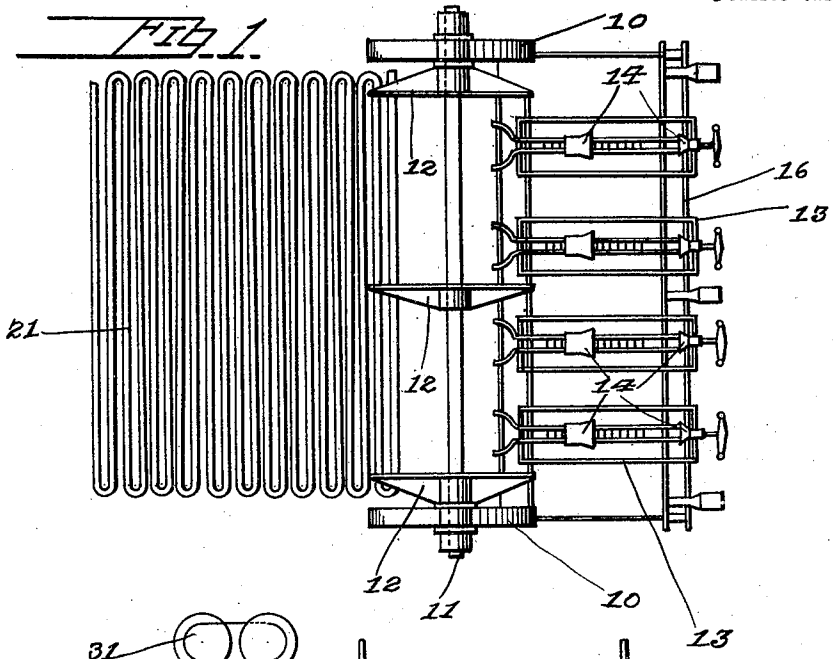
GLUING CLAMP AND DRIER.

APPLICATION FILED OCT. 13, 1919.

1,420,244. Patented June 20, 1922.

2 SHEETS—SHEET 1.

Fig. 1.



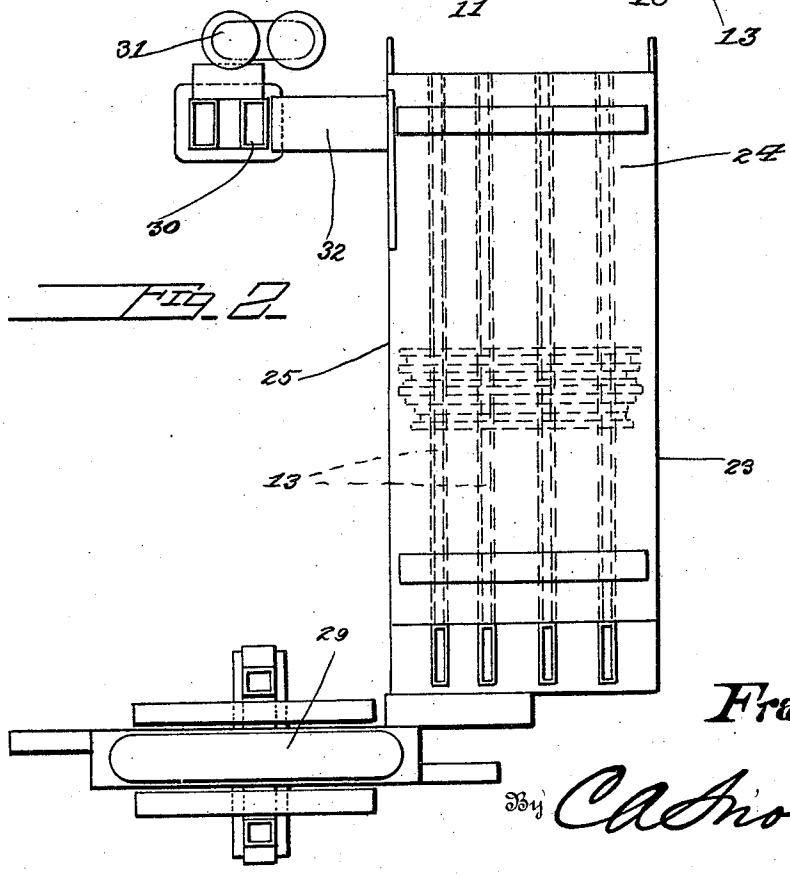


Fig. 2.

Inventor

Frank Diehl.

By C. A. Snow & Co.

Attorneys

F. DIEHL.

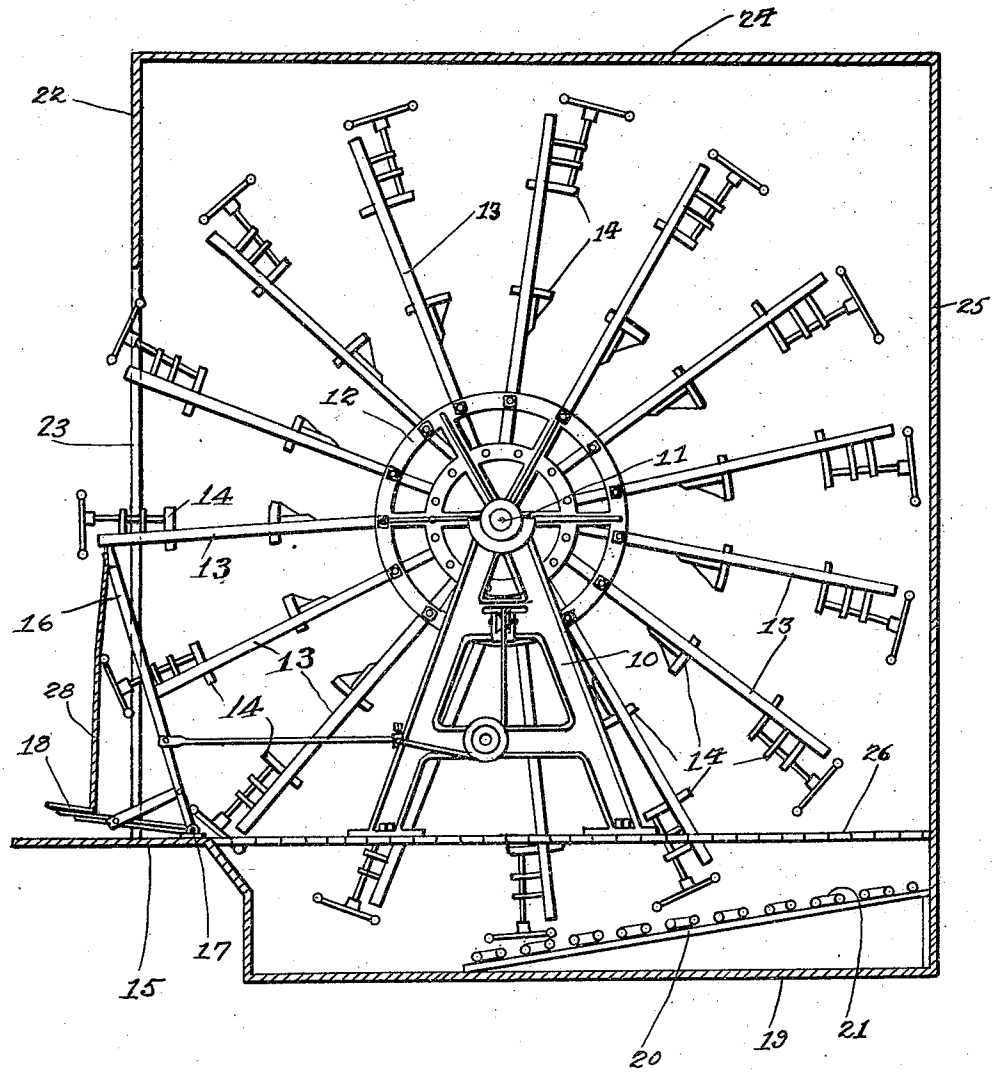
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UNITED STATES PATENT OFFICE.

FRANK DIEHL, OF WABASH, INDIANA.

GLUING CLAMP AND DRIER.

1,420,244. Specification of Letters Patent. Patented June 20, 1922.

Application filed October 13, 1919. Serial No. 330,272.

To all whom it may concern:

Be it known that I, FRANK DIEHL, a citizen of the United States, residing at Wabash, in the county of Wabash and State of Indiana, have invented a new and useful Gluing Clamp and Drier, of which the following is a specification.

This invention has reference to the class of wood working, more particularly to an improved gluing clamp and drier.

The object of the invention is to provide an improved form of housing and heating means for a revolving clamping machine by which boards or sections of wood may be effectively clamped together at their glued edges and the device being so provided that heat radiating over the clamping device will be diffused to such an extent to evaporate water from the glued joints of the boards or sections of wood being glued together, thereby permitting the glue in the joint to be dried quickly and preventing the water in the glue from swelling the wood and causing great loss due to the opening of the joint by shrinkage after having been swelled by the water and moisture.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that, within the scope of what is claimed, changes in the precise embodiment of the invention shown can be made without departing from the spirit of the invention.

In the accompanying drawings:

Figure 1 is a plan view of the device constructed in accordance with my invention, the housing means being removed;

Figure 2 is a plan view of the complete device;

Figure 3 is an enlarged vertical sectional view therethrough.

Referring to the drawings in detail, in which similar reference characters designate like parts throughout the several views, the numeral 10 designates the end bearings of a revolving clamp upon the upper ends of which is horizontally journaled a shaft 11. Mounted upon this shaft are circular end castings 12 preferably having concentric rings to which are connected in any suitable manner, a series of transversely spaced clamps including arms 13 for supporting the boards or sections of wood thereon in radially extending relation between the clamping members 14.

There is also disposed at the front of the machine on the floor line 15 a rocking beam 16 which normally extends into the path of one of the arms 13. This beam is adapted to swing downward on a horizontal pivot 17 at the floor in order to release the arm 13 and the clamps thereon so as to allow the clamping machine to revolve downward. This rocking means is shown extended upwardly and outwardly and adapted to be actuated by foot pedals 18.

In accordance with the present invention, the clamping machine is partly or entirely inclosed and has arranged therebeneath suitable heating means to evaporate the water from the glue in the joints of the boards or the like being glued together. The heating means may be arranged directly beneath the machine on the floor, but as shown in the drawings, there is provided a pit 19, which may be lined with cement or the like, said pit being disposed beneath the gluing machine and having arranged therein in an inclined position, a skid or supporting frame 20 upon which is arranged a series of coils or steam pipes 21, although it is to be understood that said pipes are adapted to carry any other suitable heating medium but are especially arranged in an inclined position, so as to prevent any condensation or water from lodging in the pipes.

Enveloping the clamping and gluing machine, is a housing comprising a front wall 22 having an opening 23 through which the clamps are accessible for placing and removing the boards or the like to be clamped. The housing also includes a top portion 24 and a back or rear portion 25, which may continue below the floor 15 which said floor is cut out as shown at 26, in order to permit the heat to radiate from the heating means consisting of the coil arranged with one end higher than the other for the purposes heretofore stated. As shown the heat pipes or coils are preferably arranged in a forwardly inclined position at the rear of the machine, this heating means causing a diffusion of the heat in the inside of the machine within the housing, for purpose of radiating heat all over the clamp to such an extent as to evaporate the water from the glue in the joints of the table tops, chair seats and all similar work where two pieces of wood are glued together. The result is that

the water being evaporated from the glue, causes the glue to dry in the joints very quickly and prevents the water in the glue from swelling the wood and causing great loss, as often happens at the present time by reason of the method of gluing in vogue, since the swelling of the wood by the moisture and then the shrinking thereof, makes depressions along the wood at the joints where the pieces of wood are glued together. These objections are entirely overcome by the present device.

The rocking beam or structure 16 has a curtain 28 attached to it and formed of canvas or the like, this curtain serving to close the lower portion of the opening in the housing. The curtain is adapted to swing outward with the beam 16 when said beam is shifted to release the arms of the clamps. When one of the arms 13 is resting on the beam 16 it is supported in position to give ready access to the clamp on said arm, thus to allow wood sections to be placed easily between the members of the clamp and to be readily removed.

This drying arrangement is a very valuable feature in furniture and manufacturing of all kinds as well as chair and casket factories and wherever two pieces of wood are glued together. In some cases, the skid may be omitted and heating means placed directly beneath the machine mounted upon the floor. It will be seen that the housing encloses the machine and heating means, so as to retain the heat therein, while permitting convenient operation of the clamps for the purposes stated. It will also be apparent that the water in the glue will be so quickly dried that swelling and shrinking of the joints will be prevented, thereby preventing loss of material incident to the causes mentioned.

In Figure 1 of the drawings the device is shown also with the housing removed, the heating means or coil 21 being shown in elevation. In Figure 2 of the drawings, the housing is indicated and at one end of the housing, there is shown a blow fan 29 adapted to force air through the housing so as to assist in the drying operation. The exit is made through an outlet 30, which may be provided with a suitable suction fan 31 if desired and an adjacent operating table 32.

Having thus fully described the invention what is claimed is:

The combination with a housing having an opening in one wall, of a stop member mounted to swing within the opening, a curtain suspended therefrom for closing a portion of the opening, a series of radial clamp carrying arms mounted for rotation in the housing and movable successively to position upon the stop member to limit the rotation of the arms, and heating means within the lower portion of the housing and close to the path of the arms.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FRANK DIEHL.

Witnesses:
WINIFRED JENKS,
MARY A. WELLS.