

April 15, 1947.

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2,419,132

APPARATUS FOR TREATING SHEET MATERIAL

Filed Jan. 18, 1945

Fig. 1.

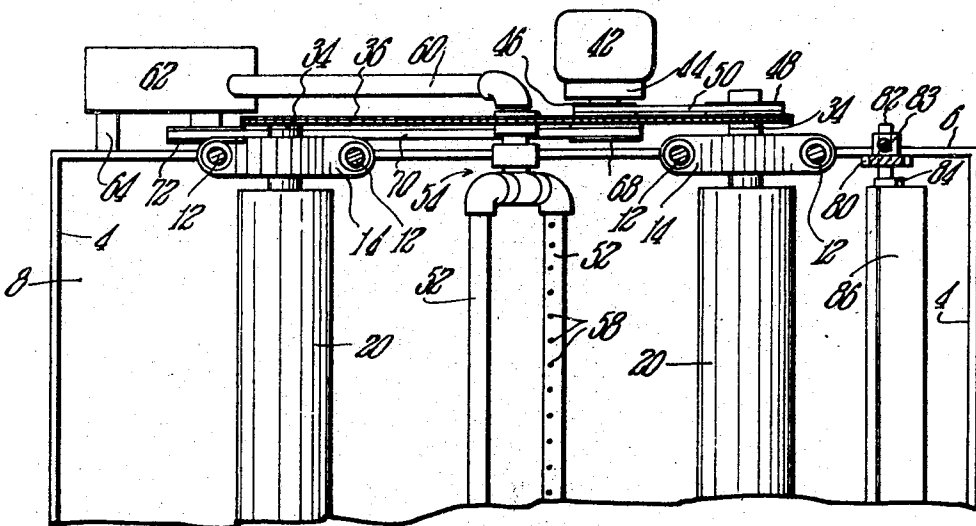
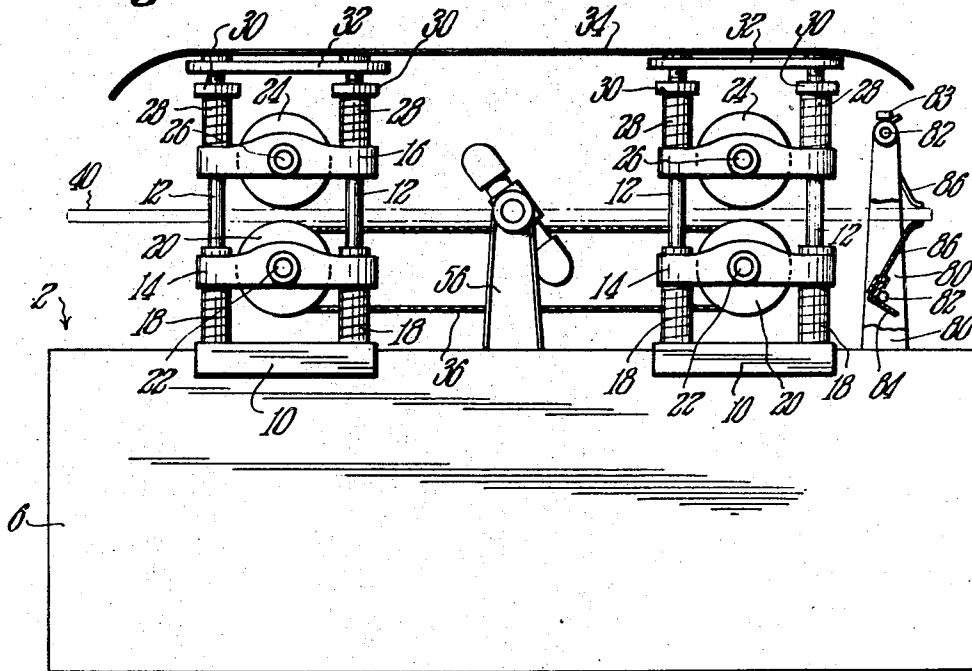


Fig. 2.

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# UNITED STATES PATENT OFFICE

2,419,132

## APPARATUS FOR TREATING SHEET MATERIAL

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Application January 18, 1945, Serial No. 573,402

1 Claim. (Cl. 91—18)

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This invention relates to improvements in apparatus for treating sheets of material.

The principal objects of the invention are directed to apparatus for treating sheet material such as plywood or other substantially rigid or semi-rigid material of various thicknesses.

While the invention is adapted for broad application, it is particularly useful for treating plywood. It is desired and necessary to treat plywood with a preservative liquid, paint, or the like and according to special features of the invention this is accomplished easily and readily in such a way as to eliminate excessive labor costs and the waste of materials with which the plywood is treated.

It is a special feature of the invention to provide an apparatus which is so arranged and constructed as to facilitate the passage of sheets of plywood or the like therethrough for the treating operation thereby to obtain efficiency and speed in the operation.

The apparatus of the invention is characterized by spaced pairs of cooperating pressure rolls between which the material is passed. Said pairs of rolls are so disposed relative to a tank from which at least some of the liquid for treating the plywood is withdrawn and applied to plywood that excess liquid is returned to the tank. Means is provided for removing excess treating liquid from the sheets all to the end that the plywood is not only given the desired treatment but excess treating liquid is saved.

With the foregoing and various other novel features and advantages and other objects of my invention as will become more apparent as the description proceeds, the invention consists in certain novel features of construction and in the combination and arrangement of parts as will be hereinafter more particularly pointed out in the claim hereunto annexed and more fully described and referred to in connection with the accompanying drawings wherein:

Fig. 1 is a side elevational view of an apparatus for treating sheet material embodying the novel features of the invention; and

Fig. 2 is a partial sectional plan view taken on a plane extending between the rolls of the pairs of the apparatus shown in Fig. 1.

Referring now to the drawings more in detail, the invention will be fully described. It will be understood while reference is made herein to plywood that the apparatus is adapted for use in connection with other materials as well.

A tank 2 is provided which has end walls 4, side walls 6 and a bottom wall 8. Said tank may be

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made from wood or metal or from wood lined with metal, all as may be desired. Brackets 10 are secured to opposite side walls 6 in spaced relation and adjacent the end walls 4. Guides 12 extend upwardly from the brackets 10 and are in spaced relation as shown. Lower roll supports 14 are slidable on the guides 12 as are upper roll supports 16. Lower springs 18 on the guides 12 are disposed between the lower roll supports 14 and brackets 10. Lower rolls 20 have their shafts 22 journaled in the members 14 and upper rolls 24 have their shafts 26 journaled in the upper members 16.

Upper springs 28 on the guides are disposed between nuts 30 in threaded engagement with the guides and the upper members 16. Upper members 32 may extend between the guides 12 and a hood 34 may be carried between upper ends of the guides 12, as shown. Sprockets 34 are fixed to the shafts 22 of the lower rolls 20 which are connected by a chain 36 whereby said lower rolls may be rotated simultaneously.

The lower members 14 are yieldingly supported by the springs 18 and the upper members 16 are urged downwardly by the springs 28 so that the rolls 20 and 24 of a pair are adapted to yieldingly engage a sheet of material such as plywood 40 and feed the same through the apparatus. The nuts 30 may be adjusted to vary the spring pressure.

The apparatus may be driven in any well known manner but for illustrative purposes, a motor 42 is shown which may have a reducing unit 44 provided with driving pulley 46 on its shaft. A pulley 48 on a shaft of one of the lower rolls 20 is connected by a belt 50 to the motor pulley 46 so that when the motor 42 is in operation the lower rolls of each pair is driven.

A preservative liquid, paint or the like, may be applied to opposite sides of the sheet 40 in various ways but for illustrative purposes there is shown a pair of spaced transverse conduits 52 which have their opposite ends connected together by a swivel construction such as 54. These swivel constructions are mounted at opposite sides of the tank in brackets 56 secured to and extending upwardly from the side walls 6. The conduits may swing so that they may be located at various distances from the sheet 40 as it passes through the apparatus and each conduit may be provided with a plurality of outlets, or nozzles 58, as may be desired.

The conduits 52 are connected by a pipe 60 to means for providing a supply of preservative liquid or the like. In the form of the invention

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shown said connection 60 is connected to a pump indicated by 62 which has its suction 64 extending into the tank. There may be a filter or strainer associated with the connection 64 if desired. A pulley 68 on the motor shaft is connected by a belt 70 to a pulley 72 of the pump 62 for operating the same.

Brackets 80 are secured to and extend upwardly from opposite side walls 6 and have upper and lower trunnions 82 journalled therein. Transverse members 84 which may be in the form of angle irons are fixed to the trunnions 82 and have extending therefrom wipers 86. Said wipers are preferably more or less yieldable or flexible and may be made from leather, rubber, composition or the like. Adjusting screws 83 are for holding the wipers in adjusted position. These wipers are for wiping excess liquid from a sheet as it passes therebetween.

In operation and with the lower rolls being rotated as described the forward end of a sheet indicated by 40 is passed between the left hand pair of rolls which engage and feed it to the right hand pair of rolls. In this way the sheet is passed through the apparatus. The conduits 58 are adjusted, as may be desired, and the liquid whether a preservative, paint or the like is applied to opposite sides of the sheet as it passes through the apparatus. Excess liquid is wiped off the sheet by the wipers 86 and it falls into the tank. The hood 34 is intended and is so constructed and arranged as to collect liquid being sprayed upwardly so that it will fall into the tank.

The nuts 30 may be adjusted to obtain any desired pressure between the rolls of the pairs thereof. The tank may be of any dimensions desired, the spacing of the pairs of the rolls may be varied to accommodate sheets of any desired length, and various means may be employed for applying liquid to the sheet.

The form of the invention being shown is intended to enable one skilled in the art to make such changes and modifications as may be desired in order to adapt the apparatus for various purposes.

The invention may be embodied in other specific forms without departing from the essential characteristics thereof. Hence, the present embodiments are therefore to be considered in all respects merely as being illustrative and not as being restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all modifications and variations as fall within the meaning and purview and range of equivalency of the appended claim are therefore intended to be embraced therein.

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What it is desired to claim and secure by Letters Patent of the United States is:

Apparatus for treating sheets of ply wood and the like comprising in combination, a tank for liquid having opposite longitudinal side walls, brackets secured to said side walls at opposite ends thereof, spaced guides arranged in pairs and extending upwardly from each bracket providing pairs of guides at each side of the tank at opposite ends thereof, lower springs on the guides of each pair thereof, lower roll supports having opposite ends slidable on the pairs of guides yieldingly supported by said springs, lower rolls journalled in the lower roll supports at opposite ends of the tank and extending thereacross, upper roll supports having opposite ends slidable on the pairs of guides above said lower roll supports, abutments adjustable on the upper ends of said guides, springs between said abutments and upper roll supports yieldingly resisting upward movements of said supports, upper rolls journalled in said upper roll supports providing with said lower rolls pairs of cooperating rolls which are yieldingly separable to receive sheets of ply wood and the like, driving connections between the lower rolls of the pairs thereof and means for driving one of lower said rolls, means disposed transversely of said tank between said brackets for applying treating liquid to opposite sides of a sheet being fed by said pairs of rolls, and means at one end of said tank for engaging opposite sides of a sheet for removing excess liquid therefrom, all adapted and arranged whereby said pairs of rolls frictionally engage opposite faces of a sheet with predetermined pressure for feeding the same longitudinally of said tank and relative to said liquid applying and removing means while either pair of rolls may move upwardly or downwardly relative to the other pair while maintaining said yielding pressure.

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#### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

Number	Name	Date
677,343	Delaney	July 2, 1901
2,282,628	Whann et al.	May 12, 1942
936,472	Pfanhauser	Oct. 12, 1909
1,664,505	Franz	Apr. 3, 1928
2,354,777	Schwartz	Aug. 1, 1944
2,356,666	Hamilton	Aug. 22, 1944