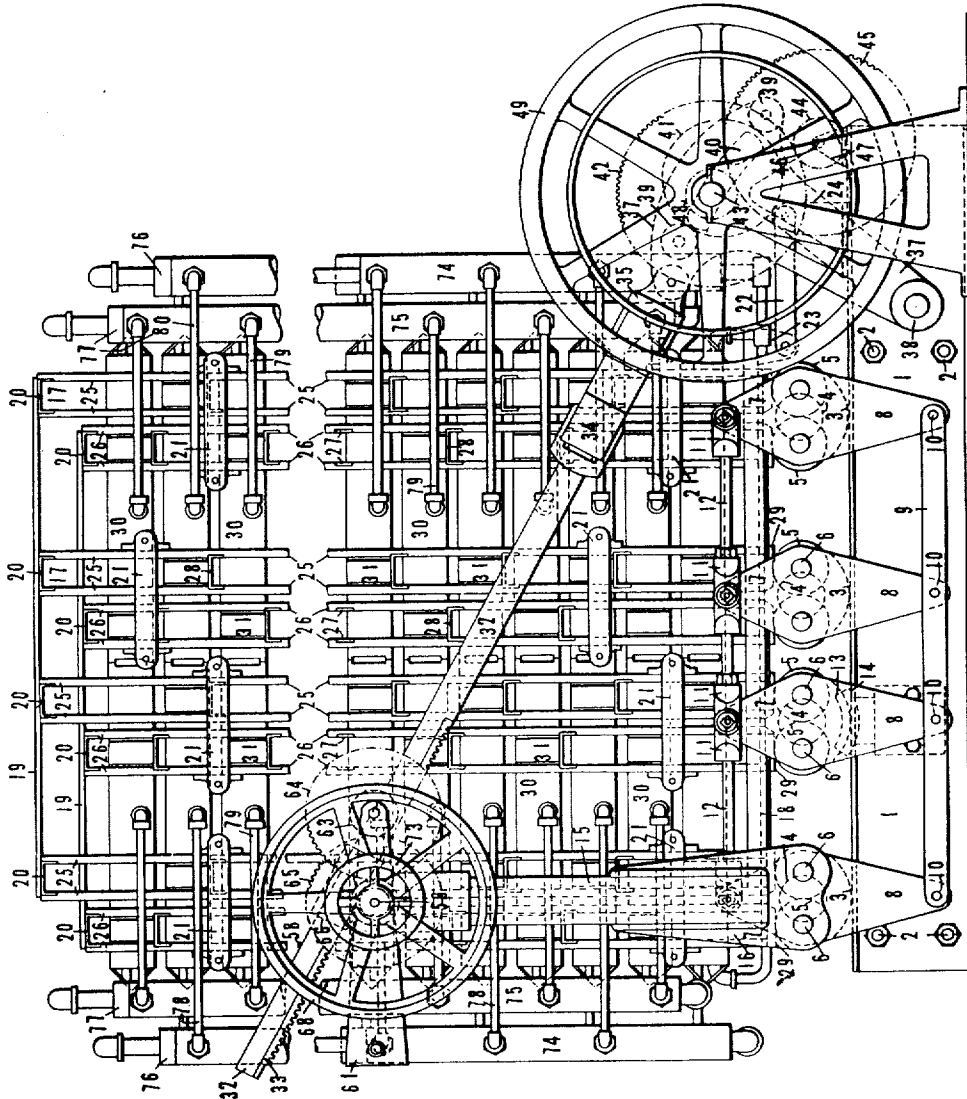


L. G. MERRITT.
 VENEER DRYING APPARATUS.
 APPLICATION FILED JULY 2, 1910.

1,022,690.

Patented Apr. 9, 1912.
 5 SHEETS—SHEET 1.



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5 SHEETS--SHEET 2.

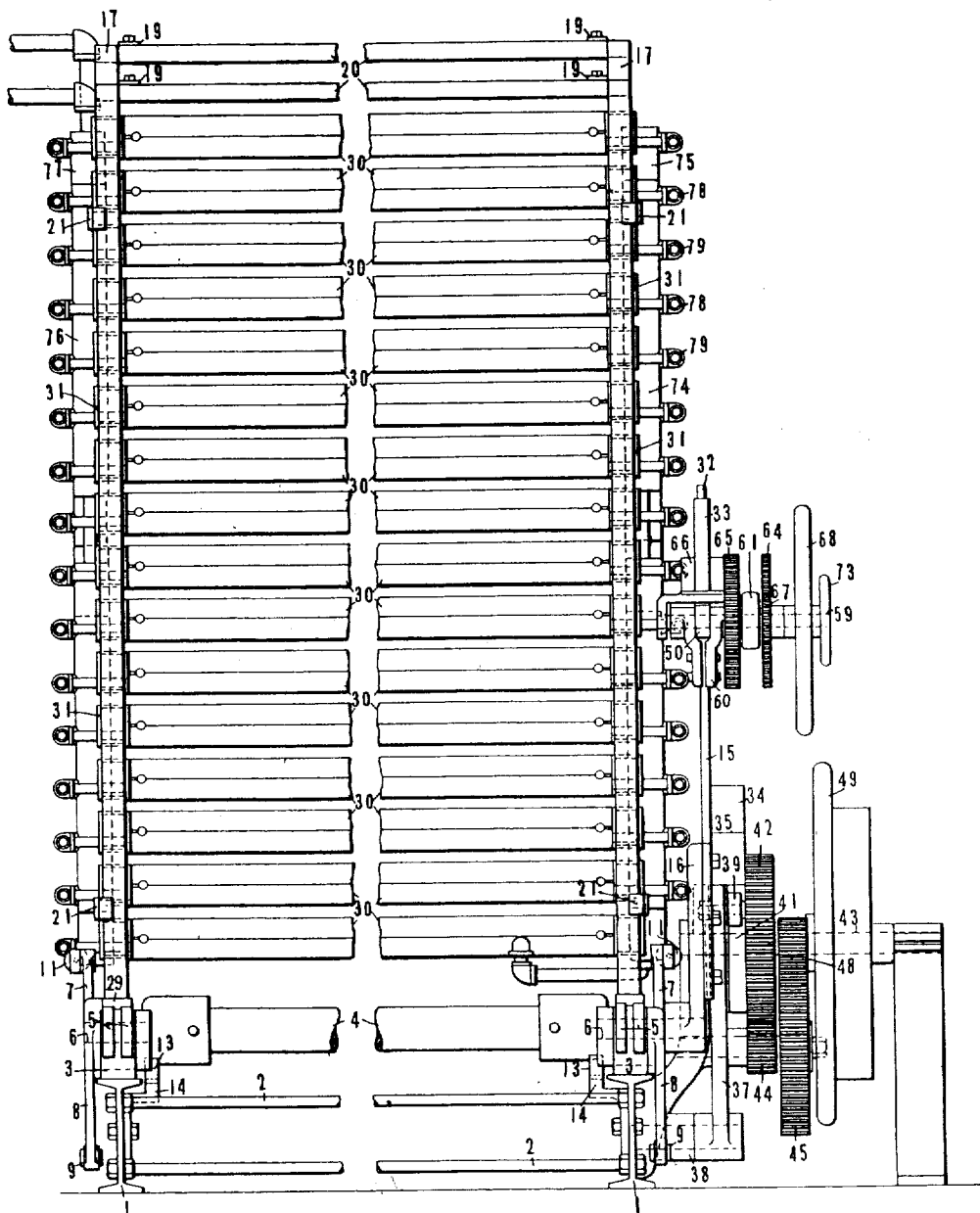


Fig-2-

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5 SHEETS-SHEET 3.

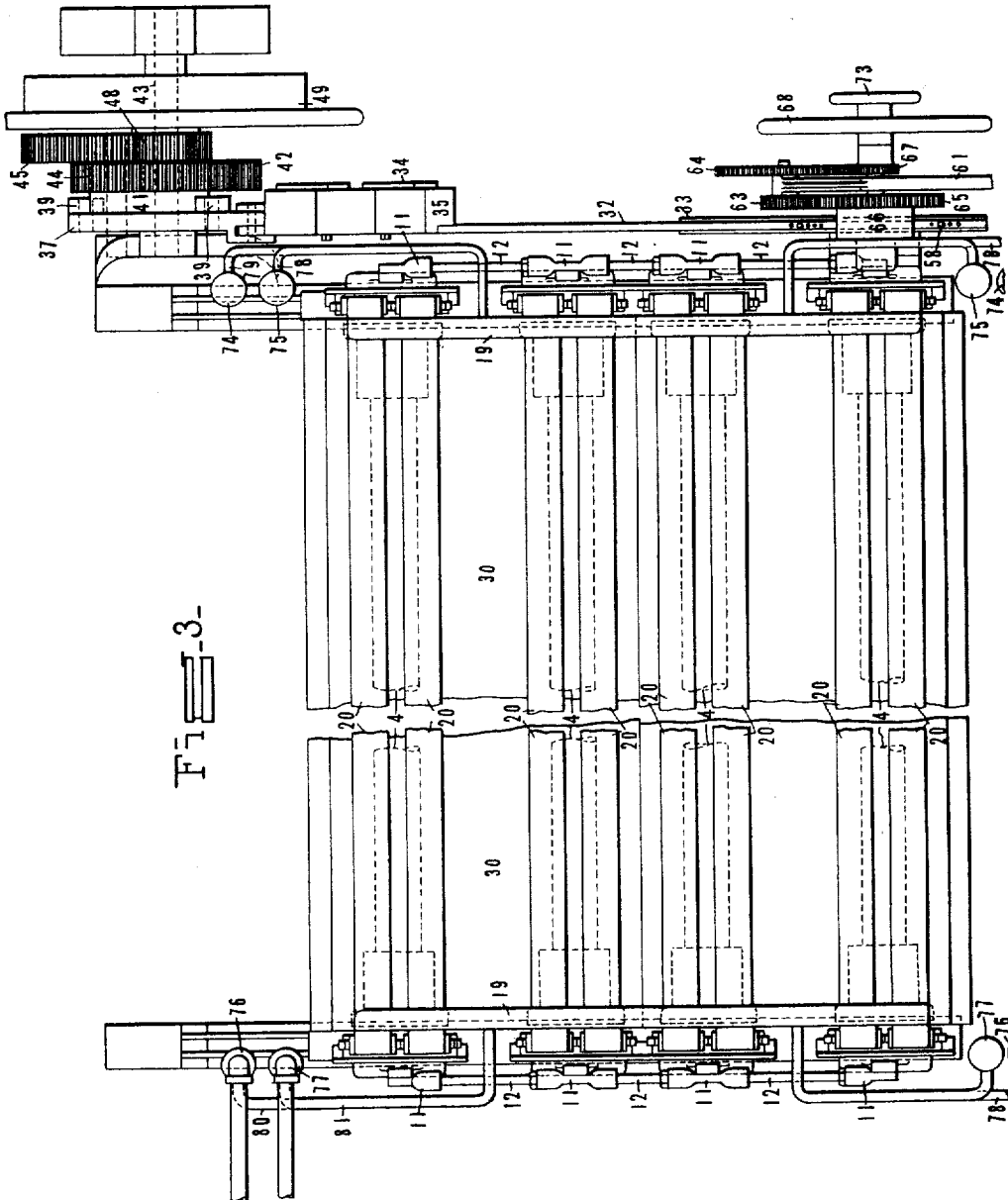


Fig. 3-

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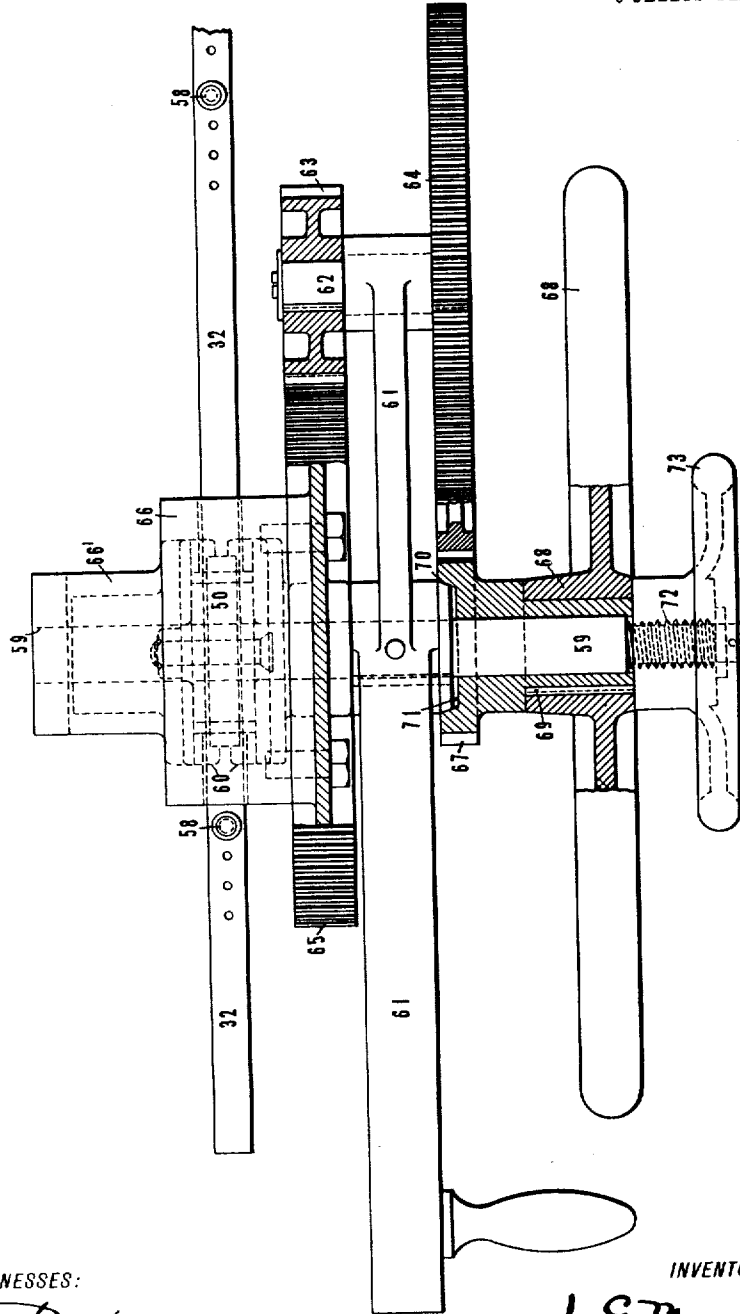
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5 SHEETS-SHEET 4.

Fig. 4-



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1,022,690.

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5 SHEETS-SHEET 5.

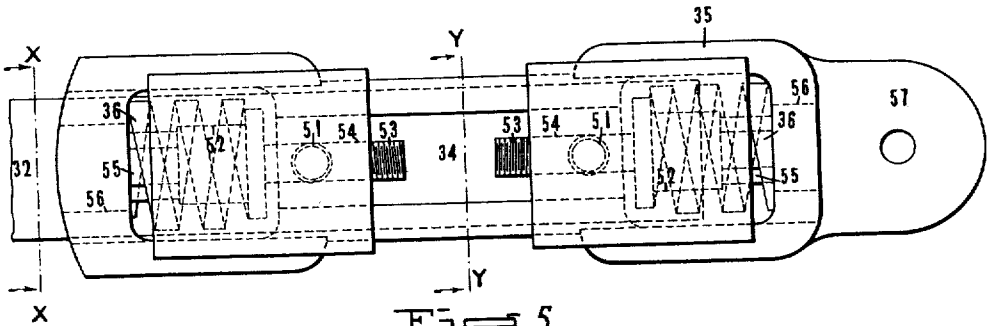


Fig. 5.

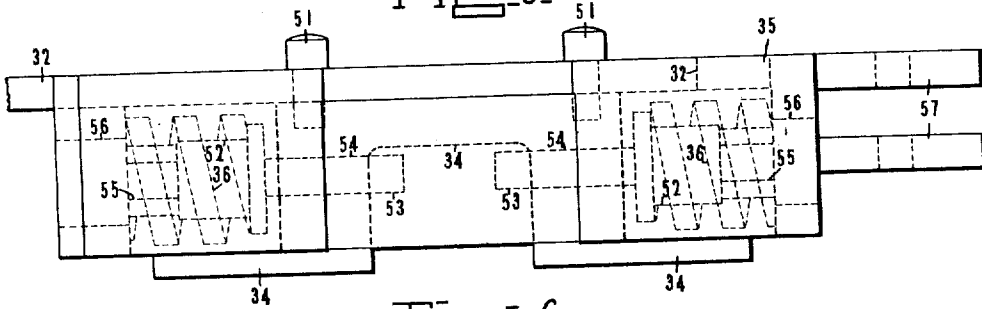


Fig. 6.

Fig. 7.

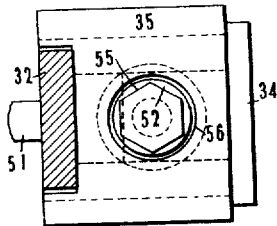
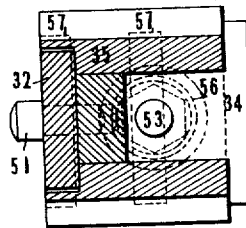


Fig. 8.



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UNITED STATES PATENT OFFICE.

LOUIS G. MERRITT, OF LOCKPORT, NEW YORK.

VENEER-DRYING APPARATUS.

1,022,690.

Specification of Letters Patent.

Patented Apr. 9, 1912.

Application filed July 2, 1910. Serial No. 570,123.

To all whom it may concern:

Be it known that I, LOUIS G. MERRITT, a citizen of the United States, residing at Lockport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Veneer-Drying Apparatus, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in veneer drying apparatus.

One of the objects thereof is to provide a practical and efficient apparatus of the above character.

Another object is to provide apparatus of this nature adapted to receive a plurality of layers of veneer, and, whether said layers be of the same thickness or of different thicknesses, to submit all of the veneer to a substantially uniform pressure.

Another object thereof is to provide a machine of this character adapted to permit the veneer to shrink properly in drying.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings wherein is illustrated one of the various possible embodiments of this invention, Figure 1 is a side elevation of the same; Fig. 2 is an end elevation thereof; Fig. 3 is a plan view thereof; Fig. 4 is an enlarged detail, partly in section, of the means for locking the rack bar and operating lever in operative position; Figs. 5 and 6 are enlarged detail views of the spring box and bumper; Fig. 7 is a sectional view taken on line $x-x$ of Fig. 5; Fig. 8 is a sectional view taken on line $y-y$ of Fig. 5.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Referring now to the drawings, the base

of the machine comprises two I-beams 1 connected by four round tie-rods 2. Resting upon the base is a truck construction, adapted to support the plates or platens between which the veneer is placed to dry and to provide their vertical movement in two balanced series. The truck consists of eight rockers 3, which make rolling contact with the top of the I-beams 1, and which are pinned in pairs to the opposite ends of four shafts 4. Each rocker is provided with two rollers 5 free to revolve on pins 6, and oppositely located at equal distances from the centers of the shafts 4. These rollers serve to support the frames hereinafter described and give to them a balanced vertical movement. As the rocker makes rolling contact with the beam 1 one wheel rises and the other falls. Each rocker has two arm extensions, one denoted by the numeral 7 extending upwardly, and the other denoted by the numeral 8 extending downwardly, and the four separate rocker shafts are linked together through these extensions, thus converting them into a truck in which the rocker movement on the base of the machine gives the balanced up and down movement to the frames supported thereby. The links connecting the downward extensions 8 consist of bars 9 and pins 10, the bars being in pairs upon either side of the said extensions. The upper links comprise turn-buckles 11 joined by rods 12, thus providing an adjustment by which the frames supported by the trucks can be leveled up.

One of the rocker shafts 4 is provided with gear segments 13 fastened to the hubs of the rockers, these segments engaging racks 14 secured to the beams 1. This arrangement prevents one side of the truck creeping ahead of the other as a result of the rocking movement. A shifting sideways is prevented by the extensions 8 formed upon the rockers themselves. A lever 15 bolted to a block 16 supported by the extension of two of the pins 6 is employed to operate and control the movement of the truck.

Supported upon the truck is a structure adapted to support the plates, consisting of two separate frames, one of which rises as

the other falls under the rocking movement of the truck. Each frame consists of a plurality of upright posts 17 connected side-wise by tie-bars 18 and 19 at the bottom and
 5 top respectively and braced in the other direction by channel bars 20 at the top. The frames are connected together by pivoted links 21 which permit them to move up and
 10 down without moving apart in a horizontal direction. One of the frames is also attached to the base of the machine by means of a link 22 pivoted to brackets 23 and 24 secured to the frame and base respectively. The upright posts 17 are formed of flat
 15 bars of steel 25 and 26 with notches 27 milled part way into their sides at equal distances from one another, and they are fastened together by short steel channels 28 which fill the notches and form seats for the plates to
 20 rest upon. Secured to the bottom ends of the posts are cast iron shoes 29, which rest upon the rocker wheels 5 and provide a bearing for the frame. The plates 30 hereinbefore referred to are cored iron castings adapted to be connected to a source of steam
 25 pressure. As disclosed in Fig. 1 two plates are placed side by side to provide a surface double that of each plate. Lugs 31 are cast on every plate and find a bearing upon the seats formed by the channels 28 of the up-
 30 right posts.

The frames are so placed in relation to each other that the upright posts come side by side in pairs, one post of each pair be-
 35 longing to the ascending frame and the other to the descending frame, when the frames are rocked by the rockers at the base of the machine. Every alternating plate in the assembled machine is supported by one of
 40 these frames while the intervening plates form another series supported by the other frame.

The rocker movement of the truck resulting in opposite vertical movements of the
 45 two frames has the effect of bringing the plates of the two series into surface contact, first as to one side of each plate, then the other, and leaving open spaces between the sides of the plates not in contact. When the
 50 plates come together in the alternate position of the frames these contacts and spaces alternate, and what was a contact before now becomes a space, and vice versa. The practical effect of this arrangement is, that
 55 one-half of the plate surface of the machine is open for loading and unloading veneer while an equal surface is in effective drying contact with veneer.

The mechanical device for reversing the
 60 relative position of spaces and closures is provided by reversing gear to be hereinafter described. This is manually accomplished after each batch of veneer is dried and ready for removal from the machine, and the open
 65 spaces having been filled while the said

batch was drying the quick reversal of the frames causes no break in the continuous process of drying. It will be noticed that the lugs 31 of the plates simply rest upon the seats of the upright posts and are not
 70 fastened to them, thus providing that each plate is free to be lifted from its supports and is actually so lifted every time contact is made with the veneer, thus giving the full
 75 weight of the plate as a pressure upon the veneer to hold it flat while drying.

In view of the fact that one frame, with its supported plates, is rising while the other frame with its plates is falling, the move-
 80 ment is a balanced one until the plates of one frame come into contact with those of the other. If now, power is applied to the operating lever 15 to continue the upward movement of the rising frame beyond the
 85 point of plate contact, every plate of the descending frame will be lifted from its supports and will rest with its weight upon the adjacent plate of the other frame. A similar action takes place when the machine is reversed, the falling frame then becoming
 90 the rising one.

It has been found in actual practice that it will not answer to leave the weight of a plate continuously upon the veneer during the whole time of drying because unless the
 95 weight is removed every few seconds to give the veneer a chance to shrink it will split apart. In order that this tendency to shrink may be properly taken care of, a power mechanism is provided to give the op-
 100 erating lever 15 a limited oscillating movement, which causes the idle frame to pick up its plates and momentarily lift them a slight distance from the veneer. During the
 105 time the plates are lifted the veneer shrinks and as the plates again settle down upon the veneer the steam or moisture incident to the drying process is expelled therefrom. It will be noted that this opening and closing
 110 of the plates carried by the frame and those carried by said first plates is not a complete reversal of the machine, but is only a slight movement which leaves the open spaces exist-
 115 ing respectively below and above said plates sufficiently free for the removal and insertion of veneer for the next drying operation. This latter movement is actuated by a cam, the purpose of which is to give the
 120 operating lever an oscillating movement when in either of its two positions of plate contact. A bar 32 having attached to its lower edge near one end thereof a rack 33, is bolted at its other end to a cast iron
 125 bumper-block 34 sliding in a box 35 containing two heavy pressure springs 36, located at opposite ends thereof. The box is piv-
 130 oted to an arm 37, which in turn is pivotally supported at its lower end to a bracket 38 attached to the base of the machine. Two rollers 39 disposed at opposite ends of a 130

slot 40 in the upper end of the arm 37 co-operate with a cam or eccentric wheel 41 attached to a gear wheel 42 running loosely upon a shaft 43 supported by appropriate brackets. Gear 42 meshes with a pinion 44 which rotates with back gear 45 upon a shaft 46 supported by bearing blocks 47. The back gear 45 derives its motion from a pinion 48 which has secured to its hub a combined pulley and hand wheel 49. This back gearing serves to increase the power of the device. The revolution of pulley 49 causes the cam or eccentric wheel 41 to impart a reciprocating movement to the arm 37 and the rack bar 32. The latter in turn transmits to the operating lever 15 the oscillating movement which results in the lifting of the plates to permit of the shrinkage of the veneer, as already described. A pinion 50 serves to connect the operating lever and rack bar by being clamped in engagement with the teeth of the latter.

Referring now to the spring box 35, shown in detail in Figs. 5 to 8 inclusive, which connects the rack bar with the cam arm 37, the lifting of the plates involves moving considerable weight and the springs provide sufficient outlet for any excessive pressure which might come from inserting too much veneer in one of the spaces, whereby the plates might be obliged to lift higher than they are designed to. The rack bar 32 is fastened to the bumper-block 34 as by studs 51 and the spring box 35 is adapted to receive between the ends thereof the said block, sufficient space being provided between the opposing end faces of the latter and the box to receive the springs 36, each of which is supported upon a steel core 52, provided at one end with a stud 53 adapted to engage a tapped hole 54 in the bumper block. At its other end the core 52 is finished off with flattened surfaces 55 adapted to be engaged by a wrench to facilitate the adjustment of the spring tension. Holes 56 are provided in the ends of the spring box for the insertion of the wrench. At one end of the spring box are two perforated flanges 57 which serve to pivotally hold the cam arm 37 therebetween. Referring to the latter part, the two rollers 39 which coöperate with the cam arm 41 are for the purpose of securing the slight movement of the plates to allow for shrinkage when the lever 15 is fixed at either the extreme right hand limit or the extreme left hand limit of its movement, and the use of two rollers makes the reciprocating movement of the rack bar a positive one in both directions. Stop pins 58 adapted to be placed in any one of a series of holes in the rack bar near the extreme right and left hand positions of the operating lever 15, indicate where to lock the said operating lever to the rack bar in order to lift the plates the minimum distance to re-

lease veneer of different thicknesses. The smaller the lift of the plate from the veneer the greater the length of time the veneer is under pressure during each revolution of the cam wheel.

Now, referring to the reversing gear shown in detail in plan in Fig. 4, the purpose of which is to reverse the plate contacts and openings at the completion of each drying operation, pinion 50 already referred to, engages the rack 33. This pinion is fast upon a shaft 59 which is free to turn in bearings afforded by two iron straps 60 bolted to the operating lever 15. Near the middle of this shaft is rigidly attached an arm 61, the oscillation of which causes the pinion 50 to revolve in the rack 33 and carry the operating lever 15 to the right or left along the rack bar. If the weight of the plates and frames was always in a balanced state, this simple device would be sufficient to reverse the machine, but to carry the operating lever 15 to either one of its extreme positions after plate contact is reached, it is necessary to lift all the weight of both frames with their supported plates. It is also necessary to lock said shaft and pinion securely to the rack bar and to accomplish these two ends extra gearing and clamping means are provided. For this reason one end of the arm 61 provides bearing for a short shaft 62 at one end of which is a pinion 63 and at the other end a gear 64, both fast upon said shaft. Loosely centered upon the pinion shaft 59 is a mortised block 66 having a stationary or box gear 65 on its face. This block provides a sliding attachment between the operating lever 15 and the rack bar 32 which passes freely through the mortise therein. As the arm 61 is oscillated, the back gear 64, the pinion 63 and shaft 62 share the movement thereof in sun and planet fashion and are rotated as the said pinion passes around the box gear 65 in engagement with the teeth thereof. Loose upon the shaft 59 is a pinion 67 meshing with the gear 64 and having a hand wheel 68 fastened to its hub by means of a key 69. It will be seen that the turning of this hand wheel will, through the intermediate gearing, rotate the pinion 63, causing the latter to travel around the box-gear 65, whence it follows that the arm 61 will be oscillated and the shaft 59 and pinion 50 rotated. This results in the travel of the operating lever 15 along the rack-bar 32 and as this movement is derived from the rotation of the hand wheel 68 through a greatly increased leverage, the whole weight of the frames and plates is easily lifted. The mortised box 66 is provided with a supporting arm 66' which takes over and receives the end of the shaft 59. The hub of the arm 61 is provided with a conical friction surface 70 adapted to be received within a conical

recess 71 in the side of the pinion 67. The end of the shaft 59 is threaded as at 72 to receive the threaded hub of a locking wheel 73.

5 The operation of this device is as follows: When the operating lever 15 has been moved along the rack-bar 32 until the mortised box 66 abuts against one of the pins 58, the locking wheel 73 is turned to feed it inwardly upon the threaded portion of the shaft 59. This movement forces the pinion 67 into locked relation with the arm 61 and prevents any movement of the latter relative to the box gear 65, whereupon the operating lever and rack-bar are locked against relative movement. After the drying of one load of veneer is accomplished, the locking wheel is turned back and the hand wheel 68 turned, whereby the operating lever is moved to its other extreme position relative to the rack-bar and the machine is reversed. What were formerly closures between the plates now become openings and vice versa.

At each corner of the machine are arranged two manifolds, those upon one side denoted by the numerals 74 and 75, and those upon the other side by 76 and 77. Manifolds 74 and 75 receive steam from the steam line of the mill and conduct it to the plates of the two frames by means of the conduits 78 and 79 respectively. The condensation and exhaust passes to the manifolds 76 and 77 by means of the conduits 80 and 81 respectively. All of the manifolds are thus arranged in pairs and adapted to correspond in their movement with the movement of the frames. In order to provide sufficient flexibility in the piping in case the veneer varies in thickness or a double thickness is placed by mistake in one of the spaces, thus lifting one plate more than the others, the manifolds are placed at some distance from the points of connection of the conduits with the plates.

It will therefore be seen that there is provided apparatus well adapted to accomplish, among others, all of the ends and objects hereinbefore set forth in an exceedingly simple and efficient manner and that structurally considered the apparatus is of the greatest possible simplicity, which the nature thereof will permit, and is well adapted to be made at a minimum of cost and to be readily assembled into a neat and compact arrangement for accomplishing the purposes intended.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense. It is also to be understood

that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention, which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In apparatus for drying veneer, in combination, a pair of supports, a plate freely resting on each of said supports, one of said plates being disposed above and spaced apart from the other thereof, and means adapted to relatively move said supports to impose the weight of said upper plate upon said lower plate.

2. In apparatus for drying veneer, in combination, a pair of supporting means, a series of plates resting on said supporting means, the plates of one series being disposed in alternate relation with and spaced apart from the plates of the other, and means adapted to relatively move said supporting means to impose the weight of the plates of one of said series upon the plates of the other thereof.

3. In apparatus for drying veneer, in combination, a pair of movable frames, a series of plates freely supported by one thereof, a second series of plates supported by the other thereof, the plates of said series being disposed in alternate relation and adapted to receive veneer therebetween, and means for relatively moving said frames to impose upon the veneer carried by the plates of one series the weight of the plates of the other series.

4. In apparatus for drying veneer, in combination, a pair of movable frames, a series of plates freely resting upon each of said frames, the plates constituting said series being disposed in alternate relation, and means for moving one of said frames with respect to the other whereby closures are effected between certain opposing faces of said plates and apertures provided between other opposing faces thereof.

5. In apparatus for drying veneer, in combination, a pair of balanced series of plates, the plates of each series being movable with respect to one another, and means for moving said series relatively to each other.

6. In apparatus for drying veneer, in combination, a pair of frames, a rocker adapted to support said frames, a plate resting on each of said frames, one of said plates being disposed above and spaced apart from the other thereof, and means adapted to actuate said rocker whereby the frames are relatively moved to impose the weight of said upper plate upon said lower plate.

7. In apparatus for drying veneer, in combination, two movable frames, a plurality of connected rockers adapted to support said

frames in balanced relation, a series of plates resting on each of said frames, the plates of one series being disposed in alternate relation with and spaced apart from the plates of the other, and means adapted to actuate said rockers to destroy the balanced condition of said frames, whereby the weight of the plates of one series is imposed upon the plates of the other thereof.

8. In apparatus for drying veneer, in combination, a pair of movable frames, a series of plates freely supported by one thereof, a second series of plates supported by the other thereof, the plates of one series being disposed in alternate relation with those of the other, a plurality of connected rockers adapted to support said frames, and means for moving said rockers whereby one of said series may be lowered and the other series raised.

9. In apparatus for drying veneer, in combination, a pair of series of movably connected plates, each of the plates of one series being disposed intermediate a pair of adjacent plates of the other series, means for counter-balancing said series, and means adapted to actuate said counter-balancing means to move said series toward and from each other, whereby upon said movement being continued beyond a predetermined point in either direction the counter-balancing of said series will be destroyed.

10. In apparatus for drying veneer, in combination, a pair of supports, a plate resting on each of said supports, one of said plates being disposed above and spaced apart from the other thereof, means adapted to relatively move said supports to impose the weight of said upper plate upon said lower plate, means adapted to lock said parts in a predetermined position, and means adapted upon said parts being locked, to cause said frames to reciprocate in opposition to one another.

11. In apparatus for drying veneer, in combination, a pair of supporting means, a series of plates resting on said supporting means, the plates of one series being disposed in alternate relation with and spaced apart from the plates of the other, means adapted to relatively move said supporting means to impose the weight of the plates of one of said series upon the plates of the other thereof, means adapted to lock said parts in a plurality of positions, and means adapted upon said parts being so locked, to cause said frames to reciprocate in opposition to one another.

12. In apparatus for drying veneer, in combination, a rocker having a bearing surface and a pair of rotative supporting members, said members being positioned so that one is lifted and the other lowered upon movement of said rocker.

13. In apparatus for drying veneer, in

combination, a rocker having a bearing surface and a pair of rotative supporting members, said members being adapted, one to rise and the other to fall upon movement of the rocker in one direction, and to fall and rise respectively upon the reversal of said rocker movement.

14. In apparatus for drying veneer, in combination, a plurality of rockers rigidly connected by a shaft, each of said rockers having a bearing surface, and each being provided with a pair of supporting rollers, said rollers being oppositely located with respect to said shaft upon either side thereof.

15. In apparatus for drying veneer, in combination, a pair of rockers rigidly connected by a shaft, each of said rockers having a bearing surface, and each being provided with a pair of supporting rollers, said rollers being oppositely located with respect to said shaft upon either side thereof.

16. In apparatus for drying veneer, in combination, a plurality of pairs of rockers, each pair being rigidly connected together, anti-friction supporting devices carried thereby, and means connecting all of said pairs whereby any movement imparted to one will be shared by all.

17. In apparatus for drying veneer, in combination, a plurality of pairs of rockers, each pair being rigidly connected by a shaft, each rocker having an upper extension, a lower extension and a bearing surface, means pivotally connecting said lower extensions, and means pivotally connecting said upper extensions, certain of said connecting means being adjustable.

18. In apparatus for drying veneer, in combination, a plurality of pairs of rockers, each pair being rigidly connected by a shaft, each rocker having an upper extension, a lower extension and a bearing surface, and each having a pair of rollers journaled thereon upon opposite sides of the shaft secured thereto, means pivotally connecting said lower extensions, means pivotally connecting said upper extensions, said upper means being adjustable, and a lever adapted to simultaneously actuate said rockers.

19. In apparatus for drying veneer, in combination, pressing devices, rocking mechanism connected therewith, and a plurality of means adapted to actuate the rocking mechanism.

20. In apparatus for drying veneer, in combination, veneer supporting devices, rocking mechanism adapted to establish pressure relation therebetween, and a plurality of means adapted to act at different times to impart movement to said rocking mechanism.

21. In apparatus for drying veneer, in combination, rocking mechanism, means for moving said rocking mechanism into a predetermined position, locking means there-

for, and independent means adapted to act when said parts are locked to impart a limited oscillation to said rocking mechanism.

22. In apparatus for drying veneer, in combination, rocking mechanism, an operating lever secured thereto, a rod angularly disposed with respect to said lever, and means adapted to cause the end of said lever to travel along said rod.

23. In apparatus for drying veneer, in combination, rocking mechanism, an operating lever secured thereto, a rod angularly disposed with respect to said lever, means adapted to cause the end of said lever to travel along said rod in either direction, and means for locking said lever and said rod against relative movement.

24. In apparatus for drying veneer, in combination, rocking mechanism, an operating lever secured thereto, a rod angularly disposed with respect to said lever, means adapted to cause the end of said lever to travel along said rod in either direction, means for locking said lever and said rod against relative movement, and means adapted to reciprocate said rod.

25. In apparatus for drying veneer, in combination, rocking mechanism, an operating lever secured thereto, a pinion mounted on said lever, a rod provided with a rack along which said pinion is adapted to travel, and means adapted to rotate said pinion.

26. In apparatus for drying veneer, in combination, rocking mechanism, an operating lever secured thereto, a pinion mounted on said lever, a rod provided with a rack along which said pinion is adapted to travel, means adapted to rotate said pinion, and means adapted to lock said last means against movement relative to said lever.

27. In apparatus for drying veneer, in combination, rocking mechanism, an operating lever secured thereto, a pinion mounted on said lever, a rod provided with a rack along which said pinion is adapted to travel, means adapted to rotate said pinion, means adapted to lock said last means against movement relative to said lever, and means adapted to reciprocate said rod.

28. In apparatus for drying veneer, in combination, rocking mechanism, an operating lever secured thereto, a rack rod angularly disposed with respect to said lever, a shaft journaled upon said lever, a pinion secured thereto and adapted to turn in said rack, and a swinging arm secured to rotate said shaft and said pinion, whereby the latter is made to travel along said rack rod and to move said rocking mechanism into a predetermined position.

29. In apparatus for drying veneer, in combination, rocking mechanism, an operating lever secured thereto, a rod angularly disposed with respect to said lever having a rack secured thereto, a shaft journaled upon

said lever, a pinion secured thereto and adapted to engage said rack, a box loosely mounted on said shaft adapted to slide along said rod, a box gear rigidly secured to said box, a swinging arm secured upon said shaft, and means carried by said arm and associated with said box gear adapted by rotation thereof to swing said arm, whereby said operating lever may be thrown to either side of a central position to impart movement to said rocking mechanism.

30. In apparatus for drying veneer, in combination, rocking mechanism, an operating lever secured thereto, a rod angularly disposed with respect to said lever having a rack secured thereto, a shaft journaled upon said lever, a pinion secured thereto and adapted to engage said rack, a box loosely mounted on said shaft adapted to slide along said rod, a box gear rigidly secured to said box, a swinging arm secured upon said shaft, back gearing carried by said arm and associated with said box gear, adapted by rotation thereof to swing said arm, whereby said operating lever may be thrown to either side of a central position to impart movement to said rocking mechanism, means adapted to drive said back gearing, and means adapted to lock said last means and said swinging arm against relative movement.

31. In apparatus for drying veneer, in combination, rocking mechanism, an operating lever secured thereto, a rod angularly disposed with respect to said lever and provided with a rack, a shaft journaled upon said lever, a pinion secured thereto and adapted to engage said rack, a box loosely mounted on said shaft adapted to slide along said rod, a box gear rigidly secured to said box, a swinging arm secured upon said shaft, back gearing carried by said arm and associated with said box gear, adapted by rotation thereof to swing said arm, whereby said operating lever may be thrown to either side of a central position to impart movement to said rocking mechanism, means adapted to drive said back gearing, means adapted to lock said last means and said swinging arm against relative movement, and means adapted to reciprocate said rod.

32. In apparatus for drying veneer, in combination, rocking mechanism, an operating lever secured thereto, a rod angularly disposed with respect to said lever and provided with a rack, a shaft journaled upon said lever, a pinion secured thereto and adapted to engage said rack, a box loosely mounted on said shaft adapted to slide along said rod, a box gear rigidly secured to said box, a swinging arm secured upon said shaft, a second shaft journaled upon said arm, a pinion secured to one end thereof and meshing with said box gear, a gear

secured to the other end thereof and mesh-in with a driving pinion journaled upon said first shaft, and a hand wheel adapted to rotate said driving pinion.

5 33. In apparatus for drying veneer, in combination, rocking mechanism, an operating lever secured thereto, a rod angularly disposed with respect to said lever and provided with a rack, a shaft journaled upon
10 said lever, a pinion secured thereto and adapted to engage said rack, a box loosely mounted on said shaft adapted to slide along said rod, a box gear rigidly secured to said box, a swinging arm secured upon
15 said shaft, a second shaft journaled upon said arm, a pinion secured to one end thereof and meshing with said box gear, a gear secured to the other end thereof and meshing with a driving pinion journaled upon
20 said first shaft, a hand wheel adapted to rotate said driving wheel, means provided by the hub of said driving pinion adapted to frictionally engage coacting means upon said swinging arm, and means adapted to
25 force said friction means together, whereby all of said parts are held against relative movement.

34. In apparatus for drying veneer, in combination, rocking mechanism, an operating lever secured thereto, a rod angularly disposed with respect to said lever and provided with a rack, a shaft journaled upon said lever, a pinion secured thereto and adapted to engage said rack, a box loosely
35 mounted on said shaft adapted to slide along said rod, a box gear rigidly secured to said box, a swinging arm secured upon said shaft, a second shaft journaled upon said arm, a pinion secured to one end thereof
40 and meshing with said box gear, a gear secured to the other end thereof and meshing with a driving pinion journaled upon said first shaft, a hand wheel adapted to rotate said driving wheel, means provided by the
45 hub of said driving pinion adapted to frictionally engage coacting means upon said swinging arm, means adapted to force said friction means together whereby all of said parts are held against relative movement,
50 and means adapted to impart a rocking movement to said rocking mechanism when said parts are so held.

35. In apparatus for drying veneer, in combination, rocking mechanism, an operating lever secured thereto, a rod associated with said lever to oscillate the same, and means adapted to reciprocate said rod.

36. In apparatus for drying veneer, in combination, rocking mechanism, an operating lever secured thereto, a rod associated with said lever to oscillate the same, means adapted to reciprocate said rod, and means resiliently connecting said rod and said actuating means.

37. In apparatus for drying veneer, in

combination, rocking mechanism, a reciprocating rod, means connecting said rod and said rocking mechanism, an oscillating member connected to said rod, and means adapted to impart movement to said oscillating member. 70

38. In apparatus for drying veneer, in combination, rocking mechanism, a reciprocating rod, means connecting said rod and said rocking mechanism, an oscillating member pivotally connected to said rod, and a rotative cam adapted to oscillate said member. 75

39. In apparatus for drying veneer, in combination, rocking mechanism, a reciprocating rod, means connecting said rod and said rocking mechanism, an oscillating member pivotally connected to said rod, a cam, and means in engagement with said cam and carried by said member adapted
85 upon rotation of the former to transmit an oscillation to the latter.

40. In apparatus for drying veneer, in combination, rocking mechanism, a reciprocating rod, means connecting said rod and said rocking mechanism, an oscillating member pivotally connected to said rod, a cam, and a pair of cam wheels pivotally connected upon said member upon opposite sides of said cam adapted upon the rotation of the
95 latter to transmit an oscillation to the former.

41. In apparatus for drying veneer, in combination, rocking mechanism, a reciprocating rod, means connecting said rod and said rocking mechanism, an oscillating member pivotally connected to said rod, a rotative cam adapted to oscillate said member, and means for driving said cam. 100

42. In apparatus for drying veneer, in combination, rocking mechanism, a reciprocating rod, means connecting said rod and said rocking mechanism, an oscillating member pivotally connected to said rod, a suitably mounted cam shaft, a cam thereon
110 adapted to oscillate said member, and means adapted to rotate said shaft.

43. In apparatus for drying veneer, in combination, rocking mechanism, a reciprocating rod, means connecting said rod and said rocking mechanism, an oscillating member pivotally connected to said rod, a suitably mounted cam shaft, a cam thereon adapted to oscillate said member, a hand pulley wheel loosely mounted upon said
120 shaft, and means cooperating therewith to drive said cam shaft with increased power effect.

44. In apparatus for drying veneer, in combination, rocking mechanism, a rod for rocking the same, actuating means for said rod, and a resilient connection between said rod and said actuating means. 125

45. In apparatus for drying veneer, in combination, rocking mechanism, a rod for 130

rocking same, actuating means for said rod, a member secured to said rod, a second member slidably fitting upon said first member and connected to said actuating means, and resilient means interposed between said two members.

46. In apparatus for drying veneer, in combination, rocking mechanism, a rod for rocking same, actuating means for said rod, a member secured to said rod, a second member slidably fitting upon said first member and connected to said actuating means, and a pair of springs interposed between the adjacent end walls of said two members.

47. In apparatus for drying veneer, in combination, rocking mechanism, a rod for rocking same, actuating means for said rod, a bumper block secured to said rod, a spring box slidably fitting upon said block and having its inner end walls disposed in opposed relation to the ends of said block, springs interposed between said opposing end walls, and means pivotally connecting said spring box to said actuating means.

48. In apparatus for drying veneer, in combination, rocking mechanism, a rod for rocking same, actuating means for said rod, a bumper block secured to said rod, a spring box slidably fitting upon said block and having its inner end walls disposed in opposed relation to the ends of said block, flanged members adjustably secured in the ends of said block, springs interposed between the flanges thereof and the inner end walls of said spring box, means provided in the latter whereby the flanged members may be adjusted, and means pivotally connecting said spring box to said actuating means.

49. In apparatus for drying veneer, in combination, a pair of movable frames comprising a plurality of upright columns, each column being provided with a plurality of seats, the seats of one of said frames being disposed in a series of substantially horizontal planes, and the seats of the other frame being disposed in planes lying between and parallel to said other planes, a series of plates provided with lugs adapted to rest upon the seats of one of said frames, a second series of plates similarly supported by the other thereof, and means adapted to relatively move said frames.

50. In apparatus for drying veneer, in combination, a frame, seats disposed in a substantially horizontal plane upon said frame, a pair of plates provided with lugs adapted to rest upon said seats, a second frame having a pair of plates similarly supported thereon, one of said pairs of plates being disposed above the other thereof, and means adapted to relatively move said frames.

51. In apparatus for drying veneer, in combination, a frame provided with seats, a plurality of sets of plates having lugs

adapted to rest upon said seats, each set comprising a plurality of plates arranged adjacent to one another in a substantially horizontal plane, a second frame provided with sets of plates similarly supported and arranged, the sets of one frame being alternately disposed with respect to the sets of the other, and means adapted for relatively moving said frames to impose the weight of the sets of plates of one thereof upon the sets of the other.

52. In apparatus for drying veneer, in combination, a pair of movable frames comprising a plurality of upright columns, each column of one frame being disposed beside a column of the other thereof to form a pair, links pivotally connecting the members of said pairs, a series of plates resting upon each of said frames, the plates of one series being disposed in alternate relation with the plates of the other, and means adapted to relatively move said frames.

53. In apparatus for drying veneer, in combination, a pair of supports adapted to rise and fall in opposition to one another, hollow plates resting upon said supports, and means connected to said plates adapted to rise and fall therewith and to lead steam to and from the interior thereof.

54. In apparatus for drying veneer, in combination, a pair of frames adapted to rise and fall in opposition to one another, hollow plates resting upon said frames, a plurality of manifolds adapted to share the motion of said frames, pipes having flexible connection with said plates and said manifolds, means for leading steam to certain manifolds, and means for leading steam and water away from others of said manifolds.

55. In apparatus for drying veneer, in combination, a pair of frames, a plurality of sets of plates resting upon each of said frames, each set comprising a pair of hollow plates arranged adjacent one another in a substantially horizontal plane, means adapted to relatively move said frames, a pair of manifolds near each end of said apparatus upon one side thereof adapted to lead steam to said plates, similarly arranged manifolds upon the other side thereof adapted to conduct steam and water away from said plates, flexible pipe connections from one of each pair of manifolds to the plates of one frame, and flexible pipe connections from the other of each pair of manifolds to the plates of the other of said frames, said manifolds being connected to share the motion of said frames.

56. In apparatus for drying veneer, in combination, a pair of movable frames comprising a plurality of upright columns, each column of one frame being disposed beside a column of the other thereof to form a pair, links pivotally connecting the members of said pairs, a series of plates resting upon

each of said frames, the plates of one series being disposed in alternate relation with the plates of the other, a rocker provided for each pair of columns, each rocker having a bearing surface and two supporting members, said members being so positioned that upon movement of said rocker in one direction the columns of one frame are raised and the columns of the other frame lowered and upon movement of said rocker in the other direction said first columns are lowered and said second columns raised, whereby the plates of one of said series are brought into contact first with one and then with the other of the adjacent plates of said other series.

57. In apparatus for drying veneer, in combination, a pair of movable frames, a supporting member, a rocker adapted to oscillate upon said supporting member, means upon said rocker adapted to support said frames and to produce a relative movement thereof when said rocker is moved out of its normal position.

58. In apparatus for drying veneer, in combination, a pair of movable frames, supporting members, a plurality of rockers adapted to oscillate upon said supporting members, each of said rockers having a pair of rollers, each adapted to provide support for one of said frames and to effect a relative movement of said frames when said rockers are oscillated.

59. In apparatus for drying veneer, in combination, a pair of movable plates, one of said plates being disposed above and spaced apart from the other thereof, and a plurality of means adapted to relatively move said plates.

60. In apparatus for drying veneer, in combination, a pair of movable plates, one of said plates being disposed above and spaced apart from the other thereof, and a plurality of means adapted to act at different times to impart a relative movement to said plates.

61. In apparatus for drying veneer, in combination, a pair of movable plates, one of said plates being disposed above and spaced apart from the other thereof, means adapted to impose the weight of one of said plates upon the other thereof, and means adapted to move said first means to relieve the pressure between said plates.

62. In apparatus for drying veneer, in combination, a pair of movable plates, one of said plates being disposed above and spaced apart from the other thereof, means adapted to impose the weight of one of said plates upon the other thereof, and means adapted to periodically actuate said first means to move said plates from and toward one another.

63. In apparatus for drying veneer, in combination, a pair of movable plates, one

of said plates being disposed above and spaced apart from the other thereof, means adapted to impose the weight of one of said plates upon the other thereof, and means adapted to oscillate said first means.

64. In apparatus for drying veneer, in combination, a pair of movable plates, one of said plates being disposed above and spaced apart from the other thereof, means adapted to impose the weight of one of said plates upon the other thereof, and means adapted to resiliently impart an oscillating movement to said first means.

65. In apparatus for drying veneer, in combination, a pair of series of plates, the plates of one series being disposed in alternate relation with and spaced apart from the plates of the other, rockers supporting said series, and a plurality of independent means adapted to actuate said rockers to move said series of plates relatively to one another.

66. In apparatus for drying veneer, in combination, a pair of series of plates, the plates of one series being disposed in alternate relation with and spaced apart from the plates of the other, rockers supporting said series, and a plurality of means adapted to act at different times to actuate said rockers whereby said plates are moved relatively to one another.

67. In apparatus for drying veneer, in combination, a pair of series of plates, the plates of one series being disposed in alternate relation with and spaced apart from the plates of the other, rockers supporting said series, and means adapted to move said rockers to impose the weight of the plates of one series upon the plates of the other thereof.

68. In apparatus for drying veneer, in combination, a pair of series of plates, the plates of one series being disposed in alternate relation with and spaced apart from the plates of the other, rockers supporting said series, and means adapted to actuate said rockers whereby closures are effected between certain opposing faces of said plates and apertures provided between other opposing faces thereof.

69. In apparatus for drying veneer, in combination, a pair of series of plates, the plates of one series being disposed in alternate relation with and spaced apart from the plates of the other, rockers supporting said series, means adapted to actuate said rockers whereby closures are effected between certain opposing faces of said plates and apertures provided between other opposing faces thereof, and means adapted to impart an oscillation to said rockers whereby said closures are periodically opened.

70. In apparatus for drying veneer, in combination, a pair of series of plates, the plates of one series being disposed in alter-

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nate relation with and spaced apart from the plates of the other, rockers supporting said series, and means adapted to move said rockers into a predetermined position to effect closures between certain opposing faces of said plates and to move said rockers into another predetermined position to effect closures between the other opposing faces of said plates.

71. In apparatus for drying veneer, in combination, a pair of series of plates, the plates of one series being disposed in alternate relation with and spaced apart from the plates of the other, rockers supporting said series, means adapted to move said rockers into a predetermined position to effect closures between certain opposing faces of said plates and to move said rockers into another predetermined position to effect closures between the other opposing faces of said plates, and means adapted to impart movement to said rockers, when in either position, to periodically open said closures.

72. In an apparatus for drying veneer, in combination, a pair of supports, a plate freely resting on each of said supports, said plates being disconnected from each other, one of said plates being disposed above and spaced apart from the other thereof, and

means adapted to relatively move said supports to impose the weight of said upper plate upon said lower plate.

73. In an apparatus for drying veneer, in combination, a pair of bodily movable supports, a plate freely resting on each of said supports, one of said plates being disposed above and spaced apart from the other thereof, and means adapted to relatively move said supports to impose the weight of said upper plate upon said lower plate.

74. In an apparatus for drying veneer, in combination, a pair of supporting means, a plurality of plates carried by said supporting means, and means adapted to collocate the plates in a plurality of superimposed sets.

75. In an apparatus for drying veneer, in combination, a pair of supporting means, a plurality of plates carried by said supporting means, and means adapted to collocate the plates in a plurality of superimposed disconnected sets.

In testimony whereof I affix my signature, in the presence of two witnesses.

LOUIS G. MERRITT.

Witnesses:

MONTFORD C. HOLLEY,
F. R. OLLIVER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."