No. 709,864. Patented Sept. 30, 1902.

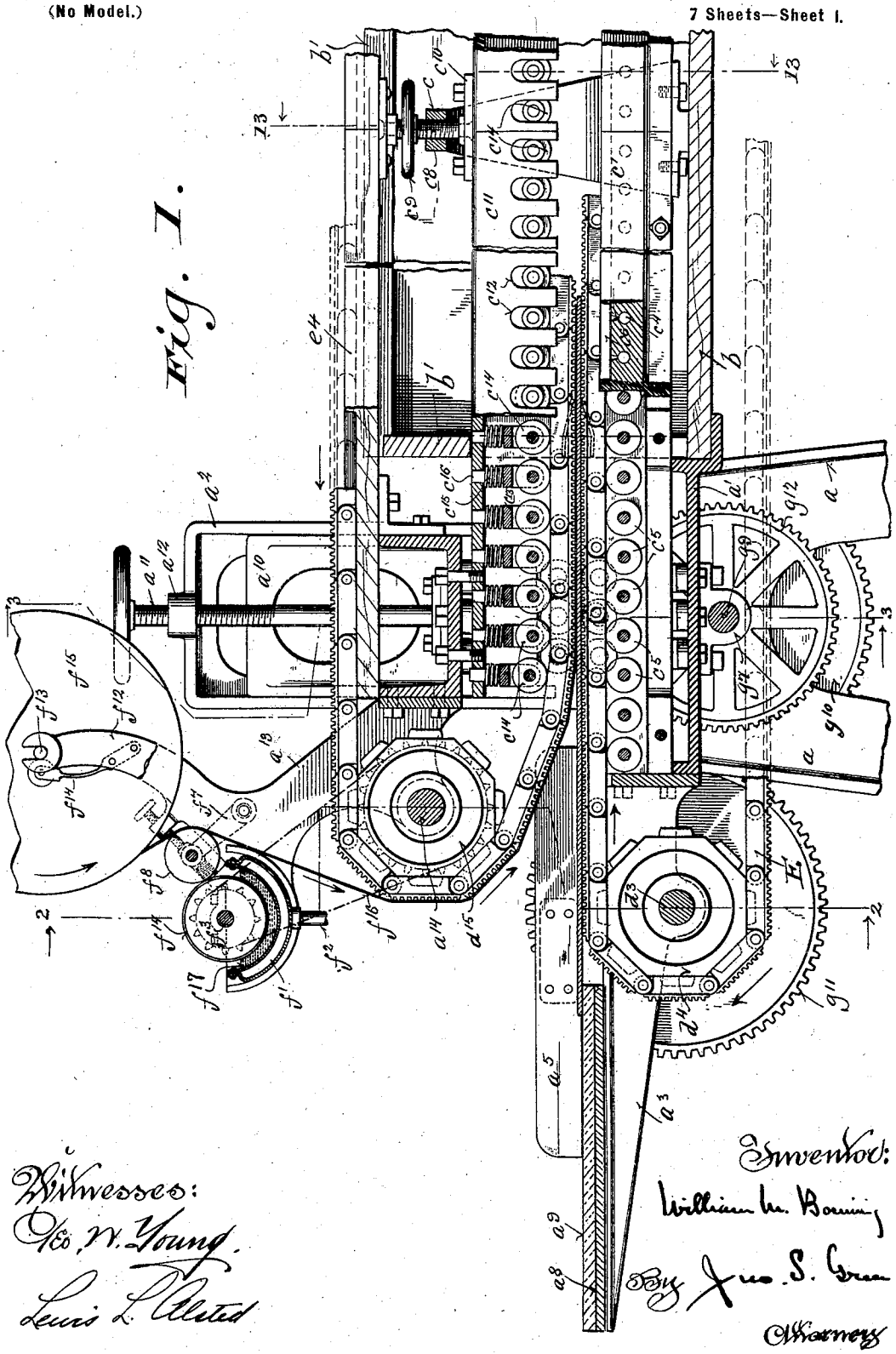
W. M. BOENNING.

APPARATUS FOR EDGE UNITING VENEERS.

(Application filed Aug. 1, 1901.)

(No Model.) 7 Sheets—Sheet 1.

Fig. 1.



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(No Model.) 7 Sheets--Sheet 2.

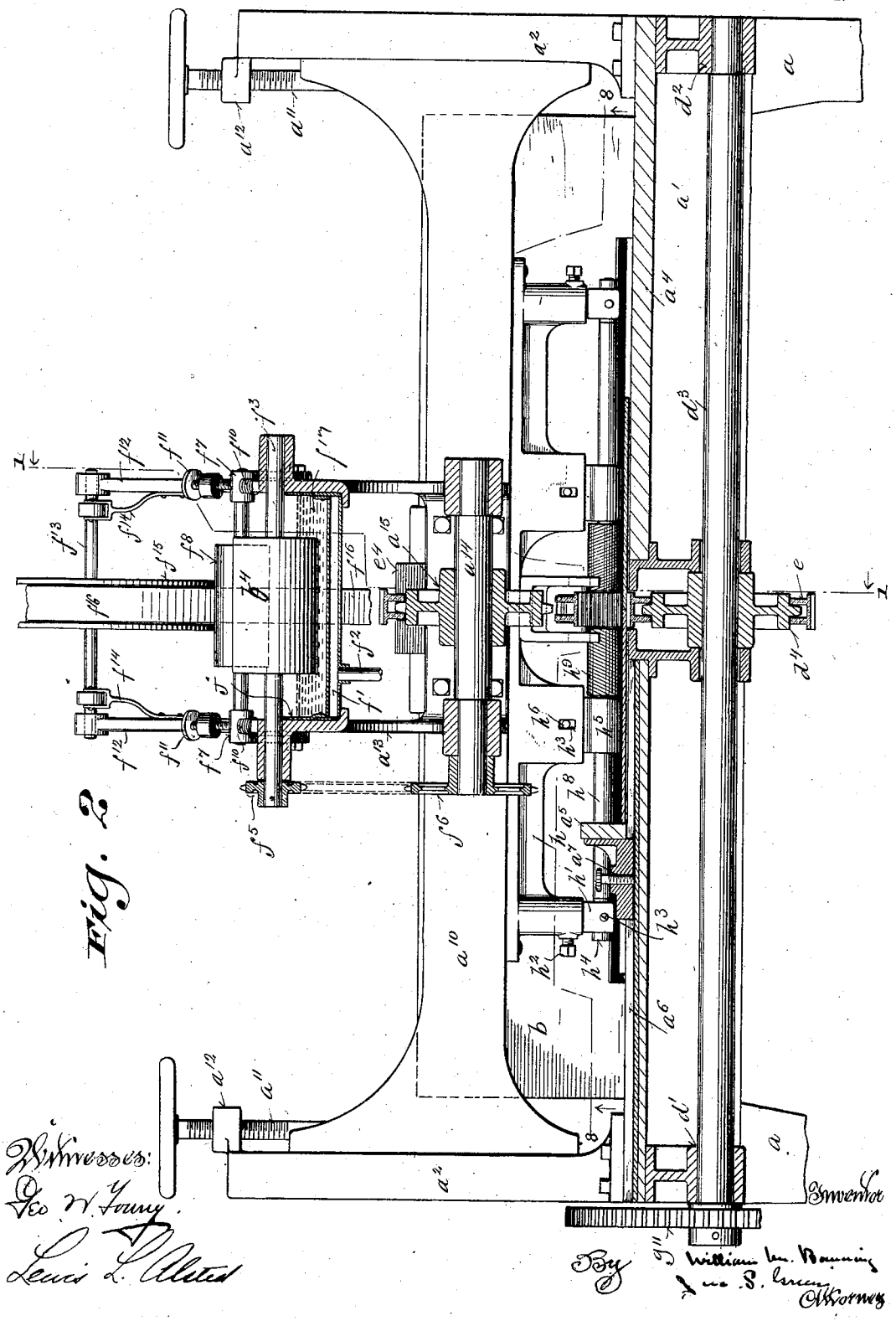

Fig. 2.

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(No Model.) 7 Sheets—Sheet 3.

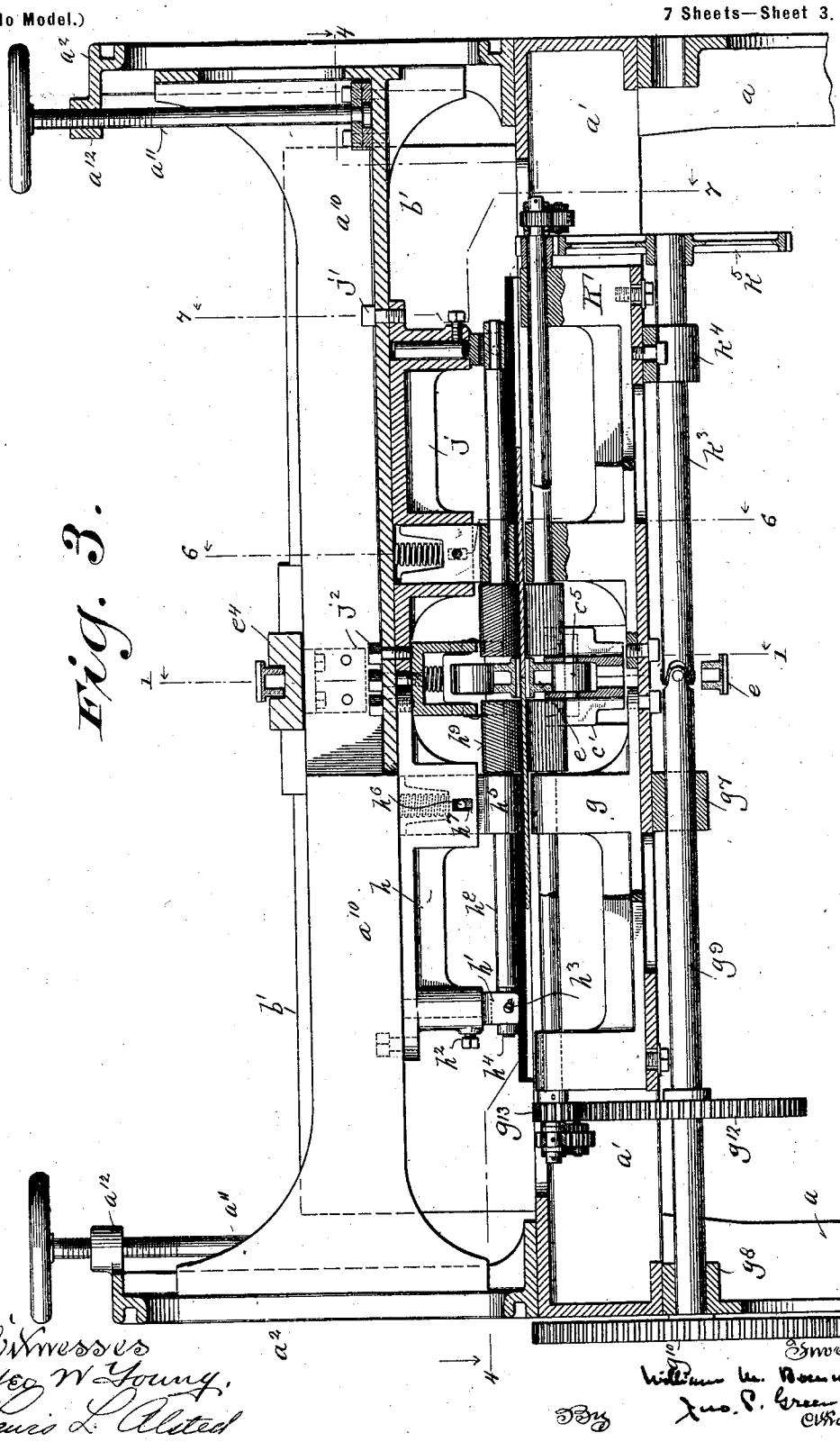

Fig. 3.

Witnesses
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(Application filed Aug. 1, 1901.)

(No Model.) 7 Sheets—Sheet 4.

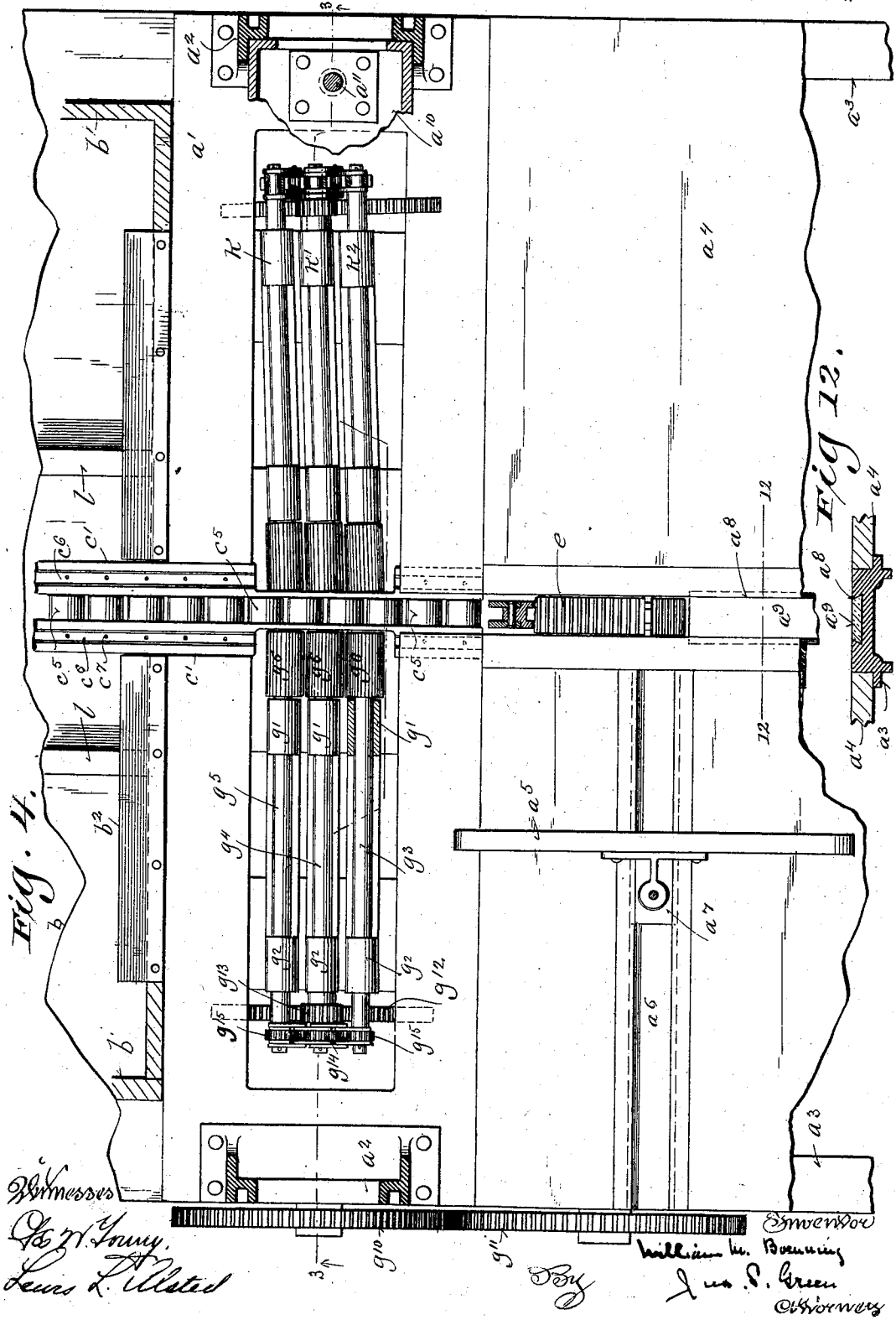

Fig. 4.

Fig 12.

Witnesses
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APPARATUS FOR EDGE UNITING VENEERS.

(Application filed Aug. 1, 1901.)

(No Model.) 7 Sheets—Sheet 5.

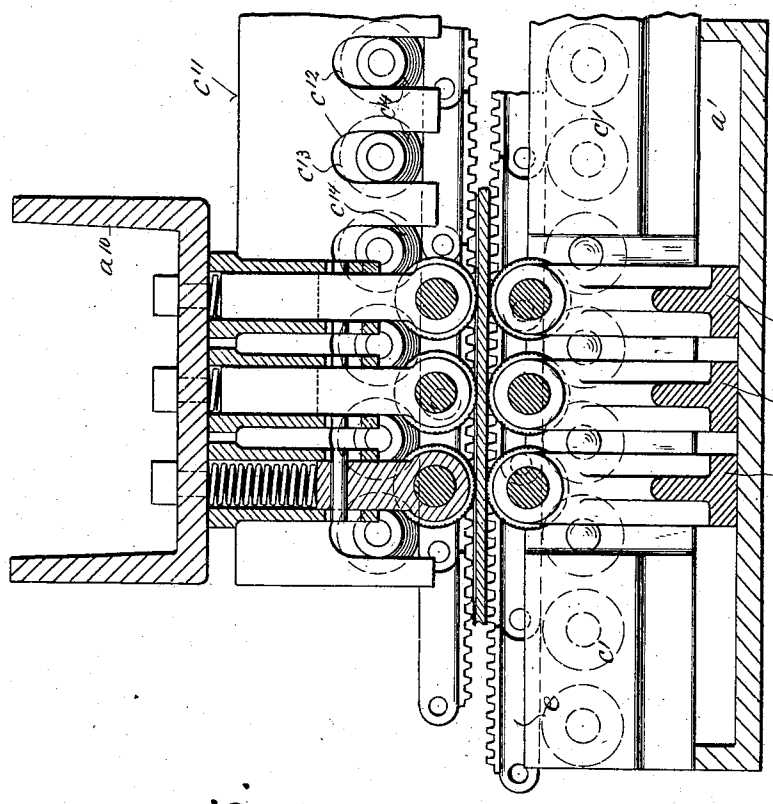

Fig. 6.

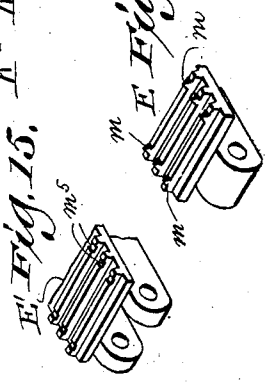

Fig. 16.

Fig. 15.

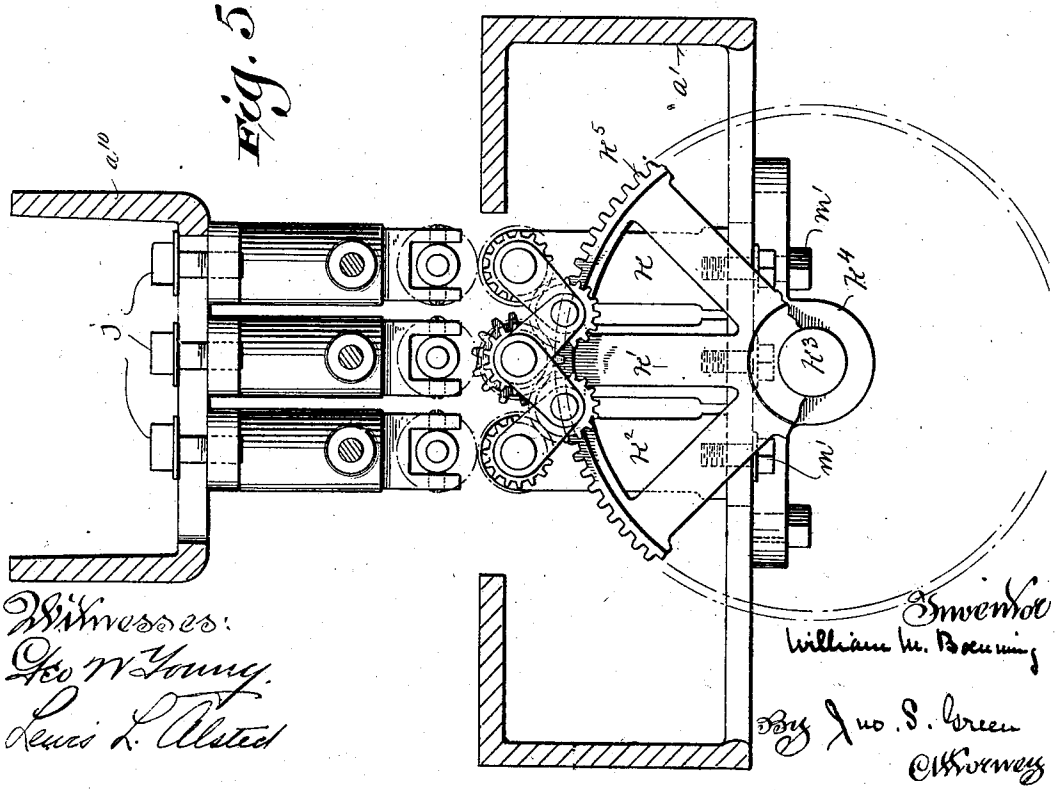

Fig. 5.

Witnesses:
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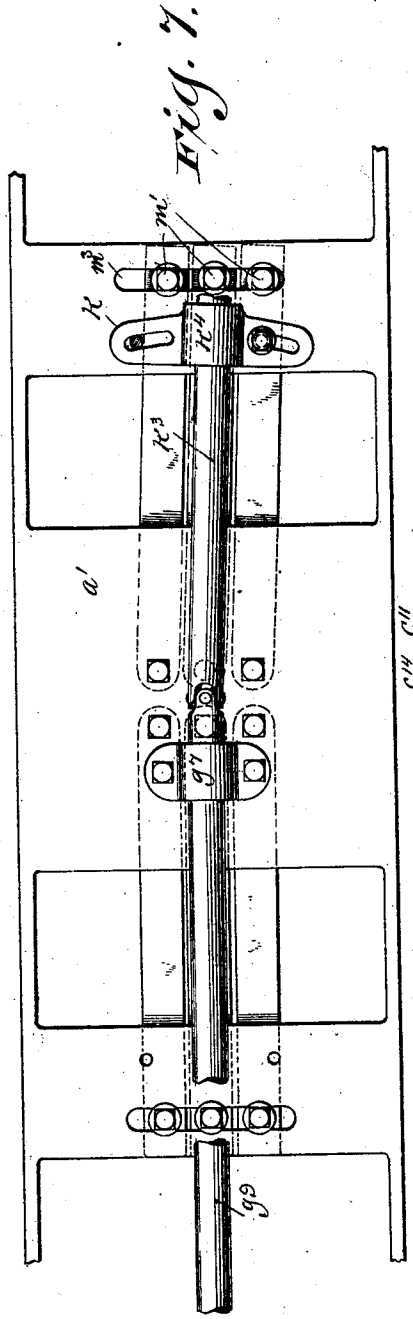
APPARATUS FOR EDGE UNITING VENEERS.

(Application filed Aug. 1, 1901.)

(No Model.) 7 Sheets—Sheet 6.

Fig. 7.



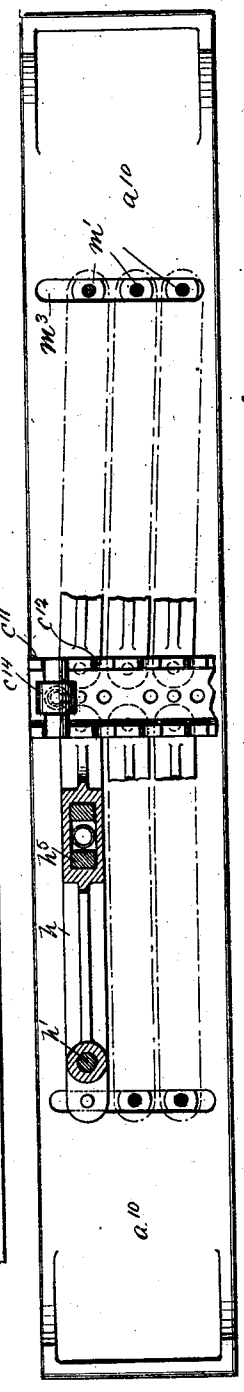


Fig. 10.

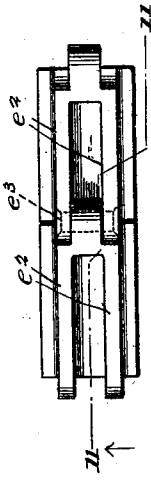


Fig. 11.

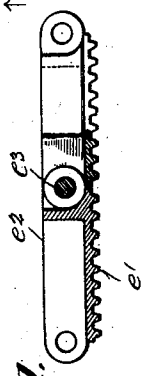


Fig. 8.

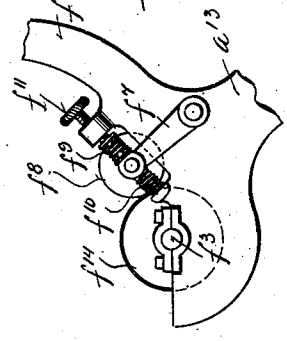


Fig. 9.

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No. 709,864. Patented Sept. 30, 1902.

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APPARATUS FOR EDGE UNITING VENEERS.

(Application filed Aug. 1, 1901.)

(No Model.) 7 Sheets—Sheet 7.

Fig. 13.

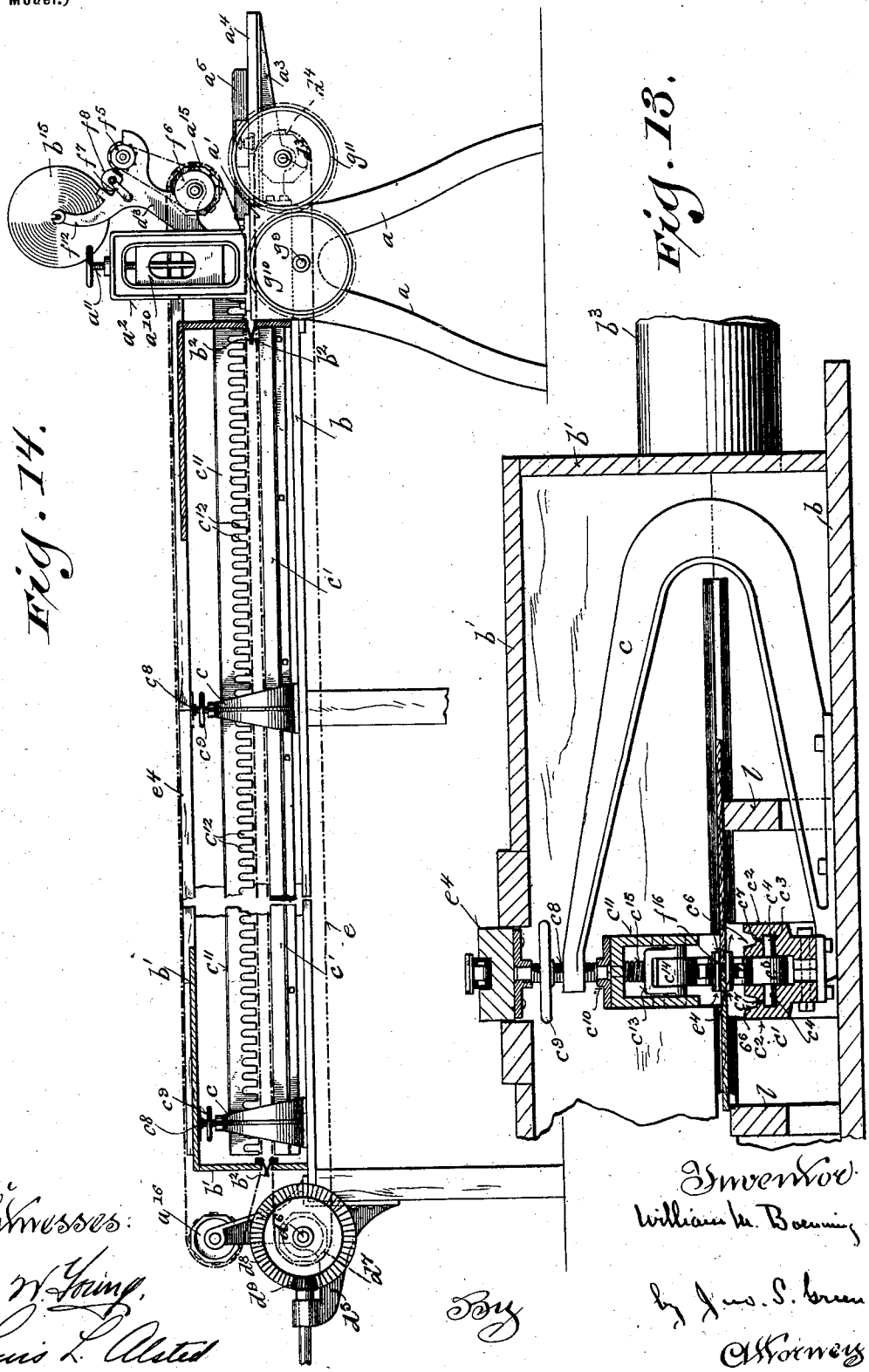

Fig. 14.

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UNITED STATES PATENT OFFICE.

WILLIAM M. BOENNING, OF PORT WASHINGTON, WISCONSIN.

APPARATUS FOR EDGE-UNITING VENEERS.

SPECIFICATION forming part of Letters Patent No. 709,864, dated September 30, 1902.

Application filed August 1, 1901. Serial No. 70,446. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. BOENNING, a citizen of the United States of America, residing at Port Washington, in the county of Ozaukee and State of Wisconsin, have invented certain new and useful Improvements in Apparatus for Edge-Uniting Veneer or Similar Material, of which the following is a specification.

My invention relates to improvements in apparatus for edge-uniting blanks of veneer or similar material.

It is necessary in order to obtain the full benefits from the use of veneer to be able to use narrow strips of the same as well as wide ones, and it has therefore become necessary to find a suitable way of uniting or edge-gluing together blanks or strips of veneer.

The object of my invention is to produce an apparatus or device by means of which veneer may be united or edge-glued together quickly and satisfactorily—a machine or apparatus by means of which the labor and space heretofore necessary will be reduced.

A further object of my invention is to produce a machine or apparatus which may by the passing of the veneer strips or blanks therethrough unite them in a satisfactory manner, so that the united blanks or strips as they come out from said machine or apparatus will be capable of being handled and laid away to dry to be ready for use.

In accordance with the present invention two strips or blanks of veneer each having a planed or otherwise trued edge are brought in contact with a revolving cylinder or roller supplied with glue, so that each trued edge will receive its proper amount. The blanks are then placed on a table in front of and forming part of the apparatus so that the trued edges will lie adjacent to one another and project over the upper surface of a conveyer in the same plane with the upper surface of the table and moving toward the rear thereof. The blanks are moved in the direction of the travel of the conveyer until their ends contact with the upper part of the conveyer, which is suspended immediately above and in line with the lower part. The two parts of this conveyer are moved at the same speed, and the lower part is so shaped and supported as to form a solid bed, while the upper part is yieldingly held in contact therewith, thus forming a combined conveyer and press for the blanks. A strip of suitable material, such as muslin or paper, on a spool or reel is arranged so as to pass over a glue-distributing roller or cylinder and lie against and move with the upper portion or part of the conveyer with the adhesive side down to lie over the joint between the two blanks, tending to couple or unite them. The blanks when caught in the jaw formed by the two portions of the conveyer are carried between four sets of rollers—two lower and two upper sets. The lower sets of rollers are driven at the same speed with which the conveyer moves, while the upper sets are merely idlers, so mounted as to be yieldingly held in contact with the blanks to give them a severe pressure. The upper and lower sets of rollers on one side are arranged so that their axes are at right angles to the line of travel of the conveyer, thus holding and guiding the blanks passing between them straight. The other two sets are arranged so that their axes may be shifted, and they will preferably be arranged so that they will tend to force the blank passing between them forward and toward the other blank, so that the adjacent edges of said blanks will be brought in close contact, thus forcing out the superfluous amount of glue between them. The conveyer carries the blanks on past the rollers into a housing supplied with a warm dry air-blast for heating the blanks and setting the glue, and throughout its entire length the conveyer acts as a press or clamp. The housing is long enough so that as the blanks reach the end the glue will be set and they united ready to be laid away to dry.

In the accompanying drawings I have shown an apparatus representing a practical embodiment of my invention and including novel combinations of parts and structural features forming the subject-matter of my invention, as will be hereinafter described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side view in cross-section, taken on lines 1 1 in Figs. 2 and 3. This view shows the jaw formed by the two parts of the conveyer. It also shows the strip of fabric or paper passing from its reel over a glue-distributing roller down onto the

blanks of veneer. Fig. 2 is a front view in cross-section, taken on line 2 2 in Fig. 1. In this view two blanks of veneer may be seen on the table with the edges to be united between the two parts of the conveyer. Fig. 3 is a front view in cross-section, taken on line 3 3 in Fig. 1. This view illustrates the means by which the two sets of lower rollers are driven. Fig. 4 is a top view in cross-section, taken on line 4 4 in Fig. 3. This view shows one set of the lower rollers out of perpendicular to the line of travel of the conveyer forming a part of the means for tending to force one blank out of the line of travel of the conveyer or toward the other blank. Fig. 5 is a detail view in cross-section, taken on line 7 7 in Fig. 3, and shows the means for driving the three rollers forming one of the lower sets from one gear-wheel. Fig. 6 is a detail view in cross-section, taken on line 6 6 in Fig. 3. This view illustrates the position of the rollers and conveyer with the blanks in place between them. Fig. 7 is a bottom view in detail of the shaft for driving the set of rollers which is out of perpendicular to the line of travel of the conveyer. Fig. 8 is a bottom view in detail, taken on line 8 8 in Fig. 2, and shows the means by which the position of one of the sets of rollers is allowed to be varied. Fig. 9 is a detail view of a portion of my apparatus. Fig. 10 is a detail view of two links of the conveyer. Fig. 11 is a view in cross-section, taken on line 11 11 in Fig. 10. Fig 12 is a detail view in cross-section, taken on line 12 12 in Fig. 4. Fig. 13 is a detail view of the means for supporting the conveyer and adjusting the tension of the means which yieldingly holds the upper part thereof toward or in contact with the lower part. Fig. 14 is a side elevation of my device, a portion of the same being broken away. Figs. 15 and 16 are details of the conveyer-chain.

Throughout the several views like elements are denoted by like characters.

In constructing this device I employ a frame or standard comprising legs $a\,a$, bed a', and upright supports a^2. Suitably secured to the forward part of this frame is a table-supporting bracket a^3, provided with a table a^4, upon which the veneer blanks will be placed after the edges to be united have been supplied with glue. The table is provided with a movable guide a^5 for the veneer blanks, said guide being held in position by means of a groove a^6, within which slides a clamping device a^7, secured to said guide. The table is also provided with a groove a^8, within which lies a removable plate a^9. When the veneer blanks are placed upon the table, the guide a^5 will be moved up so that the edges of the veneer to be united will fall directly above the plate a^9, and as this plate in a short time will become gummed up it is made removable, so that it can be taken out and another one inserted while it is being cleaned. Secured to the frame and extending in the rear thereof is a bench or table b, forming a floor and support for the hot-air housing. This table is provided with any suitable legs or standards and at its rear end carries the driving mechanism for the apparatus. At suitable intervals throughout the length of said bench or table supporting arms or brackets c are placed. The lower arm of the bracket is secured to the floor and carries a roller track or way c' for the lower part of the conveyer. This track or way comprises a frame formed of two side plates c^2, bolted together at intervals throughout their length. Each side plate is recessed, as at c^3, to form a seat or bearing for the axles c^4 of rollers c^5, closely mounted throughout the length of said way, as seen at c^5, Fig. 4. Each side plate c^2 is provided with a groove c^6, and leading from these grooves down to the seats of the rollers are oil-passages c^7. The upper arm of the support c is threaded to receive a screw-rod c^8, provided with a hand-wheel c^9. The lower end of the rod c^8 is provided with a supporting-flange c^{10}, which lies within a recess of a frame c^{11} and which extends immediately above the lower frame c'. This upper frame c^{11} is U-shaped and each side is slotted, as shown at c^{12}. Located within the U-shaped frame and shaped to move up and down within the slots c^{12} are roller-supports c^{13}, each provided with a roller c^{14} and held in a downward position by, means of a spring c^{15}, surrounding a shaft c^{16}, movable within an opening in the top of said frame.

Journaled within suitable bearings d' and d^2 is a shaft d^3, carrying at its center a sprocket-wheel d^4.

Suitably mounted on the rear end of the table b is a supporting-frame d^5, within which is journaled a shaft d^6, carrying a sprocket-wheel d^7 (shown by dotted lines) and a gear-wheel d^8, meshing with a suitable driving-gear d^9, by means of which power will be transmitted from any suitable supply to the apparatus.

Passing over the sprocket-wheels d^4 and d^7 and resting on the rollers c^5 of the lower way is an endless chain conveyer e, composed of links formed as illustrated in Figs. 10, 11, 15, and 16, having one corrugated face e' and one straight face e^2. The links of this conveyer are pinned together in any suitable manner by pins e^3. (Shown by dotted line in Fig. 10.) The rods c^8 serve as supports for a grooved track or way e^4 for the return of the upper conveyer-chain.

The upright supports a^2 have their inner sides planed and form guides for a frame a^{10}, movable vertically by means of suitable screw-rods a^{11} a^{11}, threaded through the upper part of said supports at a^{12} a^{12}. The frame a^{10} at its center is provided with a supporting-arm a^{13}, within which is suitably journaled a shaft a^{14}, carrying a sprocket a^{15} for the upper chain of the conveyer. Suitably journaled within the frame d^5 at the rear of the table or bench b is a sprocket-wheel a^{16}, similar to a^{15}. The upper chain of the conveyer is adapted to lie beneath the rollers c^{14} of its way and

to pass around the sprocket-wheels a^{15} and a^{16} and along its upper way e^4.

The bench or table b is provided with a housing b', comprising sides and a top which meets the conveyer-way e^4. The housing at its forward and rear ends is provided with flexible lips b^2, adapted to bear on the top and bottom of the veneer blanks as they pass within and out of said housing and have as their duty the keeping of the heated air within the housing except as it escapes through a suitable exhaust-port. The housing is provided with an opening b^3 for admitting heated air, and a similar opening will be provided for allowing the air to escape, and these openings will preferably be located at the opposite ends of said housing.

The supporting-arm a^{13} is formed to and carries a glue-reservoir f, provided with a steam or hot-water jacket f', connected with a suitable steam or hot-water supply by means of a pipe f^2. Mounted on a shaft f^3, suitably journaled within the frame a^{13}, is a glue-cylinder f^4, formed of any suitable material and preferably covered with carpet. The shaft f^3 is also provided with a sprocket-wheel f^5, in line with the sprocket-wheel f^6, mounted on a shaft a^{14}. A chain passes over said sprockets, and thus drives the cylinder f^4. Mounted in a swinging frame f^7 is a glue-distributing cylinder f^8, yieldingly held in contact with the cylinder f^4 by means of springs f^9 and f^{10}, the tension of which may be varied by suitable screws f^{11} f^{11}.

Journaled within the upper arms f^{12} of the supporting-frame a^{13} is a shaft f^{13}, yieldingly held against movement by means of brakes f^{14} and carrying a reel or spool f^{15}, upon which is wound a strip of fabric f^{16}, as muslin, or suitable material, such as paper. This strip passes from the reel down around a distributing-roller f^8 and from said roller is supplied with glue on one side after the tank or reservoir f has been supplied with its glue f^{17}. From the roller the strip passes down around the front end of the upper conveyer-chain and after being placed on the blanks of veneer above the joint between them it is automatically fed to the blanks which are entered in said machine after the first two.

Carried by the floor of the bed a' are frames g, shaped and machined to form suitable bearings g' and g^2 for three shafts g^3, g^4, and g^5, each of which is provided at one end with a corrugated roller g^6. Journaled within bearings g^7 and g^8 is a shaft g^9, provided at its outer end with a gear-wheel g^{10}, adapted to mesh with a gear-wheel g^{11}, carried by shaft d^3. The shaft g^9 also carries a gear-wheel g^{12}. The shaft g^4 carries at one end two gear-wheels g^{13} and g^{14}, and the gear g^{13} is adapted to mesh and work with gear-wheel g^{12}, carried by shaft g^9. The shafts g^3 and g^5 are each provided with a gear-wheel g^{15} g^{15}. Two other gear-wheels arranged similarly to those shown in Fig. 5 are employed and supported by a suitable frame, so that from the gear-wheel g^{12} all of the rollers g^6 are driven in the same direction, or toward the back of my apparatus.

Suitably supported by means of the frame a^{10} and directly above the rollers g^6 are three roller-supports, like h. Each of these supports at one end is recessed to receive a stem h', which may be moved vertically within said recess and held in position therein by means of a set-screw h^2. The lower end of said stem is bifurcated and holds, by means of a screw h^3, a shaft-bearing h^4. The forward end of each support h is recessed to receive a sliding member h^5, which is formed at its lower end into a shaft-bearing. The sliding member h^5 is provided with a pin h^6, which works within a slot h^7 in said support. This sliding member is held in a downward position by means of a spring located within said recess. Journaled within the bearings h^4 and h^5 are shafts h^8, each carrying at its forward end a spirally-corrugated roller h^9. The axes of these rollers, as well as the set below them, stand at right angles to the line of travel of the conveyer. Opposite the three roller-supporting frames h are three similar roller-supporting frames j, provided with adjusting means and rollers similar to those carried by h. The roller-frames j are secured to the supporting-frame a^{10} by means of bolts j' and j^2, which pass through slots similar to j^3, Fig. 5, in the floor of the supporting-frame a^{10}, thus allowing the frames j to be swung so as to stand at different angles to the line of travel of the conveyer. Supported by the floor of the bed a' are three roller-bearing supports k, k', and k^2, similar to the supports g' and carrying rollers similar to rollers g^6 and gears similar to the gears carried by the shafts g^3, g^4, and g^5, the same being illustrated in Fig. 5. Each of these roller-bearing supports is secured at its outer end to the floor of bed a' by means of a bolt m', passing through a slot m^3 in the floor of said bed, thus allowing the frames to be moved at different angles to the line of travel of the conveyer. A shaft k^3, knuckle-joined to shaft g^9, is journaled in a suitable bearing k^4, movable on the arc of a circle by means of the construction shown in Fig. 7 and carries a gear-wheel k^5 for driving the rollers last referred to.

When power is applied to the shaft carrying the gear d^9, the upper part of the lower chain of the conveyer-chain will be moved toward the back of the apparatus and through the medium of its sprocket-wheel d^4 will drive the shaft d^3 and the gear g^{11}, which in turn will drive the gear g^{10}, and by means of knuckle-jointed shaft g^9 h^3 and the gears carried by it the lower sets of rollers will be driven at the same rate of speed as the conveyer-chain. Two blanks of veneer after the edges to be united have been supplied with glue will be placed upon the table a^4 with the edges to be united above the removable strip a^8 and the upper surface of the lower conveyer-

chain, which will lie in the same plane as the surface of said table. The blanks will be moved toward the rear of the table until they will be caught within the jaw formed by the upper and lower conveyer-chains and carried between the upper and lower sets of rollers. The upper conveyer-chain is given motion by contact with the lower chain through the medium of the blanks of veneer. As has been shown, the strip of adhesive material will fall or be placed over the joint between the blanks as they are caught by the jaw. While the blanks are passing between the sets of rollers the left-hand blank will be carried straight along in the direction to the line of travel of the conveyer, as the axes of the left-hand rollers stand at right angles to the line of travel of the conveyer. The rollers on the right hand stand at acute angles to said line of travel and will tend to force the right-hand blank toward the other to force out the superfluous glue between said blanks and tend to form a close joint between said blanks. The conveyer in conjunction with the rollers carries said blanks beyond said rollers, and the conveyer by itself will carry the blanks on into the housing, which is supplied with heated air. The floor of the housing is provided with supports or guides *l*, upon which the veneer in its travel will rest. The links of the chain forming the upper half of the conveyer are provided with two flanges *m*, one located on each side of each link in its lower face and extending a short distance down therefrom and running longitudinally thereof. These flanges will tend to hold the blanks of veneer against lateral movement. The upper face of each of the links comprising the lower part of the conveyer-chain is provided with two longitudinally-extending recesses m^5 m^5, within which the flanges *m* are adapted to lie when there are no blanks of veneer between the two portions of the conveyer.

It has been found that if two blanks of veneer having trued edges to be united are run through the apparatus having the strip of adhesive material secured to them above the edges to be united when they come out at the rear end the adhesive material on the strip will be dry, so that the two blanks will be united by said strip and can then be bent, using said strip as a hinge, and glue applied to the edges thus held together, and that if the strips thus united are then turned so that the strip of adhesive material is down and placed so that the edges to be united are lower than the outer edges, thus bellying the two blanks, a tight joint will be formed between them. It has been found that this is a more satisfactory way of operating the device than applying glue to the edges to be united first, for in using the latter way the conveyers will not become covered with the glue. Either way may be used, however, and my invention contemplates both.

Having thus described my invention, what I claim is—

1. In a device for edge-uniting two blanks of veneer or similar material, a two-part endless conveyer for carrying said blanks through said device, rollers tending to force one of said blanks at an angle to the line of travel of said conveyer and means adapted to act in conjunction with said conveyer for placing a strip of adhesive material above the joint between said blanks, substantially as described.

2. In a device for edge-uniting two blanks of veneer or similar material, a conveyer comprising two endless portions between which said blanks will be placed and by means of which they will be carried through said device, rollers arranged to force one of said blanks toward the other at an angle to the line of travel of said conveyer, mechanism for driving said conveyer and said rollers in unison, in combination with a supply of paper or fabric, and a glue-distributing device, substantially as described.

3. In a device for edge-uniting two blanks of veneer or similar material, a conveyer comprising two endless portions, a roller-way adapted to support one of said portions throughout a portion of its length, rollers mounted so as to yieldingly bear on the other portion throughout a portion of its length, said rollers tending to keep the adjacent faces of said portions in contact one with the other, said conveyer adapted when two blanks of veneer are placed in said device to grip said blanks adjacent to their abutting edges, means tending to force one of said blanks in close contact with the other at an angle to the line of travel of said conveyer, a glue-distributing roller, a source of supply of paper or fabric arranged so that said fabric may contact with said glue-distributing roller and be guided and placed over the joint between said blanks by means of one portion of said conveyer, substantially as described.

4. In a device for edge-uniting two blanks of veneer or similar material, means for carrying said blanks in one direction, mechanism tending to force one of said blanks at an angle to the line of travel of said means and a distributer for placing a strip of adhesive material above the joint between said blanks.

5. In a device for edge-uniting two blanks of veneer or similar material, a conveyer adapted to grip said blanks adjacent to their abutting edges and to carry the same through said device, means tending to force one of said blanks toward the other or at an angle to the line of travel of the conveyer, and mechanism acting in conjunction with said conveyer for placing a strip of adhesive material on said blanks over their abutting edges.

6. In a device for edge-uniting two blanks of veneer or similar material, a conveyer comprising two endless portions between which the two blanks to be joined will be fed and by which they will be carried through said device, rollers arranged so as to force one of said blanks toward the other or at an angle to the line of travel of said conveyer and a

source of supply of adhesive material situated so that said material will be carried by one of the portions of said conveyer and placed on said blanks above the joint between them, substantially as described.

7. In a device for edge-uniting two blanks of veneer or similar material, means tending to force said blanks in close contact with each other, a housing and mechanism moving in the direction of the length of the joint between said blanks adapted to hold said blanks in close contact and convey the same through said housing, substantially as described.

8. In a device for edge-uniting two blanks of veneer or similar material, means tending to force said blanks together, a housing and a conveyer moving longitudinally of the abutting edges of said blanks adapted to hold said blanks in close contact and convey the same through said housing, substantially as described.

9. In a device for edge-uniting two blanks of veneer or similar material, rollers tending to force one of said blanks toward the other, mechanism moving in the direction of the length of the joint between said blanks adapted to hold the same in close contact and convey them through said housing in combination with mechanism working in conjunction with said conveying means for placing a strip of adhesive material on said blanks above their abutting edges, substantially as described.

10. In a device for edge-uniting two blanks of veneer or similar material, a table on which said blanks are placed, means for gripping said blanks simultaneously and imparting movement thereto, mechanism tending to force one of said blanks toward the other or out of the line of movement given by said means, a supply of adhesive material and a distributer acting in conjunction with said means for placing said adhesive material on said blanks above the joint between them, substantially as described.

11. In a device for edge-uniting two blanks of veneer or similar material, a table or support upon which said blanks are placed side by side, a moving bed or conveyer, a press adapted to move in unison with said bed, said press and said bed each adapted to grip both of said blanks simultaneously and to carry the same along said bed, means located at one side of said bed adapted to contact with one of said blanks and force the same toward the other, said bed and said press being formed so as to hold said blanks in close contact, one with the other, a source of supply of narrow paper or other suitable material, a device for distributing glue to said paper or other material, said material being adapted after the end thereof has been placed on said blanks above their abutting edges being distributed on the succeeding blanks to be fed into said device by means of said press, and mechanism for moving said bed, substantially as described.

12. In a device for edge-uniting two blanks of veneer or similar material, a conveyer comprising an endless bed, and means for holding the blanks on said bed, a table on which said blanks are placed, said table being provided with an opening through which said bed moves, rollers arranged back of said table at one side of said bed with which said blanks in the movement given to them by said bed are adapted to contact, said rollers being arranged so as to force said blank toward other blanks, means operating in conjunction with said conveyer for placing a strip of adhesive material on the succeeding blanks over their abutting edges after said adhesive material has been placed on said first-mentioned blanks above their abutting edges, and means for moving said conveyer, substantially as described.

13. In a device for edge-uniting two blanks of veneer or similar material, a conveyer for said blanks, rollers standing at right angles to the line of travel of said conveyer between which one of said blanks is adapted to pass, rollers standing at acute angles to the line of travel of said conveyer between which the other of said blanks is adapted to pass, a housing through which said conveyer passes and means for heating said housing.

14. In a device for edge-uniting two blanks of veneer or similar material, a conveyer for said blanks, upper and lower rollers standing at right angles to the line of travel of said conveyer between which one of said blanks is adapted to pass, means tending to yieldingly hold the upper rollers in contact with said blank, upper and lower rollers standing at acute angles to the line of travel of said conveyer between which the other of said blanks is adapted to pass, means yieldingly holding the upper of said last-mentioned rollers in contact with said last-mentioned blank and mechanism for driving said conveyer and the lower of said rollers at the same speed.

15. In a device for edge-uniting two blanks of veneer or similar material, a conveyer moving longitudinally of the abutting edges of said blanks, means tending to force said blanks together and a distributer acting in conjunction with said conveyer for placing a strip of adhesive material above the abutting edges of said blanks.

16. In a device for edge-uniting two blanks of veneer or similar material, a two-part endless-chain conveyer for conveying said blanks through the device, one chain adapted to support said blanks and one chain adapted to bear on the upper surfaces of said blanks; the veneer-contacting faces of one of said chains formed with sharp projections for penetrating said veneer to hold said veneer from movement laterally of said chain; the other of said chains being formed with recesses to accommodate said projections when no veneer lies between said chains.

17. In a device for edge-uniting two blanks of veneer or similar material, a two-part end-

less conveyer moving in the direction of the length of the joint between said blanks adapted to grip said blanks and convey them through said device and rollers arranged at one side of said conveyer to force one of said blanks toward the other.

18. In a device for edge-uniting two blanks of veneer or similar material, a conveyer moving in the direction of the length of the joint between said blanks for carrying said blanks through said device, a roller arranged at one side of the conveyer adapted to contact with one of said blanks and force it toward the other blank and protruding members on said conveyer for holding said blanks in close contact one with the other.

19. In a device for edge-uniting two blanks of veneer or similar material, a two-part endless conveyer moving longitudinally of the abutting edges of said blanks, moving means tending to force said blanks together and mechanism acting in conjunction with said conveyer for placing a strip of adhesive material above the abutting edges of said blanks.

20. In a device for edge-uniting two blanks of veneer or similar material, rollers tending to force said blanks together, a conveyer moving longitudinally of the abutting edges of said blanks for carrying the same through said device and means on said conveyer for preventing said blanks after they have been forced together from separating.

21. In a device for edge-uniting two blanks of veneer or similar material, means tending to force said blanks together, a conveyer moving longitudinally of the abutting edges of said blanks for carrying the same through said device and protruding members on said conveyer adapted to hold said blanks in close contact one with the other.

22. In a device for edge-uniting two blanks of veneer or similar material, rollers arranged to force said blanks together, two endless chains forming a conveyer and having their adjacent faces moving longitudinally of the abutting edges of said blanks, a rigid roller-way for one of said chains and a yielding roller-way for the other of said chains for yieldingly forcing said last-mentioned chain toward the other.

Signed by me at Port Washington this 11th day of July, 1901.

WILLIAM M. BOENNING.

Witnesses:

JNO. S. GREEN,

WILLIAM AHLHAUSER.