No. 739,565. PATENTED SEPT. 22, 1903.

C. R. TRAXLER.

VENEER CUTTING MACHINE.

APPLICATION FILED MAR. 19, 1903.

NO MODEL. 7 SHEETS—SHEET 1.

Fig. 1.

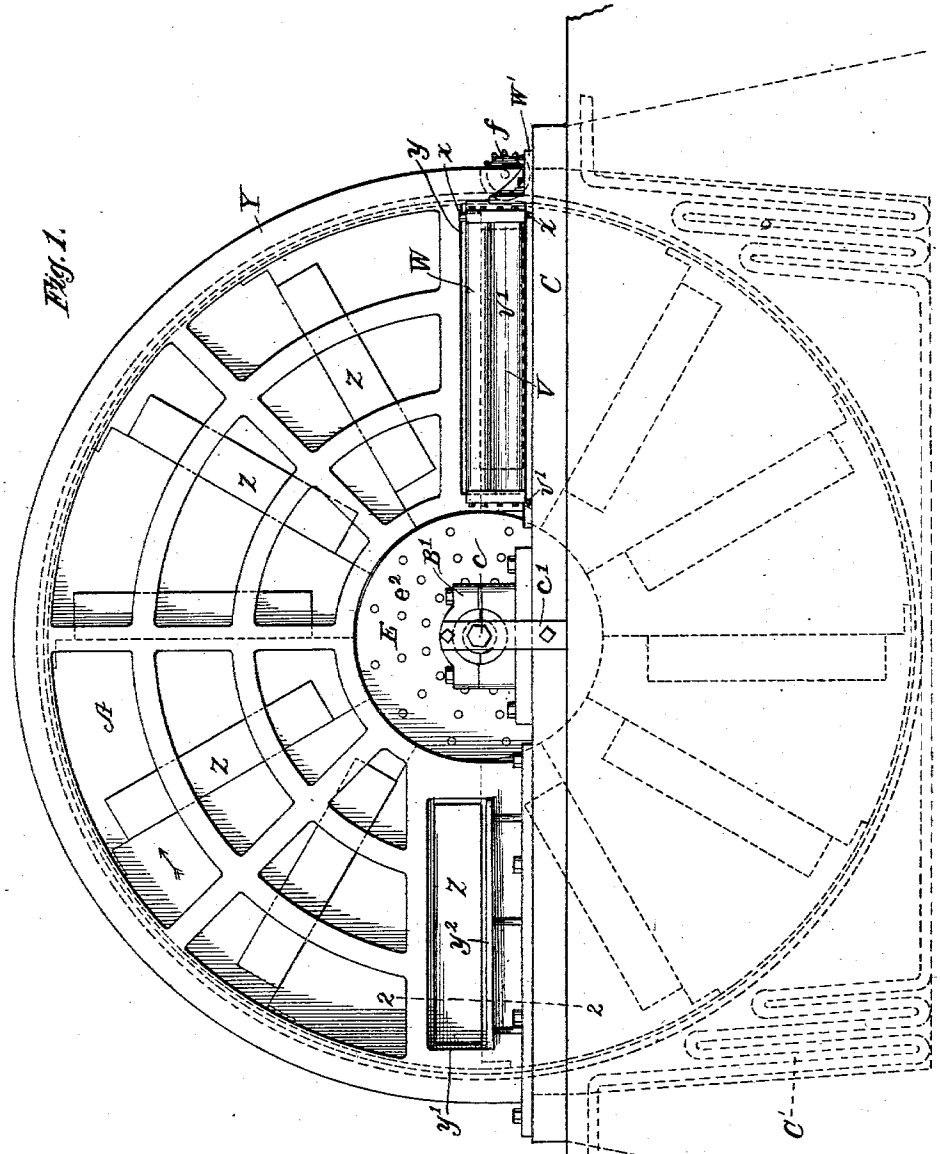
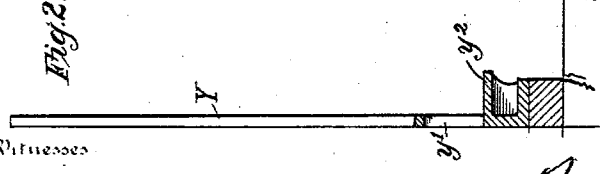


Fig. 2.



Witnesses

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A. M. Parkins.

Inventor

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NO MODEL. 7 SHEETS—SHEET 2.

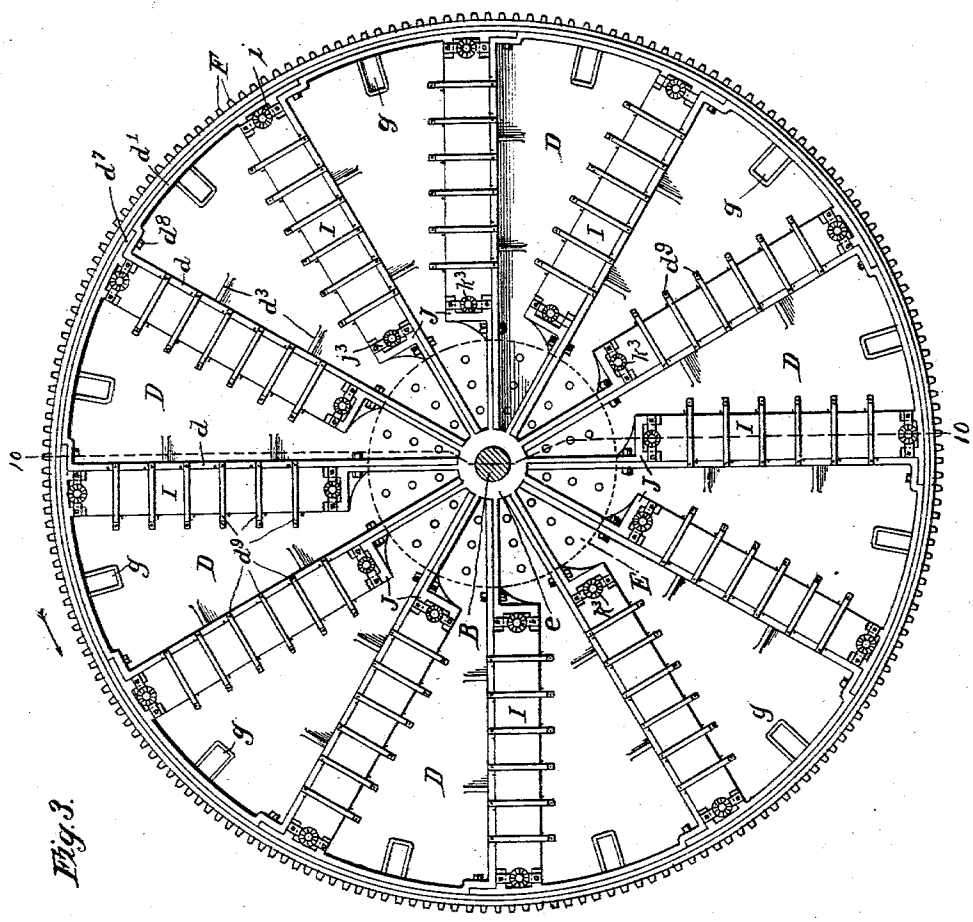

Fig. 3.

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NO MODEL. 7 SHEETS—SHEET 3.

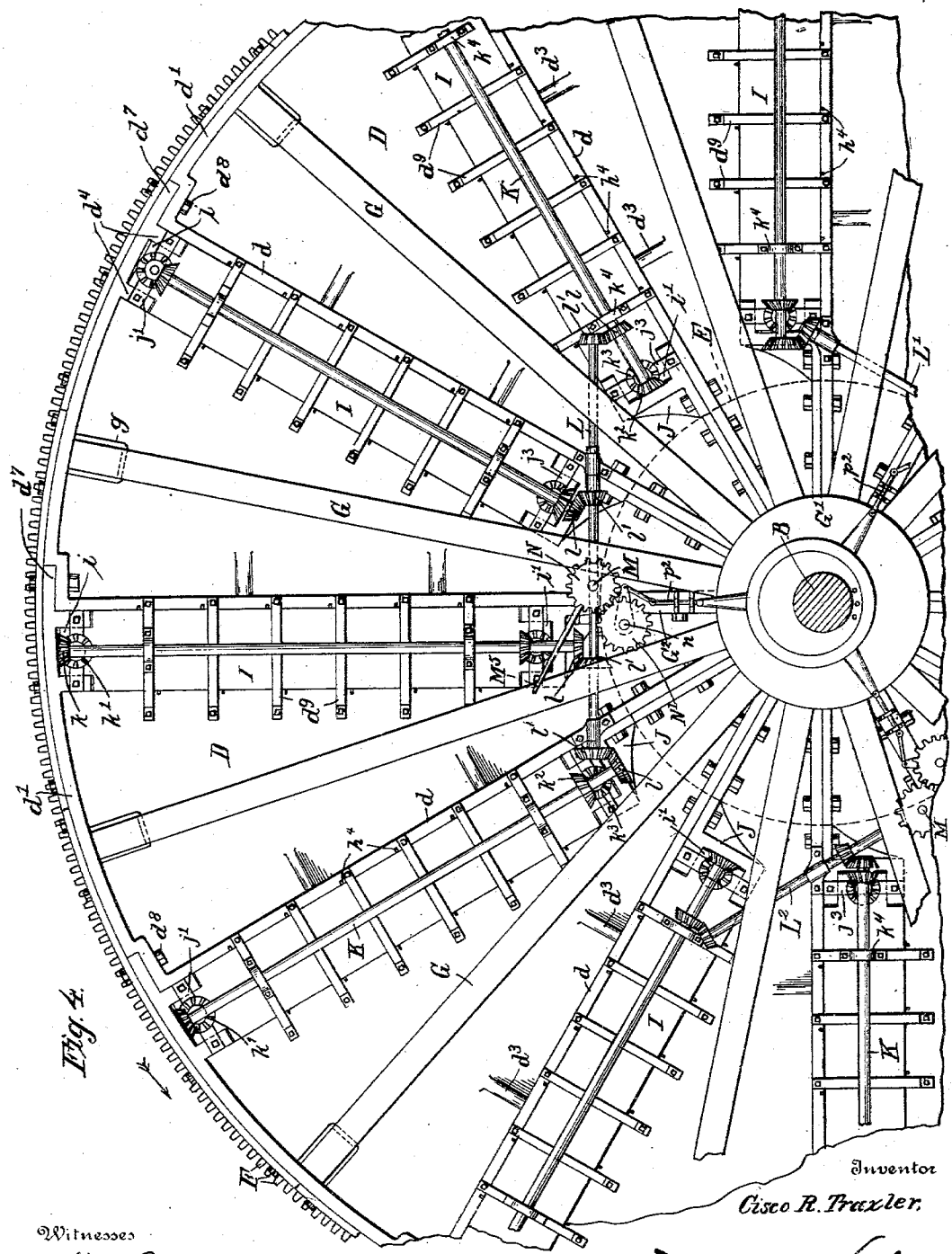

Fig. 4.

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NO MODEL. 7 SHEETS—SHEET 4.

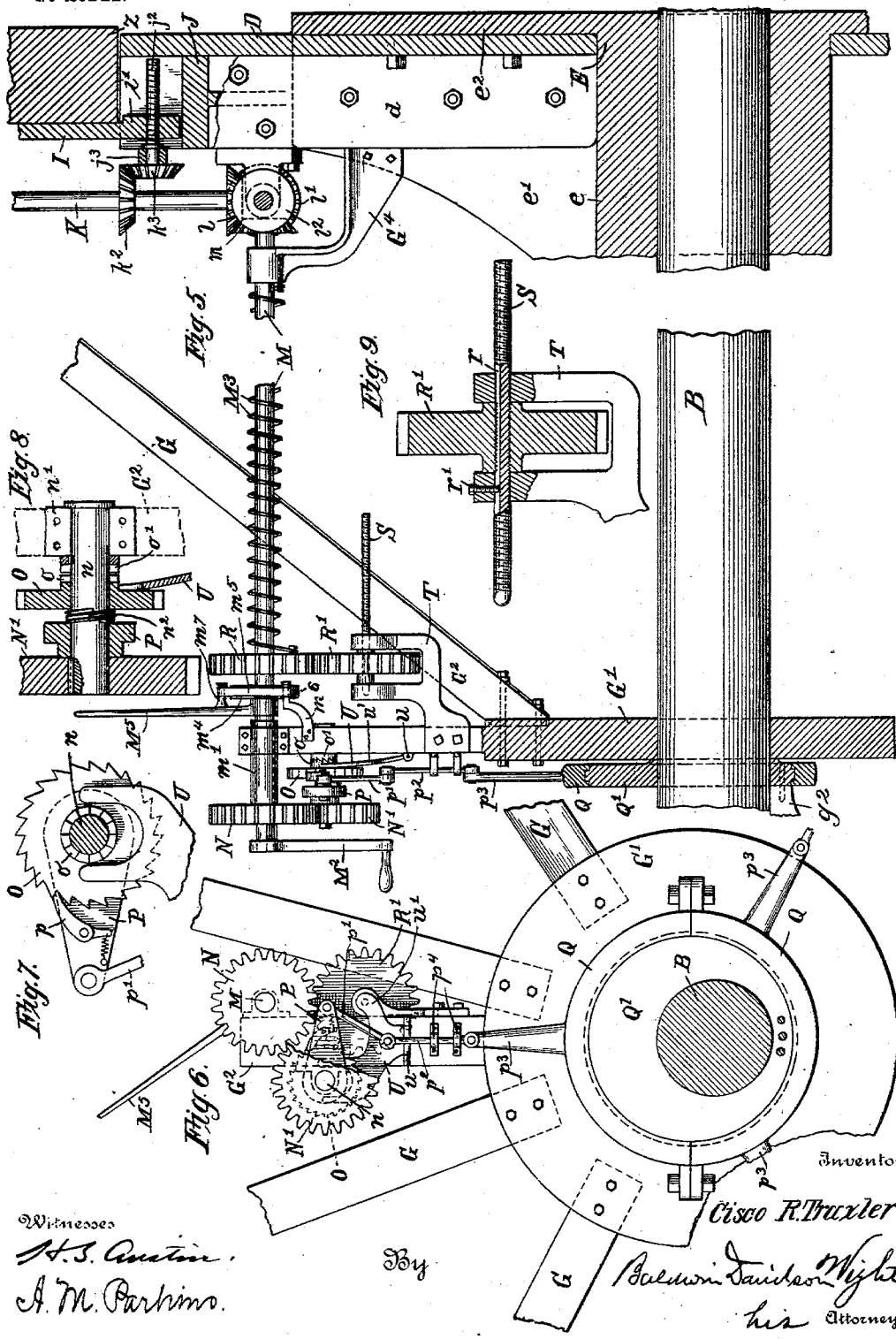

Fig. 5

Fig. 9

Fig. 8

Fig. 7

Fig. 6

Witnesses
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NO MODEL. 7 SHEETS—SHEET 5.

Fig. 11.

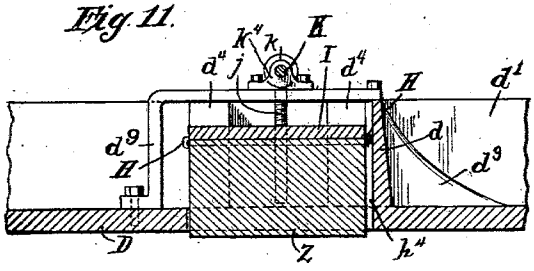


Fig. 10.

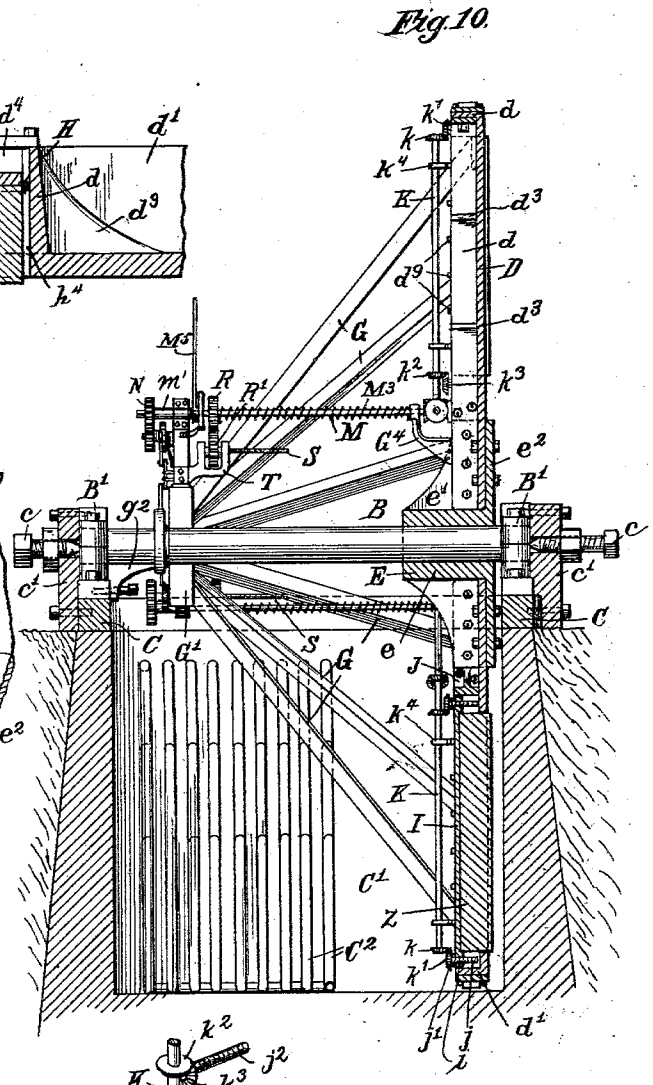


Fig. 12.

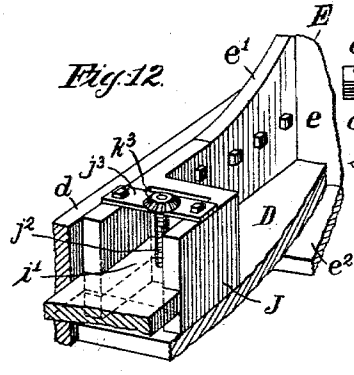
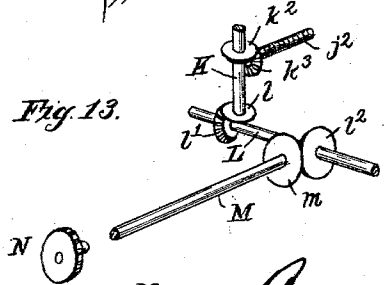


Fig. 13.



Witnesses

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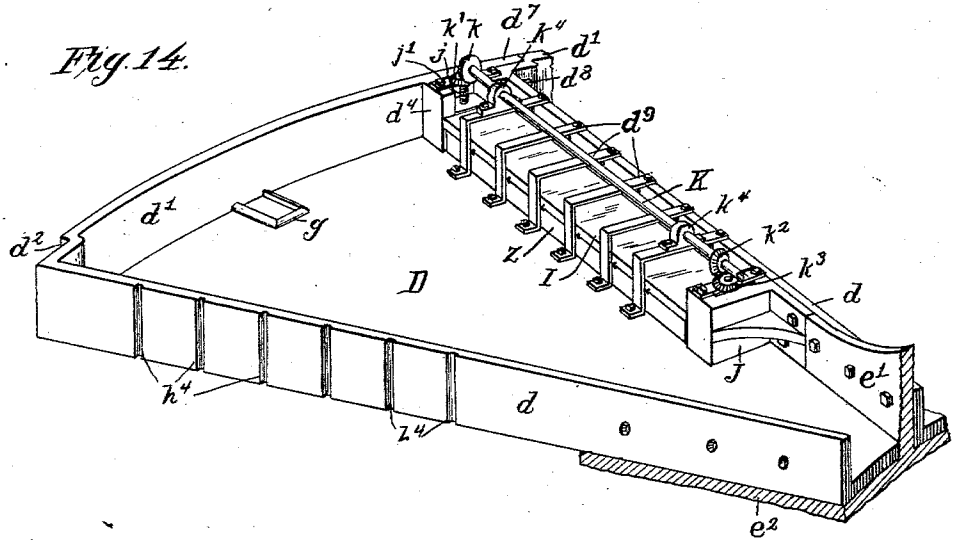
NO MODEL. 7 SHEETS—SHEET 6.

Fig. 14.



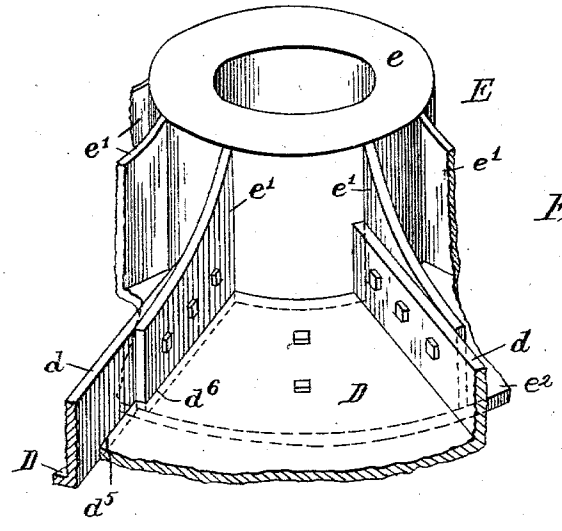


Fig. 15.

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NO MODEL. 7 SHEETS—SHEET 7.

Fig. 16.

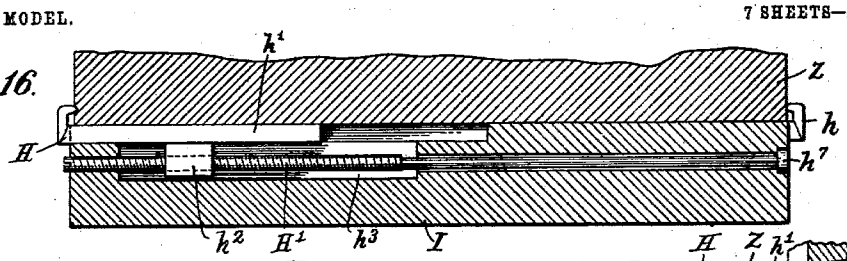


Fig. 17.

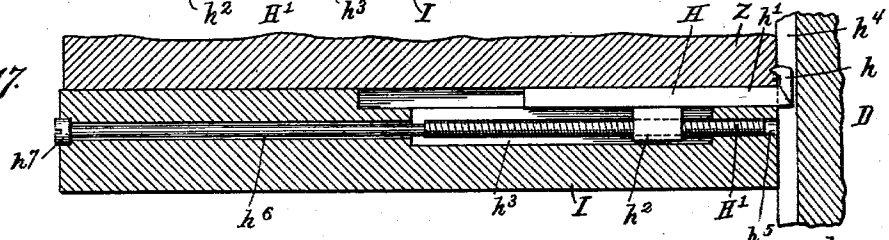


Fig. 18.

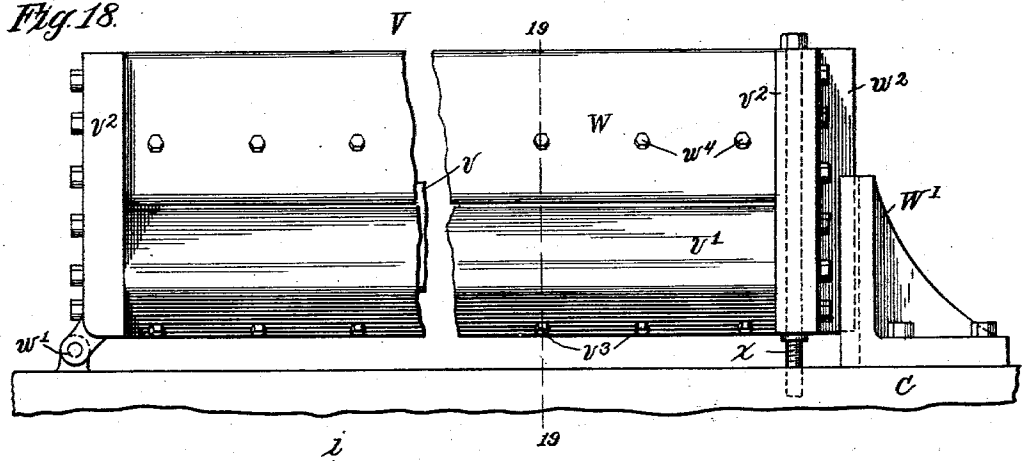
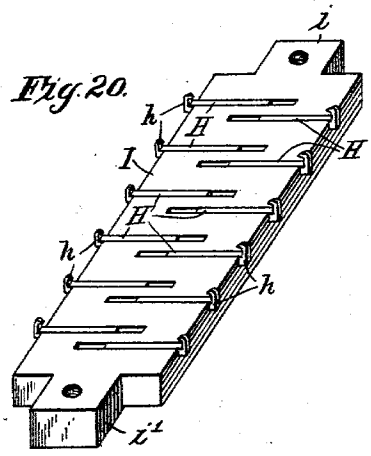


Fig. 20.



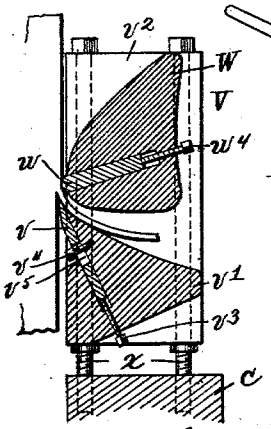


Fig. 21.

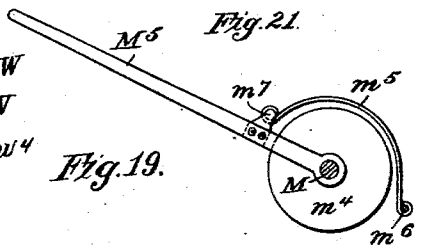


Fig. 19.

Witnesses

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A. M. Parkins.

Inventor

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his Attorneys

No. 739,565. Patented September 22, 1903.

UNITED STATES PATENT OFFICE.

CISCO R. TRAXLER, OF WINSTON-SALEM, NORTH CAROLINA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO UNITED STATES VENEER COMPANY, OF WINSTON, NORTH CAROLINA, A CORPORATION OF NORTH CAROLINA.

VENEER-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 739,565, dated September 22, 1903.

Application filed March 19, 1903. Serial No. 148,584. (No model.)

To all whom it may concern:

Be it known that I, CISCO R. TRAXLER, a citizen of the United States, residing at Winston-Salem, in the county of Forsyth and State of North Carolina, have invented certain new and useful Improvements in Veneer-Cutting Machines, of which the following is a specification.

This invention relates to machines for cutting thin slices, slabs, or sheets of veneer from blocks or "bolts" of wood. Heretofore in machines of this class the bolt has usually been sliced by means of a reciprocating knife operating upon the bolt while held in a stationary frame or the bolt or log has been made to rotate about its own axis and veneer has been cut therefrom by an adjustable knife operating upon the log near its periphery. It has also been proposed to arrange veneer-cutting knives radially on a rotary carrier which slices the block as the latter is periodically advanced across the path of the knives.

One of the principal objects of my invention is to cut from blocks of hard wood, such as quartered oak, slabs, panels, or plates of large surface area and having a fine finish. This cannot be properly done by machines of the second class above mentioned, and in machines where the knife reciprocates back and forth relatively to the wood there is a loss of speed in the back stroke and an objectionable wearing of the edge of the knife, especially where the wood is very hard. In the third class of the machines mentioned—*i. e.*, where the knives are arranged radially on a rotary carrier, while the speed is materially increased—the number of bolts operated upon is limited and the knives are subjected to repeated injurious shocks.

The object of my invention is to provide a machine in which a plurality of blocks or bolts may be presented in quick succession to a slicing-knife while all traveling in the same direction and in the same plane around the axis of a rotary carrier in such manner as to produce a shear cut, which reduces to a minimum the chances of splitting or imperfect severing of the slices and avoids sudden shocks or jars to the mechanism.

In carrying out my invention I provide a rotary block-carrier in the form of a large wheel, which is mounted to revolve about a horizontal axis and to convey the blocks of wood past the slicing-knife, which is set in a stationary frame at one side of the machine. The block-carrier is provided with radially-arranged stay-logs equipped with chucks for securing the blocks in place, and mechanism is provided for automatically advancing the stay-logs at proper intervals as the wheel revolves to properly present the blocks to enable the knife to sever successive slices from each block. The slicing-knife is arranged radially, or substantially so, with reference to the axis of the carrier and the blocks travel in a vertical plane only, thus causing the knife to make a straight even cut. While the stay-logs have a general radial arrangement, each block is arranged for the most part to one side of a true radial line—*i. e.*, on the advancing side thereof—so that when the block first reaches the knife its inner end is first engaged thereby and a shear cut is effected, the knife gradually penetrating the block in an outward direction. In this way a slowly-moving portion of the block is made to first engage the knife and the more rapidly-moving parts of the block gradually come into contact therewith. In this way injurious effects which would arise from quick sudden blows on the knife by the blocks are avoided.

These general characteristics of the machine, as well as others, will be better understood and appreciated after a more detailed description of the particular mechanism shown in the accompanying drawings, which illustrate the way now best known to me of carrying out my invention; but I wish it understood that my claims are not limited to the specific mechanism shown, as changes may be made therein without departing from the novel features of my invention.

Figure 1 shows a front elevation of the machine, some of the parts being indicated by dotted lines. Fig. 2 is a view, partly in side

elevation and partly in section, on the line 2 2 of Fig. 1, illustrating particularly the fender employed at the front of the machine. Fig. 3 shows a rear elevation of the block-carrier and some of the parts carried thereby. Fig. 4 shows a rear elevation, on an enlarged scale, of a portion of the block-carrier and the mechanism connected therewith. Fig. 5 is a view on an enlarged scale and in section, illustrating particularly the mechanism employed for setting or advancing the stay-logs. Fig. 6 is a detail view of part of this mechanism. Fig. 7 is a detail view showing particularly the ratchet mechanism employed in the stay-log set-works. Fig. 8 is a detail view in section, showing part of the ratchet mechanism and devices connected therewith. Fig 9 is a detail view in section, showing part of the stop mechanism—*i. e.*, the devices for arresting the advance of the stay-logs. Fig. 10 shows a vertical section of the machine on the line 10 10 of Fig. 3. Fig. 11 is a detail view on an enlarged scale, showing the manner in which a stay-log and block are connected with the carrier. Fig. 12 is a detail view in perspective, showing particularly the manner in which the sector-shaped plates composing the frame of the carrier are connected to the hub and in which the stay-logs are guided at their inner ends. Fig. 13 is a diagram of some of the gearing forming part of the stay-log set-works. Fig. 14 is a perspective view, on an enlarged scale, of one of the sector-plates or sections composing the frame of the block-carrier and the mechanism carried thereby. Fig. 15 is a detail view in perspective and on an enlarged scale, showing the manner in which the sector-plates are attached to the hub. Figs. 16 and 17 are detail views on enlarged scales and in section, showing the manner of arranging and operating the chucks employed for attaching the blocks or bolts to the stay-logs. Fig. 18 shows a front elevation, on an enlarged scale and partly broken away, of the slicing mechanism. Fig. 19 shows a vertical section on the line 19 19 of Fig. 18. Fig. 20 shows a perspective view of one of the stay-logs and the chucks carried thereby. Fig. 21 is a detail view of the brake used in the set-works.

The rotary block-carrier A is attached to a shaft B, mounted in bearings B′, secured to sills C, supported on opposite sides of a pit C′, in which the lower portion of the carrier revolves. By means of set-screws *c*, carried by brackets *c′* and bearing on the opposite ends of the shaft B, the latter may be given any desired endwise adjustment to regulate the position of the carrier relatively to the slicing-knife. As the carrier is intended to be made of large diameter—say thirty feet or more—its lower portion is arranged in a pit, as above stated, and the walls of the pit are made quite solid and substantial in order to support the great weight and to withstand all shocks, jars, or vibrations which may occur accidentally or in the ordinary operation of the mechanism. The pit may be lined with cement or other suitable material and partially filled with water kept hot by steam-pipes C^2. By this arrangement the lower portion of the block-carrier is kept submerged, and thus the blocks or bolts of wood are maintained in proper condition to be cut or sliced, avoiding the necessity of steaming or boiling the timber before attaching it to the machine. It is well known that it is necessary that the wood should be hot and moist in order that the veneer may be properly cut. Blocks of wood are usually treated for this purpose in vats or steaming-houses specially prepared for the purpose, and it is often found desirable to remove the blocks or bolts from the machine before they are completely cut in order that they may be further steamed or moistened; but in my machine the blocks are immersed during each revolution of the carrier and the wood is kept at a uniform temperature during the whole operation. The carrier is composed of a number of sector-shaped plates or sections D, which are attached at their inner ends to a hub E and at their outer ends are interlocked and bolted securely together, so as to form a complete disk or wheel. On the outside or periphery of the wheel there is a continuous series of teeth F, preferably formed in segmental castings bolted to the plates D. The carrier is rotated by a pinion *f*, (see Fig. 1,) which may be driven in any suitable way. The hub E is secured to the shaft B near its front end, and the carrier is braced by diagonally-arranged bars G, which at their upper ends engage sockets *g* in the plates D and at their lower ends are grouped around the shaft B and secured to a rear hub-piece G′. Each sector-shaped plate D is formed with a straight radial rearwardly-projecting flange *d* and a curved peripheral flange *d′*, which latter is formed with a recess or socket d^2 to receive an interlocking projection d^7 from an adjacent plate in the manner hereinafter described. The radial flange *d* is braced at d^3 and the peripheral flange is formed with inwardly-projecting lugs d^4, spaced apart to form a guide for a stay-log, in the manner hereinafter described. The hub E, to which the inner ends of the sector-plates are attached, is formed with a central sleeve *e*, which is attached to the shaft B, and with radial webs *e′*, with spaces between them to receive the inner ends of the plates. The front of the hub is in the form of a disk or circular plate e^2. In assembling the parts above described the inner ends of the sector-plates are inserted between the webs *e′*, and each plate is bolted to the front piece e^2 and to one of the webs *e′*. The radial edge d^5 of each plate D opposite the flange *d* is formed with a recess d^6 to accommodate the web *e′* to which the next adjacent plate is attached in order that when the plates are all assembled they may be made to fit close together in the manner indicated in Figs. 3 and 4.

The details of construction of the parts where the sector-shaped plates join the hub are clearly illustrated in Fig. 15. The outer ends of the plates D are secured together by bolts d^8, which extend through the ends d^7 of the flanges d' and through the inner walls of the sockets d^2. The plates are also firmly connected by means of tie-bars d^9, secured to the body portion of one plate and to the flange d of the next adjacent plate, bridging an opening in each plate made to accommodate the block or bolt to be sliced. In rear of each such opening is arranged a stay-log I. This is preferably made of the general shape of the block Z to be operated upon, and it has at its outer end a lug i, fitting the guide formed between the lugs d^4. Each stay-log is also formed on its inner end with a similar lug i', fitting a guide formed in a bracket J, attached to the flange d of each plate D just outside the hub E. The shape of the stay-log is clearly shown in perspective in Fig. 20. Each stay-log is equipped with a number of chucks or clamping devices H. Each of such devices is mounted in such manner that it may be independently adjusted in order that a firm hold may be taken on the block or bolt at all points, regardless of any irregularity in the shape of the block. As shown in Fig. 20 and also in Figs. 16 and 17, the chucks are arranged alternately on opposite sides of the front of the stay-log. Each chucking device consists of a hook h, having a long shank h', adapted to slide in a transverse groove in the front face of the stay-log. Each shank is formed with an inwardly-projecting lug h^2, which is adapted to move in the enlarged inner recess h^3 of the stay-log. This lug is engaged by a screw-rod H', by means of which the hook may be moved into and out of engagement with the block. Inasmuch as one edge of each stay-log lies next to the flange d of a plate D, the screws are necessarily operated from the opposite edge of the stay-log; but as the hooks h must project from the stay-logs grooves h^4 are formed in the flange d to allow the hooks to move back and forth freely, while the edge of the stay-log and the edge of the block are brought into close contact with the flange d, which therefore constitutes a firm backing for the block and receives the strain when the bolt is presented to the slicing-knife. By this construction any liability of the stay log or block to tilt or move out of proper alinement is entirely avoided, and there is no danger of producing a "feather-edge" veneer. As before stated, all the screws H' are operated from the rear edge of the stay-logs—*i. e.*, that farthest from the knife—and as the hooks are moved in opposite directions it is necessary to construct one set of hooks in a somewhat different manner from the other set. In Fig. 17 the screws for operating the hooks next the flange d are shown, and it will be seen that the threaded portion of the screw-rod is adapted to turn freely in the recess h^3 and in an aperture h^5 near the inner end of the stay-log. The unthreaded part of the screw-rod passes freely through an aperture h^6 and the outer end of the rod is formed with a head h^7, which rests in a corresponding socket in the edge of the stay-log. The strain on the rod when the chuck is being clamped to the block is of course inward toward the flange d, and the head h^7 prevents the rod from moving inward, thus causing the hook to move into engagement with the block. The opposite hook, however, moves in an opposite direction, so that it is necessary to form a head h^7 on the opposite end of the rod. This arrangement is clearly shown in Fig. 16. The screw-rods may be operated in any suitable way, such as by an ordinary screw-driver. While some little time is necessarily taken in "chucking" each log, yet the loss in time is more than compensated by the secure connection and the accuracy which is attained, and it being remembered that when the blocks are thus chucked a very large number of veneers may be rapidly produced the time spent in chucking need hardly be considered. Each lug i of each stay-log is formed with a threaded opening through which extends a screw j, that is mounted to turn without moving endwise in a cross-piece j', attached to the lugs d^4, and each opposite lug i' of each stay-log is similarly engaged by a screw j^2, similarly mounted in a cross-piece j^3, attached to the walls of a bracket J. A shaft K, arranged in rear of each stay-log and extending from one end thereof to the other, has bearings k^4 on two of the tie-bars d^9 and carries at its outer end a bevel-pinion k, meshing with a similar pinion k' on the rear end of the screw j, and at or near its opposite or inner end the shaft carries another pinion k^2, meshing with a pinion k^3 on the rear end of the screw j^2. Each stay-log is equipped in a similar way, and the inner ends of the shafts K are brought into proper relation to be operated by the mechanism next to be described.

I have shown the carrier A as composed of twelve sections, and there are twelve stay-logs and twelve shafts K. Each shaft carries at or near its inner end a pinion l, meshing with a pinion l' on one of the three cross-shafts L L' L^2. For convenience I have arranged each shaft L L' L^2 to operate four shafts K. The shaft L—for instance, as shown in Fig. 4—carries four pinions l', engaging the pinions l on four shafts K. Each shaft L L' L^2 has secured to it a fifth pinion l^2, which meshes with a pinion m on one of the three shafts M, which are disposed parallel with the main shaft B, and each of which is supported at its rear end in a long bearing m' on the outer end of a radial arm G^2, projecting from the rear hub-piece G'. The front end of each shaft is supported on a bracket G^4, attached to the hub E. To the rear end of each shaft M is attached a toothed wheel N, gearing with a pinion N', fast on

a short stud-shaft n, which is adapted to turn in bearings n', attached to the arm G^2. On this shaft n is loosely mounted a ratchet-wheel O, carrying a clutch member o, adapted to engage a clutch member o', fast on the shaft n. An arm P, loose on the shaft n, carries a spring-pawl or dog p, adapted to engage the ratchet-wheel, and the outer end of this arm is connected by a link p' with a radially-moving rod p^2, attached to an arm p^3 of an eccentric ring or strap Q, surrounding an eccentric Q', fixed to a bracket g^2, attached to the rear sill C. The rod p^2 is guided radially by brackets p^4, and a spring n^2, interposed between the ratchet-wheel and the arm P, as indicated in Fig. 8, tends to close the clutch. Each shaft M has secured to it a toothed wheel R, that engages a pinion R' on a screw-rod S, mounted to slide fore and aft in a bifurcated bracket T, attached to the arm G^2. As will be seen by reference to Fig. 9, the rod S is formed with a long groove r, engaged by a screw or pin r', carried by the bracket T, while the pinion R' has its bore screw-threaded to engage the rod S. Therefore as the pinion R' is revolved the screw-rod is moved endwise.

U indicates a lever hinged at u to the arm G^2 and engaging the front side of the ratchet-wheel O. This lever has an arm u', (see Fig. 6,) the outer end of which is in line with the screw-rod S. As the shaft M is rotated the rod S is moved gradually rearward and finally engages the lever U and causes the ratchet-wheel O to be moved rearward and unclutched from the shaft n. This stops the operation of the gearing and causes the shaft M to come to rest. By this organization when the ratchets are coupled to the shafts n the stay-logs are advanced to feed the blocks forward; but after the blocks have been fed forward to the proper extent the feed is automatically arrested.

It will be understood, of course, that there are three ratchet-wheels O and three sets of mechanisms connected therewith of the same construction as above described. Each ratchet-wheel O is operated only once in each revolution of the block-carrier—viz., when the eccentric-strap reaches the highest point of the eccentric Q'—and thus four blocks are advanced or set simultaneously. Different sizes of toothed wheels and pinions N N' may be employed. They are made removable for this purpose. By increasing the sizes of the toothed wheels N and correspondingly decreasing the sizes of the pinions N' the set-works may be made to operate more rapidly, and thus the thickness of the veneer may be lessened. By decreasing the sizes of the toothed wheels N and correspondingly increasing the sizes of the pinions N' the movement of the stay-logs may be decreased or made to operate more slowly, and thus the veneer may be made thicker. The stay-log set-works are operated when the carrier is revolving in the direction indicated by the arrows. In order to reverse the movement of the stay-logs—*i. e.*, to bring them back to the farthest extent rearward—I may apply an ordinary crank M^2 to each shaft M and turn such shaft by hand in the proper direction to cause the mechanism to operate reversely to draw back the stay-logs, or I may reverse the movement of the stay-logs automatically. By reference to Figs. 5 and 10 it will be observed that each shaft M carries a coiled spring M^3, one end of which is attached to the bracket G^4 and the opposite end of which is attached to the wheel R. As each shaft M is revolved to advance a stay-log the spring M^3 is wound up and put under tension; but as soon as the rod S operates to stop the advance movement the spring will commence to unwind and will revolve the shaft M in the opposite direction, thus causing the stay-log to retreat. This reverse movement may become too rapid, and in order to control it I employ a brake M^4 of well-known construction, consisting of a disk or wheel m^4, attached to the shaft M and partially surrounded by a strap m^5, attached at one end to a bracket m^6 and at the opposite end to an arm m^7, projecting laterally from an operating-lever M^5, pivoted to the shaft M. By this brake mechanism the speed of revolution of the set-works on the return movement of the stay-logs may be regulated or stopped at any point, if desired. Any other suitable brake mechanism may be employed for the same purpose.

The slicing mechanism V is preferably constructed and arranged as shown particularly in Figs. 1, 18, and 19. The knife or blade v is carried by a heavy metal block v', attached to end castings v^2, and above the block v' is another block W, carrying a presser-bar w. The frame-pieces are rigidly bolted to the blocks v' and W and are arranged in the position relatively to the carrier shown in Fig. 1. The inner end of the frame is hinged at w' to the front sill C, and the opposite end of the cutter-frame is supported on adjusting-screws x, working vertically in sockets in the sill C. The outer frame-piece is formed with a vertical flange w^2, fitting a vertical guide in a casting W', attached to the front sill C in the manner indicated in Figs. 1 and 18. By the organization shown the cutter-frame may be tilted to vary the inclination of the edge of the knife relatively to the approaching block which it shears, while the flange w^2 and its guide hold the knife firm and steady. While the blocks are held in such manner relatively to the knife as to cause a shear cut to be made, the blocks are not themselves adjustable in such manner as to vary the shear cut; but this is accomplished by means of the set-screws x and the hinge w' in the manner above described. The blade v is made adjustable by means of screws v^3, operating upon its inner edge, while it is guided by means of screws v^4, extending through slots v^5 in the knife. The presser-bar w is adjusted

by means of screws w^4 in the manner illustrated in Fig. 19. It will be observed that the knife is set properly to cut a thin slice from the block and may be adjusted to cut slices of any desired thickness, while the presser-bar bears on the stock just above the edge of the knife and prevents any tendency of the wood to split or tear. A free passage is formed between the blocks v and W, through which the veneer passes as it is cut from the block, and such veneer may be received in any suitable receptacle or by the attendants. Preferably when the veneer is very large I prefer to have attendants stationed at each end of the knife to receive the veneer and convey it away.

In order to protect the workmen and to prevent the blocks of wood from being thrown out forwardly in case they become detached from the stay-logs, I provide a shield or fender Y, constructed and arranged as illustrated in Figs. 1 and 2. It consists merely of a semicircular open-work casting attached to the front sill C and covering the semicircular front portion of the block-carrier above the pit. It is formed with a rectangular opening y to accommodate the cutter and with a similar opening on the opposite side at y' to permit the blocks to be inserted into the carrier. The flanges d act as shelves to receive the blocks as they are inserted through the opening y' and support them while they are being chucked to the stay-logs. If desired, a shelf y^2 may be formed on or secured to the shield Y below and in front of the opening y', so that when feeding the block-carrier the blocks may be first rested on the shelf y^2 and then slid onto the shelves d. As before stated, the shield prevents the blocks from being thrown out forward if they should become detached. The tie-bars d^9 in addition to connecting the sector-plates D together will also prevent the stay-logs and blocks from being thrown out rearwardly in case they become detached.

The operation of the machine, the construction of which has now been fully described, is as follows: Before the carrier is supplied with the blocks or bolts Z the stay-logs are moved to their rearmost position. This may be done by means of the crank M^2, applied to the rear ends of the shafts M. Then the carrier is slowly turned in the direction of the arrow in Fig. 1 until each stay-log in succession has been brought opposite the opening y', stopping each time to enable the attendants to feed a block through the opening and chuck it to the stay-log. As the stay-logs move upwardly and around the axis of the carrier the "set-works" are operated in the manner before described to advance the blocks four at a time, so as to present them properly to the slicing-knife. As the four blocks thus set engage the knife slices or sheets of veneer are severed from them. In like manner the other two sets of stay-logs are supplied with blocks, which are advanced or set in the same way. After this the carrier may be moved continuously until the blocks have been cut down to the "spalt," at which time the screw-rods S engage the levers U, causing the clutches to be uncoupled, and thus arresting the feed of the stay-logs. As soon as this occurs the revolution of the carrier may be stopped, and the stay-logs are run back by means of the automatic mechanism before referred to or by the crank M^2, and the chucks are released from the spalt. Thereafter new blocks or bolts may be mounted in the carrier in the manner before described.

There are some characteristics of my machine to which I wish again to call special attention. The knife, it will be observed, is held in a heavy solid frame and may be adjusted to give its edge any desired inclination or pitch suitable for operating upon different grains in various kinds of timber. The presser-bar is also solidly supported and may be adjusted correspondingly with the adjustments of the knife to any desired extent. The block-carrier is preferably made of large diameter to carry a large number of blocks, also of large dimensions. The momentum is therefore very great, and the blocks are carried with a steady powerful movement against the knife. In view of the great momentum the carrier may be revolved at a comparatively slow speed, but yet with sufficient force to cut the veneer properly. The construction of each section of the carrier is such that a shelf d is provided to receive a block as it is fed to the machine, and this same shelf constitutes a support for the block to receive the strain when the block encounters the knife, and inasmuch as the stay-log is arranged close to this flange and at right angles thereto the block is held in proper alinement, avoiding any possibility of its tilting when encountering the knife.

While the blocks are rotated in the same direction in a straight vertical plane a shear cut is given to the blocks which is such that the knife encounters the block at that part of the latter which is moving most slowly, and the penetration of the knife into the block proceeds with gradually-increased speed outward from the axis of the carrier, whereby a clean smooth cut is effected and shocks or jars incident to other constructions in which the knife engages the full length of the block at the start are avoided.

Another important feature of my invention is that the blocks never move backward across the knife, and therefore there is no tendency for the knife to become worn and its edge dulled, as is found to be the case in reciprocating machines where the knife moves back and forth across the block. The fender at the front of the machine and the tie-bars in rear of the stay-logs prevent accidents, which might otherwise occur if the blocks became detached from the stay-logs or the stay-logs became detached from the carrier. The means provided for endwise adjustment of the shaft

of the carrier are also important in connection with the adjustable slicing-knife, as by these devices the carrier may be held to move in a true fixed vertical plane relatively to the knife to thus cut veneer of uniform thickness. The automatic set-works for the stay-logs and the automatic means for stopping the set-works not only contain many features of novelty, but they operate most efficiently, causing the stay-logs to be advanced with perfect accuracy, while being entirely automatic. The chucks employed for attaching the blocks or bolts to the stay-logs are also very efficient and, so far as I am aware, are novel. So far as I am aware it is also new to moisten and heat the blocks or bolts while they are mounted in the carrier and are undergoing the slicing operation. This I consider a most important feature of my invention.

I claim as my invention—

1. In a veneer-cutting machine, the combination with a stationary slicing-knife, of a rotary block-carrier, a series of stay-logs arranged radially on the carrier, chucks carried by the stay-logs for rigidly securing the blocks thereto, and means for automatically moving the stay-logs and blocks transversely to the plane in which the carrier moves.

2. In a veneer-cutting machine, the combination with a stationary slicing-knife, the edge of which is radial, or substantially so to the axis of the block-carrier, of a rotary block-carrier, a series of stay-logs carried thereby, which hold the advancing side of each block to one side of a true radial line whereby a slowly-moving part of the block is first engaged by the knife and the knife is caused to penetrate the block with increasing speed in an outward direction from the axis of the carrier, and means for rigidly securing the blocks to the said logs.

3. In a veneer-cutting machine the combination of a stationary slicing-knife, the edge of which is radial or substantially so to the axis of the block-carrier, means for adjusting the knife to incline its edge relatively to a true radial line from the axis of the carrier, a rotary block-carrier, a series of stay-logs carried thereby which hold the advancing side of each block to one side of a true radial line whereby a slowly-moving part of the block is first engaged by the knife and the knife is caused to penetrate the block with increasing speed in an outward direction from the axis of the carrier, and means for rigidly securing the blocks to the stay-logs.

4. In a veneer-cutting machine a rotary carrier having a series of radial flanges or shelves, *d*, and block-openings adjacent to said flanges in combination with radially-arranged stay-logs adjustable relatively to said flanges and in close proximity thereto, whereby the blocks to be cut are backed and braced to receive the strain while being cut, and means for rigidly securing the blocks to the stay-logs.

5. In a veneer-cutting machine, a rotary carrier comprising a hub formed with a front flange and radial webs, a series of sector-shaped plates each having radial and peripheral flanges, devices for attaching the inner ends of the plates to the hub, and means for connecting the peripheral flanges of the several plates together.

6. In a veneer-cutting machine, a rotary carrier comprising a hub formed with a front flange and a series of radial webs, a series of sector-shaped plates having radial and peripheral flanges, the latter formed with interlocking portions, devices for attaching the plates to the hub, and means for connecting the peripheral flanges of the plates at their interlocking portions.

7. In a veneer-cutting machine, a rotary carrier comprising a hub having a front flange and a series of radial webs, a series of sector-shaped plates secured to the hub and connected together at their outer ends, a rear hub-piece, and diagonal braces connecting the outer ends of the sector-shaped plates with the rear hub-piece.

8. In a veneer-cutting machine, a rotary carrier comprising a hub, sector-shaped plates having radial and peripheral flanges and openings to accommodate the blocks and stay-logs, means for attaching the inner ends of the plates to the hub, devices for connecting the peripheral flanges together, and tie-bars bridging said openings in the plates and connecting the body portions of one plate with the radial flange of the next adjacent plate.

9. In a veneer-cutting machine, the combination of a rotary block-carrier, radially-arranged stay-logs on the carrier to which the blocks are secured, a shaft on which the carrier is mounted, bearings for the shaft, a stationary slicing-knife arranged radially with reference to the axis of the block-carrier, and devices for moving the shaft of the carrier endwise in its bearings to adjust the position of the carrier relatively to the knife.

10. In a veneer-cutting machine the combination of a pit, sills at the top thereof, bearings erected on said sills, a shaft, devices for adjusting the shaft endwise in its bearings, a hub secured to the shaft, sector-plates secured to the hub, means for connecting the sector-plates at their outer ends, and means for bracing the plates.

11. In a veneer-cutting machine a rotary carrier having a flanged periphery and formed with a series of radial flanges joining said peripheral flange, and with a series of block-openings close to said radial flanges in combination with a series of stay-logs in rear of said openings, and movable transversely with reference to the plane of rotation of the carrier, means for guiding the stay-logs at their opposite ends, and means for automatically advancing or setting them.

12. In a veneer-cutting machine, a rotary block-carrier comprising a hub and a series of sector-shaped plates formed with radial and peripheral flanges and with block-open-

ings, means for connecting the plates to the hub, devices for attaching the plates together at their outer ends, a series of stay-logs arranged close to the radial flanges of the plates, guides in the peripheral flanges of the plates for the outer ends of the stay-logs, guide-brackets attached to the plates for the inner ends of the stay-logs, tie-bars connecting adjacent plates in rear of the stay-logs, and automatic set-works for the stay-logs, substantially as described.

13. In a veneer-cutting machine, the combination with a rotary block-carrier having a series of radial rearwardly-projecting flanges formed with rearwardly-extending grooves, of a series of stay-logs adapted to move back and forth in close proximity to the flanges, and chucks carried by the stay-logs which move in said grooves, substantially as described.

14. In a veneer-cutting machine, the combination with a rotary carrier formed with a series of block-openings, stay-logs in rear of these openings, screw-rods engaging the stay-logs for moving them back and forth, shafts parallel with the stay-logs, and geared with said screw-rods, a cross-shaft geared to a plurality of said first-mentioned shafts, ratchet mechanism operatively connected with said cross-shaft, and means for operating the ratchet mechanism.

15. In a veneer-cutting machine, the combination with a rotary carrier formed with block-openings, of stay-logs in rear of said openings, screw-rods engaging the stay-logs, shafts parallel with the stay-logs geared to the screw-rods, a cross-shaft geared to a plurality of said first-mentioned shafts, a rearwardly-extending shaft geared with said cross-shaft, ratchet mechanism geared to said rearwardly-extending shaft, and devices for operating the ratchet mechanism.

16. In a veneer-cutting machine, the combination of an eccentric, an eccentric-strap engaged thereby, a pawl operatively connected with the strap, a ratchet-wheel engaged by the pawl, a shaft on which said ratchet-wheel is mounted, means for clutching the ratchet-wheel to the shaft, a rotary block-carrier, stay-logs carried thereby, a shaft extending rearwardly from the block-carrier and geared to the shaft carrying the ratchet-wheel, and connections between said rearwardly-extending shaft and the stay-logs whereby they are advanced and retracted, substantially as described.

17. In a veneer-cutting machine, the combination of a rotary block-carrier, stay-logs carried thereby, means for automatically advancing the stay-logs, and devices for automatically arresting the advance of the stay-logs after the blocks have been cut to the desired extent.

18. In a veneer-cutting machine, the combination of a rotary block-carrier, stay-logs carried thereby, automatic set-works for the stay-logs, and devices for automatically arresting the advance of the stay-logs when the blocks have been cut to the desired extent.

19. In a veneer-cutting machine, the combination of a rotary block-carrier, stay-logs carried thereby, set-works for advancing the stay-logs, and means for automatically returning the stay-logs after they have been advanced to their full extent.

20. In a veneer-cutting machine, the combination of a rotary block-carrier, stay-logs carried thereby, set-works for automatically advancing the stay-logs, devices for automatically arresting the advance of the stay-logs when the blocks have been cut to the desired extent, and means for automatically returning the stay-logs to their initial position.

21. In a veneer-cutting machine, the combination of a rotary block-carrier, stay-logs carried thereby, means for automatically advancing the stay-logs, devices for automatically arresting the advance thereof when the blocks have been cut to the desired extent, means for automatically returning the stay-logs to their initial position, and means for controlling the backward movement of the stay-logs.

22. In a veneer-cutting machine, the combination of a rotary carrier, stay-logs carried thereby, screw-rods engaging the stay-logs, ratchet mechanism, means for operating it, connections between said ratchet mechanism and the screw-rods which engage the stay-logs, a clutch for operatively connecting the ratchet mechanism with the mechanism for advancing the stay-logs, a lever for opening the clutch, and means operated by the stay-log-advancing mechanism for uncoupling the clutch after the blocks have been cut to the desired extent.

23. The combination of a rotary block-carrier, stay-logs carried thereby, screw-rods engaging the stay-logs, a shaft extending rearwardly from the carrier, gearing connecting said shaft with the screw-rods, ratchet mechanism operating said rearwardly-extending shaft, a clutch for connecting the ratchet mechanism operatively with said rearwardly-extending shaft, a lever for opening the clutch, a screw-rod operated to engage the lever, and connections between this screw-rod and the rearwardly-extending shaft for moving the rod endwise to engage at the proper time the lever which opens the clutch.

In testimony whereof I have hereunto subscribed my name.

CISCO R. TRAXLER.

Witnesses:
EUGENE E. GRAY,
W. I. BROOKES.