Jan. 7, 1936. W. W. STODDARD 2,027,295

VENEER MACHINE

Filed March 26, 1934 4 Sheets-Sheet 1

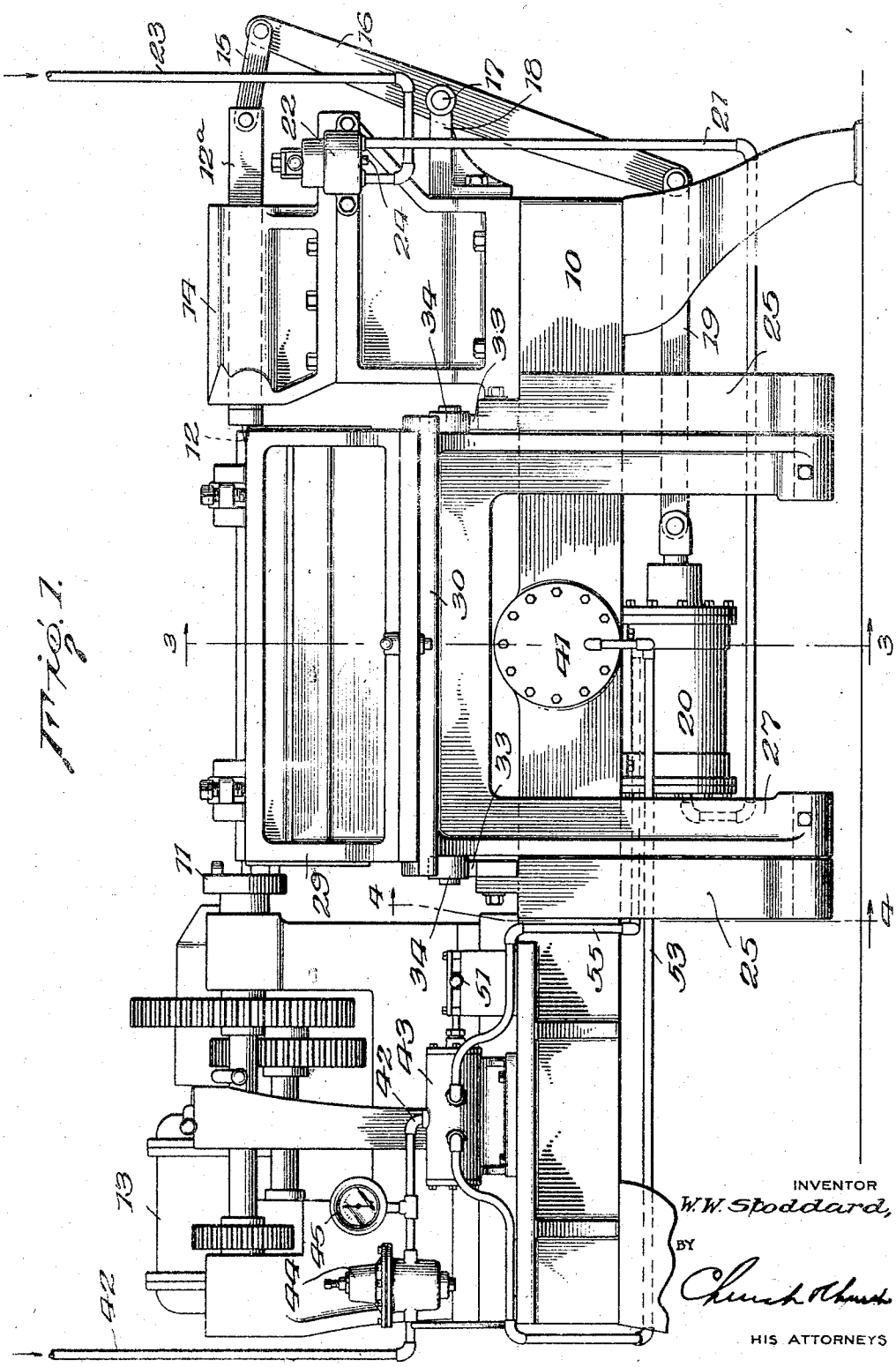


Fig. 1.

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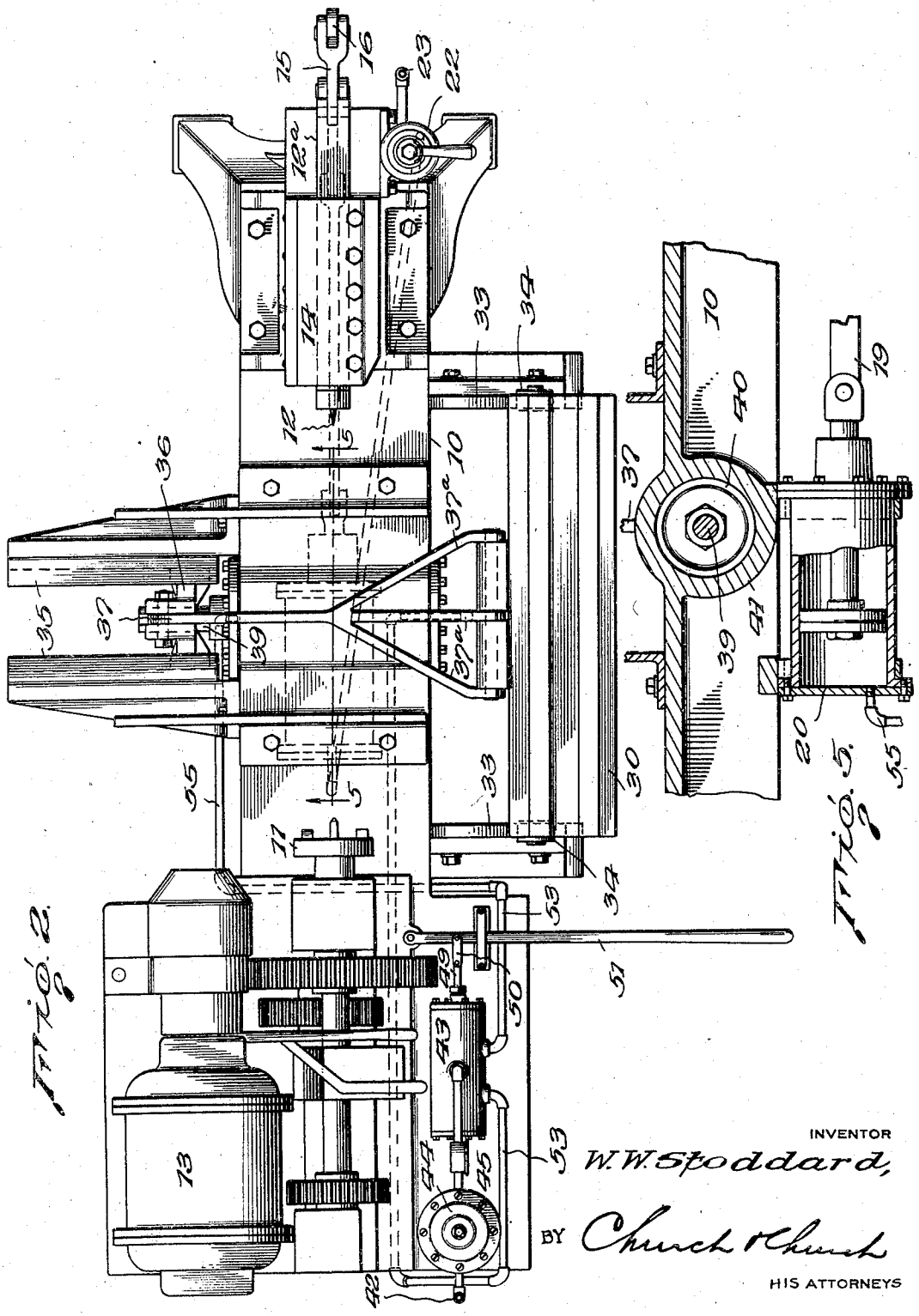


Fig. 2.

Fig. 5.

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VENEER MACHINE

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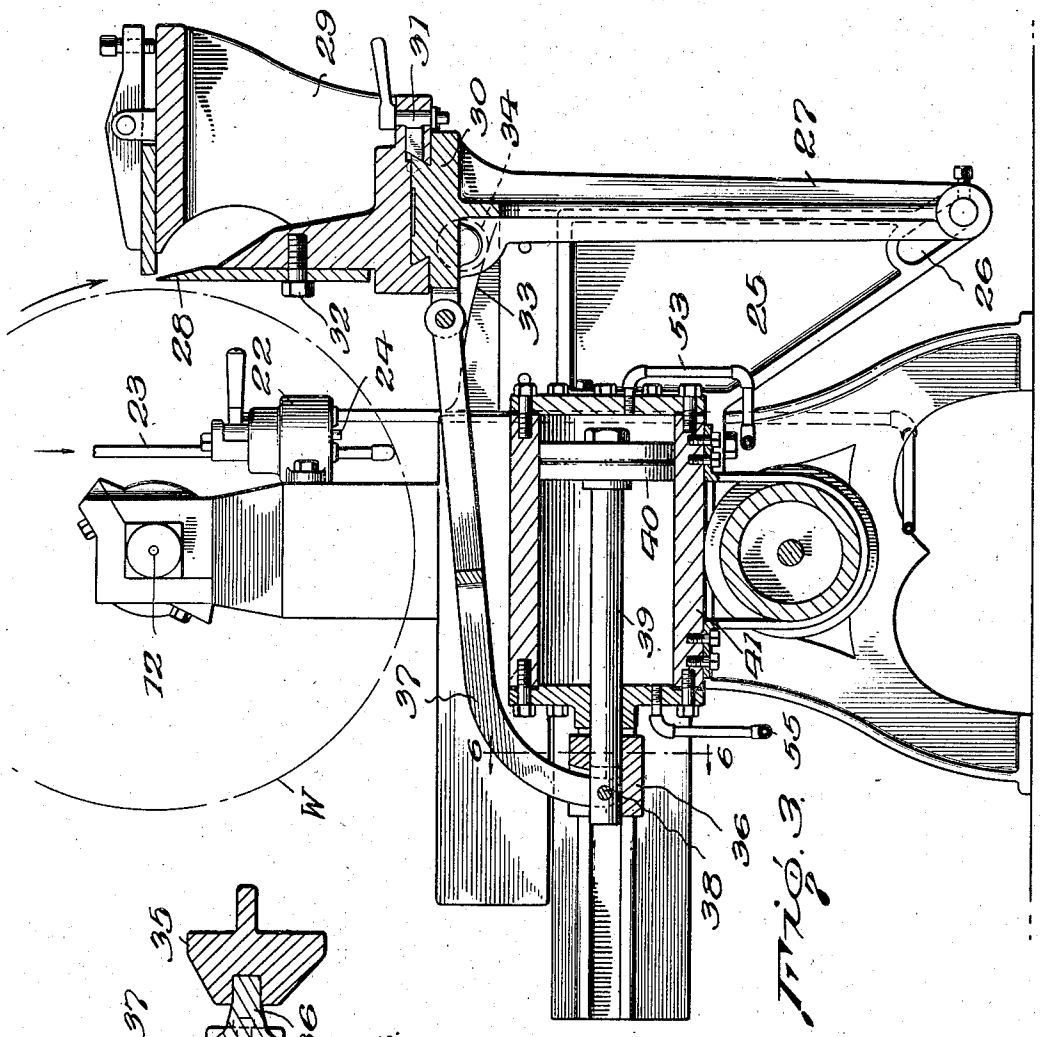


Fig. 3.

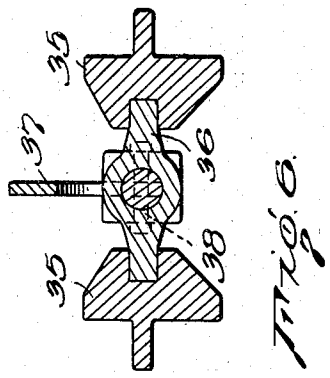


Fig. 6.

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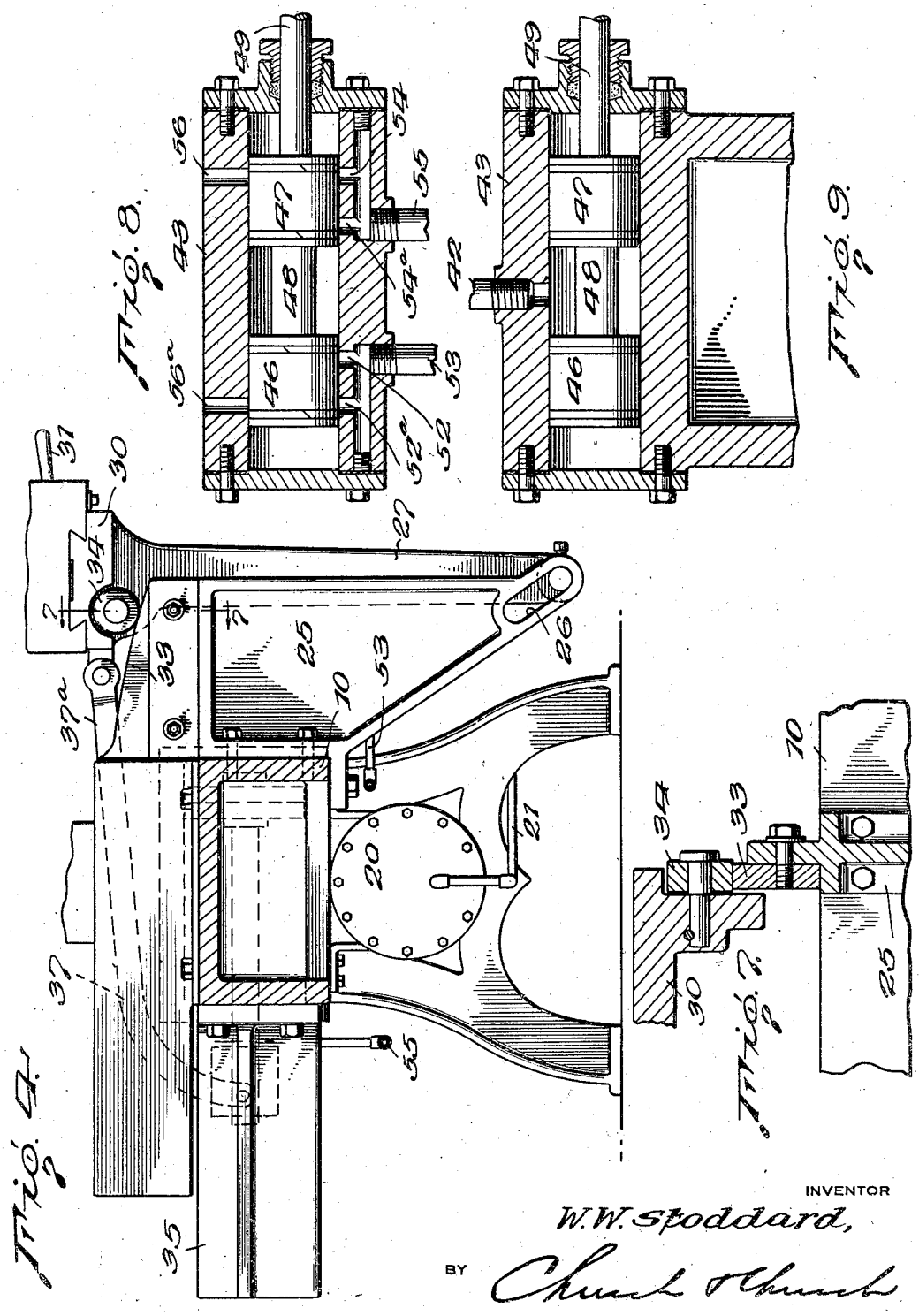
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VENEER MACHINE

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UNITED STATES PATENT OFFICE

2,027,295

VENEER MACHINE

Wallace W. Stoddard, Savannah, Ga.

Application March 26, 1934, Serial No. 717,493

6 Claims. (Cl. 144—209)

This invention relates to improvements in veneer machines.

Heretofore, it has been the general practice in the construction of veneer machines to provide screw and gear mechanism for positioning and holding the cutting element or knife in the desired position, relatively to the body of wood from which the strip of veneer is being formed, and the primary object of the present invention is to provide fluid-actuated means for manipulation of the cutting element, thereby eliminating the conventional types of screws and gears utilized for this purpose.

More specifically, the invention contemplates a veneer machine having means for rotatably supporting a body of wood and fluid actuating devices connected to the cutting element adapted to move the element toward the revolving body of wood and hold it against the surface thereof with a regulable, uniform or constant pressure, the movement of the cutting element relatively to the axis of rotation of the body of wood being controlled, both as to rate of movement and direction of movement, so that a strip of veneer of uniform thickness will be severed or removed from the body of wood.

With these and other objects in view, the invention consists in certain details of construction and combinations and arrangements of parts, all as will hereinafter be more fully described, and the novel features thereof particularly pointed out in the appended claims.

In the accompanying drawings, illustrating a preferred embodiment of the invention,

Figure 1 is a front elevational view of the machine;

Fig. 2 is a top plan view;

Fig. 3 is a transverse, vertical section, on the line 3—3 of Fig. 1;

Fig. 4 is a like view on the line 4—4 of Fig. 1;

Fig. 5 is a vertical, sectional view, on the line 5—5 of Fig. 2;

Fig. 6 is a sectional view on the line 6—6 of Fig. 3;

Fig. 7 is a sectional view on the line 7—7 of Fig. 4;

Fig. 8 is a longitudinal sectional view through the cylinder showing the arrangement of ports for the operating fluid for reciprocating the cutting element; and

Fig. 9 is a similar view, illustrating the supply port of the fluid cylinder.

To a certain extent, the design of the machine proper may follow conventional lines. Suffice it to say that there is a main frame or lathe 10, above which there are appropriately supported holding devices 11, 12, for rotating a body of wood (not shown), from which the strip of veneer is to be supported. The supporting element 11 is journaled in suitable bearings and is driven from an electric motor 13, through a chain of gearing which may, or may not, be provided with clutch and change-speed. If desired, the supporting element 12 may be mounted for reciprocatory movement in the bearing block 14, the outer extremity or prolongation of said element having attached thereto a link 15, by which it is connected to a lever 16, pivoted at 17 on the bracket 18 on the frame.

At its lower end, lever 16 has attached thereto a link 19, and the latter, in turn, is connected to a piston within the interior of cylinder 20. Air or other operating fluid is admitted to cylinder 20 through pipe 21, which leads to a valve mechanism 22, by means of which air, supplied from a supply pipe 23, may be delivered to the cylinder 20 for the purpose of urging the holding device 12 into engagement with the body of wood under the desired pressure. Air may be vented from cylinder 20 through the valve mechanism 22 and exhaust 24.

The mechanism for positioning the cutting element against the revolving body of wood, and subsequently moving it with respect to said revolving body, so as to remove from the latter the strip of veneer of uniform thickness, will now be described. Projecting forwardly from the lathe bed or main frame 10, are two longitudinally spaced brackets 25 in the lower extremity of which are slots 26 and journaled in said slots are the extensions 27 of a carriage for the cutting element or knife 28. This carriage may be formed of an upper section 29 and a lower section 30, the latter comprising the extensions 27. The upper section 29 has a V-shaped slot extending longitudinally of its lower surface, in which is received a similarly shaped rib on the upper surface of section 30 for securing the two sections together. To insure rigidity of this connection, clamp devices such as indicated at 31 may be utilized. Knife 28 is preferably detachably secured to section 29 by bolts 32. At their upper extremities, brackets 25 are formed or provided with guideways or surfaces 33, on which the knife carriage is also supported by anti-friction elements 34, the contour of said guideways or surfaces 33 being such that when the carriage is rocked on its pivotal center toward a body of wood rotatably supported in the machine by the fluid-actuated mechanism hereinafter described, said carriage

and knife will not only be urged toward the revolving body with the desired pressure, but their movement toward the center of rotation of said body, as the strip is removed from the latter, will be so controlled that a strip of uniform thickness will be formed.

Slidably mounted in ways 35, projecting rearwardly from the main frame is a cross head 36, to which is pivotally attached one end of the link 37 and the opposite end of said link is formed with a plurality of arms 37a pivotally secured to section 30 of the knife carriage. Said link 37 is secured to cross-head 36 by a pin 38 which also secures to said head the stem or piston rod 39 of a piston 40 in a cylinder 41 arranged transversely beneath the frame 10. As shown in Fig. 3, piston 40 is in the position it occupies at the time the knife 28 is disengaged from the body of wood indicated by the dot and dash line W in this figure, but by admitting an operating fluid into the right-hand end of cylinder 41, movement of the piston 40 will cause the knife to be moved into engagement with the wood.

The connections for supplying operating fluid to cylinder 41 will now be described. The operating fluid, whether air or steam, is supplied through a feed pipe 42 to a cylinder 43, a pressure regulator valve 44, and a gauge 45 being interposed in said supply line. As shown in Figs. 8 and 9, the fluid enters cylinder 43 centrally thereof and, at opposite sides of the point of admission, there are pistons 46, 47, connected by an intermediate member 48 and provided with a stem or piston rod 49 projecting from one end of the cylinder, suitable packing being provided around the stem. At its outer extremity, stem 49 is connected by a link 50 to an operating lever 51 by means of which the pistons 46 and 47 can be reciprocated manually in cylinder 43. Referring, particularly, to Figs. 2, 3, and 8, pistons 46, 47, are shown in neutral position, or, in that position where the operating fluid will not have access to cylinder 41. But, assuming that it is desired to move the cutting knife into the wood from which the veneer is to be cut, lever 51 is moved to the left (as viewed in Fig. 2) with the result that fluid supplied to cylinder 43 will pass through a port 52 to a pipe 53 by which it is delivered to the right-hand end of cylinder 41 (Fig. 3). At the same time, piston 47 will have uncovered a port 54 connected by pipe 55 to the opposite end of cylinder 41, so that fluid entering one end of the cylinder 41 will move the piston toward the opposite end and the fluid in said opposite end will be vented through pipe 55 back to the cylinder 43, from which it will be exhausted through vent opening 56. This movement of piston 40 will, through link 37, rock the knife carriage on its pivotal mounting in slot 26 to advance the knife into engagement with the revolving body of wood. As the supply of operating fluid remains open, the knife will be urged toward the rotating body of wood at a constant pressure, and the contour of ways 32 is such that the cutting edge of the knife may be moved relatively to the center of rotation of said body of wood, so as to remove from the latter a strip of veneer of uniform thickness. In other words, by adjusting pressure regulating valve 44, to determine the force with which the knife will be urged against the surface of the wood, it is only necessary, in producing a strip of veneer of uniform thickness, to make such adjustment, and open communication between cylinders 43 and 41, so as to move the knife into initial engagement with the wood. After the piston 40 and the knife 28 have reached the limits of their movement, during the cutting operation, hand lever 51 is moved in the reverse direction to bring piston 47 in cylinder 43 to a position where vent 56 and port 54 will be closed but a port 54a opened. At the same time, piston 46 in said cylinder 43 will be moved to a position where port 52 will be closed, and port 52a and vent 56a opened, under which condition, operating fluid will flow through pipe 55 to cylinder 41 and retract piston 40, the fluid in the end of the cylinder 41, previously supplied, being exhausted through pipe 53, port 52a and vent 56a. After the piston 40 and knife have been fully retracted, lever 51 may be actuated to move pistons 46, 47, to neutral position, as illustrated in Fig. 9.

With the present machine, the uniformity of the pressure with which the knife is held in engagement with the revolving body of wood and the uniformity of the direction of movement of said knife insures the production of veneer of uniform thickness. In addition, the machine can be operated quickly and its upkeep is reduced to practically a minimum.

What I claim is:

1. In a veneer machine, a frame, brackets on said frame having slots therein, means for rotatably supporting a body of wood, a carriage, a cutting element mounted in said carriage, rocking bearings for said carriage in said slots, and fluid actuated means for rocking said carriage in said slots to force said cutting element into engagement with a body of wood carried by said supporting means with a regulable uniform pressure.

2. In a veneer machine, a frame, brackets on said frame having slots therein, means for rotatably supporting a body of wood, a carriage, a cutting element mounted in said carriage, rocking bearings for said carriage in said slots, guideways for said carriage, and fluid actuated means for rocking said carriage and advancing the same along said ways to hold said cutting element against a body of wood in said supporting means with a regulable, uniform pressure.

3. In a veneer machine, a frame, means for rotatably supporting a body of wood, a pivotally supported carriage, ways on which said carriage is slidable, a cutting element on said carriage, and fluid actuated means for rocking said carriage to force said cutting element into engagement with a body of wood carried by said supporting means with a regulable uniform pressure, said ways controlling the pivotal and sliding motions of said carriage to move said cutting element relatively to the axis of rotation of said body of wood to sever from said body a strip of veneer of uniform thickness.

4. In a veneer machine, a frame, means for rotatably supporting a body of wood, a carriage, means for pivotally supporting said carriage in said frame, said pivotal supporting means being slidable in the frame, a cutting element on said carriage, fluid actuated means for holding said cutting element against a revolving body of wood with a regulable uniform pressure, and means for directing the movement of said carriage and its cutting element relatively to the axis of rotation of said body of wood to sever from said body a strip of veneer of uniform thickness.

5. In a veneer machine, a frame, means for rotatably supporting a body of wood, a carriage pivotally and slidably secured in said frame, a cutting element on said carriage, a fluid pressure cylinder, a piston in said cylinder, a link pivotally

connected to said piston and carriage whereby reciprocatory motion of said piston will rock said carriage on its pivotal center toward and from a revolving body of wood, and means for directing movement of the carriage and its cutting element relatively to the axis of rotation of said body of wood to sever from said body a strip of veneer of uniform thickness.

6. In a veneer machine, a frame, means for rotatably supporting a body of wood, a pivotally suported carriage, a cutting element on said carriage, a fluid pressure cylinder, a piston in said cylinder, connections between said piston and carriage for rocking the latter to move the cutting element toward a revolving body of wood, and means for maintaining said cutting element in the same radial plane relatively to the axis of rotation of said body of wood, said connections between said piston and carriage comprising means for preventing lateral deflection of the piston.

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