

No. 681,362.

Patented Aug. 27, 1901.

W. W. WOOD.

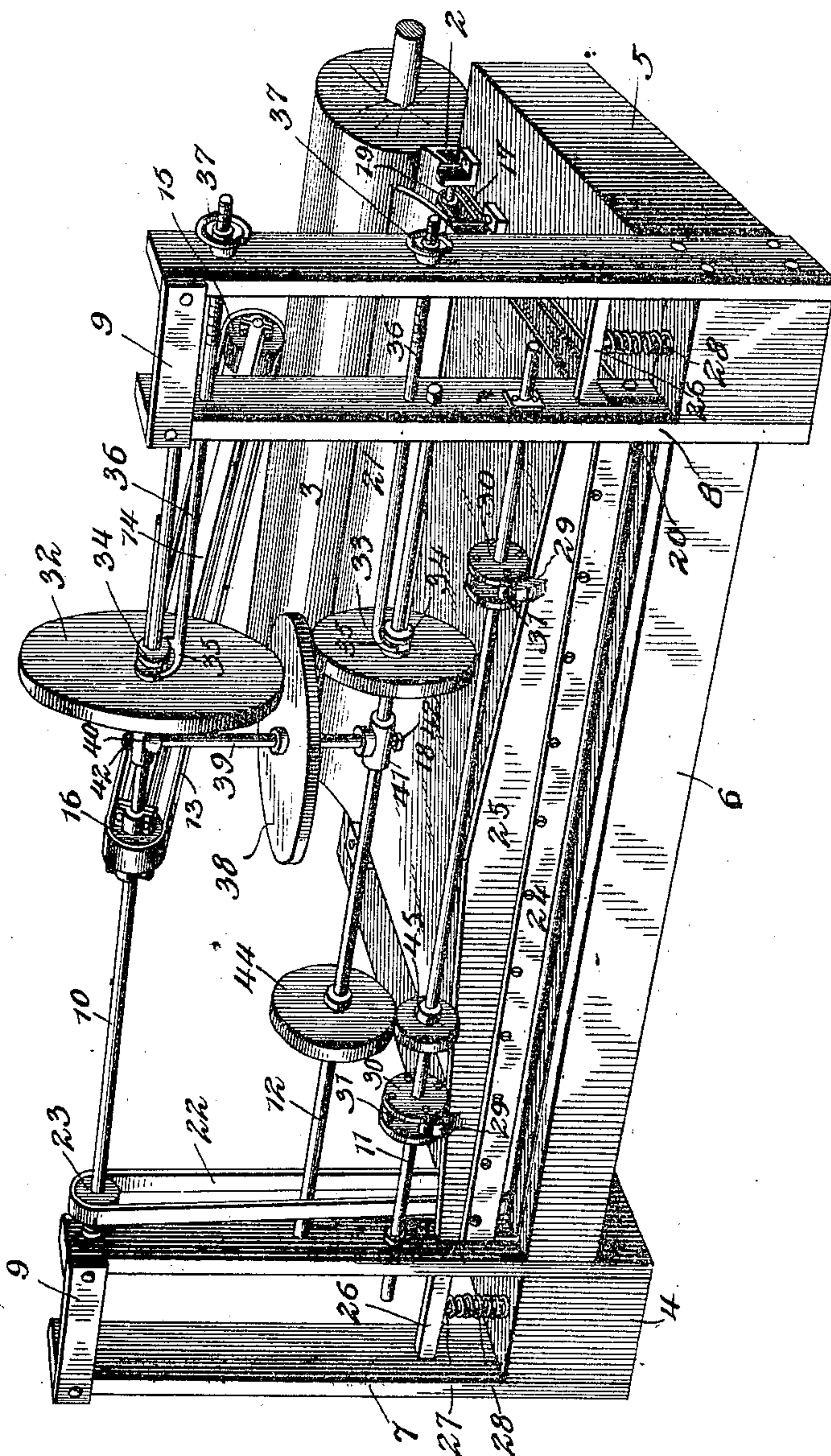
CUTTING ATTACHMENT FOR VENEER MACHINES.

(Application filed Sept. 5, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



Witnesses
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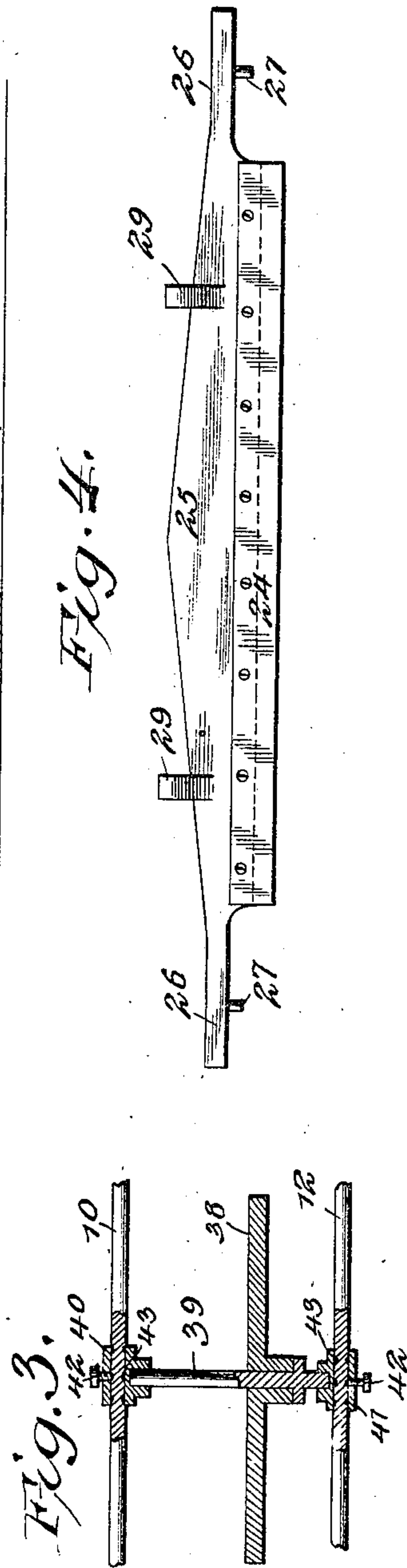
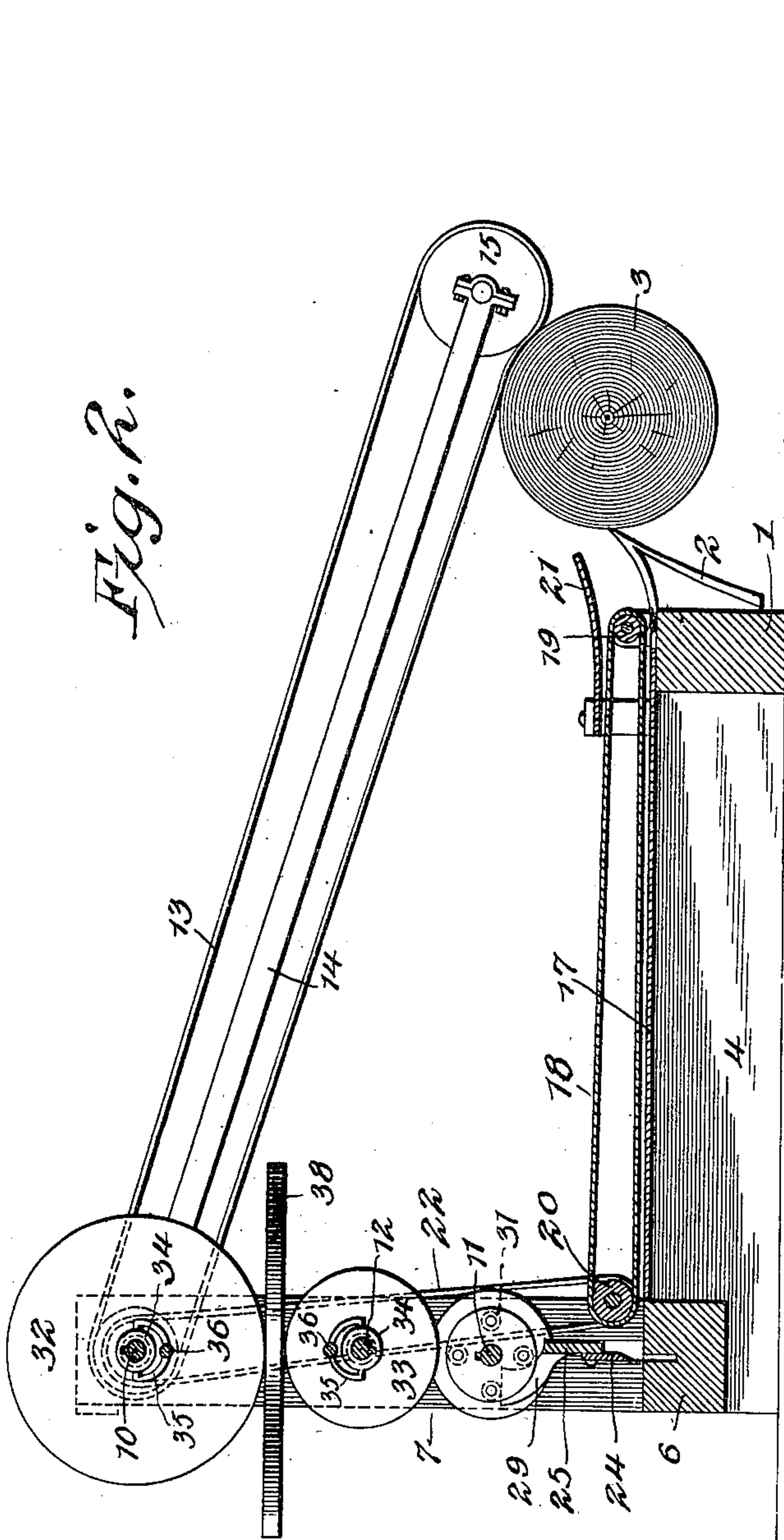
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2 Sheets—Sheet 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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CUTTING ATTACHMENT FOR VENEER-MACHINES

SPECIFICATION forming part of Letters Patent No. 681,362, dated August 27, 1901.

Application filed September 5, 1900. Serial No. 29,082. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WALLACE WOOD, a citizen of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented a new and useful Cutting Attachment for Veneer-Machines, of which the following is a specification.

This invention relates to veneer-machines, and has for its object to provide an improved cutter attachment therefor for cutting the strip of veneer into widths and also to provide for adjusting the device so as to cut the strip of veneer into different widths. It is furthermore designed to preserve a constant relation between the motion of the means for feeding the strip of veneer to the cutting apparatus and the motion of the revolving log from which the veneer is being stripped, so that the cutting apparatus may not be choked and the veneer may be properly fed from the log to the knife-blade.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of the present form of veneer-cutting attachment. Fig. 2 is a longitudinal sectional elevation thereof. Fig. 3 is a detail sectional view illustrating the mounting of one of the friction-wheels of the cutting apparatus. Fig. 4 is a detail front elevation of the cutting-knife and knife-bar.

Corresponding parts are designated by like characters of reference in all of the figures of the drawings.

Referring to the drawings, 1 designates the usual knife-bar of any ordinary veneer-machine, and 2 the stripping-knife secured thereto and designed to strip a thin sheet of veneer from the surface of a log 3, which is revolved by the machine and against the knife-blade in any common or preferred manner.

In carrying out the present invention there

are provided the opposite sills 4 and 5, which are secured to the knife-bar 1 and project outwardly at substantially right angles thereto at opposite ends of the knife. The outer ends of these sills are connected by a cross-bar 6, which forms a cutting-block for the trimming-knife and also completes the frame of the cutting attachment. Rising from the outer ends of the sills and at opposite ends of the cross-bar 6 are the opposite standards 7 and 8, each of which is formed by a pair of posts secured to opposite sides of the adjacent sill and connected at their upper ends by a cross-bar 9. Extending between and journaled in these standards are the upper or drive shaft 10, the lower or knife shaft 11, and the intermediate or speed shaft 12, which are arranged in the same vertical plane.

The drive-shaft 10 is operated from the revolving log by means of an endless belt 13, which is carried by a pulley-frame comprising the opposite frame-bars 14, carrying the pulleys 15 and 16 at opposite ends thereof, and over which the belt travels. The inner pulley 16 is preferably smaller than the outer pulley 15 and is fixed to an intermediate portion of the drive-shaft, while the outer pulley and the under portion of the belt rest upon the upper side of the log, the frame being long enough for the pulley 15 to reach beyond the vertical axis of the log, as best shown in Fig. 2 of the drawings, so that the belt may have a positive frictional engagement with the log. By this means the drive-shaft will have a speed which bears a constant relation to the speed of the revolving log from which the veneer is being stripped.

As the veneer is stripped from the log by means of the knife 2 it is fed across a zinc sheet 17, which is secured to the tops of the sills and both knife-bars, so as to form a top or platform for the frame of the cutter apparatus. The strip of veneer is fed over this platform by means of an endless apron or belt 18, which is mounted upon the opposite rolls 19 and 20, located at the back and front of the frame and immediately above the platform. The roller 19 is located adjacent to the veneer-stripping knife, so that the veneer may be received beneath the apron just as soon as it comes from the knife, and a suitable guard 21 is carried by the frame and pro-

jects rearwardly over the end of the belt to direct the strip of veneer beneath the feed-belt. In order that this feed-belt may be driven at a constant rate with relation to the rate of rotation of the log, it is driven from the drive-shaft 10, which is in turn driven directly from the log. The connection between the drive-shaft and the feed-belt is had by means of a drive-belt 22, running over one end of the roller 20, and a suitable pulley 23, fixed upon the drive-shaft. It will thus be seen that the veneer will be fed from the log at the same rate as it is cut therefrom, and thus prevent choking of the knife.

It will be observed that the outer end of the feed-belt terminates at or adjacent to the inner edge of the transverse knife-block 6, and it is designed to cut the veneer as it leaves the belt by means of a vertically-reciprocating knife-blade 24, that extends transversely between the opposite standards 7 and 8 and is carried by a bar 25, the opposite ends of which are provided with longitudinally-extended guide-arms 26, which are slidable vertically in suitable slots formed in the respective standards. Pendent from intermediate portions of the guide-arms are the studs or pins 27, which fit into helical springs 28, that bear in opposite directions against the arms and the respective sills 4 and 5, so as to normally elevate the knife and automatically throw the latter upwardly after a downward movement thereof. The upper edge of the knife-bar 25 is provided with the opposite upwardly and forwardly disposed tappet-arms 29, which are arranged for engagement with the tappet-wheels 30, carried by the knife-shaft 11. Each tappet-wheel is formed by a pair of spaced disks, which are connected by a plurality of transverse pins, upon which are mounted antifriction-rollers 31 to strike the upper ends of the tappet-arms, and thereby successively throw the knife-bar downwardly, and thereby cut the strip of veneer into sections.

The knife-shaft or tappet-shaft is driven from the drive-shaft 10 through the medium of the oppositely-disposed friction-disks 32 and 33, fixed against rotation upon the shafts 10 and 12, respectively, and keyed thereon for longitudinal adjustment. These disks are located between the pulley 16 and the standard 8, and their hubs 34 are extended outwardly toward the standard and provided with circumferential grooves for the reception of the opposite ends of suitable yokes 35, which are carried by the adjusting-rods 36. The outer end of each adjusting-rod is screw-threaded and projects through the adjacent standard, and a suitable adjusting hand-wheel 37 is fitted to the projecting end of the rod, whereby the disk may be adjusted longitudinally upon the shaft. Interposed between the peripheries of the disks 32 and 33 is a horizontally-disposed disk 38, the upper and lower faces of which are in frictional contact with the said disks. As best shown in Fig.

3 of the drawings, this horizontal disk is mounted loosely upon a vertical fixed shaft 39, the opposite ends of which are provided with bearing-boxes 40 and 41 to embrace the respective shafts 10 and 12, and each box is provided with a set-screw 42 to engage with one of several grooves 43, formed in the adjacent horizontal shaft, whereby the upright shaft and the horizontal disk may be adjusted laterally between the upright disks, so as to change the gearing, and thus control the rate of rotation of the tappet-shaft, which is driven by the friction-disks 44 and 45, carried by the shafts 12 and 11, respectively.

In the operation of the device the log is turned by the veneer-machine, upon which it is mounted, so as to strip the veneer from the log, from which it will be directed onto the platform 17 and beneath the feed belt or apron 18 by means of the guide 21. The apron feeds the veneer to the cutting-knife 24, which may be of any size and shape, according to the purpose for which the veneer strips are intended, and the knife is operated from the drive-shaft so as to reciprocate in a vertical direction to cut the veneer into sections. When it is desired to place a new log in position, the pulley-frame 14 is elevated upon the drive-shaft as a center, so that the outer free end thereof may not be in the way of the log.

What is claimed is—

1. In a veneer-machine, the combination with a platform, of a stripping-knife mounted thereon, a cutting-knife also mounted upon the platform; an endless feed device mounted above and adjacent to the platform with its under side traveling from the stripping-knife to the cutting-knife, the space between the under side of the feed device and the platform being for the reception of and also forming a guide for the strip of veneer as it comes from the stripping-knife, and means for driving the feed device from the periphery of the log from which the veneer is being stripped.

2. In a veneer-machine, the combination with a platform, of a stripping-knife mounted transversely of one end thereof, a vertically-reciprocating cutting-knife mounted at the opposite end of the platform, an endless feed device mounted above and adjacent to the platform and located between the two knives, the under side of the feed device traveling from the stripping-knife to the cutting-knife, the space between the under side of the feed device and the platform being for the reception of and also forming a guide for the veneer as it comes from the stripping-knife, a guard carried by the platform and overhanging the stripping-knife and the adjacent end of the feed device, and means for driving the feed device from the periphery of the log from which the veneer is being stripped.

3. In a cutting attachment for veneer-stripping machines, the combination of a cutting-knife, and a peripherally-contacting frictional log-engaging driving device therefor, comprising a frame having opposite rollers

or pulleys, and an endless belt traveling over the pulleys or rollers, one side of the belt at a point between the opposite pulleys or rollers being disposed transversely across and arranged for frictional contact with the peripheral edge of the log from which the veneer is being stripped, whereby the feed device is driven from and at a uniform speed with respect to the log, the log-engaging portion of the belt being flexible to conform to the peripheral edge of the log, whereby the maximum frictional contact between the log and the belt is had.

4. A device of the class described, comprising a platform, opposite uprights rising therefrom, a vertically-reciprocating cutting-knife mounted upon the uprights, a drive-shaft also mounted upon the platform and operating toward the knife, and a vertically-swinging peripherally-contacting log-engaging driving device pivotally connected to the drive-shaft and extending above the platform.

5. A device of the class described, comprising a platform, opposite uprights rising therefrom, a cutting-knife mounted to reciprocate vertically upon the uprights, a feed device traveling toward the knife and over the platform, a drive-shaft supported above the feed device and upon the uprights, an operative connection between the shaft and the feed device, and a vertically-swinging peripherally-contacting log-engaging frictional driving device, having its upper end pivotally connected to the drive-shaft and inclining downwardly therefrom across the feed device.

6. In a cutting attachment for veneer-stripping machines, the combination with a cutting-knife, of a drive-shaft in operative relation thereto, and a peripherally-contacting frictional log-engaging driving device connected to the shaft, and comprising a frame pivotally supported at one end only upon the shaft, and having opposite terminal rollers, one of which is fixed to the shaft, and an endless belt traveling over the rollers, an intermediate portion of the under side of the belt and adjacent to the outer free end of the frame being disposed transversely across and arranged for frictional contact with the peripheral edge of the log from which the veneer is being stripped, whereby the feed device is driven from and at a uniform speed with respect to the log, the log-engaging portion of the belt being flexible to conform to the peripheral edge of the log, whereby the maximum frictional contact between the log and the belt is had.

7. In a device of the class described, the combination with a cutting-knife, of a feed device for feeding veneer to the knife, a drive-

shaft in operative relation to the feed device, an intermediate shaft operatively connected to the knife, opposite friction-disks carried by the respective shafts and also adjustable longitudinally thereof, and an intermediate friction-disk having its opposite flat faces in frictional engagement with the peripheral edges of the other friction-disks.

8. In a device of the class described, the combination with a cutting-knife, of a feed device, a drive-shaft, an intermediate shaft, opposite friction-disks mounted upon the respective shafts and also adjustable longitudinally thereon, adjusting-rods connected to said disks, and provided with means for adjustably moving the rods longitudinally, a fixed shaft, having opposite boxes embracing the respective drive and intermediate shafts, a friction-disk mounted loosely upon the fixed shaft and having its opposite flat faces in frictional engagement with the respective other disks, and an operative connection between the intermediate shaft and the knife.

9. A device of the class described, comprising a platform, standards rising from the outer end thereof, a vertically-reciprocating knife mounted between the standards, an upper drive-shaft, a lower knife-operating shaft, and an intermediate shaft, all of which shafts are mounted upon the standards, an endless feed-apron traveling over the platform and toward the knife, an operative connection between the drive-shaft and the apron, a log-engaging drive connection between the drive-shaft and the log from which the veneer is to be stripped, an adjustable operative connection between the drive-shaft and the intermediate shaft, and an operative connection between the latter and the knife-shaft.

10. In a veneer-machine, the combination with means for rotatably supporting a log from which veneer is to be stripped, and a stripping-knife, of a feed device to convey the veneer from the knife, and means for driving the feed device at a constant rate with respect to the rotation of the log, and comprising an endless flexible belt disposed transversely across the location of the log and mounted for frictional engagement with the periphery of the log, there being means to automatically force the belt laterally toward and maintain the same in frictional contact with the log as it decreases in diameter.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM WALLACE WOOD.

Witnesses:

A. E. LAWRENCE,
A. B. TUTTON.