

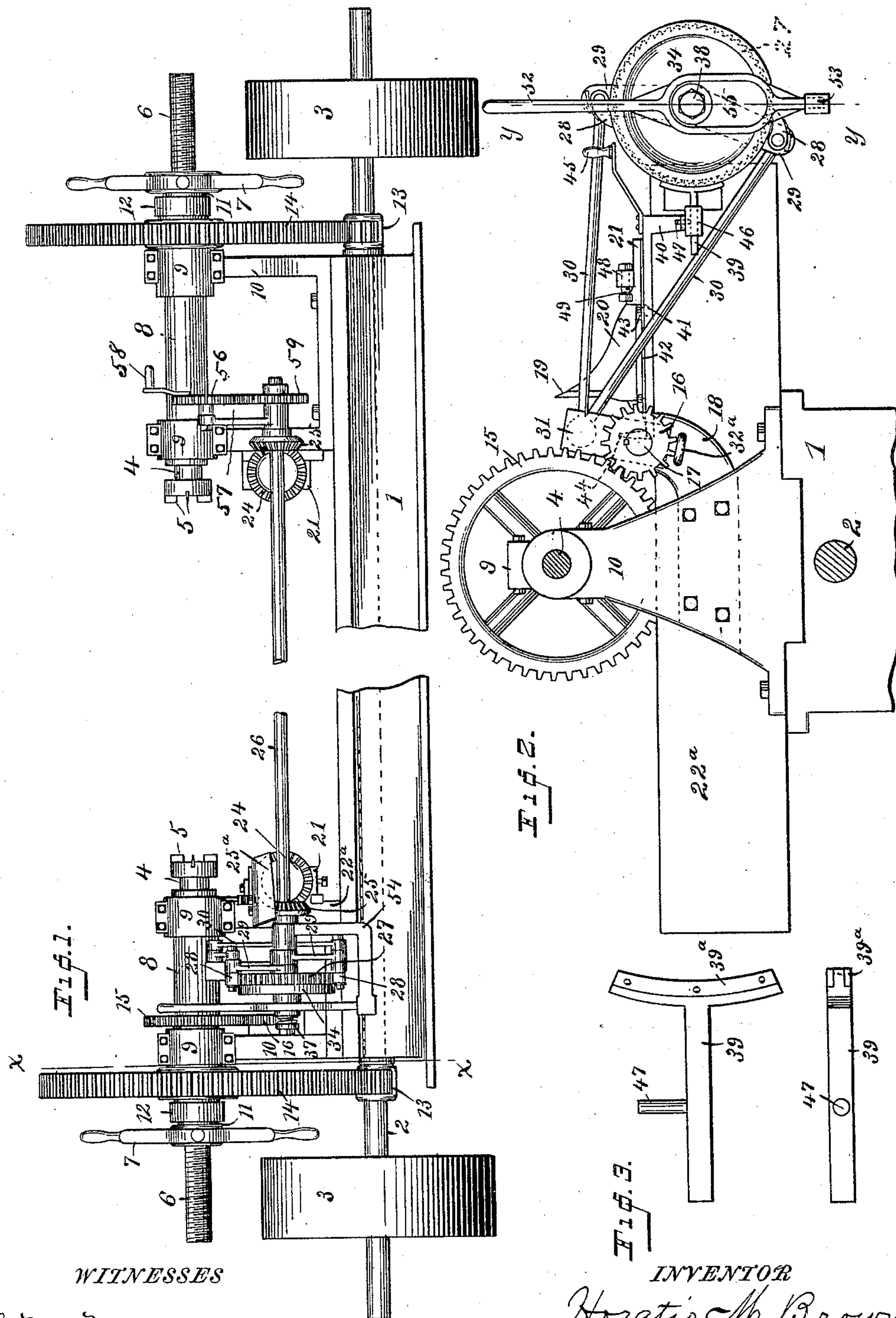
(No Model.)

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H. M. BROWN.
MACHINE FOR CUTTING VENEERS.

No. 433,511.

Patented Aug. 5, 1890.



WITNESSES
C. M. Newman,
Asley S. Munson.

INVENTOR
Horatio M. Brown
By A. M. Wooster
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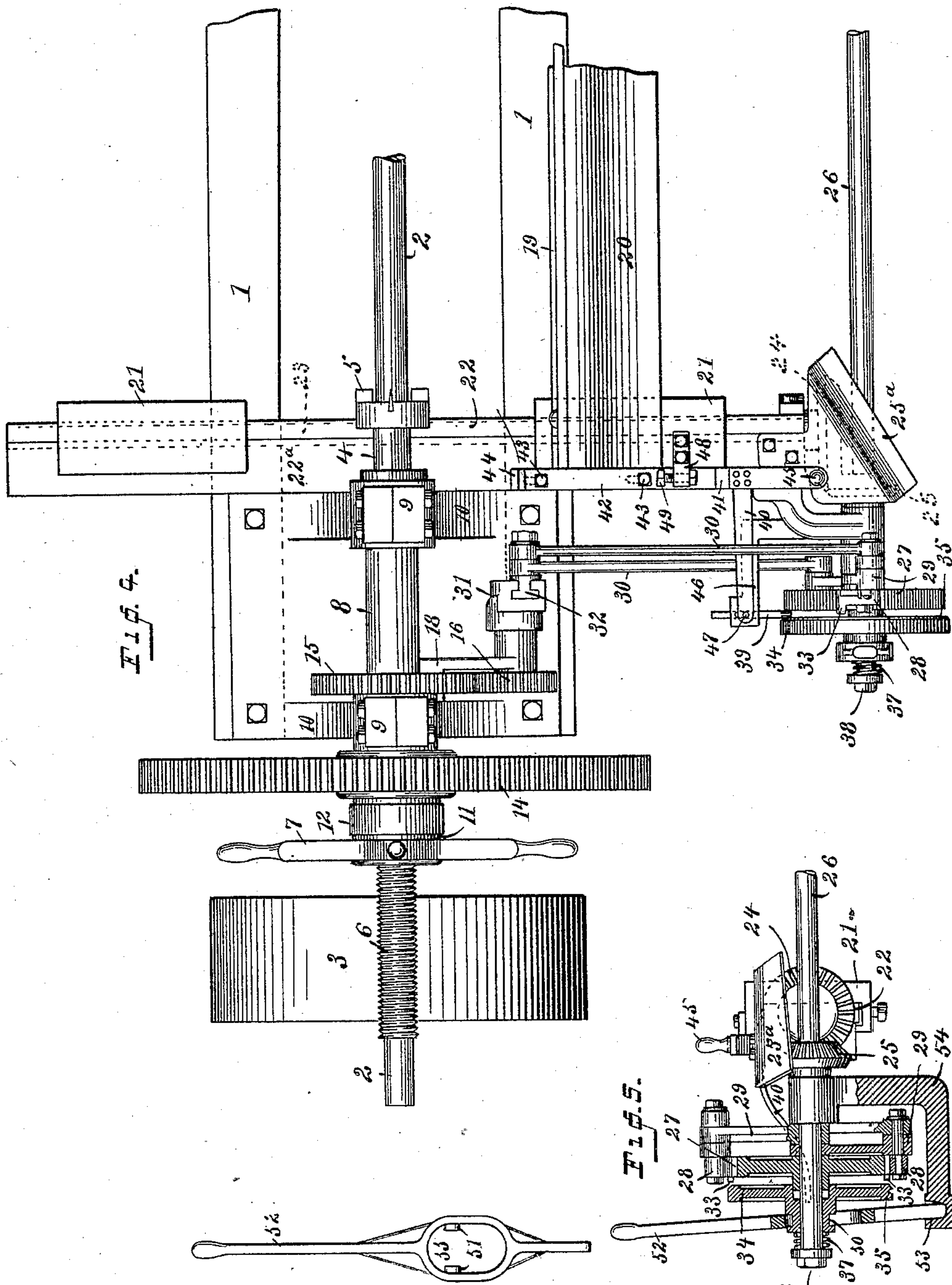
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UNITED STATES PATENT OFFICE.

HORATIO M. BROWN, OF ANSONIA, CONNECTICUT, ASSIGNOR TO THE
FARREL FOUNDRY AND MACHINE COMPANY, OF SAME PLACE.

MACHINE FOR CUTTING VENEERS.

SPECIFICATION forming part of Letters Patent No. 433,511, dated August 5, 1890.

Application filed April 10, 1890. Serial No. 347,327. (No model.)

To all whom it may concern:

Be it known that I, HORATIO M. BROWN, a citizen of the United States, residing at Ansonia, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Machines for Cutting Veneers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the class of veneer-cutting machines in which the log is rotated and the cutter is fed forward as the operation proceeds, and has for its object to provide automatic stop mechanism whereby the feeding movement shall be stopped with absolute certainty at a predetermined time, thus avoiding the necessity of watching the machine closely.

With this end in view my invention consists in the novel construction and combination of parts, which I will first describe in detail, and then specifically set forth in claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of the entire machine, the legs being removed. Fig. 2 is a view, on an enlarged scale, showing the feeding and stopping mechanism in end elevation, the shafts being in section on the line *xx* in Fig. 1; Fig. 3, a side elevation and plan view of the locking-piece; Fig. 4, a plan view of the end of the machine at which the feeding and stopping mechanism is placed; Fig. 5, a sectional view on the line *yy* in Fig. 2, and Fig. 6 is an elevation of the hand-lever for operating the stopping-disk detached.

1 denotes the bed, and 2 the shaft, to which power is applied by belts (not shown) running over pulleys 3. The log is carried in the usual manner by two spindles 4, having at their inner ends the usual prongs 5 to engage the log. The outer ends of these spindles are threaded, as at 6, and are adapted to be moved longitudinally to engage logs of any length within the capacity of the machine by suitable hand-wheels 7. These spindles are held by sleeves 8, themselves supported in boxes 9 upon standards 10. The hand-wheels are rigidly secured to flanged threaded sleeves 11,

the flanges of which are engaged by collars 12, threaded to engage the outer ends of the sleeves 8. The spindles and sleeves 8 are connected together by grooves and keys. (Not shown.) Rotary motion is imparted to the sleeves and spindles by means of pinions 13 on shaft 2, engaging gears 14 on the sleeves.

15 denotes a gear on sleeve 8, meshing with a pinion 16 on a short shaft 17, which is supported in a suitable bracket 18. These portions of the machine do not differ, essentially, from other machines of this class in general use. I have not, therefore, deemed it necessary to illustrate the details of construction, nor to refer to them otherwise than in this brief manner.

19 denotes the cutter; 20, the carrier therefor, and 21 slides running upon ways 22 at opposite ends of the machine; to which the ends of the carrier are rigidly secured. These ways are formed in heavy cross-pieces 22^a, which are rigidly secured to the bed at opposite ends of the machine.

It will be noticed in Fig. 4 that I have illustrated another slide on the opposite side of the machine. This slide and its companion (not shown) are used to support another carrier provided with a heavy roller, which bears against the surface of the log in the act of cutting veneer. This roller, being in common use, I have not deemed to require illustration. The slides are fed inward simultaneously by shafts 23, provided with right and left threaded portions, (not shown,) which engage the carriers. Intermittent rotary motion is imparted to these shafts by means of beveled gears 24, engaged by beveled pinions 25 on the shaft 26. These gears and pinions in practice I cover by hoods 25^a, to prevent the possibility of anything getting caught therein. Shaft 26 is provided with a feed-ratchet 27, which is engaged by pawls 28, carried by rock-arms 29, oscillating on shaft 26.

30 denotes pitmen, the ends of which are connected, respectively, to the rock-arms and to an adjustable block 32 in a crank-arm 31 at the inner end of short shaft 17. The block is moved in or out in any ordinary manner, as by a screw 32^a, to determine the throw of the feed-pawls at each actuation. Each of the feed-pawls is provided with an outwardly-

extending lug or projection 33, the purpose of which will presently be explained. At the outer end of shaft 26 I place a stopping-disk 34, the diameter of which is slightly greater than the diameter of the feed-ratchet, and the face of which is beveled on the inner edge, as at 35. This disk is left free to move longitudinally on the shaft, as will presently be more fully explained.

37 denotes a spring bearing against the outer face of the hub of disk 34 and acting to force said disk inward into contact with the feed-ratchet. The outer end of this spring bears against a nut 38 at the extreme outer end of the shaft.

39 denotes a locking-piece carried by an arm 40, projecting outward from a slide 41. This locking-piece is supported in a bracket 46, the bracket being provided with a longitudinal recess in which the locking-piece slides and with a slot in its top, through which a pin 47 passes, this pin being fixed to the locking-piece and in practice engaging the outer end of arm 40. The construction of these parts will be clearly understood, it is thought, from Fig. 4 in connection with Fig. 2. Slide 41 is fastened to and is adapted to move upon cross-piece 22^a.

42 denotes a top plate covering a portion of the slide, and 43 bolts passing through the top plate and through slots (see dotted lines, Fig. 4) in the slide and engaging the cross-piece. At the inner end of the slide is an upwardly-extending lug 44, and at the outer end a handle 45, for convenience in moving it backward.

48 denotes a bracket upon one of the slides 21, and 49 a bolt whose thread engages this bracket, the head of which is adapted to engage lug 44 at the inner end of slide 41.

50 denotes a groove in the hub of disk 34, which is adapted to be engaged by lugs 51, projecting inward from the opposite sides of an elongated opening 55 in a lever 52. The lower end of this lever is adapted to engage a notch 53 in a bracket 54. The peculiarity of construction and operation of this lever is the readiness with which it may be detached from disk 34 and entirely removed from the machine. It will be noticed (see Fig. 6) that lugs 51 are a sufficient distance above the lower end of opening 55 to permit the lever to be passed over the sleeve. It is then allowed to drop down to place, the lower end of the lever engaging notch 53 in the bracket and the lugs engaging groove 50 in the sleeve. To remove the lever again it is simply lifted, which disengages the lower end of the lever from the notch, and also disengages the lugs from the groove in the sleeve and permits removal of the lever. It will be noticed (see Fig. 3) that the locking-piece is provided with wearing strips or plates 39^a. These strips may be made of any suitable material, although in practice I find rawhide preferable. These plates or strips are secured in place by pins or in any suitable manner, so as to be

readily removable to permit the substitution of new ones when worn.

The operation of placing the log in position, rotating it, and feeding the cutter forward is the same as in other machines of this class, and therefore is not thought to require description in detail. In starting, slides 21, the carrier, and cutter will of course be at their extreme retracted position—that is, at their greatest distance from the spindles. In Fig. 4 one of the slides and a portion of the carrier and cutter are shown at an intermediate position. Let us suppose that power has been applied to the machine. To commence the operation of cutting a veneer, the operator places one hand upon lever 52 and moves it toward the left, as seen in Figs. 4 and 5, against the power of spring 37. With the other hand the operator grasps handle 45 and moves slide 41, arm 40, and the locking-piece backward to the position shown in Fig. 4, the locking-piece entering between the feed-ratchet and stopping-disk 34, as clearly shown in Fig. 4. As the operation of cutting the veneer proceeds, the slide 21, toward the front in Fig. 4, will move inward until the head of bolt 49 will engage lug 44 at the inner end of slide 41. The continued inward movement of slide 21 will cause slide 41, and with it the locking-piece, to be moved inward—that is to say, toward the center of the machine. It will be seen from the drawings that but slight movement of slide 41 is required to remove the locking-piece from between the stopping-disk and the feed-ratchet. As soon as the locking-piece is removed, spring 37 will force the stopping-disk inward into contact with the feed-ratchet. As the stopping-disk is moved inward, projections 33 upon the feed-pawls will ride up bevel 35 upon the inner edge of the stopping-disk, so that said pawls will rest upon the periphery of the disk and entirely out of contact with the feed-ratchet, thus stopping the feed instantly.

It will of course be understood that the parts are set by adjustment of the locking-piece, or preferably by adjustment of bolt 49, so that the operation of cutting will continue just as far as possible without danger of the cutter coming in contact with the prongs which hold the logs. At the instant that the limit of safety for the inward movement of the cutter has been reached, the head of bolt 49 will have engaged lug 44 at the inner end of slide 41, and will have moved the locking-piece out from between the stopping-disk and the feed-ratchet. It will be seen that this stopping mechanism wholly dispenses with the necessity for close watching of the machine, as not the slightest damage can happen to the machine if it continues running after the feeding operation has been stopped. Should it be necessary or desirable to stop the feeding operation at any time during the operation of cutting without stopping the entire machine, the operator simply has to push slide 41 back-

ward by means of handle 45 sufficiently to withdraw the locking-piece from between the feed-ratchet and the stopping-disk. As soon as the locking-piece has been removed, no matter whether the movement is performed automatically or by hand, spring 37 will force the stopping-disk into contact with the feed-ratchet and will lift the feed-pawls up out of contact with the ratchet.

The return movement of slides 21 and the cutter is effected by hand in any ordinary or preferred manner. In the drawings (see Fig. 1) I have shown a pinion 56, mounted in a suitable bracket 57, and provided with a crank 58 for convenience in operation. This pinion meshes with a pinion 59 at one end of shaft 26, (the right,) as shown in the drawings, and by means of bevel-pinions 25 on said shaft and bevel-gears 24 on shafts 23 moves the slides, and with them the carrier and cutter, backward to the retracted position.

It will of course be understood that the various details of construction may be varied to an almost unlimited extent without departing from the principle of my invention.

I claim—

1. The combination, with the feed-ratchet, the shaft therefor, and the feed-pawls having projections 33, of a disk adapted to move longitudinally on the shaft, said disk being of greater diameter than the feed-ratchet and beveled upon its inner edge, so that when said disk is moved inward the feed-pawls will ride up the incline and rest upon the periphery of the disk wholly out of engagement with the feed-ratchet, thereby stopping the feed without stopping the machine.

2. The combination, with the feed-ratchet, shaft, and pawls, the latter projecting over the edge of the ratchet, of a disk of greater diameter than the feed-ratchet and beveled upon its inner edge, said disk being adapted to move longitudinally on the shaft, and a spring acting to force the disk inward against the feed-ratchet, as and for the purpose set forth.

3. The combination, with the feed-ratchet, pawls, and shaft, said pawls projecting outward from the face of the ratchet, of a disk of greater diameter than the feed-ratchet, said disk being adapted to move longitudinally on the shaft and to lift the pawls out of contact with the ratchet.

4. The combination, with the feed-ratchet, pawls, and shaft, said pawls projecting outward from the face of the ratchet, of a disk of greater diameter than the feed-ratchet, said disk being adapted to move longitudinally on the shaft and lift the pawls out of contact with the ratchet, a spring acting to force the disk inward, and a lever engaging the disk, whereby said disk may be forced outward against the power of the spring.

5. The combination, with the feed-ratchet, pawls, shaft, and bracket 54, having a notch at its outer end, of a disk of greater diameter than the feed-ratchet and having a groove 50

in its hub, the ratchet being adapted to slide longitudinally on the shaft, for the purpose set forth, a lever having an opening to receive the hub of the disk, and lugs above the center of said opening adapted to engage the groove, the lower end of said lever being adapted to engage the notch in the bracket, so that said lever may be attached or detached without movement of other parts.

6. The combination, with the shaft, bracket 54, having a notch 53, and disk 34, having a circular groove in its hub, of a lever provided with an elongated opening adapted to receive the hub of the disk, and inwardly-extending lugs in the upper portion of said opening, adapted to engage the groove in the disk, so that when the lever has been passed over the hub of the disk and the lower end seated in the notch the lugs will engage the groove, as and for the purpose set forth.

7. The combination, with the feed-ratchet, pawls, and shaft, of a disk adapted to move inward on said shaft to lift the pawls out of engagement with the feed-ratchet, and a locking-piece adapted to lie between the feed-ratchet and the disk to hold the latter out of contact with the pawls.

8. The combination, with the feed-ratchet, pawls, and shaft, of a disk on said shaft, a spring acting to force said disk inward, for the purpose set forth, means, substantially as described and shown, for moving said disk outward against the power of the spring, and a locking-piece adapted to lie between said ratchet and disk.

9. The combination, with the feed-ratchet, feed-pawls, and disk 34, adapted to lift said pawls out of engagement with the ratchet, of a locking-piece 39, having adjustable wearing-pieces 39^a, as and for the purpose set forth.

10. The combination, with the feed-ratchet, shaft, and pawls, a disk 34 on the shaft, and a spring acting to force said pawls inward to lift the pawls out of engagement with the ratchet, substantially as set forth, of a locking-piece adapted to lie between said pawl and disk, a slide by which the locking-piece is carried and which is provided with a lug 44 at its inner end, and a bracket upon a moving portion of the machine, adapted to engage said lug at a predetermined time and to move the locking-piece out from between the disk and ratchet and permit the spring to move the disk inward and disengage the pawls from the ratchet, so that the feeding movement is instantly stopped.

11. The combination, with the feed-ratchet, shaft, pawls, disk 34, and spring 37, of a locking-piece, slide 41, by which the locking-piece is carried and which is provided with a lug 44, a slide 21, acting as described, and a bracket on said slide having a bolt adapted to engage the lug to move slide 41 and retract the locking-piece when slide 21 has reached the extreme of its inward movement.

12. The combination, with the feed-ratchet, pawls, and disk 34, of bracket 46, a locking

piece carried by said bracket and having a pin 47, and a slide 41, having an arm adapted to engage said pin.

13. The combination, with the feed-ratchet,
5 pawls, shaft, and disk 34, of bracket 46, the locking-piece engaging the bracket and having a pin 47, slide 41, having a lug 44 and handle 45 and an arm engaging the pin, and

a slide 21, operating as described, and having a bolt adapted to engage lug 44. 10

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

HORATIO M. BROWN.

Witnesses:

FRANK E. HOADLEY,
JOHN STARKWEATHER.