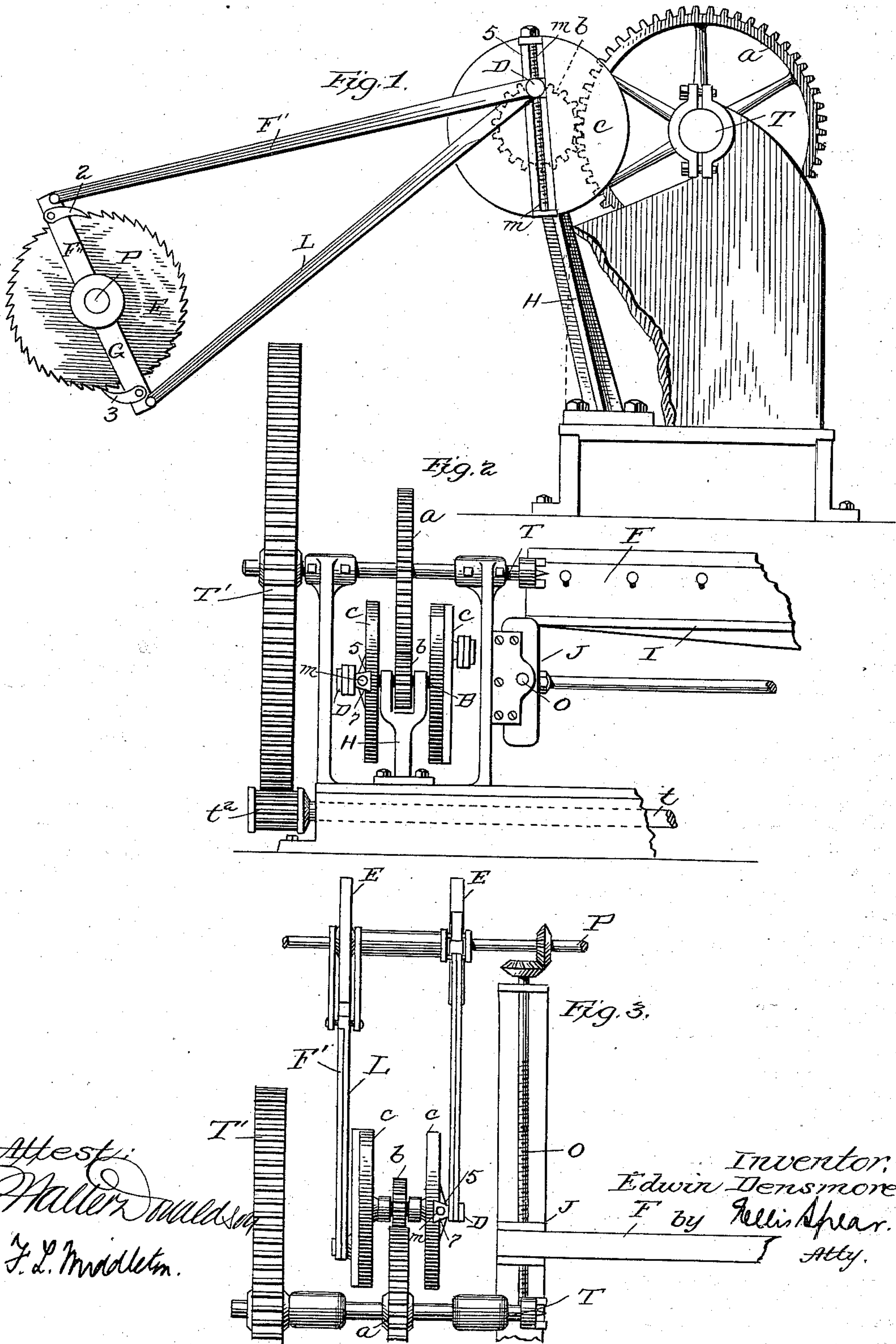


(No Model.)

E. DENSMORE.
VENEER CUTTING MACHINE.

No. 382,219.

Patented May 1, 1888.



UNITED STATES PATENT OFFICE.

EDWIN DENSMORE, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO WM. T. POWERS & SON, OF SAME PLACE.

veneer-cutting machine.

SPECIFICATION forming part of Letters Patent No. 382,219, dated May 1, 1888.

Application filed July 28, 1887. Serial No. 245,537. (No model.)

To all whom it may concern:

Be it known that I, EDWIN DENSMORE, of Grand Rapids, in the county of Kent and State of Michigan, have invented a new and useful
5 Improvement in Veneer-Cutting Machines; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to machinery designed for cutting veneers, and is an improvement in
10 the mechanism employed for regulating the movement of the cutting-knife.

The object of my invention is to provide such mechanism as will permit the operator to change quickly and accurately the movement
15 of the knife to a greater or less degree in order that veneers of any desired thickness may be produced. This result is ordinarily accomplished by means of shifting the driving-belt to a larger or smaller pulley, or by changing
20 the driving-gears. I aim to secure greater accuracy in the work and a more extensive range of adjustment than is provided by the means above referred to.

With these objects in view my invention
25 consists, broadly, of mechanism for giving the cutting-knife the necessary lateral movement, in combination with an adjustable connection between said mechanism and the driving-power, whereby the movement of the driving-
30 shaft may be imparted to the knife-moving mechanism to a greater or less degree.

The invention consists, further, of the knife-moving mechanism, of suitable devices for operating the said mechanism, and of pitmen
35 for operating the latter, said pitmen being adapted to be adjusted toward and from the center of their rotary supports, whereby the strokes of the said pitmen may be varied at the will of the operator to change the move-
40 ment of the knife, and consequently the thickness of the veneer.

The details of construction which enable me to carry out my objects successfully and to apply the improvement to machines already
45 built also form an essential part of this invention.

In the accompanying drawings is shown only so much of a veneer-cutting machine as will be necessary to a clear understanding of the
50 present invention.

The machine to which I have applied my

improvement is the same in all essential particulars as that shown in Letters Patent granted to me on the 17th of August, 1886, No. 347,331.

Figure 1 is a side elevation showing a portion of the machine and my improvement attached thereto. Fig. 2 is a plan view of a portion of the machine, and Fig. 3 is a front view of the same.

In the drawings, F represents the knife, and I the knife-bar. The latter is provided on either side with a pendent block, J, one only being shown, each of which is in engagement with an operating-screw, O, whereby the necessary lateral movement is imparted to the knife to perform the cutting operation. The log from which the veneers are to be cut is secured between the clutches, one only of which is shown, on the rotating shafting T, as in my patent aforesaid. Power is applied to drive this shaft through the large gear T', which is in turn driven from the shaft t by the intermediate pinion, t'. The operating-screws are driven from the shaft P through the beveled
75 gears, as shown.

I attach my improved mechanism to the shafts P and T. In the space between the bearing of the shaft T, on one side of the machine, a driving-gear-wheel, a, is secured. This
80 meshes with a pinion, b, keyed to a small shaft, B, which is suitably supported from the base of the machine by a standard, H. Upon this shaft are fixed also two crank wheels or disks, c c. The shaft P carries fixed thereto ratchet-
85 wheels E E, these being secured at a distance apart slightly greater than the distance between the disks c c. Each ratchet-wheel has engaging with it two pawls, 23, which are carried upon the ends of arms F' G. The pawls
90 and arms are arranged upon opposite sides of the shaft P, and are adapted to act each independent of the other. Movement is imparted to the pawls by means of pitmen F' L, driven from the disk c. In the face of each disk c a
95 groove or channel, 5, is formed running from the periphery to or past the center. This groove is beveled and is adapted to receive a block, 7, which carries the crank-pin D. The pitmen F' and L, which, as above stated, drive
100 the pawl-arms upon opposite sides of the ratchets, are connected to the crank-pin D. It will

thus be seen that in the revolution of the crank wheels or disks the pawls will be alternately pushed and pulled, thus imparting a continuous movement to the ratchet-wheels and shaft P. In order that the movement of the said shaft may be more even and positive, I make the connections between one disk and its ratchet a quarter-turn from the connections between the other set of devices, so that while the crank-pin of one set is passing the line of the shafts B and P the crank-pin of the other set will be making its full effect upon the pitmen.

The device by which the movement of the shaft is regulated to any desired degree is shown at *m m*, and consists of the elongated screw having suitable bearings at its ends in the disks *c*. This screw passes directly through the block 7, and it will be apparent that by turning the screw either one way or the other the block will be caused to travel toward or from the center, and the stroke of the pitmen will be accordingly decreased or increased to any degree desired. By this mechanism I am enabled to make the most accurate adjustment of the movement, and the degree thereof may be extremely slight or great, according to the will of the attendant.

If desired, a suitable scale and index may be attached to the disk and block, whereby the operator can tell just how much to move the block in one direction or the other to effect any movement in the knife. This arrangement of operating parts enables me to apply the improved mechanism to the form of machine referred to heretofore without change therein.

Obviously crank-arms may be substituted for the crank-wheels shown.

I claim as my invention--

1. In a veneer-cutting machine, and in combination, the holder, as I, for the material, the cutting-knife, means, substantially as described, for giving movement to the same, a driving-shaft, and adjustable connections from said shaft to the knife-moving mechanism, whereby the knife may be advanced against the work to a greater or less degree relative to the movement of the holder, substantially as described.

2. In combination, the knife, the crank-wheel, the pitman, and the screw for moving the connecting-point of said pitman toward and from the center of the crank-wheel, and

mechanism for communicating the movement of the pitman to the knife, substantially as described.

3. In combination, the cutting-knife, the crank-wheel provided with a groove in its face, the crank-pin or stud adapted to move in said groove, the screw engaging said crank-pin, knife-moving mechanism, as E P O, and the pitmen, substantially as described.

4. In combination, the knife, the crank-wheel, the adjustable pitman connected with said crank-wheel, whereby the stroke may be varied, the pawl-and-ratchet mechanism operated by the pitman, and the mechanism, substantially as described, for imparting the movement of the ratchet mechanism to the knife, substantially as described.

5. In combination, the knife, the crank-wheel, the ratchet-wheel, the push and pull pawls, and the adjustable pitmen operating said pawls and causing them to act alternately upon the ratchet-wheels, and mechanism, substantially as described, for communicating the movement of the ratchet mechanism to the knife, substantially as described.

6. In combination, the knife, the crank-wheel, the ratchet-wheel, the push and pull pawls, the pitmen for operating the said pawls, and adjustable crank-pins, both of said pitmen being secured directly thereto, substantially as described.

7. In combination, the knife, the crank wheels or disks *c c*, the ratchet-wheels, the pawls, and the pitmen for operating said ratchet mechanism, the pitman of one crank-wheel being positioned a quarter-turn from the pitman of the other crank-wheel, substantially as described.

8. In combination, the knife, the shaft I, the driving-gear *a*, placed thereon, the supplemental shaft B, the pinion *b*, supported by said shaft and meshing with gear *a*, the disk *c* on said shaft, the mechanism, as E P O, for driving the knife, and adjustable connection between said mechanism and the disk, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWIN DENSMORE.

Witnesses:

CYRUS E. PERKINS,
ELLA P. SHUSTER.