# E. B. Chereroy,

## Cutting Veneers.

No. 6,326. Patented Apr. 17, 1849.

Fig. 5.

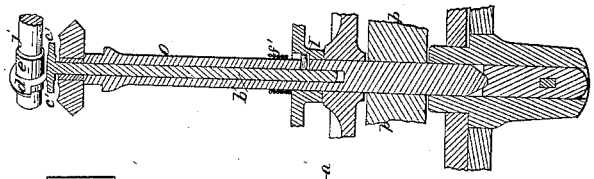


Fig. 4.

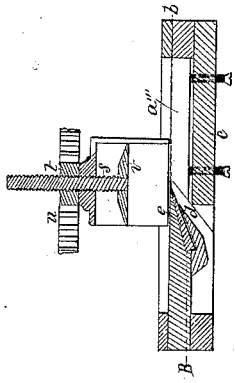


Fig. 1.

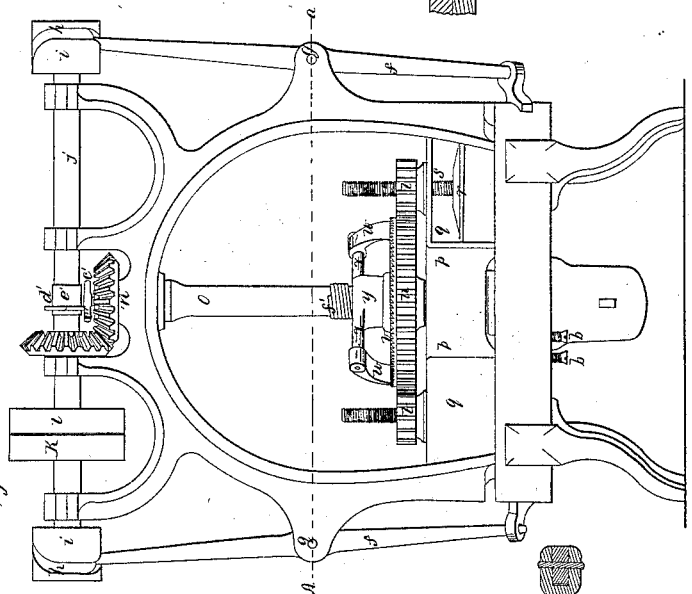


Fig. 3.

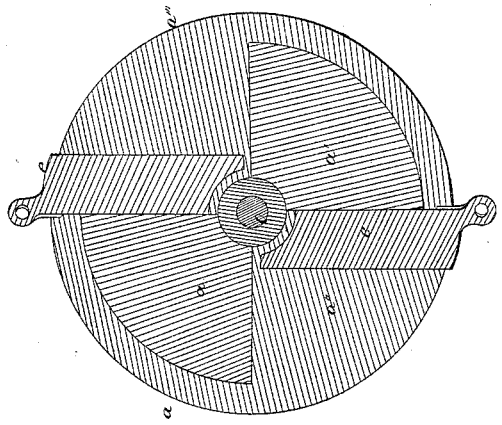
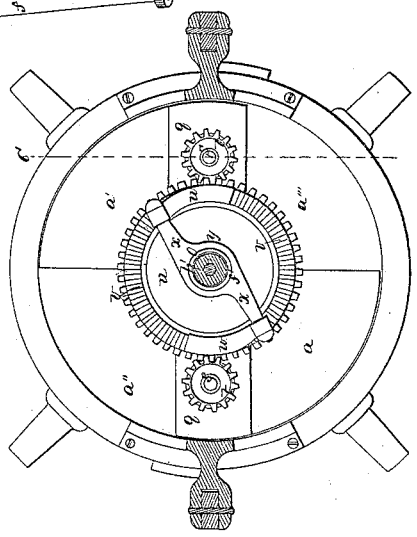


Fig. 2.



# UNITED STATES PATENT OFFICE.

E. B. CHEREVOY, OF NEW YORK, N. Y.

## MACHINERY FOR CUTTING VENEERS, &c.

Specification of Letters Patent No. 6,326, dated April 17, 1849.

*To all whom it may concern:*

Be it known that I, E. B. CHEREVOY, of the city, county, and State of New York, have invented new and useful Improvements in the Machine for Cutting Veneers and other Thin Sheets of Slabs of Wood from Blocks, &c., and that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known, and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a front elevation of the machine; Fig. 2, a horizontal section taken at the line (A *a*) of Fig. 1; Fig. 3, a similar section taken at the line (B *b*) of Fig. 4; Fig. 4, a vertical section taken at the line (C, *c*) of Fig. 2; and Fig. 5 a vertical section through the central shaft.

The same letters indicate like parts in all the figures.

The principle or character of my invention, which distinguishes it from all other things before known, consists in cutting veneers or other sheets or slabs of wood (from a block or blocks of wood) by means of a radial knife (or knives) which has a longitudinal vibratory motion to make a draw cut, as it is termed, when this is combined with a rotating arm (or arms) and feeding box which carries the block (or blocks) of wood to be cut, which arm (or arms) revolve and carry around the feeding box to carry the block around over a circular platform in which the knife (or knives) slides, the revolution of the block and the vibration of the knife constituting the compound motion necessary to effect what is called the draw cut. And my invention also consists in combining with the feeding box (or boxes) a feeding wheel, that is a ratchet and cog wheel that turns freely on the shaft which carries the arm (or arms) or the feeding box (or boxes), the cogs of which engage a cog wheel on a screw attached to a follower that forces down the block, the said feeding wheel being in turn combined with an arm (or arms) that carries a ratchet hand or pawl and connected with a shaft within the main vertical shaft that carries the feed box, that the said ratchet hand or pawl may be operated above by a motion independent of the main shaft to communicate the required feed to the block from which the veneers are to be cut.

In the accompanying drawings (*a*) represents a horizontal platform divided into four quadrants (*a*, *a'*, *a''*, *a'''*) two of them (*a*, *a'*) are permanent, and the other two (*a''*, *a'''*) are movable and rest on a series of set screws (*b*) which pass through the bed (*c*) of the said platform, by means of which screws the surface of the two quadrants (*a''*, *a'''*) can be elevated or depressed to determine the thickness of veneers to be cut, as the amount of depression of these quadrants below the plane of the stationary quadrants will determine the depression of the block below the cutting edges of the knives to be presently described. Two radial spaces are left between the permanent quadrants (*a*, *a'*) and the movable ones (*a''*, *a'''*) for the formation of a throat (*d*) for the passage of the veneers, and for the cutting edges of the two knives (*e*, *e*). These knives are made each of a flat plate of metal with a cutting edge in the usual manner, and are fitted to slide radially in appropriate recesses in the platform and bed, and to project beyond the outer periphery of the bed. The cutting edge is placed on a level with the upper surface of the permanent quadrants, and facing the adjustable quadrants, and the end that projects beyond the periphery of the platform is pierced with a hole to receive the rounded end of a lever (*f*) (one for each knife) which is hung on a fulcrum (*g*) the upper end being fitted to a cam groove (*h*) in the surface of a cylinder (*i*) on the end of a horizontal shaft (*j*) provided with a fast and loose pulley (*k*, *l*) to receive a belt from some first mover by which the machine is operated. The cam grooves, one for each knife, are so formed and placed on the shaft relatively to the other parts of the machine that while the blocks of wood, from which the veneers are to be cut, pass over the knife, the two grooves run in an oblique direction to slide and give the knives the required vibrations while cutting, and when the veneers are cut the grooves run in the direction of the periphery to keep the knives stationary while the blocks in their revolution again approach them, the grooves run obliquely in the reverse direction while making the next cut, and then again in the direction of the periphery to join the first described portion. In this way it will be seen that the knives only slide or vibrate during the passage of the blocks over them.

On the driving shaft there is a bevel cog wheel (*m*) which engages a corresponding bevel wheel (*n*) on a vertical shaft (*o*) which turns on a step in the center of the platform, and the lower end of this shaft carries two arms (*p*, *p*) the outer ends of which are boxes (*q*, *q*) of sufficient capacity to receive the blocks of wood from which the veneers are to be cut. Within each of these boxes is fitted a follower (*r*) that rests on the block of wood, and provided with a screw (*s*) which passes up through a hole in the top of the box; and to this screw is fitted a nut (*t*) having cogs on its periphery which are engaged by the cogs of what I term the feed wheel (*u*) that turns freely on the vertical main shaft, so that by the turning of this feed wheel, by reason of its connection with the cogged nut and screw the follower is either depressed or elevated. So long as the feed wheel turns with the main shaft and with the same velocity the follower will not move, but if it be made to turn faster then the follower will be depressed and with it the block of wood, and vice versa. It is necessary therefore that this feeding wheel should receive an independent motion greater than the rotation of the shaft at the time that the block of wood passes over one of the adjustable quadrants for the purpose of forcing down the block of wood to give the required feed. This is effected in the following manner. On the upper face of the feed wheel there is a circle of ratchet teeth (*v*) acted upon by two hands or pawls (*w*, *w*) jointed to two arms (*x*, *x*) on a hub (*y*) that is capable of vibrating to the required extent on the main shaft; and this hub is connected by a short arm or pin (*z*) that passes through and works freely in a short horizontal slot in the main shaft, the said arm or pin being simply a projection from the lower end of a rod (*b'*) within the main shaft which is made hollow for that purpose. This rod passes out at the top of the shaft and is there provided with two horizontal arms (*c*,' *c'*) which are acted upon by two tappets (*d'*, *d'*) on the driving shaft, and as the main vertical shaft receives its motion from the driving shaft it is necessary that the tappets on the driving shaft should act on the arms (*c'*, *c'*) at a greater distance from the axis of the driving shaft than the distance of that part of the arms (*c'*, *c'*) acted upon are from the axis of the main vertical shaft, for if they were at equal distances the two would of necessity move with equal velocity, and not give the required motion. And as it becomes necessary frequently to vary the thickness of veneers to be cut the tappets (*d'*, *d'*) project from a hub (*e'*) that is secured to the shaft by means of screws passing through elongated holes in the hub, so that the distance of these tappets from the axis of motion of the main shaft can be regulated at pleasure to make the feed correspond with the required thickness of veneers to be cut, which thickness is also gaged by the adjustment of the quadrants (*a''*, *a'''*). The arms (*x*, *x*) that carry the ratchet hands or pawls are drawn back after the required feed has been given, and preparatory to a repetition of the operation by means of a helical spring (*f'*) attached to the hub of the arms and the main shaft.

It will be obvious from the foregoing that the details of the arrangement of my invention may be varied without changing in any degree the principle of my invention, and I therefore do not wish to confine myself to the precise arrangement herein specified although it is in my judgment the most effective.

What I claim as my invention and desire to secure by Letters Patent is—

1. The method of cutting veneers, substantially as herein described, by means of a knife (or knives) having a longitudinal sliding or vibrating motion during the operation of cutting, when this is combined with a box (or boxes) on a rotating shaft that by its revolutions it may carry the block to and over the knife, substantially as herein described, whereby the operation of cutting veneers by means of a sliding or vibrating knife to give the draw cut, may be made continuous, as described.

2. And I also claim the method, substantially as herein described of communicating the feeding motion to the follower (or followers) in the feeding box (or boxes) by means of the arms (or arms) so connected with the main shaft, or the equivalent therefor, that it may have a motion independent thereof, and connected with the follower (or followers) in the feed box (or boxes), and operating as herein described, or in any other manner essentially the same in principle.

E. B. CHEREVOY.

Witnesses:
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A. P. BROWNE.