

No. 871,230.

PATENTED NOV. 19, 1907.

L. G. MERRITT.  
VENEER CUTTING MACHINE.

APPLICATION FILED OCT. 5, 1906.

2 SHEETS—SHEET 1.

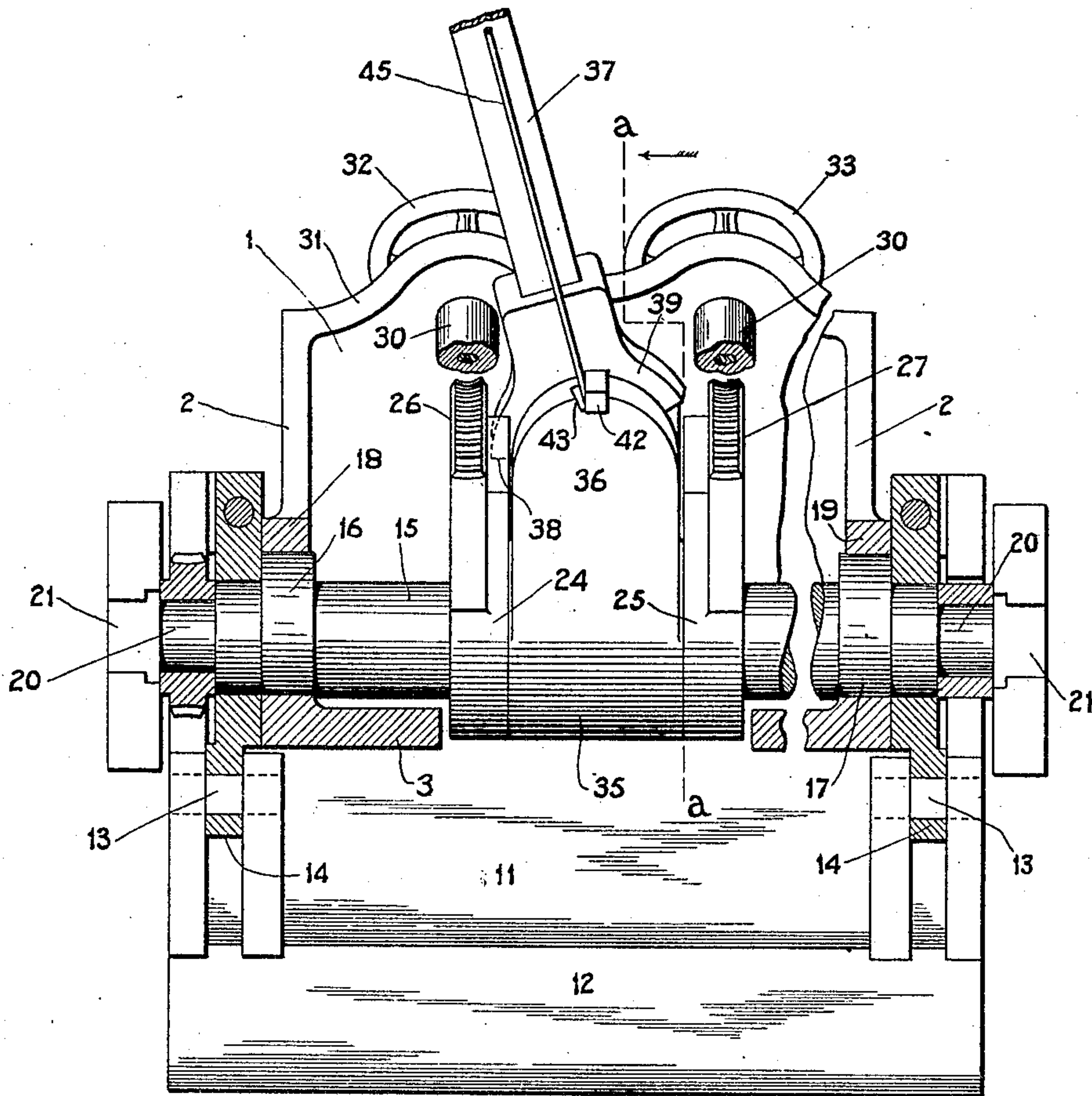


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 5.

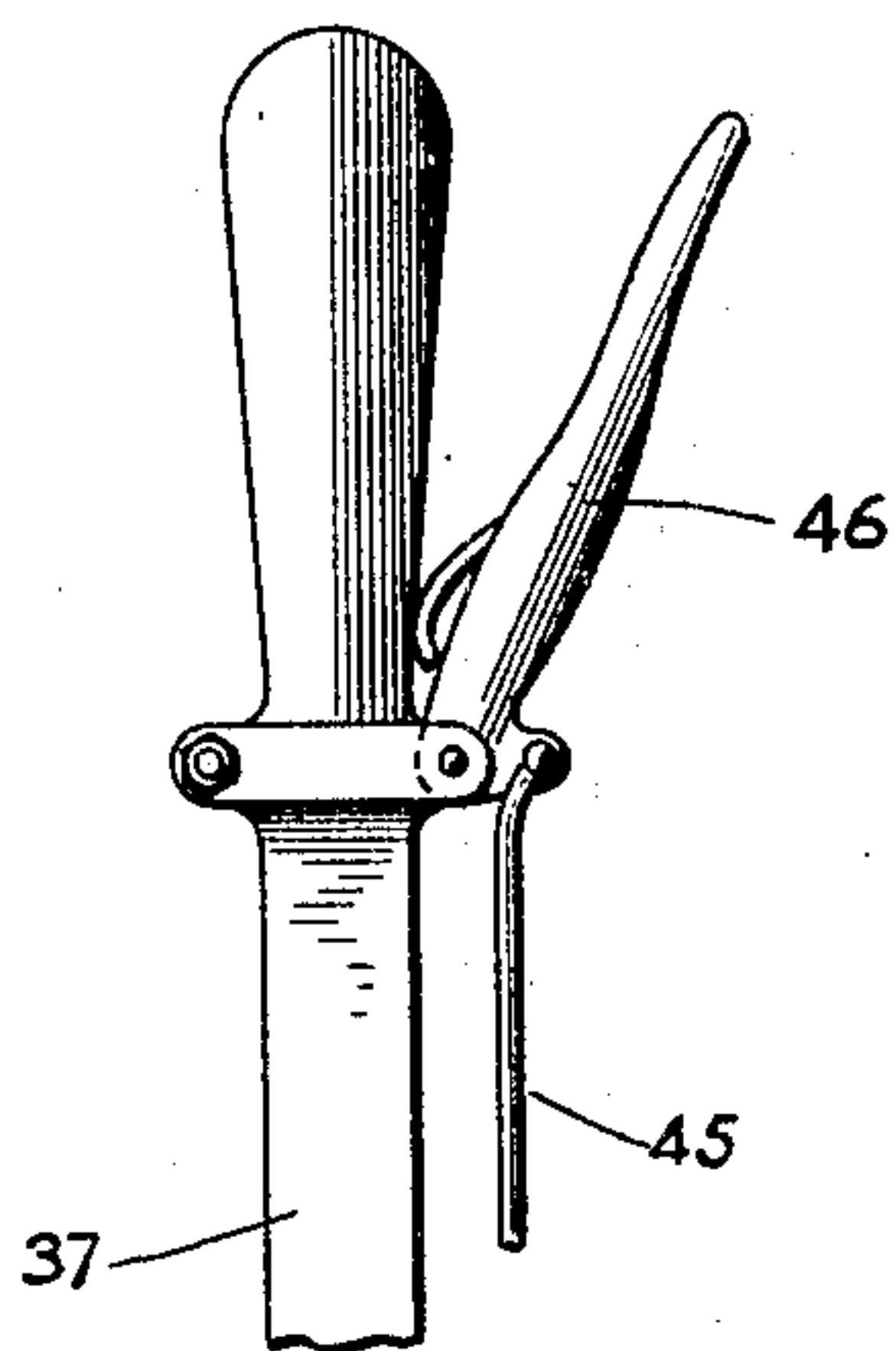


Fig. 2.

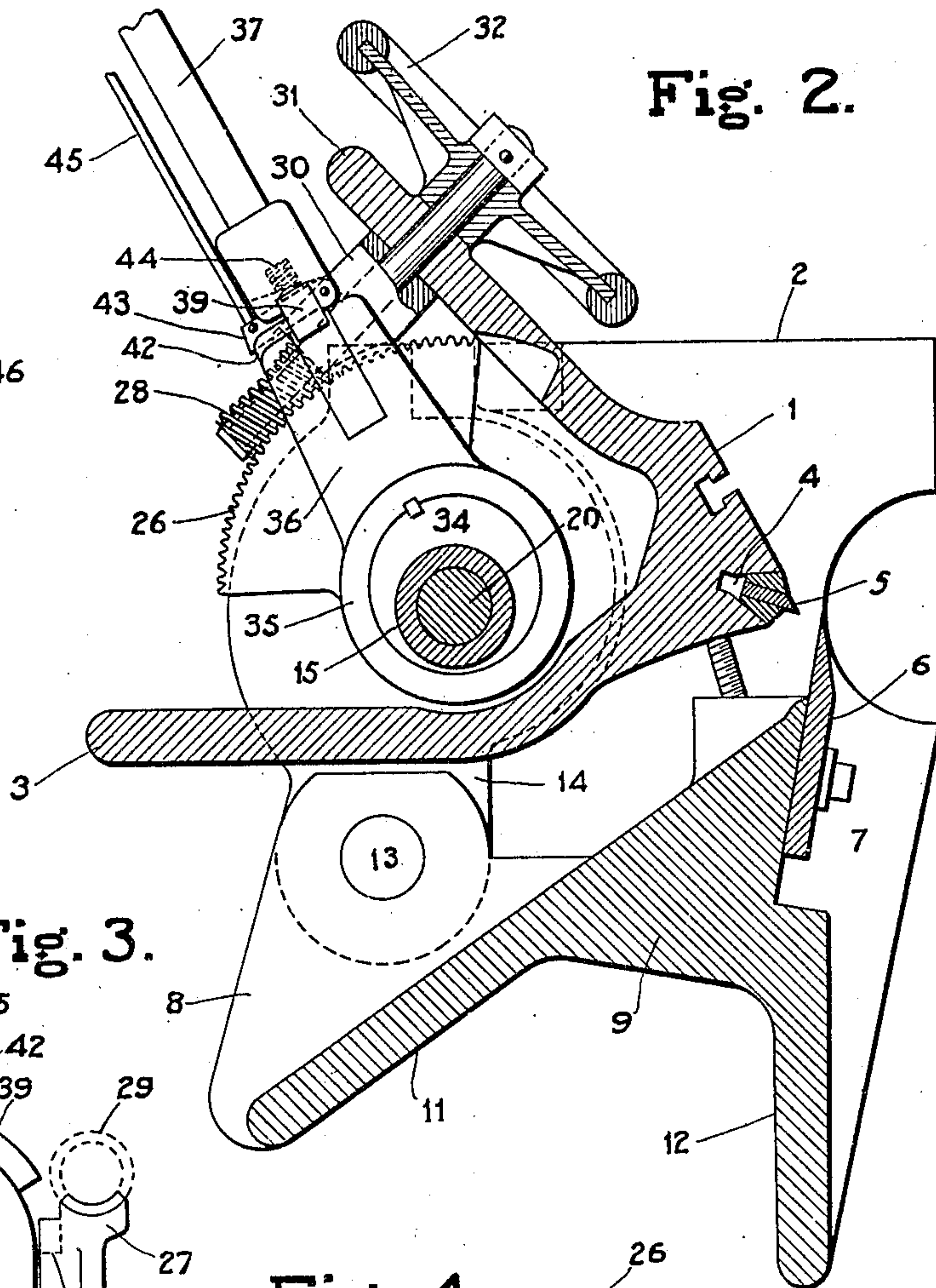


Fig. 3.

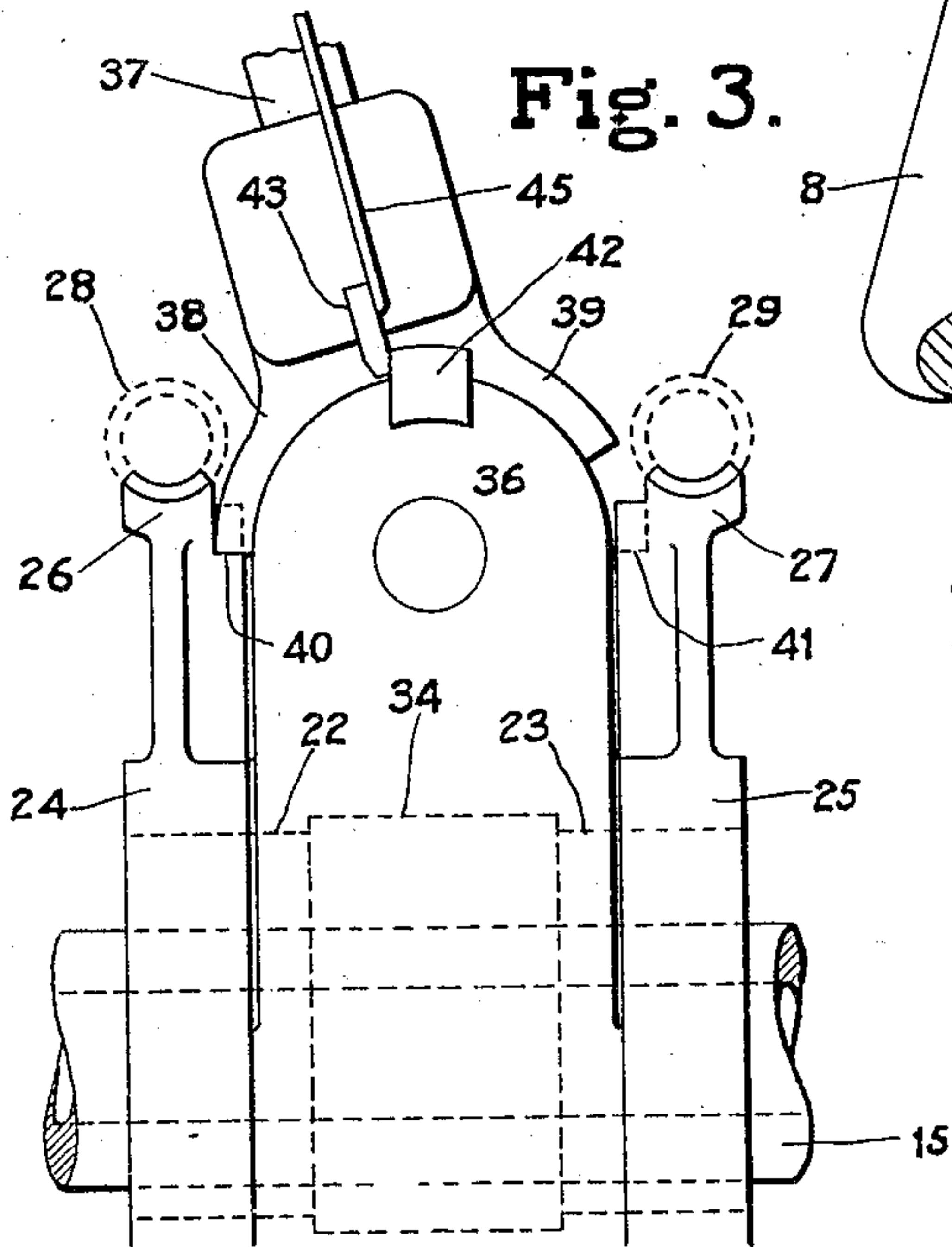
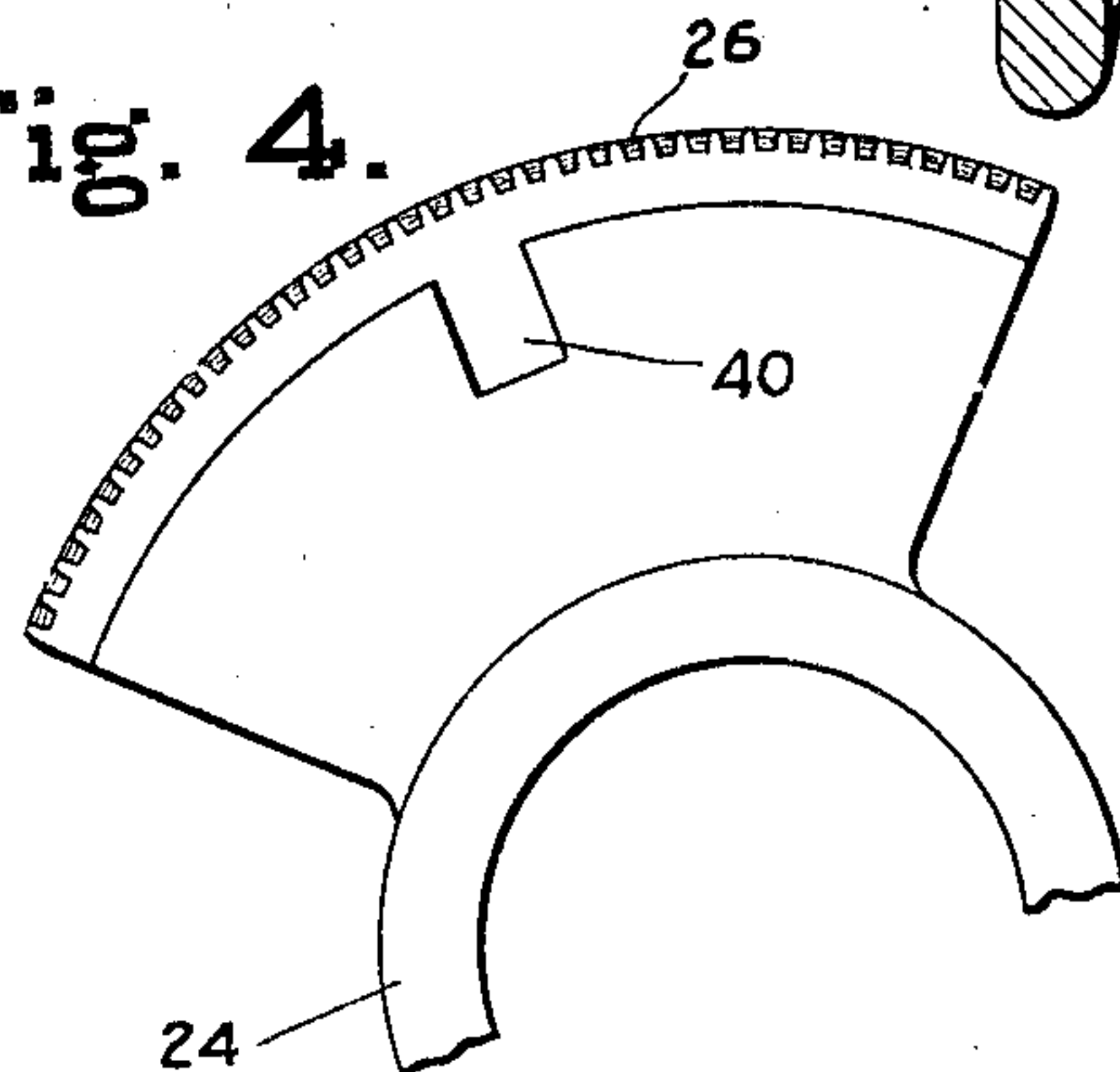


Fig. 4.



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# UNITED STATES PATENT OFFICE.

LOUIS G. MERRITT, OF LOCKPORT, NEW YORK.

## VENEER-CUTTING MACHINE.

No. 871,230.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed October 5, 1905. Serial No. 281,392.

*To all whom it may concern:*

Be it known that I, LOUIS G. MERRITT, residing at Lockport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Veneer-Cutting Machines, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to veneer-cutting machines in which the stock from which the veneer is to be cut is rotated or otherwise moved in front of a fixed knife.

It has for one of its objects to provide means for adjusting the pressure-bar or plate employed in a machine of the above type characterized by increased simplicity and efficiency.

Another object is the provision of means for controlling the movements of the pressure-plate with respect to the work whereby the same is given several independent movements and whereby also it may be easily and quickly tilted or swung back or swung up from the carriage-knife.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter described, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, wherein is illustrated one of various possible embodiments of my invention, Figure 1 is a view in elevation, partly in section, of a portion of a veneer-cutting machine constructed in accordance therewith. Fig. 2 is a sectional view through a portion of the machine taken through line *a-a* of Fig. 1, looking in the direction of the arrow. Fig. 3 is an elevation, partly in section, of a detail of construction. Fig. 4 is an elevation of an eccentrically-mounted collar and its worm segment. Fig. 5 is an elevation of a portion of the operating lever.

Similar reference characters refer to similar parts throughout the several views.

Preliminary to a description of the specific features of my invention and in order to render clearer of understanding certain of the important objects thereof, it may here be noted that, in veneer-cutting machinery,

it is necessary to regulate the width of the opening between the carriage knife and the pressure-plate or bar in accordance with the thickness of veneer to be cut. The width of this opening is preferably changed by a relative movement of the pressure-plate with respect to the knife, and this movement is a slow and measured one in order to determine accurately the thickness of veneer to be cut, such adjustment being made for each particular thickness. It is also desirable to provide a quick clearing movement for the pressure plate, so that from time to time the machine may be cleared from clogging pieces of wood, such as slivers, etc. It is, moreover, often desirable when cutting a log to start in and cut the outside thereof into veneer of a certain thickness for certain uses, and then, when the log is cut down to some extent, to cut veneer of other thickness for other purposes, as often the quality of the wood, or its color, changes in going from the outside to the heart. To stop the machine and set the pressure-plate to the new thickness would, of course, consume valuable time, and I have therefore found it desirable to provide mechanism such that the pressure-plate may be moved from an initial working position to or from a second working position by a quick movement, independent measured adjusting means being provided for the pressure-plate when the same occupies either of said positions. I have also found it desirable to provide single clearance mechanism adapted to withdraw the pressure-plate quickly from either of its working positions, and to tilt the same upon its bearings.

The above and other advantages are secured in constructions of the nature of that hereinafter described.

Referring now to the drawings, 1 denotes the main casting or frame for the pressure-plate, herein designated "cap", substantially triangular in cross section, and provided with legs or side plates 2 and 3. In a planed groove 4 in the forward portion of cap 1 pressure-plate 5 is located and supported adjustably by suitable means not described herein, as the same comprises no essential part of my present invention. Knife 6 is supported on knife-carriage 7, constituted, as herein shown, by an integral casting having end-plates 8 and a connecting bar or frame 9, which has downwardly-extending plates or legs 11 and 12 and is pivotally connected or



hinged at 13 to hangers 14. At this point, it may be noted that, while cap 1 and knife-carriage 7 have been described herein as castings, such parts may be built up of a plurality of parts; the present structures are, however, preferred, by reason of their strength and rigidity.

Shaft 15 provided with eccentric portions 16 and 17 passes through sleeves 18 and 19 formed in the rear of cap 1, furnishing thereby an eccentric support for said cap, so that, by rotation of shaft 15, cap 1 and the pressure-plate will be adjusted horizontally, or, in other words, moved to or from the work, in order that the position of the said pressure-plate with reference to the work and to knife 6, with which it coöperates, may be properly adjusted to cut any desired thickness of veneer.

For purposes of adjusting cap 1 and the pressure-plate carried thereby by means of shaft 15, it is only necessary that said shaft be supported rotatively in suitable fixed bearings in the framework of the machine. In the present instance, however, shaft 15 is hollow, forming thereby a long, hollow sleeve through which passes a second shaft 20 having bearings at its ends in planed blocks 21, which are adapted to slide in planed ways in the framework of the machine. The ends of shaft 15 are journaled in hangers 14 and, above the shaft and hangers, are supported by shaft 20 bearing in blocks 21. It will be apparent, therefore, that shaft 15, being rotatively supported, will, by a rotation thereof one way or the other, carry cap 1 forward and back, while at the same time, it, being pivotally supported, may be tilted or swung upward as desired.

Mounted loosely upon eccentric portions 22 and 23 upon shaft 15, are collars 24 and 25 spaced apart, as shown, each of which is provided with a worm-wheel 26 and 27 shaped preferably in the form of a segment. Worms 28 and 29 extending through housing 30 connected with lug or plate 31 of cap 1 engage worm-wheels 26 and 27 respectively, and are provided with operating hand-wheels 32 and 33.

Located between loose collars 24 and 25 and upon a similarly constructed and arranged eccentric 34 of shaft 15 is a collar 35 keyed fast to said eccentric portion, or cast integral therewith, as may be desired. Collar 35 is provided with ears 36, and between said ears lever 37 is pivoted, the pivot being arranged transversely of the axis of shaft 15, so that the throw of said lever is parallel with the axis. Lever 37 is provided with lugs or jaws 38 and 39 arranged at either side thereof at its lower end, which are adapted to engage with recesses or notches 40 and 41 located in collars 24 and 25 respectively, a lug, when in engagement with either of said recesses, operating to lock that collar with the

shaft 15, as will be obvious. In order that lever 37 may be maintained at either side of its pivot and locked with either of collars 24 or 25, a lug 42 is provided upon one of fixed ears 36 of collar 35, which is adapted to be engaged at either side thereof by a latch 43 mounted to reciprocate longitudinally of lever 37 controlled by spring 44 and adapted to be lifted out of engagement with lug 42 by rod 45 connected with clasp 46 mounted pivotally upon the upper end of lever 37.

Having thus described my invention, the operation thereof, which will be largely obvious, is substantially as follows: The pressure-plate 5 is moved toward or from the work in a substantially horizontal line by the rotation of shaft 15, the eccentric bearing portions 16 and 17 of which support cap 1 by means of sleeves 18 and 19, as will be understood. When lever 37 is in the position shown in Fig. 1, jaw 38 is in engagement with recess 40 of collar 24. Collar 24 and worm-wheel 26 will, therefore, be positively connected with shaft 15 and act as one piece, keyed fast thereto, and the pressure-bar can then be adjusted by means of hand-wheel 32 and worm 28 actuating said worm-wheel. In this way, a gradual, measured, and comparatively slow movement will be given to the pressure-plate, by reason of the worm and hand-wheel, which adjustment may be regulated within exceedingly small limits, as by turning hand-wheel 28 through a portion of a revolution. At this point, it may be noted that it is often desirable, when cutting veneer of a different thickness to be used for different purposes, to shift the pressure-plate to a second working position without the necessity of moving the pressure-plate to such position, by means of the slow worm and segment mechanism. In the accomplishment of this result, recess 41 in loose collar 25 is disposed in an advanced position from that occupied normally by recess 40 in loose collar 24, and it is therefore only necessary, in accomplishing a quick forward movement of pressure-plate 5, to swing lever 37 upon its pivot, disengaging collar 25 from shaft 15, and throw the same forward until jaw 39 engages with recess 41 in loose collar 26, fixing the same to shaft 15. Should it now be desired to move pressure-plate 5 slowly toward or from the work, such slight adjustment as may be necessary may be accomplished by means of hand-wheel 33 and worm 29 co-acting with segment 27. It will be apparent, therefore, that pressure-plate 5 can be instantly locked in either one of two predetermined working positions without the necessity of performing the operation by the slow and gradual movement provided by the worm and segment mechanism.

It is to be noted that, when the proper adjusted position of the pressure-plate is obtained through adjusting movement by



either of the hand-wheel and worm mechanisms, if the pressure-plate is then retracted from either of its relatively fixed working positions and tilted up by means of lever 37, it may be returned to exactly the same adjusted position when said lever is thrown back so that either of jaws 38 and 39 will engage with the recess formerly occupied thereby. Thus the operation of the lever in producing a clearance movement of the pressure-plate does not disarrange the adjustment of pressure.

If desired, an index and pointer may be provided for use in connection with each of hand-wheels 32 or 33 to indicate exactly the distance between the knife and the pressure-plate.

As hereinbefore pointed out, it is often desirable to retract the pressure-plate quickly from the work in order to clear the machine of clogging substances, such as dirt, slivers, etc. This operation may be readily accomplished by disconnecting the lugs of lever 37 from loose collars 24 and 25 and throwing the same in a rearward direction, thereby rotating shaft 15, and, by the eccentric connection of said shaft and cap 1, withdrawing pressure-plate 5 quickly from the work. Inasmuch, however, as cap 1 is pivotally mounted on shaft 15, it is possible, as will be apparent from the drawings, by continuing the movement of lever 37 in its course after it comes in contact with lower plate or leg 3 to tilt said pressure-plate about the bearings of shaft 15 as points of support and carry its forward end upward and away from the work. Thus, by a single movement of lever 37, pressure-plate 5 may be withdrawn from the work a short distance and then tilted, furnishing a free access to the parts beneath. During this retractive and tilting operation, collars 24 and 25, being loose on shaft 15, are inoperative.

It will, accordingly, be apparent that I have provided mechanism in a machine of this type well adapted to achieve the objects of my invention. By reason of the provision of the plurality of working positions for the pressure-plate, a large amount of time is saved without a sacrifice in accuracy of operation.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention could be made without departing from the scope thereof, I intend that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I desire it also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention

which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a veneer cutting machine, the combination with a pressure-plate, of means for moving said pressure-plate comprising separate means for controlling and operating said plate to give a slow and measured movement, and further means for giving the said pressure-plate a comparatively quick movement the extent of which is determinable by either of said first operating means.

2. In a veneer cutting machine, the combination with a pressure-plate, of means for giving said pressure-plate slow and measured movements or comparatively quick movements toward or from different working positions, said means comprising independent elements to impart and control the slow and measured movements, and a further element for effecting the quick movements the extent of which is determined by said first-mentioned elements.

3. In a veneer cutting machine, the combination of a pressure-plate, means comprising separate elements adapted to move said pressure-plate toward or from the work from different positions with respect thereto with slow and measured movements, and means for moving said plate from one of said positions to another thereof with a comparatively quick movement.

4. In a veneer-cutting machine, in combination, a pressure-plate, a plurality of means for moving said pressure-plate to and from the work with a slow and measured adjusting movement, means for connecting said pressure-plate to any of said moving means at various adjusted positions thereof, and means for moving said pressure-plate to and from the work with a comparatively quick clearing movement.

5. In a veneer-cutting machine, in combination, a pressure-plate, a plurality of means for moving said pressure-plate to and from the work with a slow and measured adjusting movement, means for locking said pressure-plate to said moving means at various adjusted positions thereof, said last-mentioned means being also adapted upon disconnection from said first-mentioned moving means to give said pressure-plate a comparatively quick clearing movement to and from the work.

6. In a veneer cutting machine, the combination with a pressure-plate, of means for moving said pressure-plate comprising separate elements for controlling and operating said plate to give the same a slow and measured movement, and further means for giving said plate a comparatively quick movement the extent of which is determinable by either of said first operating means, said last-



mentioned means being also adapted to remove said plate from the work with a quick clearing movement.

7. In a veneer cutting machine, the combination of a pressure-plate, means comprising separate elements adapted to move said pressure-plate toward or from the work from different positions relative thereto with slow and measured movements, and means for connecting said pressure-plate with either of said elements.

8. In a veneer cutting machine, the combination of a pressure-plate, means comprising separate elements adapted to move the pressure-plate toward or from the work from different positions with respect thereto with slow and measured movements, and means adapted to effect a positive connection between said pressure-plate and either of said aforementioned elements and also adapted to move said pressure-plate from one position to another with a comparatively quick movement.

9. In a veneer cutting machine, the combination of a pressure-plate, means for moving said pressure-plate toward or from the work from one position relative thereto with a slow and measured movement, means for moving said plate to a different position relative to the work with a quick movement, and means for moving said plate to or from the work from said last-named position with a slow and measured movement.

10. In a veneer cutting machine, the combination of a pressure-plate, means for moving said pressure-plate toward or from the work from one position relative thereto with a slow and measured movement, means for moving said plate to a different position relative to the work with a quick movement, and means for moving said plate to or from the work from said last-named position with a slow and measured movement, said second-mentioned means being adapted to move said pressure-plate to or from the work from any position relative thereto to which it may have been moved with a quick clearing movement.

11. In a veneer-cutting machine, in combination, a pressure-plate adapted to assume a plurality of positions with respect to the work, means for moving the pressure-plate from one of said positions to another by a comparatively quick movement, and independent means for adjusting the pressure-plate toward or from the work when in either of said working positions by a slow and measured movement, said first-mentioned means being adapted to move the pressure-plate from either of said working positions toward or from the work with a comparatively quick clearing movement.

12. In a veneer-cutting machine, in combination, a pressure-plate, an immediate

support for the pressure-plate adapted to assume and hold the pressure-plate in a plurality of positions with respect to the work, means for moving said support when the same is in one of said positions toward or from the work with a slow and measured movement, means for moving said support from one of said positions to another with a comparatively quick movement, and means for moving said support from either of said positions with a comparatively quick clearing movement and along the path in which the support moves when moved by said first-mentioned means.

13. In a veneer-cutting machine, in combination, a pressure-plate, an eccentric shaft, connections between said shaft and said plate whereby the plate is adjusted upon rotation of the shaft, said shaft being adapted to maintain said plate in a plurality of positions with respect to the work, means for giving said shaft a gradual rotation, the limits of which may be positively fixed whereby a definite amount of adjusting movement may be given to the pressure-plate, means for giving said shaft a quick rotation whereby a rapid movement may be given said plate to a second position with respect to the work, and means for giving said shaft a gradual rotation when in said second position, the limits of which may be positively fixed, whereby a definite amount of adjusting movement may be given to said pressure-plate.

14. In a veneer-cutting machine, in combination, a pressure-plate, a shaft upon which said pressure-plate is eccentrically mounted, said shaft being adapted to hold said pressure-plate in a plurality of different positions with relation to the work, means for giving said shaft a quick throw to carry said pressure-plate rapidly toward or from the work, and independent means for giving said shaft a slow, measured throw whereby the position of said pressure-plate may be accurately adjusted within narrow limits from either of said working positions.

15. In a veneer-cutting machine, in combination, a pivotally-mounted pressure-plate, means whereby said pressure-plate may be maintained in a plurality of relatively fixed positions with relation to the work, and means whereby said pressure-plate may be moved rapidly from one of said positions to another, said last-mentioned means being adapted by one operation to retract said pressure-plate from the work and then tilt or rock the same upon its pivots.

16. In a veneer-cutting machine, in combination, a pressure-plate, a shaft upon which said pressure-plate is eccentrically mounted, a plurality of collars loose upon said shaft, a worm-wheel carried by each of said collars, worms adapted to engage each of said worm-wheels, a collar rigid with said



shaft, a lever connected with said second collar whereby said shaft may be rotated, and means for locking said second collar with either of said loose collars.

5 17. In a veneer-cutting machine, in combination, a pressure-plate, a shaft upon which said pressure-plate is eccentrically mounted, a plurality of collars loose upon said shaft, a worm-wheel carried by each of  
10 said collars, a worm engaging each of said worm-wheels, a collar rigid with said shaft, a notch or recess in each of said loose collars, a lever mounted upon said fixed collar so that it will carry said collar with it in its trans-  
15 verse movement of said shaft, but free to swing upon said collar in a direction parallel with said shaft, and lugs upon said lever adapted to engage either of the recesses in said loose collars.

20 18. In a veneer-cutting machine, in combination, a pressure-plate, a shaft upon which said pressure-plate is eccentrically mounted, a pair of collars loose upon said shaft, a pair of worm-wheels, one of which is  
25 carried by each collar, a pair of worms, one for each worm-wheel, a fixed collar rigid with said shaft, a notch or recess in each of said loose collars, one of said notches being normally in advance of the other, and means  
30 adapted to enter either of said notches to lock said eccentric shaft with the collar whose notch is engaged thereby.

19. In a veneer-cutting machine, in combination, a pressure-plate, a shaft upon  
35 which said pressure-plate is eccentrically mounted, a pair of collars loose upon said shaft, said collars being mounted upon eccentric portions of said shaft, a worm-wheel upon each collar, a worm for each worm-wheel,  
40 said collars being adapted normally to maintain said pressure-plate by means of the co-acting worm-wheel and worms in different positions with respect to the work, a collar fixed upon said shaft, and means for connect-  
45 ing said fixed collar with either of said loose collars.

20. In a veneer-cutting machine, in combination, a pressure-plate support, an eccentric shaft supporting said pressure-plate  
50 support, a pair of collars loose upon said shaft, each of which carries a worm-wheel, worms housed in said pressure-plate support, each of which co-acts with a worm-wheel, a fixed collar upon said shaft arranged  
55 intermediate said loose collars, a lever pivoted to said fixed collar, and means carried by said lever adapted to be engaged with either of said loose collars to attach the same rigidly to said shaft.

60 21. In a veneer-cutting machine, in combination, a pressure-plate, a pressure-plate cap, an eccentric shaft upon which said pressure-plate is pivotally supported, a pair of worm-wheels loose upon said shaft, a collar

keyed to said shaft and arranged intermediate said worm-wheels, recesses in said worm-wheels, projecting lugs upon said collars, a lever pivoted between said lugs to swing toward and from said worm-wheels and having projections, one of which is  
70 adapted to engage with either of the recesses in said worm-wheels to lock the wheel engaged thereby to said shaft.

22. In a veneer-cutting machine, in combination, a pressure-plate, means for moving  
75 said pressure-plate toward or from the work from either of two working positions with a comparatively slow and measurable adjusting movement, means for moving said pressure-plate toward or from the work with  
80 a comparatively quick clearing movement from either of said working positions, and a single operating lever by the movement of which said first-mentioned means may be disconnected from the pressure-plate and  
85 said second-mentioned means actuated.

23. In a veneer-cutting machine, in combination, a pressure-plate, independent elements for moving said pressure-plate toward or from the work with a comparatively slow  
90 and measurable adjusting movement from either of two positions with relation to the work, and a single means whereby either of said first-mentioned independent means may be disconnected from said pressure-  
95 plate and the pressure-plate moved toward or from the work with a comparatively quick clearing movement.

24. In a veneer-cutting machine, in combination, a pressure-plate, means for moving  
100 said pressure-plate to or from the work with a slow and measurable movement, means arranged in advance of said first-mentioned means adapted to move said pressure-plate toward or from the work with a slow and  
105 measurable movement, and means adapted to move said pressure-plate by a comparatively quick movement from engagement with said first-mentioned means to engagement with said second-mentioned means.  
110

25. In a veneer-cutting machine, in combination, a pressure-plate, means for moving  
said pressure-plate to or from the work with a slow and measurable movement, means  
115 arranged in advance of said first-mentioned means adapted to move said pressure-plate toward or from the work with a slow and measurable movement, and means adapted to move said pressure-plate by a comparatively quick movement from engagement  
120 with said first-mentioned means to engagement with said second-mentioned means, said last-mentioned means being adapted to move said pressure-plate with a quick clearing movement toward or from the work from  
125 either of said first- or second-mentioned means.

\* 26. In a veneer-cutting machine, in com-

combination, a pressure-plate mounted for movement toward or from the work, a shaft in operative connection with the pressure-plate whereby the pressure-plate is so moved,  
5 means acting upon said shaft for moving said pressure-plate with a measurable adjusting movement from either of two relatively fixed positions with relation to the

work, and means for moving said pressure-plate with a quick clearing movement. 10

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

LOUIS G. MERRITT.

Witnesses:

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CLARA FITHIAN.