Feb. 16, 1932. G. H. OSGOOD 1,846,515

PRESSURE BAR FOR VENEER MACHINES

Filed April 21, 1930

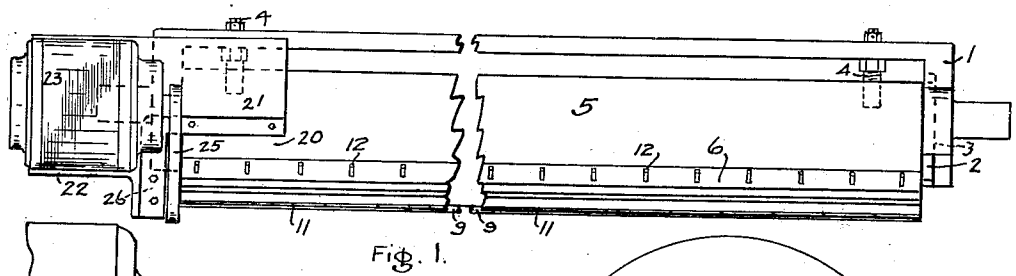


Fig. 1.

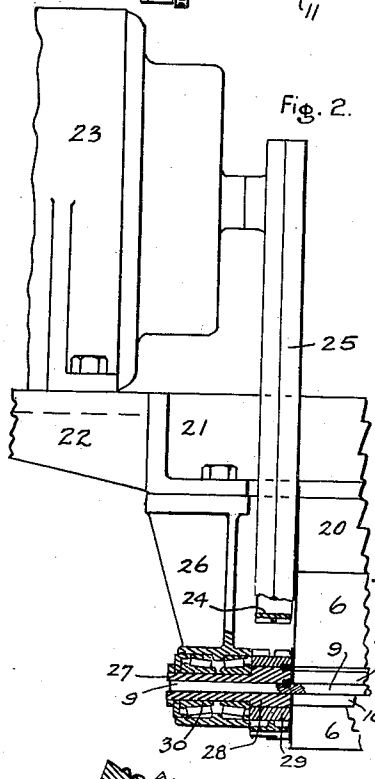


Fig. 2.

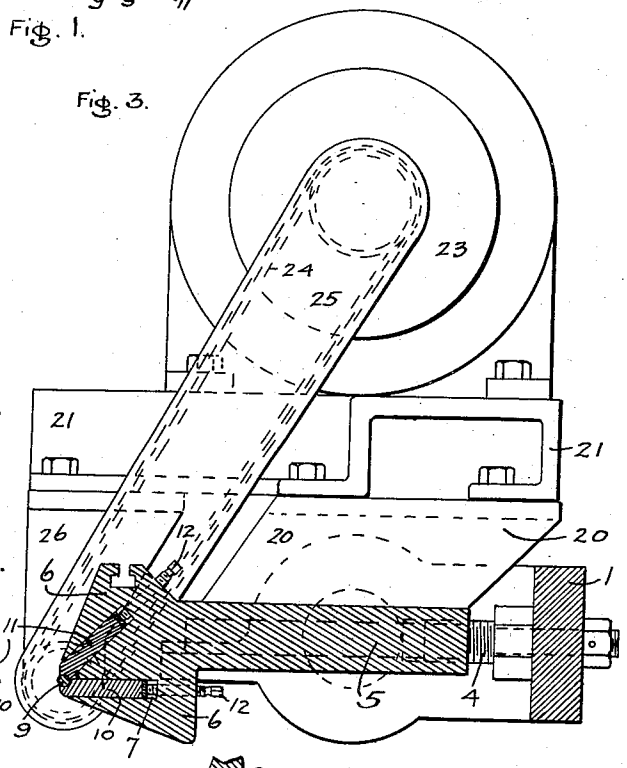


Fig. 3.

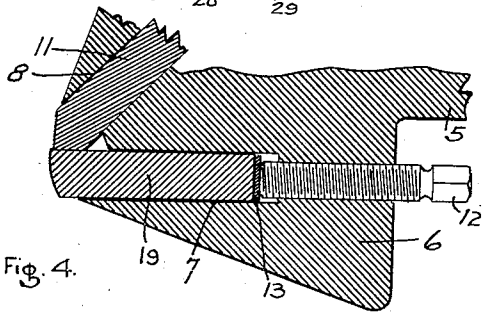


Fig. 4.

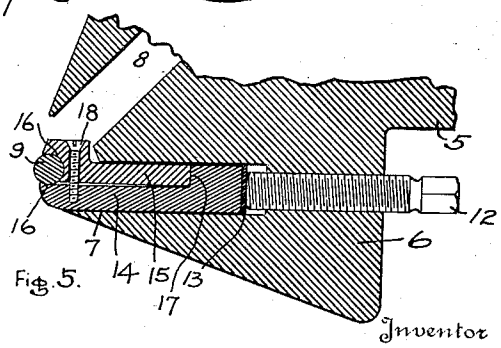


Fig. 5.

Inventor

George H. Osgood

By

Attorney

Patented Feb. 16, 1932 1,845,515

UNITED STATES PATENT OFFICE

GEORGE H. OSGOOD, OF TACOMA, WASHINGTON

PRESSURE BAR FOR VENEER MACHINES

Application filed April 21, 1930. Serial No. 445,966.

My invention relates to machines for slicing or cutting a sheet of veneer from a block of wood, and has special reference to the pressure bar thereof which engages the wood at a point adjacent to but spaced from the cutting edge of the knife, to prevent the splitting or breaking of the wood. The objects of my invention are to provide a pressure bar wherein the strain-bearing member is adapted to receive either a rotary pressure member or a fixed nose-plate; and wherein the strain-bearing member adjustably supports the pressure member throughout its entire length to carry the pressure reaction between the wood and said pressure member without producing excessive friction or bending action therein. Further objects of my invention are, to provide means of connecting the gearing which drives the rotating pressure member with said pressure member; to provide means for preventing the chattering of the pressure member; to provide means for supporting the driving motor on the pressure bar; and to provide a bar which is simple in construction, easy to repair or replace the wearing surface, stiff and strong in construction, and which effectively produces a smooth and uniform sheet of veneer.

I attain these and other objects by the devices, mechanisms, and arrangements illustrated in the accompanying drawings, in which—

Fig. 1 is a plan view of my improved pressure bar mounted in the usual carrier yoke; Fig. 2 is a front elevation of the right-hand end of the pressure bar, showing the overhanging arrangement for supporting the motor, and showing the devices for connecting the driving chain gear to the driven pressure member in section; Fig. 3 is a vertical cross-section of the pressure bar, showing the motor and its supporting attachment in side elevation; Fig. 4 is a section of a portion of the pressure bar showing its adaptation for use with a nose plate; and Fig. 5 is a similar view showing a modified form of means for holding the pressure member in the pressure bar.

Similar numerals of reference refer to similar parts throughout the several views.

In the following description of my invention its application to a rotary veneer machine or lathe is described in detail, but it is to be understood that it may be used on rectilinear machines, or slicers, with suitable modifications which will be easily understood and apparent to those skilled in the art.

In veneer lathes, the pressure bar, which bears against the wood adjacent to and in fixed relation to the knife, is carried by the yoke 1, and is supported by means of two horizontal lugs 2 at its ends, said lugs fitting in and adapted to be adjustably slid in suitable horizontal grooves 3 in the tines of the said yoke 1. The position of the pressure bar within the said yoke 1 is controlled by means of heavy screws 4 between the said parts. The yoke 1 is suitably moved to keep the pressure bar in constant relation to the veneer cutting knife.

The pressure bar comprises a heavy horizontal plate 5 extending the entire width of the machine between the tines of the yoke 1, and having its major cross-sectional dimension horizontal and lying preferably slightly above the point of application of the pressure to the veneer. The front end of this plate 5 is enlarged both upward and downward to form a head 6, said enlargements being proportioned to give ample metal to carry the stresses developed therein by the operation of the machine. This head 6 is provided with a lower horizontal slot 7 whose central axis lies slightly below the parallel line through the point of contact with the wood. The head 6 is also provided with an upper inclined slot 8 extending upward and rearward at about 45 degrees to the horizontal and whose central axis lies slightly above the parallel line through the point of contact with the wood. Although this plate is thick and heavy yet it is light in comparison with the stress-bearing members of former machines, without losing any substantial degree of stiffness or in any way failing to be strong enough to carry all the stresses developed by the pressure on the wood, and it further has a great advantage in being much easier to cast and to finish.

When the character of the wood demands

a driven pressure rod 9 (Fig. 3) to contact with the block from which the veneer is being stripped then the pressure is applied thereto through a series of separate pressure blocks 10 lying within the said horizontal slot 7 and grooved at their upper forward edges to receive the lower portion of the said pressure rod 9. Similarly the said rod 9 is held down on the said blocks 10 by means of the series of separate blocks 11 lying within the said inclined slot 8. Each of said blocks 10 and 11 are independently adjustable by means of independent backing screws 12 passing through the enlargements forming the head 6 of the bar 5. The stresses from the pressure of the rod 9 on the wood are therefore carried by the several blocks 10 and 11 to the bar 5 through the said screws 12. The pressure rod 9 is of small diameter, about one-half inch being usual and, being some nine feet long, has substantially no strength to resist the pressure applied through it to the wood, hence it is necessary that it be supported by the blocks 10 and 11 at all points in its length and, since the wear of the rod 9 cannot be entirely uniform from end to end, it is evident that the said blocks must be separately adjustable. However, in order to provide a certain degree of continuity between the adjacent blocks I prefer to insert a strip 13 of thin metal in the slots 7 and 8, between the said blocks 10 or 11 and the screws 12.

When it is desired that the rod 9 be stationary, then the two sets of blocks 10 and 11 are forced outward slightly by their screws and therefore pinch the said rod 9 and prevent its rotation, thereby making a contact surface which is renewable when worn, by simply turning the rod.

In certain cases the above-described means of supporting the rod 9 may be modified as shown in Fig. 5. The blocks 10 and 11, above described, are herein substituted by a compound block comprising a main block 14, whose front or outer portion is cut to about one-half the thickness of the rear end, which fits in the slot 7. A supplemental block 15 fits in said cutaway portion and a groove 16 is cut in the contiguous outer edges of both said blocks 14 and 15, to receive the rod 9. The rear connection between said blocks 14 and 15 is formed with a shoulder 17, at right-angles to the axis of the block 14. The two said blocks may be fastened together by means of the screws 18, whereby the rod 9 is prevented from chattering when in operation.

A further modification of my invention is illustrated in Fig. 4, wherein the rod 9 and block 10 are substituted by a single nose plate 19 extending from end to end of the slot 7 and shaped to have a sliding contact with the wood without materially damaging the wood as it is slid therepast. This nose plate 19 may be held from chattering in the slot 7 by means of the hold-down blocks 11, as in Fig. 3.

Since the pressure bar 5 must extend the full width of the wood to be engaged by the knife, it is evident that any means for independently driving the roller or rod 9 must be mounted beyond one end of the said bar. For this purpose I form a pad or platform 20 at one end of the bar and secure thereon a casting 21, which is provided with an overhanging cantilever part 22 adapted to receive the electric motor 23, which drives the rod 9 through the chain belt 24 enclosed in the protective casing 25. A hanger 26 extends down from the forward-extending part of the casting 21 and is provided with suitable bearings for the end of the rod 9, thereby making a strong and stiff connection between the motor shaft and the said rod 9 to prevent undue strain on the rod through the action of the said chain belt 24.

However, on account of the fact that the rod 9 is of very small diameter it is not practical either to mount the gear wheel, driven by the said belt 24, directly thereon, nor to provide it with suitable thrust bearings in said hanger 26, therefore I have invented the construction shown particularly in Fig. 2, wherein a sleeve 27 fits tightly on and is keyed to the said rod 9. This sleeve 27 is provided with a boss 28, formed integral therewith, at its inner end. A gear wheel 29 is fitted tightly on and is keyed to the said boss 28. Conical roller bearings 30 are suitably mounted between the sleeve 27 and the bearing cavity in the end of the hanger 26. Thus it will be seen that by this means I have provided a suitable thrust bearing for the rod 9 in the hanger 26 and a suitable gear wheel adapted to be engaged by the teeth of the chain belt 24 and that therefore the said rod 9 is prevented from end movement in the machine, is properly held from bending by the bearing in the hanger, and is rotated by the belt.

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

In a pressure bar for veneer machines, the combination of a stress-bearing member; a pressure block mounted therein; a pressure rod supported along its entire working length by said pressure block and one end extending beyond the end of said stress-bearing member; a single sleeve mounted on and secured to the said extended end of said pressure rod beyond the end of said pressure block; a single thrust bearing for said sleeve, and attached to but mounted beyond the end of said stress-bearing member; a motor mounted on said stress-bearing member; and driving means connecting said motor to said sleeve, engaging said sleeve between said bearing and said pressure block.

GEORGE H. OSGOOD.