

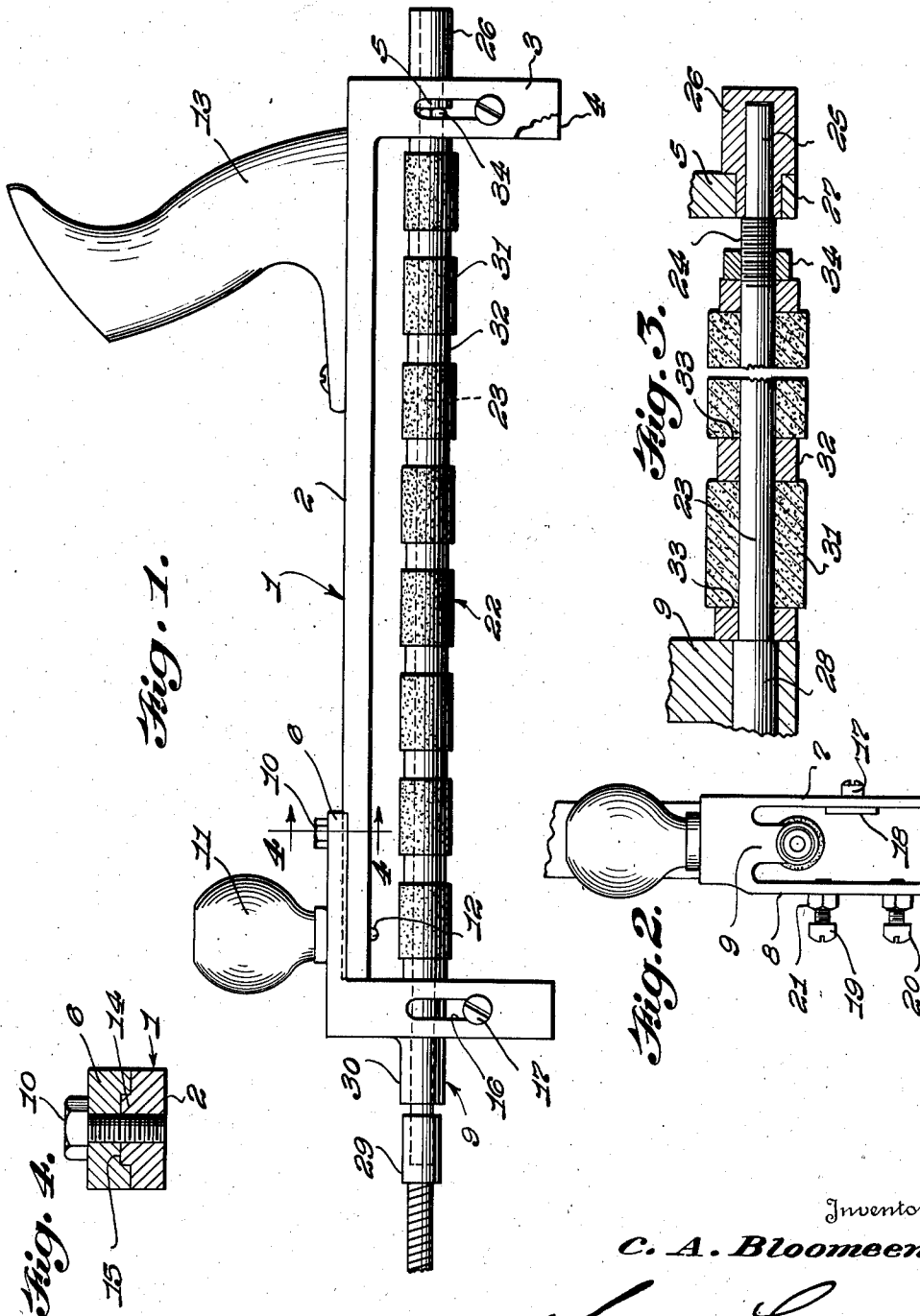
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GRINDER FOR GRINDING THE PRESSURE BARS OF VENEER CUTTING MACHINES

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GRINDER FOR GRINDING THE PRESSURE
BARS OF VENEER CUTTING MACHINES

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This invention relates to grinders and more particularly to an improved grinder for grinding the pressure bars of veneer cutting machines.

In the production of veneer and plywood, it is customary to mount large logs for rotative movement and to engage a knife with the surface of the log for removing sheets of wood of the desired thickness for forming the veneer. It is necessary, during this operation, to exert suitable compression along the surface of the logs immediately above the cutting edge of the knife, in order to prevent splitting and breaking of the wood ahead of the blade. For this purpose a roller is ordinarily employed. This roller is rotatably mounted in a bearing bed and extends throughout the length of the knife parallel therewith and bears against the log while the knife is cutting the sheet of wood therefrom. Inasmuch as the roller is quite small, it is necessary to provide reinforcement for said roller along its length. Said reinforcement takes the form of a bearing bed of untempered tool steel. Constant rotation of the roller requires frequent replacement thereof. Such replacement requires truing and finishing of the bearing bed. Up to the present time no simple and effective way has been devised by which this truing and finishing operation may be accomplished.

One object of my invention is, therefore, to provide a grinder which will be operative for quickly and efficiently truing and refinishing the bearing beds of pressure rollers of veneer cutting machines.

Another object of the invention is to provide a grinder employing a guide which will follow the shoulder of the pressure bar and assure that the surface of the bearing bed will be parallel with said shoulder.

A further object of the invention is to provide, in a grinder, a guide which is adjustable to the width and depth of the pressure bar.

Another object of the invention is to provide a grinder of the class described having a grinding roller which is formed of a plurality of grinding elements which are spaced from each other by sleeves or bushings so that there will be no danger of whipping and breaking of the roller when rotating at a high rate of speed.

Still another object of the invention is to provide a grinder which is simple in construction and which will be highly efficient in operation.

Other objects of the invention, not specifically mentioned hereinbefore, will become apparent during the course of the following description.

In the drawing:

Figure 1 is a side elevation of my improved grinder,

Figure 2 is an end view, partly broken away, of the invention,

Figure 3 is an enlarged detail sectional view showing the construction of the roller, and

Figure 4 is a detail vertical sectional view on the line 4-4 of Figure 1.

Referring now more particularly to the accompanying drawing, wherein like numerals of reference will designate like parts throughout the views, the numeral 1 indicates in general the frame of my improved grinder for pressure bars. The frame 1 includes a body 2 which is substantially rectangular in cross section and which is formed of cast metal of a suitable weight and thickness. The body 2 carries legs 3 and 4 at its rear end, said legs depending from the body and being disposed in parallel spaced relation to each other. In addition, the body includes an integral rear bearing 5 which extends between the legs and provides a support for the rear end of the grinding roller, to be described in more detail hereinafter.

Removably connected with the body at its forward end is a mounting bracket 6 which is of substantial L-shaped and which includes spaced parallel legs 7 and 8. A bearing 9, similar to the bearing 5, is mounted between the legs 7 and 8 and is formed integral on said bracket 6. In order to retain the bracket in operative position on the body 2, I provide a bolt 10 which is passed through the bracket and into the body. A handle knob 11 having a bolt 12, which extends through the bracket and through the body, is also provided to permit easy manual engagement with the forward end of the grinder. A handle 13 is mounted on the upper surface of the body 2 near the rear end thereof and provides means for engagement by the other hand of the user. As shown in Figure 4, the forward end of the body is stepped to define a tongue 14, which tongue is engageable in a mating groove 15, formed in the bracket 6. It will be seen that the tongue and groove 14 and 15 will cooperate for preventing lateral displacement of the bracket 6 on the body 2. As best seen in Figures 1 and 2 of the drawing, the legs 3 and 4 of the body 2 and the legs 7 and 8 of the bracket 6 have adjusting screws and guides mounted thereon. Inasmuch as the construction of the guides and the adjusting screws on the bracket 6 are identical with those on the legs 3 and 4, a description of those on said bracket 6 is thought to be sufficient. The legs 7 of the bracket 6 are formed with a slot 16 and extending through said slot is a set screw 17, said set screw having its inner end engaged in a guide plate 18, which guide plate is mounted on the inner surface of the leg 7 and is adapted for vertical adjustment thereon along the length of the slot 16. Tightening of the screw 17 will, of course, have the effect of locking the plate 18 in an adjusted position on the leg 7. The function of the guide, which includes the guide

plate 18, the slot 16 and the set screw 17, will be set forth in more detail hereinafter.

In order that my improved grinder may be adjusted for use on pressure bars of various widths, I provide adjusting bolts 19 and 20 which are carried on the leg 8 and which extend there-through so that their corresponding inner ends may engage the surface of a pressure bar. Lock nuts 21 are provided for locking the bolts 19 and 20 in desired adjusted positions.

In order to effect the actual grinding of the groove or bearing bed of a pressure bar, I provide a grinding roller which is indicated in general by the numeral 22. The grinding roller includes a mounting shaft 23 which is formed near its rear end with a threaded portion 24 and, rearwardly of the threaded portion, with a trunnion 25, said trunnion being rotatable in a bearing cap 26 of bronze or other suitable material. Said trunnion has a reduced end portion 27 mounted in the bearing 5. The opposite end of the shaft 23 is enlarged, as shown at 28 and is projected through the bearing 9 for engagement by a flexible drive shaft 29. The bearing 9 is projected, as shown at 30, so that the forward end of the shaft will be given downward bearing support.

Grinding elements 31 are mounted on the shaft 23, as best seen in Figure 3, and are spaced from each other by means of bushings 32. The bushings 32 are provided with concave faces 33 which confront the end faces of the grinding elements 31 and prevent turning movement of said grinding elements on the shaft 23. As shown in Figure 1, eight grinding elements are mounted on the shaft. It should be understood, however, that any suitable number of these elements may be employed. A nut 34 is screwed on the threaded portion 24 and into abutting relation with the innermost bushing, for retaining the bushings and elements against rotative movement.

In operation, when it is desired to grind a pressure bar, my improved grinder is placed upon the pressure bar with the grinding roller 22 in engagement in the groove. The guide plates 18 may be adjusted for regulating the depth of cut of the roller 22. As hereinbefore stated, the adjusting screws 19 and 20 may be adjusted for adapting the device for use on pressure bars of various widths. When rotative movement is imparted to the flexible drive shaft 29, said rotative movement will be communicated to the roller 22 for rotating said roller in the bearing bed or groove of the pressure bar and effecting the truing and finishing thereof. It should be understood that the handles 11 and 13 will be engageable for permitting ready shifting of the grinder along the pressure bar for assuring uniform grinding of the groove or bearing bed. Such uniform grinding will be insured by the guide plates 18.

Attention is called to the fact that, inasmuch as the roller 22 is formed of a plurality of grinding elements, which are spaced on the mounting shaft 23 by the bushings 32, whipping and breaking of the roller when operated at speeds up to four thousand to six thousand revolutions per minute, will not take place. The concave faces on the bushings 32 will effectively prevent slipping of the emery grinding elements 31 on the shaft 23.

It is thought that it will now be understood that I have provided a simple and highly efficient grinder for pressure bars. Further description is accordingly thought to be unnecessary.

Having thus described the invention, what is claimed as new is:

1. A grinder for pressure bars including a frame having a body, said body having a pair of spaced legs at one end thereof, a bearing carried by the body between the legs, a bracket carried by the body at its opposite end and having a pair of legs, a bearing carried by said bracket, and a grinding roller carried by the body and bracket and having a shaft having its ends journaled by the bearings.

2. A grinder for pressure bars including a frame having a body, a pair of legs carried by the body at one end thereof, a bracket carried by the body at the opposite end thereof, said bracket having a pair of legs, a bearing carried by the body between the legs, a bearing carried by the bracket between the legs of said bracket, means removably connecting the bracket with the body, and a grinding roller carried by the body and bracket and having a shaft having its opposite ends journaled by the bearings.

3. A grinder for pressure bars including a frame having a body, a pair of legs carried by the body at one end thereof, a bracket carried by the body at the opposite end thereof, said bracket having a pair of legs, a bearing carried by the body between the legs, a bearing carried by the bracket between the legs of said bracket, means removably connecting the bracket with the body, a grinding roller carried by the body and bracket and having a shaft having its opposite ends journaled by the bearings, and means carried by certain of the legs for permitting adjustment of the grinder for use on pressure bars of various widths.

4. A grinder for pressure bars including a frame having a body, a pair of legs carried by the body at one end thereof, a bracket carried by the body at the opposite end thereof, said bracket having a pair of legs, a bearing carried by the body between the legs, a bearing carried by the bracket between the legs of said bracket, means removably connecting the bracket with the body, a grinding roller carried by the body and bracket and having a shaft having its opposite ends journaled by the bearings, and guide means carried by the legs.

5. A grinder for pressure bars including a body having a pair of legs at one end thereof, a bracket carried by the body at the other end thereof and having a pair of legs, a bearing carried by the body between the first-mentioned legs, a bearing carried by the bracket between the legs thereof, a grinding roller carried by the body and bracket and having a shaft having its ends journaled in the bearings, and guide means carried by certain of the legs, said guide means including guide plates, slots formed in certain of the legs, and set screws engageable through the slots and in the guide plates.

6. A grinder for pressure bars including a frame having a body, a pair of legs formed on the body at one end thereof, a bracket carried by the body at the opposite end thereof and having a pair of legs, and a grinding roller rotatable between the legs and including a plurality of spaced grinding elements.

7. A grinder for pressure bars as recited in claim 6 including a handle on the body for manual engagement by one hand of the user, and a handle on the bracket for manual engagement by the other hand of the user.

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