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GRINDING OR POLISHING MACHINE

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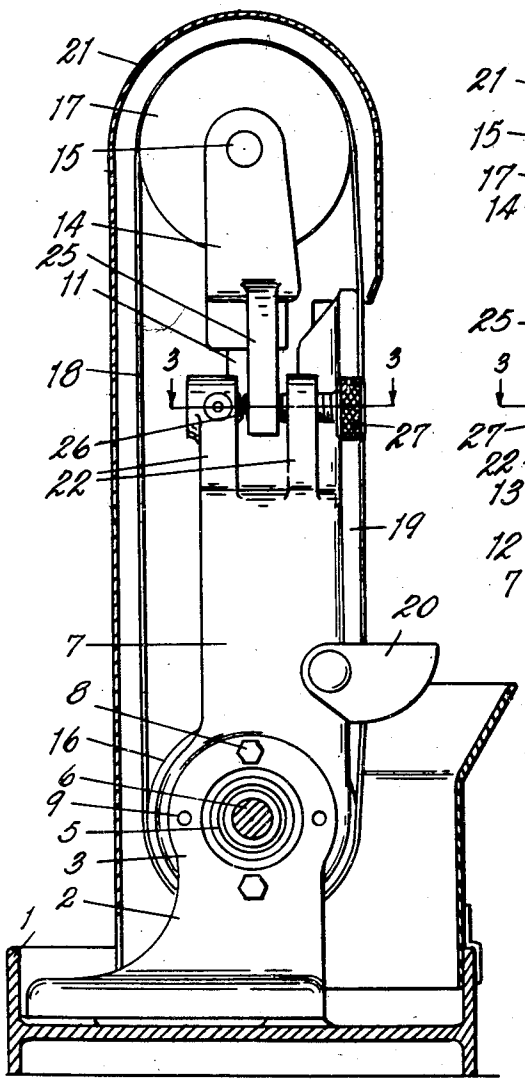

FIG. 1

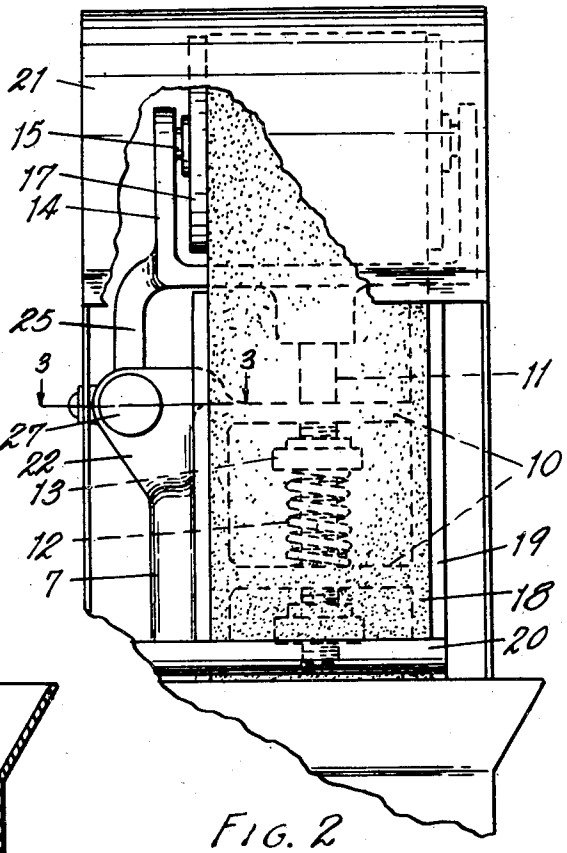

FIG. 2

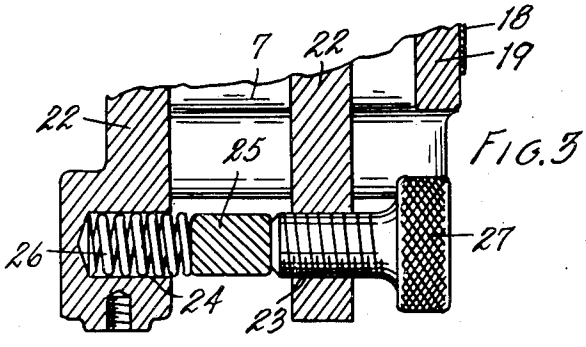

FIG. 3

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GRINDING OR POLISHING MACHINE

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3 Claims. (Cl. 51—135)

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This invention relates to improvements in grinding or polishing machines.

The main objects of this invention are:

First, to provide in a grinding or polishing machine an effective means for aligning the pulleys of a belt so that the belt will track in the center of the pulleys.

Second, to provide a belt pulley aligning means which can be quickly and easily adjusted by the operator while the machine is in operation.

Third, to provide an aligning means for the idler belt pulley having no back lash or lost motion requiring allowances during the adjusting of the pulley.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a view mainly in side elevation of a machine embodying my invention, parts being shown in vertical section for convenience in illustration.

Fig. 2 is a fragmentary front elevational view.

Fig. 3 is a fragmentary view mainly in cross section on line 3—3 of Figs. 1 and 2.

The embodiment of the invention illustrated comprises a base 1 on which is mounted the pedestal 2 having spaced supports 3 therein for the bearings 5. The driving shaft 6 is supported by these bearings. The pedestal arm 7 is adjustably mounted on the pedestal member 2 by means of cap screws 8, the member 2 having holes 9 adapted to receive the cap screws so that the pedestal arm 7 may be supported in a vertical position as shown in the drawing or in a horizontal position.

The pedestal arm 7 has spaced flanges 10 shown by dotted lines in Fig. 2 adapted to receive the supporting spindle 11 of the pulley supporting yoke 14. The coiled spring 12 is arranged on the spindle to rest on the lower flange 10 and the upper end of the spring engaging the thrust nut 13 adjustable on the spindle. This applies the desired tension to the belt while permitting swiveling movement of the yoke.

The yoke carries the pulley shaft 15 and it will be noted that the yoke spindle is perpendicular to this shaft and also to the driving shaft 6 on which the driving pulley 16 is mounted. The driven or idler pulley 17 is mounted on the shaft 15, the grinding or polishing belt 18 being trained over these pulleys.

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The platen 19 on the pedestal arm 7 supports the working reach of the belt. A work support 20 extends across the front of the belt adjacent the lower end of the platen. A sheet metal hood or casing 21 encloses the back and sides of the machine.

The pedestal arm 7 is provided with a pair of spaced laterally projecting ears 22, one of which defines an aperture 23 and the other of which defines a cylindrical recess 24 opposed to the aperture. The yoke is provided with a depending arm 25 disposed between the ears, the space between the ears substantially exceeding the width of the arm.

The coiled spring 26 is seated in the recess 24 to bear against one side of the arm 25. The adjustment of the arm 25 will rotate the yoke on its supporting spindle to adjust and maintain proper relationship between the pulley shafts 6 and 15 and consequently the pulleys 16 and 17 to properly align the belt and cause it to track properly on the pulleys.

The adjusting screw 27 engages the arm in opposition to the spring and provides an accurate and easy adjustment for the yoke. The thrust of the spring is sufficient to hold the arm against the adjusting screw under operating conditions and in effect serves as a locking means for preventing accidental rotation of the screw—that is, the screw is under sufficient thrust to prevent its rotation as a result of jarring or accidental contact.

I am aware that it has been the practice to employ opposed screws to adjust the pulley yoke but the adjustment in such structures is difficult, usually necessitating the stopping of the machine and necessitating the setting of one screw and tightening the other to clamp the parts together and this frequently causes enough movement or distortion to destroy the desired alignment.

With this adjusting mechanism, the screw 27 is always under the compression of the spring 26 so that its threads are always tight against the mating threads of the tapped aperture 23. Therefore, there is no back-lash or play to take up in adjusting the screw in either direction. The screw may be turned in either direction to rotate the yoke until the belt runs true or tracks in the center of the pulleys. The screw will stay in the adjusted position and there is no final clamping adjustment necessary which might disrupt the setting of the screw.

I have described the invention in a highly practical commercial embodiment thereof so that

others may reproduce the same without further disclosure.

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

1. In a grinding or polishing machine, the combination with a belt, of a pedestal, driving and idler pulleys, the driving pulley being mounted on said pedestal, a pedestal arm mounted for swinging adjustment on an axis coinciding with the axis of said driving pulley, a supporting yoke for said idler pulley provided with a spindle having swiveling engagement with said arm and disposed perpendicularly to the axes of the pulleys, laterally projecting ears at one side of said pedestal arm, one of which is provided with a recess on its inner side adapted to receive a spring, said yoke being provided with an arm depending between said ears, the space between the ears being such as to permit adjustment of the arm relative to the ears, a coiled spring disposed in said recess in engagement with one side of said yoke arm, and an adjusting screw extending through the other ear in supporting thrust engagement with said yoke arm in aligned opposition to said coiled spring whereby the yoke may be adjusted on its spindle, said coiled spring being of such tension as to normally support the yoke arm in thrust engagement with said adjusting screw.

2. In a grinding or polishing machine, the combination with a pedestal, of belt driving and idler pulleys, a supporting yoke for one of the pulleys provided with a spindle having a swiveling engagement with the pedestal and disposed perpendicularly to the axes of the pulleys, laterally projecting ears on said pedestal, one of which is provided with a recess on its inner side adapted to receive a spring, said yoke being provided with an arm disposed between said ears in spaced relation to both of them, a coiled spring disposed in said recess in supporting engagement with said arm, and an adjusting screw carried by the other ear in thrust engagement with said yoke arm in opposition to said spring whereby the yoke may be adjusted on its spindle by the manipulation of said screw.

3. In a machine of the class described, the combination with a pedestal, of a belt, supporting and driving pulleys for said belt, one of which is mounted on a relatively fixed shaft, a supporting yoke for the other pulley provided with a rotatably mounted spindle perpendicular to the axis of the pulley, said yoke being provided with a depending arm, a spring mounted on said pedestal in thrust engagement with one side of said arm, and an adjusting member engaging said arm in opposition to said spring, the spring being of such tension as to hold the arm in thrust engagement with said adjusting member under the stresses to which said arm is subjected by the belt.

EDWARD C. KRUEGER.

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