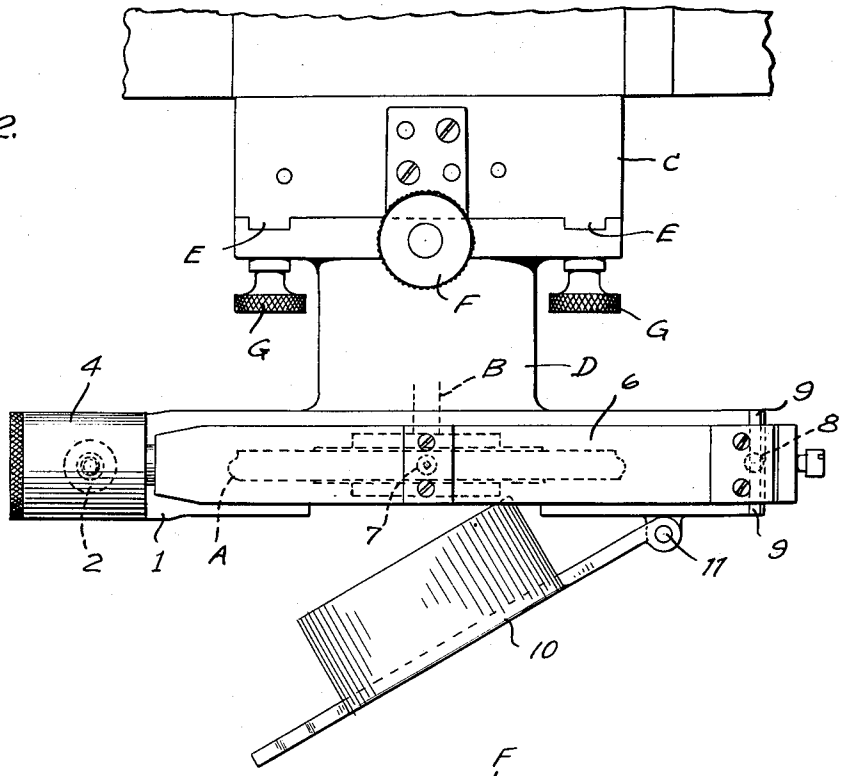
Nov. 29, 1955 H. S. JAKOBSEN 2,725,050

GRINDING WHEEL DRESSERS

Filed Oct. 18, 1951 2 Sheets-Sheet 1

Fig. 2.



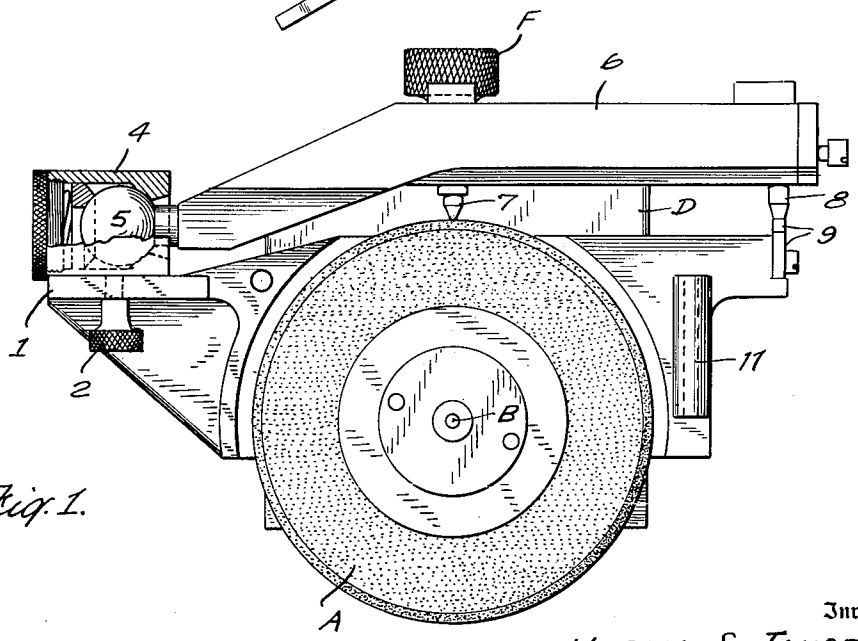


Fig. 1.

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GRINDING WHEEL DRESSERS

Filed Oct. 18, 1951 2 Sheets-Sheet 2

Fig. 3.

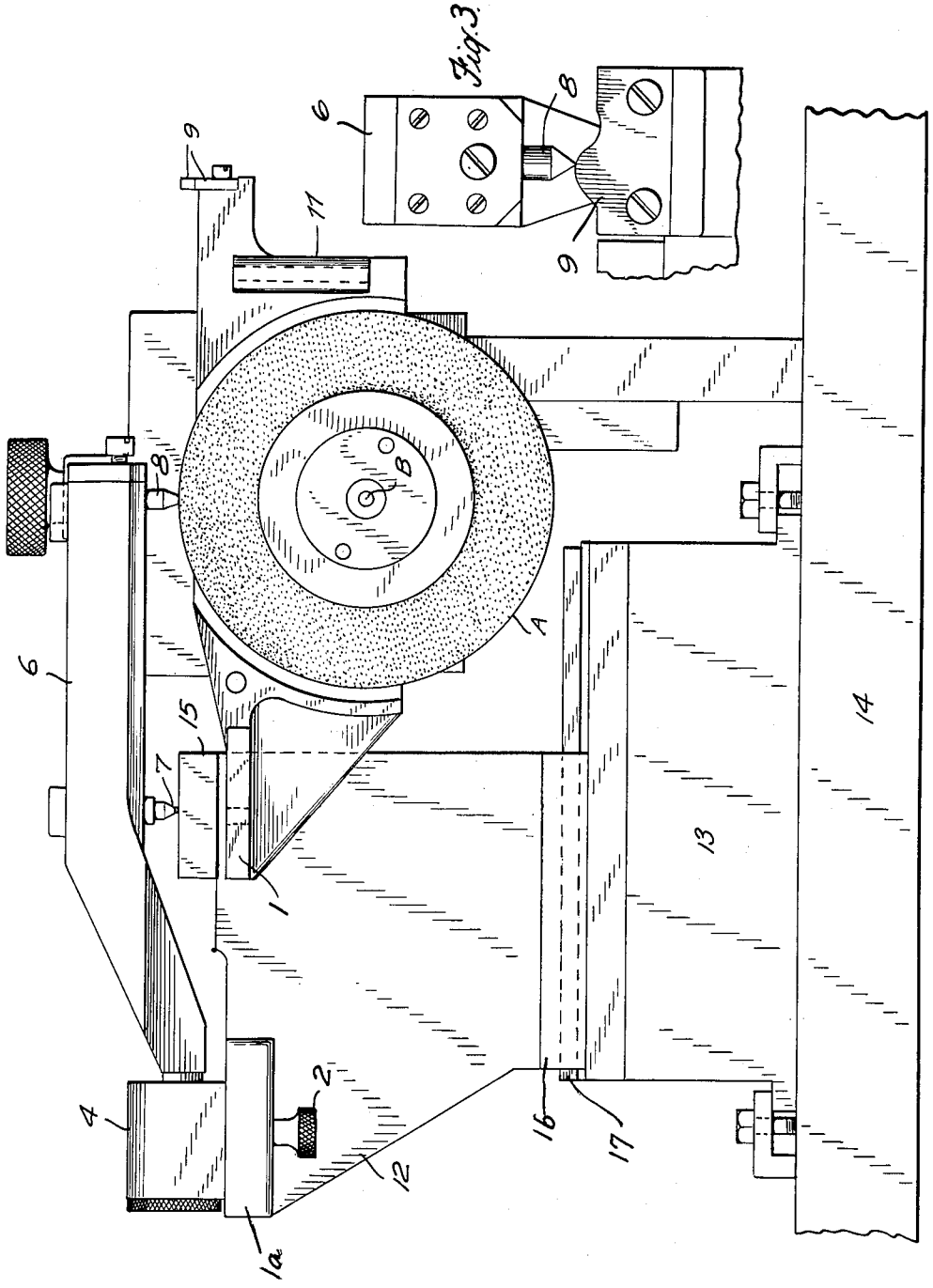


Fig. 4.

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United States Patent Office 2,725,050 Patented Nov. 29, 1955

2,725,050

GRINDING WHEEL DRESSERS

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Application October 18, 1951, Serial No. 251,859

4 Claims. (Cl. 125—11)

This invention relates to grinding wheel dressers.

An object is to provide such a dresser mounted on a ball and socket joint so that the dresser can be readily adjusted to all positions with reference to the grinding wheel and may be readily swung away from the wheel when not in use.

A further object is the provision of a dresser arm carrying a diamond and a template tracer which may be readily adjusted, to position the diamond on the grinding wheel, and further shifted in position to bring the tracer against the grinding wheel when the tracer requires reshaping.

A further object is to provide a wheel guard which may be interposed between the dresser arm and the grinding wheel, when the dresser arm is swung away from the wheel, thereby shielding the dresser arm with its attached parts and holding it away from the wheel when the grinding machine is in normal operation.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the features of construction, combinations of elements and arrangement of parts which will be exemplified in the constructions hereinafter set forth and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawings, in which:

Figure 1 is an end elevation showing a grinding wheel of conventional type with dresser arm carrying a diamond in position to operate upon the wheel and a tracer following a template carried by the machine guard.

Figure 2 is a top plan showing in addition to the dresser arm, a pivoted guard which may be interposed between the dresser arm and the grinding wheel.

Figure 3 is a detail in end elevation showing the tracer and the template.

Figure 4 is an end elevation showing the dresser arm shifted to the left, mounted upon a block carried and held by a magnetic chuck, this construction permitting the regrinding of the tracer to compensate for wear.

In the drawings, a conventional grinding wheel A is shown, which is carried by a spindle B.

This showing of the grinding wheel and its mounting is conventional and there may be substituted therefor any other desired form and mounting of a grinding surface, the term "grinding wheel" being used accordingly hereafter to cover any desired form of grinding surface.

As shown in Figure 1, the left hand side of the wheel guard of the machine at 1 carries by set screw 2, the socket 4, carrying the ball pivot 5 on the end of the dresser arm 6.

The wheel guard 1 is carried from the part D which is slidably mounted upon C block by vertical guides E. The part marked D is vertically adjusted by set screw F and held to any desired adjusted position by lock screws G.

This dresser arm 6 carries a diamond 7 shown as in operative position on the grinding wheel A. The dresser arm carries also a tracer B which follows a template 9 to control the movement of the diamond when the wheel A is to be dressed or redressed.

It will be noted that the axis of the ball and socket joint, the diamond point and the tracer are aligned across the machine.

This is important because if there is no such an alignment, the diamond point, as the dresser arm is swung above its axis, will either swing away from its true cutting line or dig into the wheel beyond the true cutting line.

Figure 2 shows a guard cover 10 pivoted at 11 to the wheel guard 1 and adapted to be swung between the dresser arm and the wheel when the dresser arm is lifted up and away from the position shown in Figure 1.

Figure 4 shows the dresser arm 6 of Figure 1 shifted to the left and mounted upon a block 12 carried by a magnetic chuck 13 upon the table 14 of the machine. A dovetail guide and groove connection 16, 17 is provided between block 12 and magnetic chuck 13 for guiding the block in its movement toward and away from the grinding wheel A. The block 12 is held in adjusted position on chuck 13 by the magnetic force of the chuck 13. Block 12 is provided with a seat 1*a*. The socket 4 and the ball pivot 5 are removed from wheel guard 1 and are attached to seat 1*a* by the set screw 2. A tool rest member 15 is carried by block 12 upon which the diamond rests when the tracer is being reshaped by the grinding wheel, to compensate for wear of the diamond point.

When the machine is used as shown in Fig. 1, block 12 and tool rest member 15 are moved away from wheel A, along the guide means 16, 17, so that socket 4 and ball 5 could be attached to wheel guard 1 by set screw 2. It is therefore apparent that in one position of the parts (Fig. 1), the universal joint 4—5 is attached by screw 2 to part 1 with the diamond point 7 engaging the periphery of the wheel A and the tracer 8 engaging the template 9, and in another position of the parts (Fig. 4) the block 12 is slid toward the wheel A with the universal joint attached to seat 1*a* of the block 12, with tool rest 15 overhanging the left hand portion of the wheel guard 1, the tracer 8 engaging the periphery of the wheel A and the diamond point resting on portion 15.

It will thus be seen that I have provided a dresser attachment for a grinding machine in which the dresser arm carrying the diamond point can be given a full universal movement by its ball and socket mounting to cover all desired shapes and irregularities of the template, the contours of which are to be reproduced upon the grinding wheel. There is also provided a convenient and efficient means for reshaping the tracer, and in general, a most efficient dresser is provided.

Since certain changes may be made in the above construction, and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are 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 grinding machine including a supporting structure and a grinding wheel carried by a spindle journalled on said supporting structure, a wheel guard on said supporting structure and having two spaced parts closely surrounding opposite peripheral portions of said wheel,

a template on one of said guard parts and a seat on the other of said guard parts, in combination with a dresser arm above the wheel including an universal joint at one end of said arm, a tracer adjacent the other end of said arm, and a diamond point supported by said arm intermediate said tracer and said joint, the pivotal center of said joint and the ends of said tracer and said diamond point all lying in the same straight line, means releasably securing said universal joint on said seat with said tracer engageable with said template and said diamond point engageable with the periphery of said wheel between said guard parts and a guard cover pivoted at one side to the machine in position to be interposed between the dresser arm and the wheel when the dresser arm is swung away from the wheel.

2. In a grinding machine having a wheel carried by a spindle revolvably mounted on a support, a block slidably mounted on said support for movement toward and from said wheel, a seat on said block, a tool rest member on said block and spaced from said seat toward the wheel, a dresser arm including an universal joint adjacent one end thereof, means for supporting a tracer adjacent the other end of said arm, and a diamond point supported by said arm intermediate said tracer and said joint, means releasably securing said universal joint on said seat with said tracer engageable with the periphery of the wheel and said diamond point engageable with the tool rest member.

3. In a grinding machine having a grinding wheel carried by a spindle revolubly mounted on a support, a wheel guard having a mount, a dresser arm, an universal joint to selectively mount one end of said arm on said mount, a tracer carried by said arm, a diamond point supported by the arm intermediate said tracer and said universal joint, the pivotal center of said joint and the lower ends of said tracer and said diamond point all lying in the same straight line, a template supported on the wheel guard for engagement with said tracer when

the diamond point engages said wheel; a block slidably mounted on said support for movement toward and from said wheel, a seat on said block, a tool rest member on said block and spaced from said seat toward the wheel, and means releasably securing said universal joint on said mount with the block and tool rest member retracted and with said tracer engageable with said template and said diamond point engageable with the periphery of said wheel, said releasable securing means being removable from said mount and cooperative with said block seat to secure said universal joint on said block seat with the block and tool rest member advanced toward the wheel, and with said diamond point engaging said tool rest member and said tracer engaging the periphery of said wheel and the tool rest member overlying the mount, whereby said arm may be selectively positioned to apply the diamond point to the wheel to dress the wheel, or to apply the tracer to the wheel to dress the tracer.

4. In a grinding machine as set forth in claim 3, comprising a magnetic chuck on said support and slidably supporting said block, said chuck and block having cooperative guide means to guide said block in its movement toward and away from said wheel and held in place by the magnetic force of said chuck.

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