May 27, 1947. E. M. DARLAND ET AL 2,421,143

GRINDER WHEEL DRESSER

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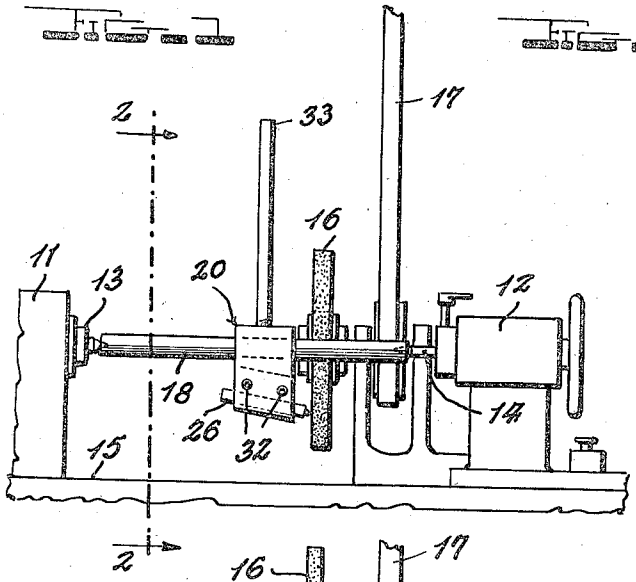


FIG. 1

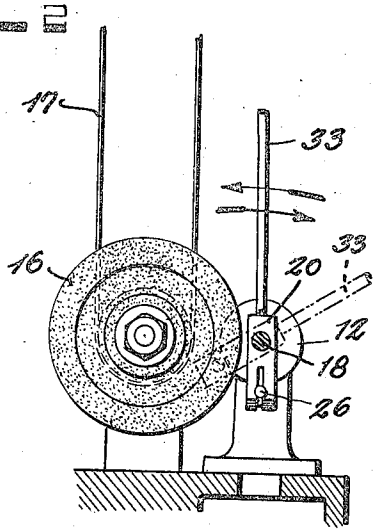


FIG. 2

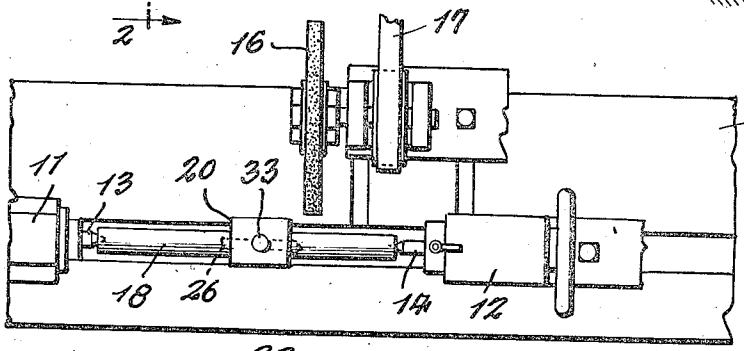


FIG. 3

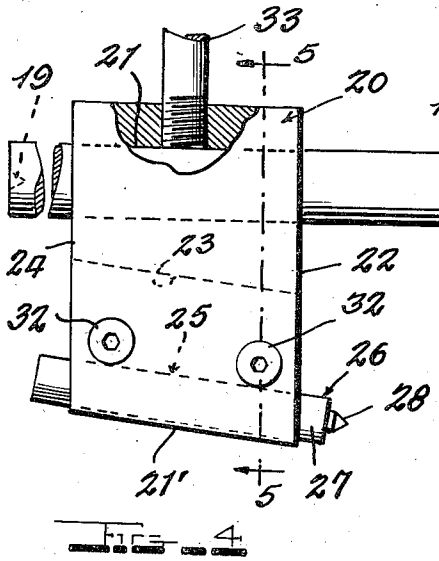


FIG. 4

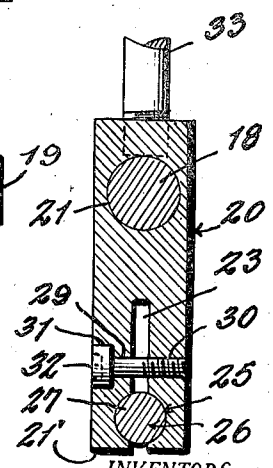


FIG. 5

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GRINDER WHEEL DRESSER

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2 Claims. (Cl. 125—11)

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This invention relates to a tool for dressing the sides of grinder wheels and it consists in the constructions, arrangements and combinations herein described and claimed.

It is an important object of the invention to provide a tool for dressing the sides of grinding wheels at absolute right angles to the center, which is important where the grinding wheel is employed in hub grinding, the device being so constructed as to be operatively engaged between tail and head stock centers of any conventional factory grinders.

More particularly, it is an object of the invention to provide a device which may be quickly mounted between centers of a grinder, the device including a diamond point which may be readily brought into dressing position with a grinding wheel, the device being adjustable to both sides of the grinding wheel to dress respective faces.

Additional objects, advantages and features of invention will be apparent from the following description and accompanying drawings, wherein

Figure 1 is a side elevation of the wheel dresser as installed upon a conventional factory grinder.

Figure 2 is a cross section on the line 2—2 of Figure 1.

Figure 3 is a top plan of the device shown in Figure 1.

Figure 4 is a side elevation of the dressing tool, partly in section.

Figure 5 is a cross section on the line 5—5 of Figure 4.

There is shown formally, a grinding machine 10 including as is customary a head stock 11 and tail stock 12, each of which embodies respective centers 13 and 14 adjustable longitudinally of the bed 15 of the grinder. A grinding wheel 16 is shown suitably mounted for sliding movement transversely of the bed 15 and at right angles to the centers 13 and 14, the wheel being driven by means of a belt 17. The above structures form no part of the invention and are shown and described only to illustrate the application of my grinder wheel dressing tool, which will now be described, attention being invited particularly to Figures 4 and 5.

A machine steel arbor 18 is employed, respective ends of which are formed with tapered recesses 19 adapted to engage the centers 13 and 14 of the head and tail stocks of the grinding machine. Upon the arbor a cutting tool holder 20 is slidably and rotatably mounted and to this end the holder 20 is formed with an opening 21 receiving the arbor therethrough. The holder 20 is substantially rectangular as seen in side

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elevation, except for the lower free edge 21' which is formed at an angle of from 12 to 15 degrees, the angle being inclined upwardly from the front face 22 of the holder.

As may be seen in Figure 5, a slot 23 is formed in the holder extending from the front face 22 to the rear face 24 having a depth approximately one-half the major axis of the holder, the slot adjacent the edge 21' being formed as enlarged semi-circular opposed recesses defining a bore 25 for reception of a cutting or dressing tool 26. The bore 25 extends parallel to the edge 21'. The dressing tool 26 is thus presented at a proper angle for most efficiently dressing a grinding wheel.

The dressing tool 26 comprises a rod 27 cylindrical in cross section of a diameter slightly less than the bore 25 so as to be readily inserted therethrough, one end of the rod having a diamond 28 suitably mounted therein.

In order that the dressing tool 26 may be securely mounted in the holder, a pair of openings 29 are formed extending transversely of the slot 23 and being positioned inwardly of the front face 22 and rear face 24 and a short distance above the bore 25. The openings 29 are threaded at one end thereof, as at 30, while the opposite end is countersunk as at 31. A machine bolt 32 is engaged in respective openings, which when fully engaged with the threads 30 will draw portions defining the bore 25 into firm gripping engagement with the rod 27 and thus hold the latter against chattering or vibrations which might effect proper dressing of a grinding wheel.

An operating lever 33 is threadedly engaged with the holder 20, being positioned in the end opposite the dressing tool.

In use, and as shown in Figures 1 and 2, the arbor 18 is mounted between the centers 13 and 14, with the holder 20 and dressing tool 26 positioned for dressing the left face of the grinding wheel 16. The grinding wheel 16 is moved forwardly in the direction of the arbor and the holder 20 moved toward the left face of the wheel 16 until the diamond 28 contacts the face of the wheel. With the grinding wheel rotating at usual operating speed, the lever 33 is drawn slowly toward the operator, thus moving the diamond across the face of the wheel which will produce a sharp cutting edge at an absolute right angle to the centers. The right side of the grinding wheel will be dressed by merely reversing the arbor 18 so that the cutting tool 26 may engage the wheel at the right side thereof.

An experienced operator will always cut a re-

lief of a few thousandths of an inch in the wheel, about one-half inch back of the cutting edge in order to let water pass between the wheel and the work to wash away metal and this relief may be readily accomplished with the tool.

While we have shown and specifically described the tool, this is by way of illustration only, and we consider as our own all such modifications as fairly fall within the scope of the appended claims.

We claim:

1. A tool for dressing the side face of a rotating grinder wheel comprising an arbor constructed for support between centers of the head and tail stocks of a grinding machine, a tool holder having an opening for receiving the arbor therethrough and oscillatably and slidably mounted on said arbor, an inclined opening opposite the first named opening and including an inwardly extended slot, a rod mounted in the inclined opening, said rod having a diamond point fixed in one end thereof, compression means extending transversely of the slot whereby to secure the rod within the holder, and an operating handle on the holder for oscillating the latter to draw the diamond point across the face of the grinder wheel.

2. A grinder wheel dressing tool comprising a tool holder having an opening therethrough, an arbor extended through said opening, the ends of said arbor being constructed to mount said arbor between centers of a head and tail stock,

said holder having right angular front and rear faces and a rearwardly inclined lower face, a slot formed in said holder and opening upon said lower face, said slot having opposed semi-circular enlargements inwardly of said lower edge, said enlargements and terminal end of the slot extending parallel to said lower edge, a rod engaged between said semi-circular portions, threaded openings extending transversely of the slot positioned above the semicircular portions, a bolt engaged in each opening for compressing the slot for securing the rod, said rod having a diamond point on one end, and a handle member on the holder for sliding and oscillating the holder upon the arbor.

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