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GRINDING WHEEL DRESSER

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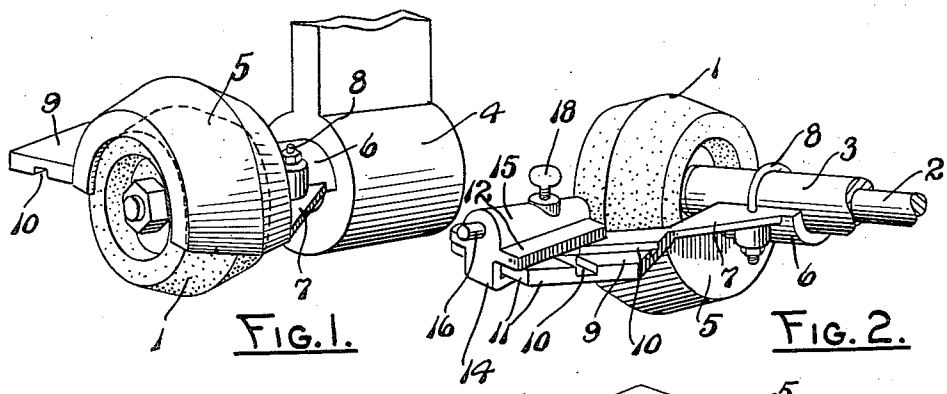


FIG. 1.

FIG. 2.

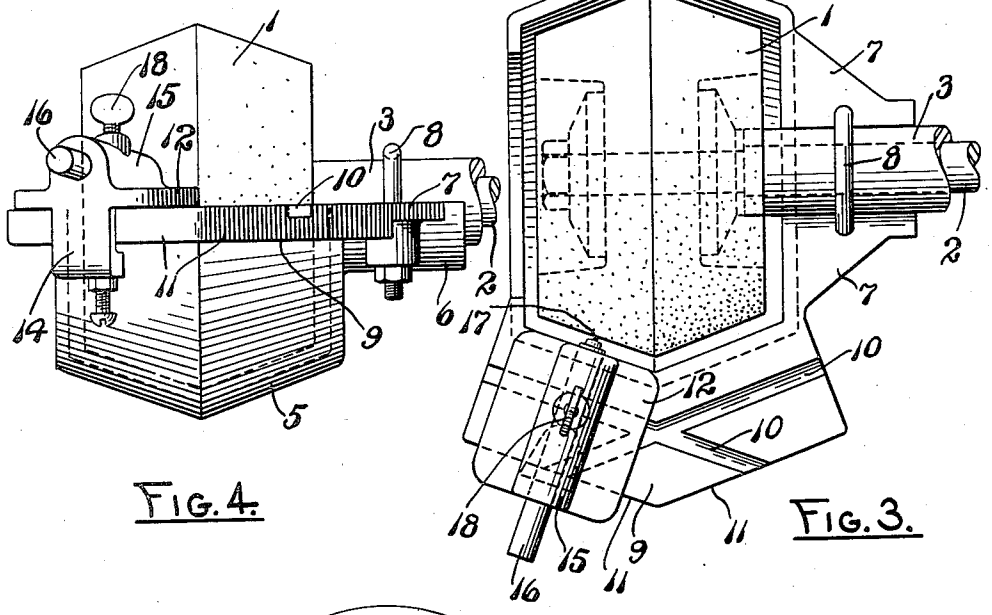


FIG. 4.

FIG. 3.

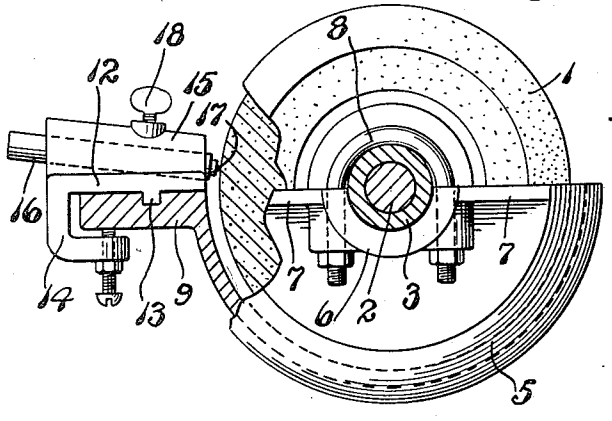


FIG. 5.

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GRINDING WHEEL DRESSER

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6 Claims. (Cl. 125—11)

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This invention relates to the dressing of grinding wheels and is concerned with a novel, simple and readily and economically produced attachment used in relation to grinding wheels, which in the normal use of the wheel serves as a hood or cover to guard the wheel at its upper portion but which may be readily reversed in position and embrace the lower half of the grinding wheel, in which position it serves as a support for a manually movable carrier for a wheel dressing diamond, the hood of the wheel having in practice preferably integral therewith, a supporting platform or shelf with guide means thereon for governing the movements of the carrier so as to have the grinding wheel dressing diamond follow a path of movement with respect to the surfaces of the grinding wheel which are to be dressed in conformity with the guides for said carrier made in said shelf, to thereby dress the grinding wheel surfaces to desired contour. After the wheel is dressed, the hood member is reversed to its normal operative position and the shelf extends to the rear and out of the way, while in the reverse position of said hood, the carrier mounting shelf extends horizontally to the front and is properly positioned for supporting said carrier of the dressing diamond at the front of the wheel to be processed.

An understanding of the invention may be had from the following description, taken in connection with the accompanying drawings, in which

Fig. 1 is a perspective view showing a grinding wheel and the combined hood and shelf as they are located with reference to the wheel in grinding operations.

Fig. 2 is a similar perspective view showing the hood reversed to lower position and the shelf extending horizontally in front of the grinding wheel to be dressed.

Fig. 3 is a plan of the structure as shown in Fig. 2 somewhat enlarged.

Fig. 4 is a front elevation of the structure as shown in Fig. 3, and

Fig. 5 is a partial end elevation and transverse vertical section.

Like reference characters refer to like parts in the different figures of the drawings.

The grinding wheel 1 is shown as secured at the end of a rotatable shaft 2 which extends through a bearing sleeve 3 therefor and which in turn may be supported in any suitable manner in a part 4 of the frame of the grinding machine.

The hood 5 which in service is over the upper half of the wheel 1 (Fig. 1), is shaped in accordance with the shape of the grinding wheel, and

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at one end, has integral therewith a half sleeve 6 from the edges of which horizontal reinforcing vanes 7 of generally triangular shape extend to and are connected with the adjacent end of the hood. Said hood in its work position, located over the upper portion of the grinding wheel, is held against movement by a U-bolt 8, the bend of which receives the sleeve 3, the legs of the bolt passing upwardly through the reinforcing vanes 7 and receive nuts which, upon tightening, secure the hood in fixed position. When the hood is reversed in position as in Fig. 2, and located at the under side of the wheel, the U-bolt 8 has the connecting bend therein passing over the upper side of the sleeve 3. At the back of the hood when the grinding wheel is being used, and at the front of it when the wheel is to be dressed, a horizontal shelf 9 is integrally cast with the hood, the upper side of which in the dressing position is substantially in the same horizontal plane as the axis of the shaft 2. In the upper side of the shelf 9, as thus positioned for wheel dressing, guide slots 10 are cut which are in conformity to the desired contour of the grinding wheel around its periphery. For example as shown in Fig. 3, the slots 10 cross each other and are parallel with the inclined peripheral surfaces of the grinding wheel shown. The outer free edges 11 of the plate 9 are in generally parallel relation to said slots from their outer ends to their meeting ends, as shown in Fig. 3.

When thus positioned with the guide slots 10 at the upper side of the shelf 9, a carrier for the dressing diamond may be placed on and at the upper side of the shelf 9. Said carrier comprising a horizontal plate 12 with a suitable guide rib or key 13 extending downwardly therefrom and slidable in a guide slot 10. At its outer end, the plate 12 has a downwardly extending arm 14 which at its free end portion passes underneath the shelf 9 and may have a set screw, as shown in Fig. 5, threaded upwardly therethrough to bear against the under side of said shelf. At its upper side and integral therewith is an elevated substantially sleeve-like portion 15 through which a rod 16 passes and in which it may be longitudinally adjusted, said rod 16 at its inner end carrying the dressing diamond point 17. When said point is disposed in proper dressing relation to the wheel surface which is to be dressed, the rod 16 is releasably secured against movement by a thumb screw 18.

It is evident that in the dressing of a grinding wheel of the form and contour shown, the rib 13 extending into one of the slots 10, will guide

the carrier 12 in its movements to cause the dressing point 17 to follow a path parallel to the rib and the guide 10 in which it is located. And, during such movement of the carrier 12, the screw carried by the arm 14 while at its upper end in close proximity to the under side of the shelf 9, is not forced into binding engagement thereagainst. After one side of the wheel has been dressed, the carrier is removed from the shelf and placed in the other slot 10 for dressing the other side of the wheel at its peripheral surface. The screw passing through the arm 14 may be tightened at times in setting up the dressing point carrying rod 16 before the operation of dressing is started but must be released to permit movement of the carriage in wheel dressing. After the dressing of the wheel is finished, carrier 12 may be removed and the hood and shelf returned to the position shown in Fig. 1.

It is, of course, to be understood that the guide slots 10 may be varied in accordance with the variation in the grinding surfaces of the wheel and such guide slots are not limited to the particular two slots crossing each other disclosed. The pattern of the guide slots will be in accordance with the surface contour wanted in the grinding wheel.

The construction described is simple, and very practical and useful, the shelf 9 is out of the way, back of the wheel during grinding. It is located at the front of the wheel by reversing the position of the hood and properly located for receiving the carrier, with the dressing diamond located with reference to the peripheral surface of the wheel which is to be dressed a short distance above the axis of the shaft 2 and pointed toward said axis.

The invention is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their scope.

I claim:

1. In combination with a grinding wheel mounted to turn about a horizontal axis, of a hood adapted to be located over the upper portion of the grinding wheel, means for mounting said hood for movement about the axis of rotation of the wheel to thereby locate the hood under said grinding wheel, a shelf connected with the hood and in the last named position of the hood extending horizontally in front of the grinding wheel, said shelf having carrier guide means thereon, a detachable carrier adapted to be located over said shelf and having means to cooperate with said guide means on the shelf to move the carrier in a predetermined relation to the peripheral surfaces of the grinding wheel, a rod mounted on said carrier for longitudinal adjustment toward and away from the grinding wheel peripheral surfaces, said rod at its inner end being adapted to carry a grinding wheel dressing point, and means for releasably securing said rod in positions to which longitudinally moved.

2. A grinding wheel hood having a form to substantially embrace the upper half of a grinding wheel mounted to turn about a horizontal axis, said hood at one end having means for mounting the hood whereby it may be moved about said horizontal axis and embrace the lower half of the grinding wheel, a shelf connected with said hood to extend horizontally back thereof when in the first position and horizontally in front thereof in the second position, a movable carrier for a grinding wheel dressing tool adapted to be mounted upon and over said shelf in said second position, and cooperating guide means on the shelf and carrier for governing the movement of the carrier with relation to the peripheral surfaces of the grinding wheel.

3. In combination with a horizontal shaft and a grinding wheel secured to one end thereof, of a hood located over substantially the upper half of said grinding wheel, a semi-cylindrical member extending longitudinally from said hood, a U-bolt connected with said semi-cylindrical member extending over said shaft and a substantially horizontal shelf secured at the rear end of the hood with its under surface in substantially the same horizontal plane as the axis of the shaft, said shelf at its under side having a guide groove therein substantially paralleling the peripheral surfaces of the grinding wheel.

4. A construction as defined in claim 3, said hood being releasable by releasing said U-bolt connection to be turned through an arc of substantially 180 degrees to position said under surface of the shelf at the upper side thereof and in substantially the same plane with the axis of the shaft at the front of the grinding wheel, and a carrier for a wheel dressing implement located and movable over said shelf in the last named position, said carrier having cooperating means entering said guiding groove to govern the path of movement of said carrier.

5. A hood construction for grinding wheels adapted in service to substantially embrace the upper half of a grinding wheel, means connected with one end of the hood for adjustably mounting it with reference to the grinding wheel for movement about its axis of rotation through an arc of substantially 180 degrees, a supporting shelf connected with the hood extending to the rear thereof when said hood is located over the upper portion of the wheel, and in front thereof when the hood has been moved through said arc of movement, said shelf in the latter position at its upper side having means thereon for guiding and controlling the movements of a wheel dressing carrier thereover through a predetermined path of movement.

6. A construction as defined in claim 5, and a dressing wheel carrier, said means for guiding said carrier comprising sliding inter-engaging means on the table and on said carrier, a rod adjustably mounted on said carrier for movements toward and away from the grinding wheel surfaces and with the axis of said rod at right angles to said surface, and a wheel dressing cutter at the inner end of the rod.

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