

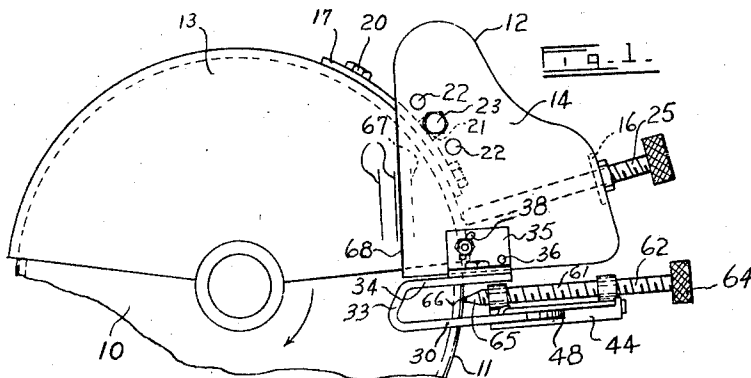
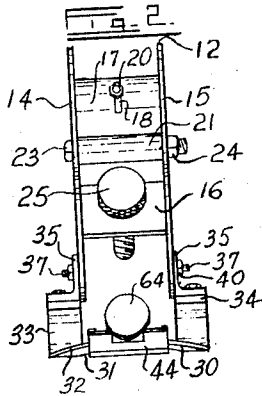
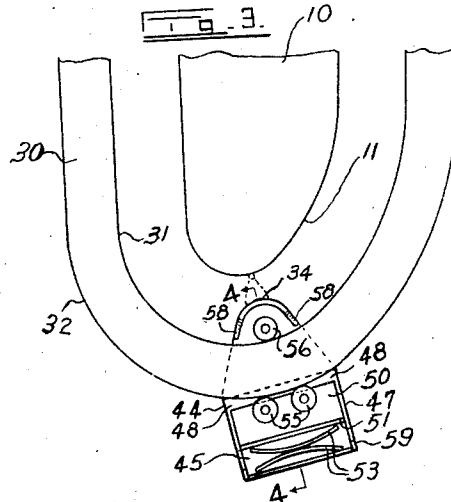
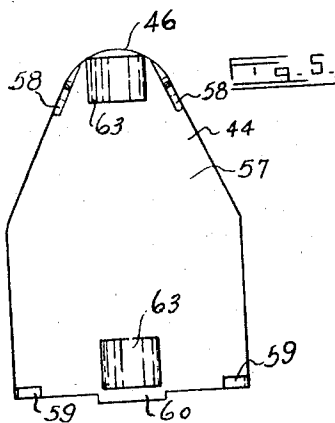
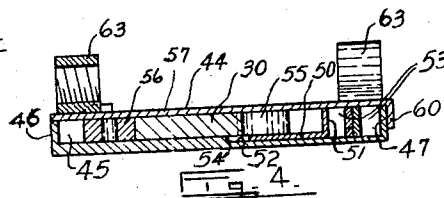
Feb. 13, 1945.

S. M. POLLARD ET AL

2,369,405

DIAMOND WHEEL DRESSER

Filed Feb. 26, 1943



Inventors
Stanley M. Pollard
Victor W. Windblad

BY Fiddenton Laugh & Co
ATTYS.

UNITED STATES PATENT OFFICE

2,369,405

DIAMOND WHEEL DRESSER

Stanley Martin Pollard and Victor William Windblad,
New Westminster, British Columbia,
Canada

Application February 26, 1943, Serial No. 477,284
In Canada January 4, 1943

2 Claims. (Cl. 125—11)

This invention relates to a dresser for grinding wheels.

An object of the present invention is the provision of a dresser for grinding wheels having peripheral surfaces of any shape.

Another object is the provision of a device particularly for dressing grinding wheels having peripheral surfaces of irregular shapes.

Another object is the provision of a dresser capable of accommodating grinding wheels of different sizes.

A further object is the provision of a dresser which may be easily adjusted for grinding wheels having different peripheral shapes.

A still further object is the provision of a device capable of keeping the peripheral surface of a grinding wheel exactly in its original shape.

Yet another object is the provision of means for producing a template of the exact sectional shape of the surface of any grinding wheel for use in a dressing device.

Still another object is the provision of a device of the nature described of extremely simple construction and which may readily be mounted adjacent a grinding wheel.

A further object is the provision of a grinding wheel dresser which may be adjustably mounted on the guard of the wheel and which, when desired, may be moved to a position where it will not interfere with the normal operation of the wheel.

With these and other objects in view, the present invention consists essentially of a grinding wheel dresser comprising a track, means adapted to hold the track adjacent the shaped peripheral surface of a grinding wheel, an edge of said track being the same shape as the sectional contour of the grinding surface and equally spaced therefrom at all points, a slide movably mounted on the track, a cutting element carried by the slide and extending to the grinding surface when the dresser is in operative position, and means on the slide for co-operating with said track edge to maintain the cutting element in its correct position in relation to the grinding surface during movement of the slide back and forth on the track, as more fully described and illustrated by way of example in the following specification and the accompanying drawing, in which

Figure 1 is a side elevation of a dresser mounted on the guard of a grinding wheel,

Figure 2 is an end elevation of the dresser,

Figure 3 is an enlarged plan view of the track and slide, the cover of the latter being removed,

Figure 4 is an enlarged section taken substantially on the line 4—4 of Figure 3, and

Figure 5 is an enlarged plan view of the slide.

Referring more particularly to the drawing, 10 10 is a grinding wheel having a peripheral grinding surface 11 of any desired shape. A dresser, generally indicated by the numeral 12, is adapted to be held adjacent the wheel in any suitable manner. As most grinding wheels are provided with a guard, such as guard 13, it is preferable to mount the dresser thereon.

The dresser 12 includes spaced side plates 14 and 15 of any required shape connected together at their outer edges by a strap 16. A base 17 having aligned longitudinal slots 18 adjacent its opposite ends, fits along the curved top of the guard 13 and is retained in place by set screws 20 which extend through the slots 18 and are threaded into the guard.

A hollow boss 21 extends transversely of the base 17 substantially midway between the ends thereof. Each of the sides 14 and 15 is provided with one or more holes 22 arranged substantially in an arc, and a bolt 23 extends through corresponding holes in the sides and the boss 21. A nut 24 is threaded on the end of the bolt to hold the latter and, consequently, the dresser in place. With this arrangement, the sides 14 and 15, which form a holder, are pivotally mounted on the guard, and the end of an adjusting bolt 25 threaded through the strap 16 bears against the base 17 or, as shown, the guard, to retain the holder in any desired position in relation to the grinding wheel.

A track 30 is fixedly or pivotally mounted on the bottom of the holder adjacent the grinding surface 11. This track has an edge 31 which is the same shape as the sectional contour of the grinding surface and equally spaced therefrom at all points, as clearly illustrated in Figure 3. The other edge 32 of the track may be exactly the same shape as the edge 31 or it may only approximate said shape. In this example, each end of the track 30 is bent upwardly and rearwardly over itself at 33, see Figure 1, to form a parallel section 34 which is secured to the horizontal portion of a right angle bracket 35, the vertical portion of which is pivotally secured to one of the sides 14 or 15 by means of a pivot 36. A threaded pin 37 extends outwardly from each of the sides through an arcuate slot 38 formed in the vertical portion of one of the brackets 35 with the pivot 36 as its centre of curvature. Nuts 40 are threaded on the pins 37 to hold the brackets in any desired position. When the brackets 35 are

pivoted within the limits of the slots 38, the track is tilted with them.

A slide 44 is movably mounted on the track 30. This slide consists of a casing 45 which preferably has a tapered inner end 46 and a peripheral wall 47, in which opposed openings 48 are formed at opposite sides of the slide. A tray 50 having a back 51 rides in a recess 52 formed in the bottom of the casing, and springs 53 lying between said back and the end wall of the casing urge the tray towards the inner end 54 of the recess 52. A pair of rollers 55 are mounted on the tray adjacent its inner edge and project outwardly over said edge, while a single roller 56 is mounted on the bottom of the casing 45 near its inner end 46. The space between the rollers 55 and 56 is in line with the openings 48 of the casing wall. A cover 57 is removably mounted on the casing in any suitable manner. In Figure 5, the inner end of this cover fits under lugs 58 projecting upwardly from the wall 47, and lugs 59 extending upwardly from said wall at the outer end of the casing are bent over the cover. If desired, another lug 60 may be formed on the outer edge of the cover and bent downwardly over the end of the casing.

A cutting element 61 is mounted on the top of the cover 47 in any suitable manner. In this example, the cutting element consists of a rod 62, which may be threaded, as shown, extending through aligned bosses 63 carried by the cover at its inner and outer ends, either one or both of said bosses being internally threaded. The rod 62 has a head 64 at its outer end and is formed with a taper 65 at its inner end, in the apex of which is located a commercial diamond 66.

The slide 44 is mounted on the track 30 with the latter extending through the openings 48 and between the rollers 55 and 56. The rollers 55 are pressed against the edge 32 of the track by the springs 53, while the roller 56 is drawn against the edge 31 by the action of said springs. When the slide is thus mounted on the track, the cutting element 61 extends directly towards the grinding surface 11 of the wheel so that the diamond 66 may be moved into contact therewith.

If the dresser is mounted on the guard 13, as shown, a plurality of vertical marks 67, one for each hole 22, may be placed on the guard adjacent the edge 68 of one or both sides 14 and 15, said edge being vertical when the holder is in its proper position.

In use, the holder is pivotally mounted on the base 17 which, in turn is mounted on the guard 13. The slots 18 permit the base to be adjusted on the guard, and the position of the holder in relation to the base may be changed by using different sets of holes 32. When the holder is arranged with the edge 68 of one of the sides 14 or 15 in line with the appropriate mark 67, the diamond 66 bears against or is positioned near the grinding surface 11 of the wheel 10. Any fine adjustment of the holder may be made by means of the bolt 25. The rod 62 may be turned to set and maintain the diamond in its correct position in relation to the grinding surface. The bracket 35 is preferably set so that the cutting element 61 points downwardly at least two or three degrees below the horizontal in order to prevent chattering with the wheel rotating in the direction of the arrow in Figure 1. As the slide 44 is moved back and forth on the track 30 the diamond is always maintained in

its correct position in relation to the grinding surface owing to the fact that the edge 31 of the track is the same shape as said surface and equally spaced therefrom at all points. As the slide moves along the track, it turns so that the rod 62 always points toward the wheel. The springs 53 cooperate with the rollers 55 and 56 to keep the slide in its proper position on the track and said springs allow for any irregularity in the edge 32.

The angle of the diamond may be changed by pivoting the brackets 35. It has been found that when the diamond becomes too flat in its normal position, as shown in Figure 1, it may be tilted to an angle of approximately fifteen degrees to the horizontal, in order to sharpen it. This is done while the diamond is still dressing the wheel.

The peripheral surface of the grinding wheel may be any desired shape, it is only necessary to make the edge of the track the same shape as said surface. A good way to obtain a template for the track is to press the edge of a piece of metal against the grinding surface until the latter grinds its way well into the metal. This produces the exact shape of the surface. The track may then be shaped as desired by the use of the template and transferring to the metal from which the track is to be cut an outline obtained by moving a point a fixed distance from the profile of the template. The track is made large enough to accommodate wheels of different thicknesses, while larger or smaller tracks may be used for different purposes. The different adjusting means of this device enable it to be used in this manner. It is a very simple matter to change the track for one of a different size or shape, whichever is required. No matter how badly a wheel is worn out of shape, this device will dress it into its exact original shape since the track remains the same and the cutting element may be moved inwardly if the wheel has become smaller in diameter and thickness.

When not required, the dresser may be swung up out of the way on the pivot bolt 23. As the sides 14 and 15 are outside the guard 13, the dresser will turn almost upside down.

Various modifications may be made in this invention without departing from the spirit thereof or the scope of the claims, and therefore the exact forms shown are to be taken as illustrative only and not in a limiting sense, and it is desired that only such limitations shall be placed thereon as are disclosed in the prior art or are set forth in the accompanying claims.

What we claim as our invention is:

1. In a grinding wheel dresser of the character described a track having a shape defined by moving a point a fixed distance from the wheel profile, a slide on the track having a single roller engaging the inside of the track and a pair of rollers engaging the outside of the track, means for forcing the pair of rollers with spring pressure against the track, a cutting element carried by the slide, a bracket on the track, a holder, means for pivoting the bracket to the holder and for holding it in adjustable position, and means for adjustably supporting the holder from the guard of a grinding wheel.

2. A grinding wheel dresser comprising a wheel guard, a base plate having a boss therein adjustably mounted thereon, a holder having spaced plates with a series of aligned holes therein, a

bolt adapted to extend through one of the pair of the said holes and through the boss on the base member, brackets pivotally mounted on the side plates of the holder having slots therein and clamping bolts extending through the slots, a 5 track carried by the brackets having a contour corresponding to that of the wheel to be dressed, a slide mounted on the track having a pair of rollers adapted to engage the outer side of the

track and a single roller adapted to engage the inner side of the track, means for forcing the pair of rollers against the outer side of the track, a cutting element including a threaded rod and aligned bosses on the slide engaging and supporting the rod.

STANLEY MARTIN POLLARD.
VICTOR WILLIAM WINDELAD.