April 4, 1944. S. J. KOPEC 2,345,821

RADIUS AND TANGENTIAL SURFACE GRINDING WHEEL DRESSER

Filed Sept. 14, 1942 2 Sheets-Sheet 1

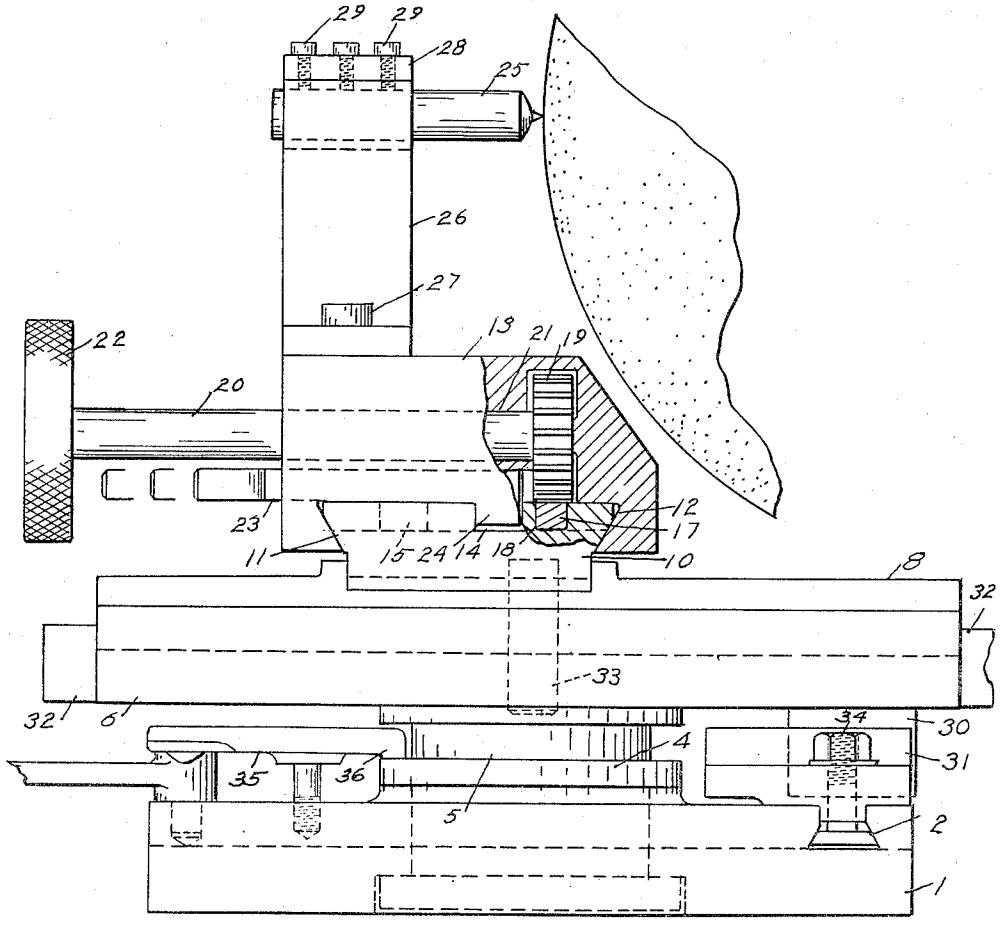


FIG. 1.

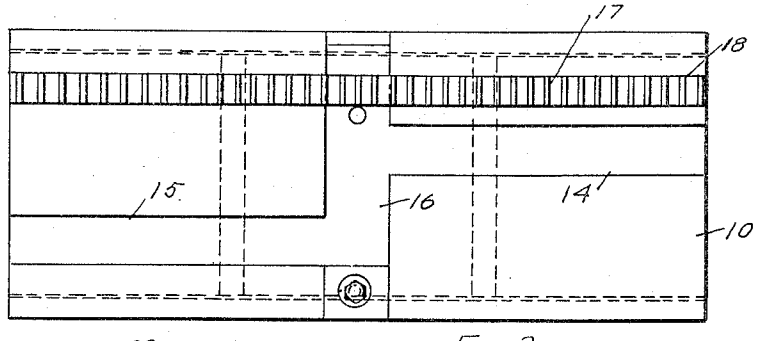


FIG. 2.

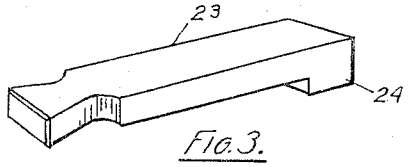


FIG. 3.

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RADIUS AND TANGENTIAL SURFACE GRINDING WHEEL DRESSER

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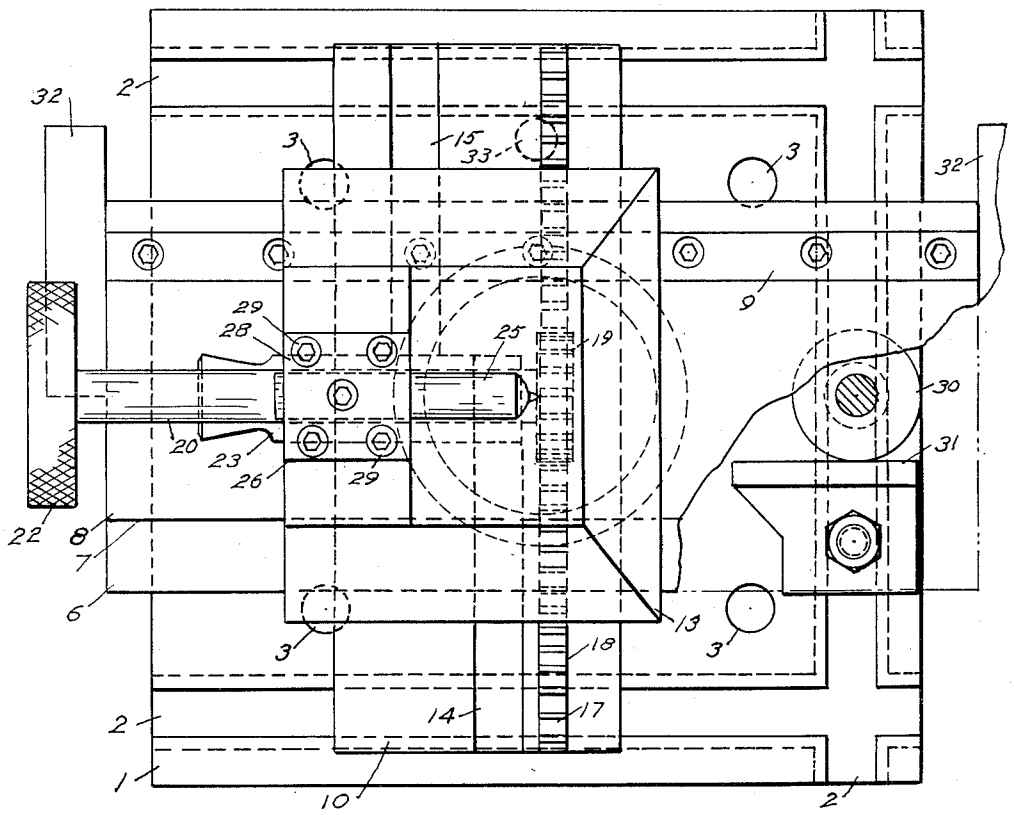


FIG. 4.

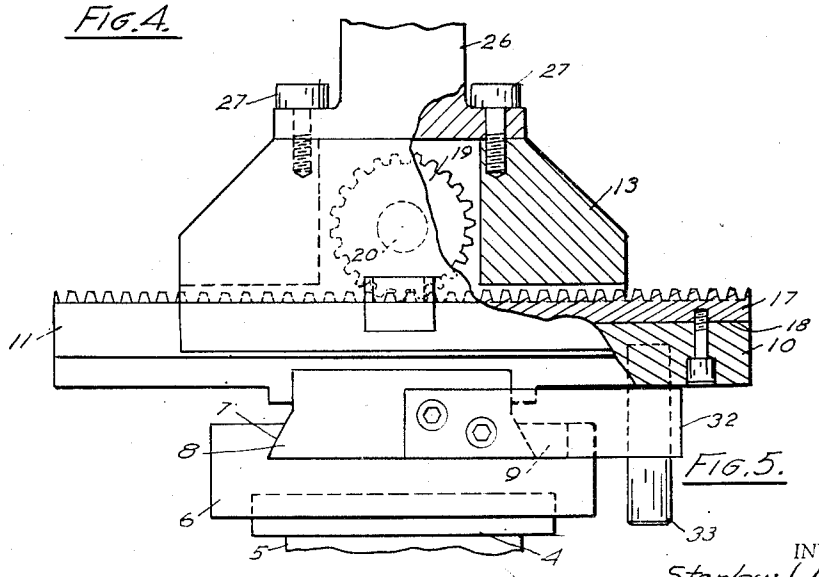


FIG. 5.

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UNITED STATES PATENT OFFICE

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RADIUS AND TANGENTIAL SURFACE GRINDING WHEEL DRESSER

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Application September 14, 1942, Serial No. 458,312

3 Claims. (Cl. 125—11)

This invention relates generally to a grinding wheel dresser and more particularly to a variable radius and tangential grinding wheel dresser.

All devices of this character move according to the teachings of the prior art, and with which I am familiar, have had very little adjustment. Prior devices had graduated members which became filled with emery dust thereby making the setting thereof inaccurate. These devices were not durable and pins and the like became worn after a short period of use because of the small area subjected to wear.

It is accordingly, an object of my invention to overcome the above and other defects in grinding wheel dressers and it is more particularly an object of my invention to provide a dresser to form variable radii and tangential surfaces on a grinding wheel which, is simple and rugged in construction, efficient in operation, easy to set up, easy to adjust, economical in manufacture, and economical in cost.

Another object of my invention is to provide a radius and tangential surface grinding wheel dresser which permits easy adjustment to extremely close tolerances.

Another object of my invention is to provide a radius and tangential surface grinding wheel dresser which permits a wide variation in the size of the radius formed.

Another object of my invention is to provide a variable radius and tangential surface grinding wheel dresser wherein the movable cross-slide may be locked at center for forming a radius and which may be moved longitudinally with the same setting for tangential dressing.

Other objects of my invention will become evident from the following detailed description, taken in conjunction with the accompanying drawings, in which

Fig. 1 is a side elevational view with parts broken away of my novel grinding wheel dresser.

Fig. 2 is top plan view of the fixed cross table on my novel grinding wheel dresser.

Fig. 3 is a perspective view of the locking and guiding member on my novel grinding wheel dresser.

Fig. 4 is a top plan view of my novel grinding wheel dresser.

Fig. 5 is a fragmentary side elevational view of my novel grinding wheel dresser.

Referring now to the drawings, Figs. 1 and 4 show a base 1 having dove-tailed marginal slots 2 and apertures 3 for connection to a table or the like of a grinder (not shown). A pivot post 4 having a circular groove 5 is rotatably disposed on the base 1 and has attached thereto a table 6 having a longitudinal slot 7. A dove-tailed slidable member 8 is disposed in the slot 7 and is locked therein by a dove-tailed gib 9. A top table 10 is transversely disposed on the central portion of the table 8. The top table 10 has a dove-tail slot 11 for receiving the dove-tailed portion 12 of the sliding head 13. The top table 10 has off-set longitudinal slots 14 and 15 in the face thereof, connected by a transverse slot 16 and a longitudinally extending rack 17 secured in a slot 18. A gear 19 mounted on a shaft 20, is journaled in aperture 21 in the head 10 and engages the rack 17 to move the head 13 on the table 10. The shaft 20 is rotated by the handle 22. A locking and guiding key 23 has a depending portion 24 for engaging the guiding slots 14, 15, and 16. When the depending portion 24 of the key 23, is disposed in the slots 14 or 15, the head may be moved longitudinally tangentially on the periphery of a grinding wheel. When the depending portion 23 of the key 24 is centrally disposed in the transverse slot 16, the head 13 is locked and in position to form a radius on the periphery of a grinding wheel.

A diamond cutting tool 25 is disposed in a holder 26 secured to the head 13 by bolts 27. The diamond cutting tool 25 is locked in position by a plate 28 secured by screw bolts 29.

The means for adjusting my novel grinding wheel dresser to dispose the dresser for forming various radii comprise a radius set pin 33 secured to the top table 10 and radius set plates 32 disposed on the ends of the table 6. Angle setting is adjusted by a sine bar button 30 depending from the rotating table 6 and 1 sine bar button stops 31 secured by bolts 34 disposed in the dove-tailed slots 2 in the base 1. For tangential dressing, the rotating table 6, is locked by an off-set locking member 35, having the end 36 thereof extending into the circular groove 5 in the post 4.

For dressing the periphery of a grinding wheel, at a predetermined radius, the gib 9 is loosened to permit longitudinal movement of the slidable member 8. Measurement is made between the radius set plates 32 and the radius set pin 33. The slidable member 8 is then locked by the gib 9 and the cutter 25 rotates on the post 4. For dressing tangent to a predetermined radius, the sine bar button stops 31 are secured in predetermined positions after utilizing the sine bar button 30 for accurate measurements.

It will be evident from the foregoing that ex-

tremely accurate adjustments can be quickly made while still allowing for maximum durability.

Various changes may be made in the specific embodiment of the present invention without departing from the spirit thereof, or from the scope of the appended claims.

What I claim is:

1. In a radius and tangential surface grinding wheel dresser, in combination, a rotatable longitudinally slotted member, a depending sine bar and stop members for stopping said member at a predetermined angular position, a longitudinally movable member in said slotted portion, means for locking said longitudinally movable member in said slotted portion of said rotatable member, a transversely disposed table on the said movable member having off-set longitudinal guiding slots, a transverse slot connecting said off-set slots, a movable head on said table, and a locking and guiding key adapted to engage said guiding and transverse slots.

2. In a radius and tangential surface grinding wheel dresser, in combination, a rotatable table, locking means for said table, a sine bar and stop members for stopping said rotatable table at predetermined angular positions, a top table movable longitudinally on said rotatable table having a transverse slot connected by longitudinally extending off-set guiding slots, a head movable longitudinally on said top table having a transverse slot on the bottom side thereof, a guiding and locking key disposed in the transverse slot in said head having a depending portion engaging the slots in said top table, gear means for moving said head longitudinally on said top table, and a tool holder disposed on said head.

3. In a radius and tangential surface grinding wheel dresser as set forth in claim 2 wherein end plates on said rotatable table and a radius set pin on said top table are provided for measuring the relative position of said top table with reference to the ends of said rotating table to vary the radius of the circular movement of said tool holder.

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