Jan. 2, 1945. H. S. JAKOBSEN 2,366,623

RADII AND ANGLE DRESSER

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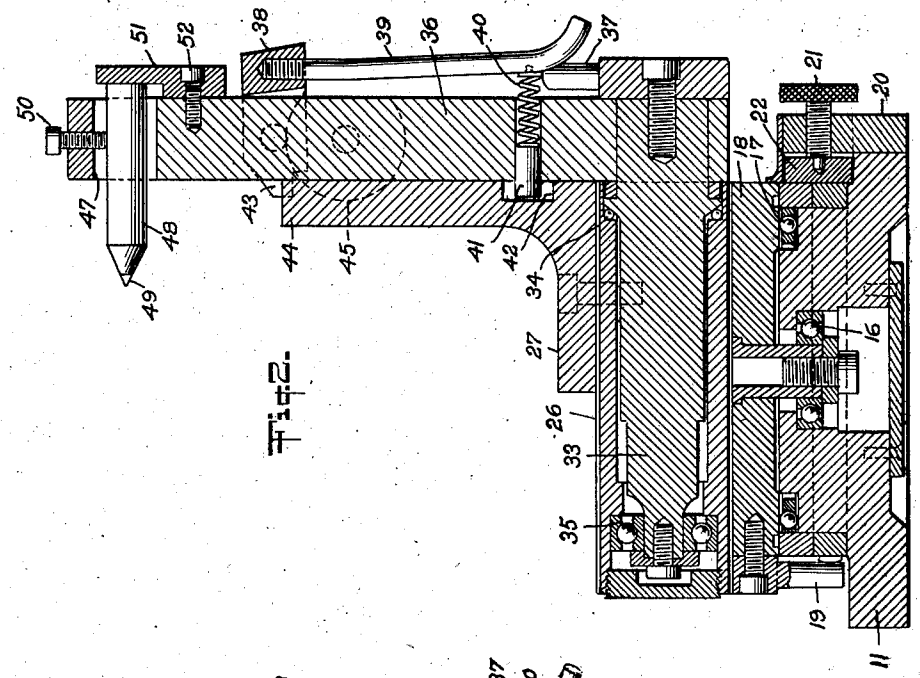


Fig. 2.

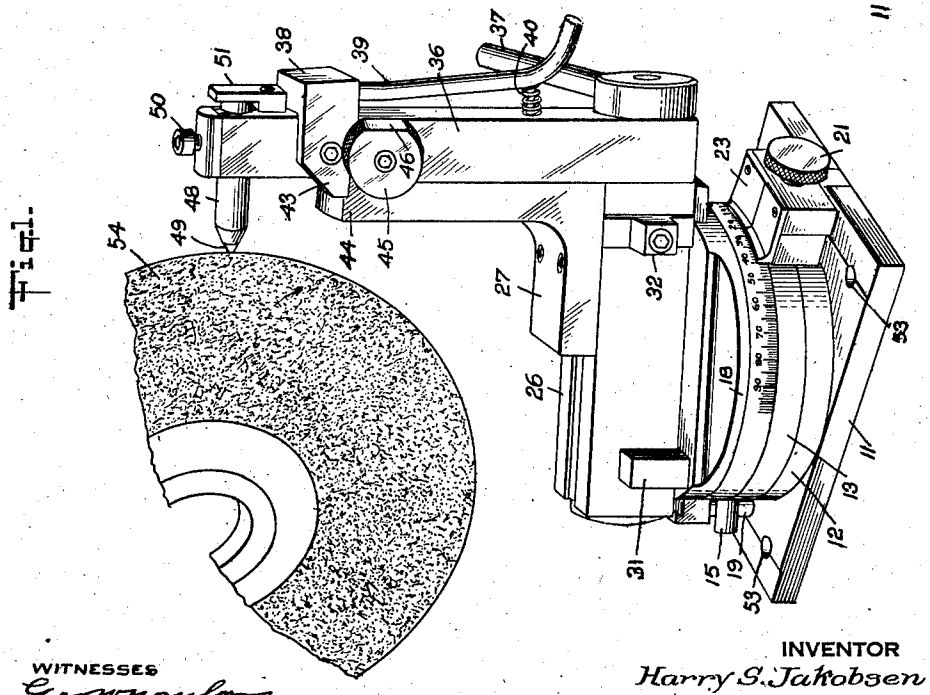


Fig. 1.

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RADII AND ANGLE DRESSER

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Fig. 4.

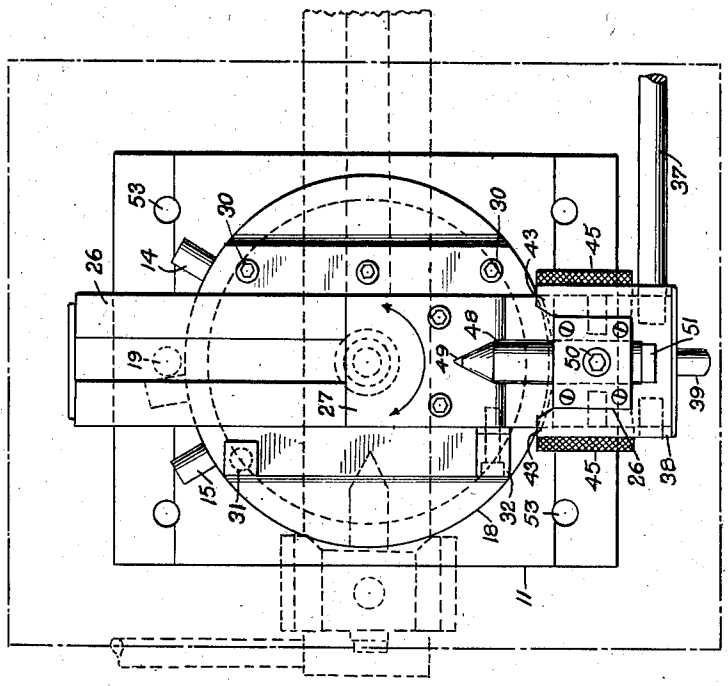
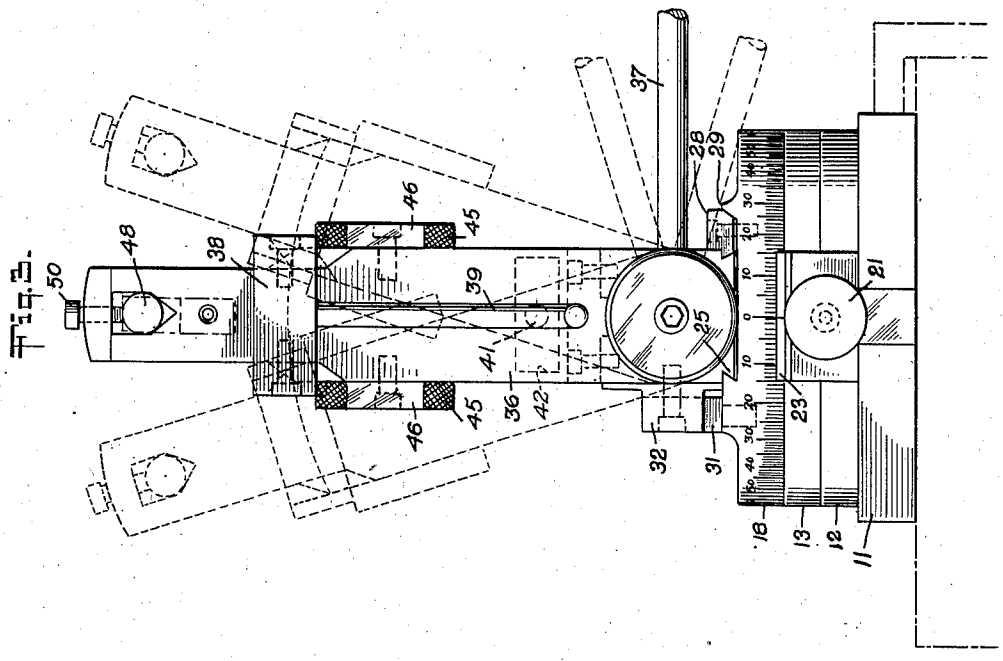


Fig. 5.



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Fig. 7.

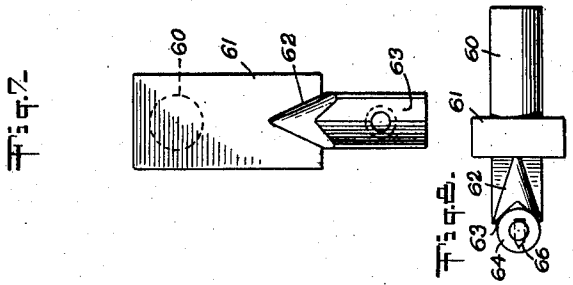


Fig. 6.

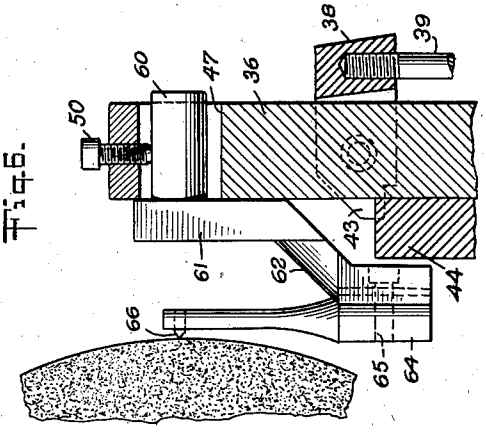
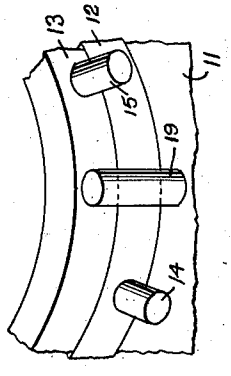


Fig. 5.



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UNITED STATES PATENT OFFICE

2,366,623

RADII AND ANGLE DRESSER

Harry S. Jakobsen, Harrison, N. J., assignor to J & S Tool Co., East Orange, N. J., a firm consisting of F. Henry Swenson and Harry S. Jakobsen

Application January 14, 1943, Serial No. 472,390

6 Claims. (Cl. 125—11)

This invention relates to radii and angle dressers, and more particularly to a radii and angle dresser adapted to dress grinding wheels and to cut said wheels in any desired manner so that they may, in turn, be used in grinding or finishing other materials.

An object of the invention is to provide a dresser which cannot only grind the wheels at any desired angle, but which can apply a convex or concave radius to the wheels. With the present invention it is possible to dress the wheel to practically any desired surface or combination of surfaces.

A further object is to provide a precision instrument having uses previously set forth, which will be simple to operate and completely accurate.

Other objects and advantages will become apparent as the description proceeds.

In the accompanying drawings—

Fig. 1 is a perspective view of a dresser embodying my invention;

Fig. 2 is a side elevation thereof in cross section;

Fig. 3 is an end view showing the manner in which the upright may be pivoted;

Fig. 4 is a top plan view showing the manner in which the base may be turned;

Fig. 5 is a detail view of the stop mechanism;

Fig. 6 is a side elevation of an attachment for the dresser;

Fig. 7 is an end view of a portion of the attachment;

Fig. 8 is a top view of the portion shown in Fig. 7.

Referring more particularly to the drawings, my dresser is mounted on a base 11 on which are mounted two rings 12 and 13. Rings 12 and 13 are provided with stops 14 and 15, stop 14 being on the ring 12 and stop 15 being on the ring 13. Mounted on suitable bearings 16 and 17 is a swivel base 18 carrying a swivel base stop 19, the purpose of which will be discussed later.

Positioned on the front of the base 11 is a block 20 in which is a set screw 21 controlling the ring clamp 22. It will be seen that by tightening the set screw 21, the rings 12 and 13 may be secured against rotation. A vernier plate 23 covers the ring clamp and is adapted to register with the graduations on the swivel base 18.

Dove-tailed into the swivel base 25 is a housing 26 upon which is fastened a bracket 27. A gib key 28 engages gib 29 and is held in place by bolts 30 to limit the movement of the housing in the swivel base. A micrometer block 31 is mounted on the swivel base and is adapted to cooperate with a similar block 32 in the housing. Positioned in the housing 26 is a shaft 33 having suitable bearings 34 and 35. An upright 36 is mounted on the shaft 33 and is provided with an operating handle 37. Pivoted on the upright 36 is a centering block 38 provided with a lever 39. The lever 39 is contacted by a spring 40 engaging the plug 41 in the groove 42 to normally keep the ends 43 in engagement with the upper sides of the bracket 27. The plug or pin 41 is press fitted into the upright 36 and not only serves to position the spring 40 but serves to limit the angular travel of the upright 36 to the length of the groove 42. It will be seen that by pressing down on the lever 39, the ends 43 of the centering block 38 will be free from the ends 44 of the bracket 27 so that the upright 36 may be pivoted on the shaft.

Mounted on the upright 36 are washers 45 having a flat side 46. By turning the flat side 46 of the washer 45 flush with the bracket 27, the upright 36 will be free to pivot in either direction when the centering block's lever 39 is depressed. However, should either of the washers 45 be turned with its rounded side toward the bracket, it will prevent movement of the upright beyond the bracket.

Mounted in the top of the upright 36 in the opening 47, is the diamond 48 having a diamond point 49. The diamond is held in place by the diamond clamp 50. A size block 51 is positioned on the upright by means of the screw 52 and is adapted to position the diamond 48.

The dresser is adapted to be used on any standard magnetic chuck or may be bolted in place through the holes 53, if desired. In use, it is so placed in relation to the stone that the height of the diamond is even with the center of the grinding wheel spindle (not shown). The grinding wheel 54 is then in position to be dressed.

If a single angle is desired, the set screw 21 is loosened and the stops 14 and 15 are pushed into contact with the swivel base stop 19. The swivel base is then turned to the desired angle, thus pushing one of the stops and its ring with it. The set screw is then tightened and the wheel may be dressed by releasing the centering block through its lever 39 and pivoting the upright on the shaft. Where two angles are desired, the set screw is loosened and the swivel base turned to the first angle, thus pushing the stop and the ring to that position; then turned back to the second desired angle, where the set screw is tightened. During the dressing the swivel base

stop should be kept against the corresponding stop with care and pressure.

Where a convex radius is desired, the diamond is fixed at a known distance, for instance two inches from the point to the back of the size block. The gib 28 is then loosened and the housing centered until the same distance is measured between the micrometer block 31 and 32. The desired convex radius is then added to this setting. For a concave radius, the desired concave radius is subtracted from the center setting.

It will be appreciated that any given combination of angles and radii can be obtained with the proper setting of the dresser, and those shown in Fig. 9 are only examples.

As shown in Figs. 6, 7 and 8, I have provided an attachment for cutting concave radii which will form a U-shaped concave radius with a minimum of $\frac{1}{16}$'' radius, at 180 degrees. With this attachment the stud 60 is inserted into the opening 47 and fastened in the diamond clamp 50. A block 61 depends from the stud 60 and is provided with an arm 62 having a V-shaped surface 63 to which the diamond holder 64 is held by the screw 65. The diamond 66 is positioned in the holder in line with the center of the V-shaped surface 63.

It will be seen that, with this attachment, much finer work may be accomplished.

I claim:

1. A dresser including a base, a swivel member having an upright mounted on said base, a diamond mounted in said upright, means for adjustably limiting the movement of said swivel member, said means including a pair of rings, stops mounted on said rings, means for adjustably fixing the position of said rings, and a stop engaging member on said swivel member.

2. A dresser including a pivotal base, means for limiting the pivotal movement of said base to predetermined limits said means including a pair of rings mounted for rotation on the same pivot as said base, stops mounted on said rings, means for adjustably positioning the position of said rings, a stop engaging member on said base, an arm mounted on said base for swinging action thereon, and a diamond carried by said arm.

3. A device for dressing radii and angles including a base, a pair of rings bearing stops mounted on said base, means for fixing said rings with their stops at any desired point, a swivel base mounted on said base for rotation thereon, a member on said swivel base adapted to engage said stops, a housing slidably mounted on said swivel base, means for fixing the position of said housing with relation to said swivel base, a bracket on said housing, a shaft in said housing, an upright engaging said shaft, means on said upright to releasably engage said bracket to position said upright, and a cutting tool mounted in said upright.

4. A cutting device including a pivotal base, a pair of stop members adapted to engage a member on said pivotal base to limit the movement of said base to one or more predetermined angles, a housing slidably mounted on said pivotal base, means for predetermining and fixing the position of said housing with relation to said pivotal base; a shaft mounted in said housing, an upright on said shaft adapted to move therewith, a cutting member in said upright, and means for limiting the movement of said upright.

5. A tool mounting including a pivotal base having graduations thereon, a pair of ring members pivotally mounted below said base, stops on said ring members, a member for clamping said ring members, said member carrying a vernier plate adapted to register with the graduations on said pivotal base, and a stop engaging member on said pivotal base.

6. A radii and angle dresser including a pivotal base, a stop engaging member on said base, adjustable stop members pivotally mounted on the same pivotal axis as said base adapted to engage said stop engaging member, a housing mounted on said pivotal base and movable laterally with relation thereto, means for determining and fixing the center of said housing with relation to said pivotal base, a shaft in said housing, an upright on said shaft adapted to swing thereon, a cutting tool in said upright, and means for rotating said device between the points defined by said stop members.

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