

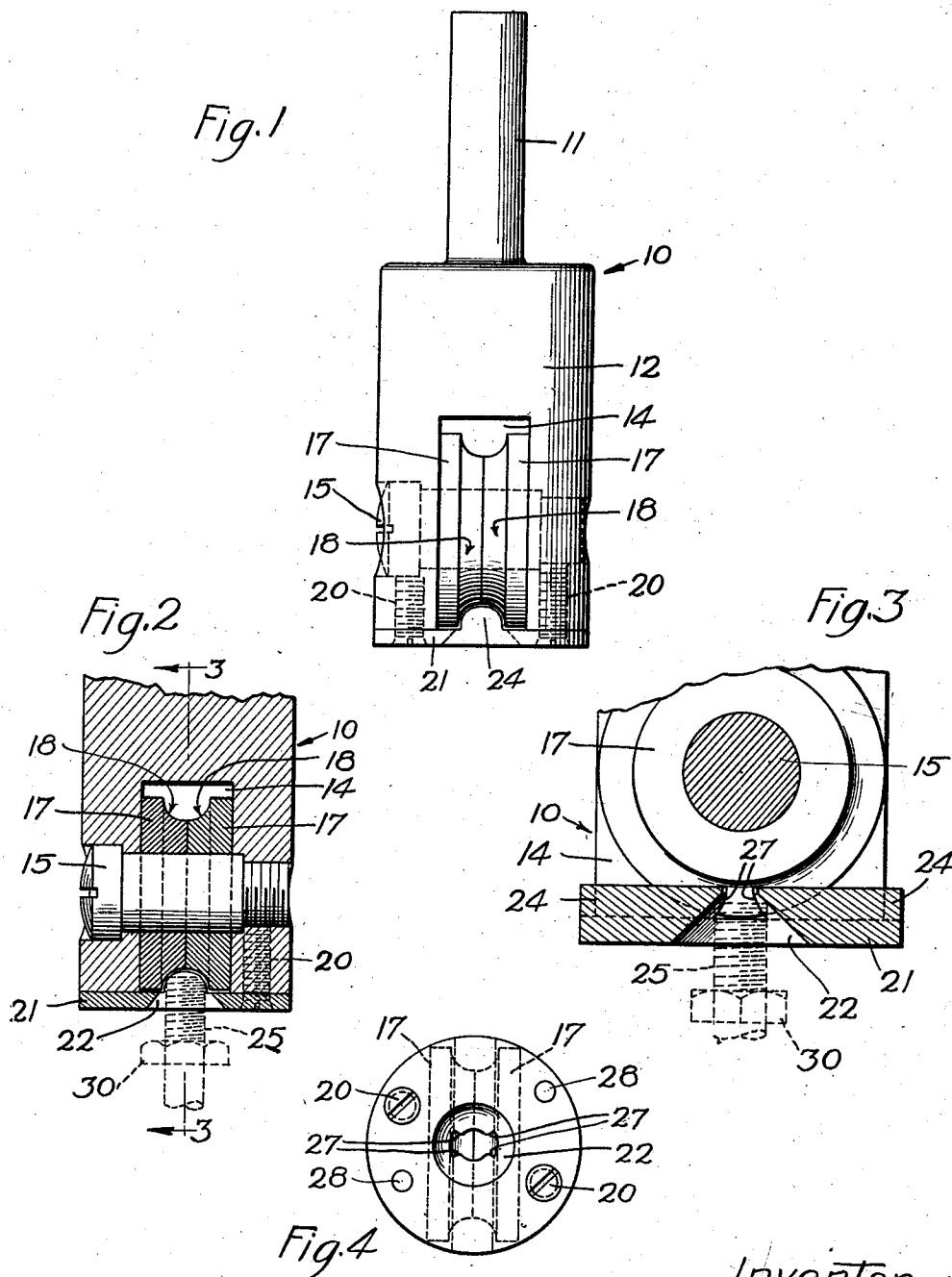
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TOOL

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UNITED STATES PATENT OFFICE

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TOOL

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This invention relates to tools, and more particularly to tools for spinning the ends of threaded terminal members.

In spinning the ends of rods or the like to form heads thereon, it is the practice in some instances to secure the work to be spun in a fixed position with respect to the working surface of a spinning tool and then move the tool into operative engagement with the work. Thus, for example, in the production of threaded terminal posts which are used extensively in various types of telephone apparatus, the ends of these posts must be upset to prevent terminal nuts threaded thereon from being displaced. In employing the above mentioned spinning operation, care must be exercised in properly positioning each post with respect to the tool in order to uniformly upset the post end without deforming the threads thereof. In following this practice, burrs are sometimes formed which must be removed subsequent to the spinning operation and in some instances when the burrs produced are very large, the post is unsuitable for use.

The primary object of this invention is to provide a simple and durable tool to facilitate and accelerate spinning operations.

In accordance with the general features of the invention one embodiment thereof contemplates the provision of a spinning tool which comprises a body adapted for attachment with a suitable machine, such as a drill press, lathe or the like and a pair of forming rollers having concave working surfaces rotatably mounted within the body. Secured to the body in a position adjacent to the working surface of the forming rollers is an apertured plate member provided with a pair of oppositely disposed projections which extend upwardly into the concave surface portions of the forming rollers. The edges of these projections lie adjacent to the working surfaces of the rollers and serve to effectively remove any burrs produced during the spinning operation and the aperture in the plate is countersunk to facilitate the positioning of the end of the threaded terminal post and to prevent deformation of threads on the post.

These and other objects will be apparent from the following detailed description and the accompanying drawing, wherein

Fig. 1 is an elevational view of a spinning tool which is representative of one embodiment of the invention;

Fig. 2 is a fragmentary vertical sectional view of the tool taken on a plane extending centrally and transversely of the forming rollers;

Fig. 3 is a fragmentary vertical sectional view taken on the line 3—3 of Fig. 2, and

Fig. 4 is a bottom view of the tool shown in Fig. 1.

Referring now to the drawings wherein like numerals have been employed to designate similar parts throughout the various figures, it will be observed that the spinning tool disclosed includes a body or mounting 10 which comprises a shank 11 terminating in a head 12. The head 12 is bifurcated by an opening 14 extending transversely thereof and traversing the opening 14 is a spindle 15 which is threaded into the body 12.

Revoluble upon the spindle 15 within the opening 14 is a pair of forming or spinning rollers 17. These rollers 17 are formed with arcuate working surfaces 18 and when the rollers are properly positioned within the opening 14 the cross-section of their working surfaces 18 will present a contour which is substantially semi-circular. It is to be understood that the form of contour presented by the working surfaces 18 will be dependent upon the type of spinning for which the tool is employed.

Secured to the outer end of the head 12 by means of screws 20 is a plate member 21 which has a central countersunk aperture 22. Formed integral with the plate member 21 and extending transversely of the upper face thereof is a rib or projection 24. The outer surface of this rib 24 conforms substantially to the contour of the combined working surfaces 18 of the rollers 17 and the central portion of the rib is cut away by the countersunk aperture 22 as shown clearly in Figs. 3 and 4. By having the central part of the rib 24 cut away in this manner the spinning tool may be carried into operative

position with the working surfaces 18 engaging the end of a threaded terminal post 25 as shown by dotted lines (Figs. 2 and 3) and the inner surfaces of the ribs 24 which form wall portions of the countersunk aperture 22 will similarly engage the end of the terminal post.

In use the shank 11 of the spinning tool may be secured to the revoluble part of any suitable machine such as the chuck of a drill press and when rotation is imparted thereto, the tool may be lowered to operative engagement with the threaded terminal post 25. Should the post 25 not be in exact axial alignment with the tool, the walls of the countersunk aperture 22 will serve to properly center the work when the tool is lowered into position and upon the frictional engagement of the working surfaces 18 with the terminal post the end thereof may be properly upset or spun. It will be observed that the plate member 21 renders impossible the mutilation or deformation of the threads of the terminal posts during the spinning operation and should burrs be produced during the spinning, inner edges 27 of the ribs 24 which lie adjacent to the working surfaces of the roller 17 (Figs. 3 and 4) serve to effectively and positively remove or cut away the burrs. Positioning pins 28 (Fig. 4) which are adapted to extend through companion apertures in the plate member 21 facilitate the proper positioning of the plate upon the head 12 during the assembling of the tool parts.

It will be clear that a spinning tool of the type described is particularly adaptable for use in connection with spinning the ends of a plurality of the threaded terminal posts 25. A large number of these posts are in some instances mounted upon a panel or plate and subsequent to the mounting thereof terminal nuts 30 are threaded thereon. After the nuts have been applied to all of the posts, the entire panel may be placed upon the bed of a suitable drill press and the spinning tool successively carried into engagement with the ends of the terminal posts. The tapered walls of the countersunk aperture 22 serve to guide each post into proper association with the spinning rollers 17 and no time need be expended to accurately position each post beneath the tool. The positive removal by the edges 27 of any burrs which might be produced during the spinning operation decreases the number of imperfectly spun posts and eliminates the necessity of removing burrs subsequent to the spinning as hereinbefore set forth. Obviously, the tool described is very efficient in operation and serves to greatly facilitate and accelerate spinning operations.

Although the invention has been described in connection with a tool for spinning the ends of threaded terminal posts, it is to be

understood that the invention is capable of many other applications which are limited only by the scope of the appended claims.

What is claimed is:

1. In a spinning tool, a mounting, a forming member carried by the mounting, and means attached to the mounting and operating independently of the forming member for engaging work associated with the tool to remove burrs produced by the action of the forming member.

2. In a spinning tool, a mounting, a forming member carried by the mounting, and a burr removing means removably attached to the mounting.

3. In a spinning tool, a mounting, a forming member carried by the mounting, and an apertured element adjacent the working surface of the forming member.

4. In a spinning tool, a mounting, a forming member rotatable with respect to and carried by the mounting, and an element having a burr removing portion positioned adjacent the working surface of the forming member and in fixed relation to the mounting.

5. In a spinning tool, a mounting, a forming roller rotatably carried by the mounting, and a member having a portion of its surface positioned adjacent to and conforming in contour with the working surface of the forming roller.

6. In a spinning tool, a mounting, a forming roller having an arcuate working surface rotatably carried by the mounting, and an apertured element having a projection which is positioned adjacent the arcuate working surface of the forming roller.

7. In a spinning tool, a mounting, forming rollers having arcuate working surfaces rotatably carried by the mounting, and a plate secured to the mounting having a countersunk aperture and a pair of oppositely disposed projections for engaging work associated with the tool.

8. In a spinning tool, a mounting, a forming member, and means for positioning work with respect to the forming member, both of which are carried by the mounting.

In witness whereof, I hereunto subscribe my name this 30th day of September, A. D., 1926.

FRANK DWIGHT OESTERLE.