Dec. 24, 1929. H. P. LAMBERT 1,740,467

ROTARY FILE

Filed March 29, 1928

FIG. 1

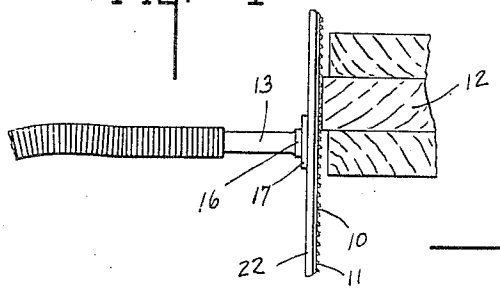



FIG. 2

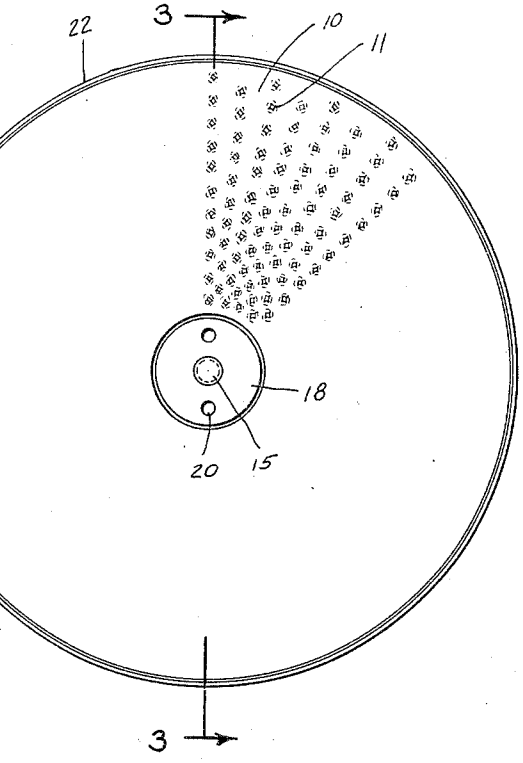
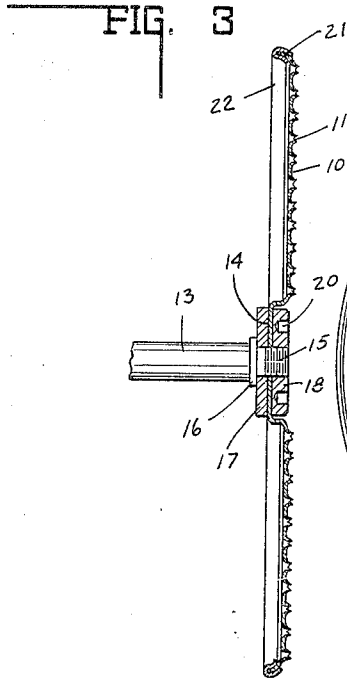



FIG. 3




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# UNITED STATES PATENT OFFICE

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## ROTARY FILE

Application filed March 29, 1928. Serial No. 265,720.

This invention relates to a rotary file particularly adapted for dressing down protruding surfaces of wood or metal, substantially as shown and described in application Serial No. 234,577, filed Nov. 21st, 1927.

In a rotary file of this character, which attains an extremely high rotary speed, there is danger of the centrifugal force, combined with the lateral pressure and grinding action, causing breakage and injury to the operator by parts thereof being thrown from the peripheral edge.

It is the object of this invention to so construct the rotary file as not only to strengthen the peripheral edge thereof, but prevent parts thereof, which might be broken, from being thrown outwardly therefrom. This is accomplished by providing a flanged periphery, to which is spot welded or otherwise secured a soft metal rim. Inasmuch as the breakage generally occurs adjacent the rim so that the damaging broken parts embody a portion of the periphery, the soft metal rim will retain and hold the parts and prevent their flying outwardly, due to the tensile strength of the soft metal as distinguished from the brittle tool steel from which the file is formed.

Another feature of the invention resides in the provision of an annular and centrally positioned offset or recessed portion adapted to receive and embody therein a locking nut for securing the file upon the drive shaft. This construction further strengthens the rotary file at its central portion and provides a relatively large bearing area for locking it to the shaft and supporting it in position thereon, while maintaining a flat-toothed surface unobstructed at the center for operative purposes.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims:

Figure 1 is a side elevation showing the application of the rotary file to a piece of work. Fig. 2 is a front elevation of the rotary file. Fig. 3 is a section taken on the line 3—3 thereof.

In the drawings there is shown a rotary file 10 formed of one piece of relatively thin sheet metal generally flat in shape. The file 10 has a plurality of burrs or cutting teeth 11 thereon, adapted to engage and operate upon a piece of work 12. Said file is rotated at high speed by means of the drive shaft 13. The file is provided with an annular and centrally positioned recess 14 having a central aperture through which the threaded end of the shaft 15 extends. The shaft is provided with a shoulder 16 against which the washer 17 abuts for receiving the rear surface of the recessed portion 14. The file is locked on the shaft against the washer 17 by the nut 18 provided with openings 20 for receiving a spanner wrench. It will be noted that the forward or extreme surfaces of the shaft 15 and nut 18 are behind the operating plane of the file so that there will be no interference with its engagement of the work.

The rotary file 10 is provided with a rearwardly extending flanged edge 21 about its periphery which strengthens and slightly stiffens the file. Secured about the flanged edge 21 by spot welding or other suitable means, there is a soft metal rim 22 adapted to embrace the flanged periphery 21. Thus, if any breakage or splitting action occurs in the hardened steel file, it will be held and prevented from flying laterally, causing injury, by the soft metal rim which has a relatively high tensile strength. This provides a safety device, as well as an important structural feature for increasing the strength and life of the file as well as preventing serious danger or injury to the operator.

The invention claimed is:

1. A rotary file, comprising an annular disc of hardened sheet steel provided with a cutting surface, means for rotating the same at high speed, and a member of high tensile strength surrounding the periphery thereof for strengthening the same and preventing lateral displacement of broken parts which may occur in the high rotary speed thereof.

2. A rotary file, comprising an annular disc of hardened sheet steel provided with a cutting surface, means for rotating the same at high speed, and a metal rim of high tensile strength formed about the periphery thereof for strengthening the same and preventing lateral displacement of broken parts which

may occur in the high rotary speed thereof.

3. A rotary file, comprising an annular disc of hardened steel provided with a cutting surface, means for rotating the same at high speed, a rearwardly extending flanged portion formed about the periphery of said disc, and a soft metal rim of high tensile strength secured to said flange for securing and retaining broken parts of said disc which may occur in the high rotary speed thereof

4. A rotary file comprising an annular disk provided with a cutting surface, a rearwardly extending flange formed about the periphery of said disc and a protecting rim secured about said flange so as to envelop both sides thereof, said protective rim being formed of a soft metal of high tensile strength for retaining broken parts which may occur in said disc, due to the high rotary speed thereof.

In witness whereof, I have hereunto affixed my signature.

HOMER P. LAMBERT.