June 6, 1939. B. SAKREN ET AL 2,161,532

FILE

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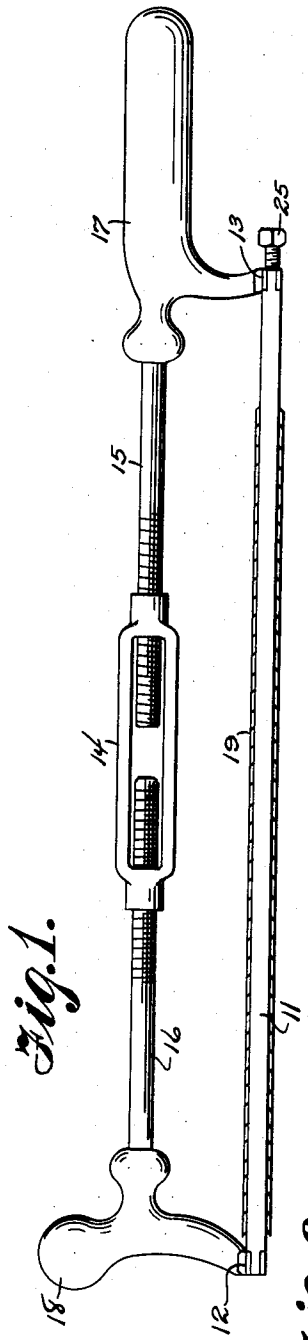

Fig. 1.

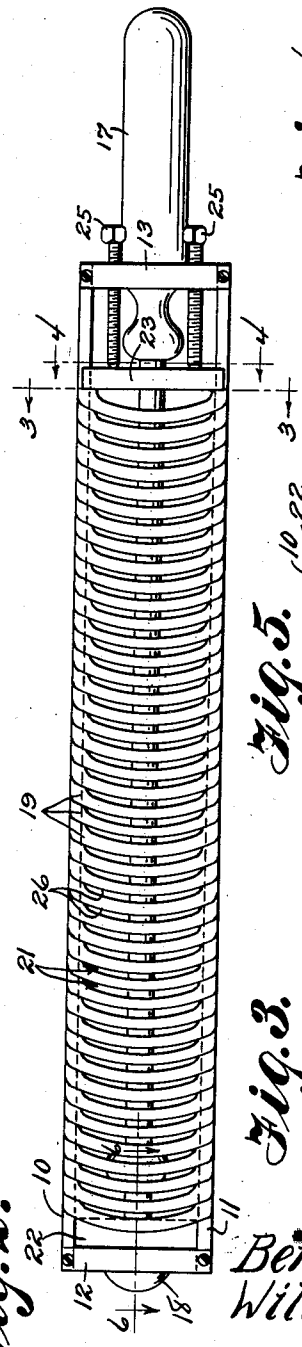

Fig. 2.

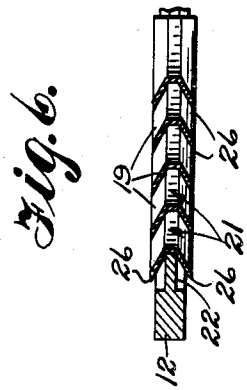

Fig. 6.

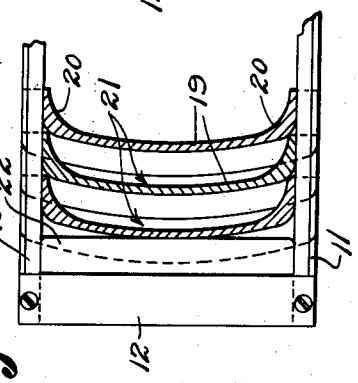

Fig. 5.

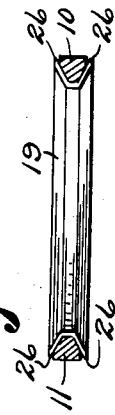

Fig. 3.

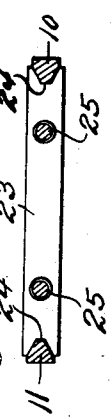

Fig. 4.

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FILE

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Application May 18, 1938, Serial No. 208,656

2 Claims. (Cl. 29—79)

This invention relates to files and has for an object to provide a coarse file in the nature of a rasp which will have novel detachably mounted cutters of such shape as to provide spaces between them through which coarse filings may escape from the rasp to promote speed and effectiveness in smoothing rough spots on surfaces to be painted and other work.

A further object is to provide a rasp of this character in which the cutters are supported at the ends in a resilient frame which may be warped or deformed through the medium of a turnbuckle to vary the inclination of the teeth to the surface of the work.

A further object is to provide a rasp of this type which will be formed of a few strong simple and durable parts, which will be inexpensive to manufacture and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawing forming part of this specification,

Figure 1 is a side elevation of a rasp constructed in accordance with the invention.

Figure 2 is a bottom plan view of the rasp shown in Figure 1.

Figure 3 is a detail cross sectional view taken on the line 3—3 of Figure 2 and showing one of the cutters or teeth as having a substantially V-shaped cross sectional contour.

Figure 4 is a detail cross sectional view taken on the line 4—4 of Figure 2 showing the follower for forcing the nested ends of the teeth tightly together.

Figure 5 is a fragmentary enlarged plan view of the front end of the rasp and showing three nested teeth in longitudinal section.

Figure 6 is a detail longitudinal sectional view taken on the line 6—6 of Figure 2.

Referring now to the drawing in which like characters of reference designate similar parts in the various views, 10 and 11 designate the longitudinal side bars and 12 and 13 designate the transverse end bars of a substantially oblong frame. The longitudinal bars are formed of resilient metal so that they may be deformed or arched through the instrumentality of a turnbuckle 14. The oppositely threaded rods 15 and 16 of the turnbuckle are fixed at the ends to respective handles 17 and 18 secured respectively to the rear bar 13 and to the front bar 12 of the frame.

Disposed transversely across the frame is a plurality of cutters or teeth 19 of substantially V-shaped cross sectional contour and gently curved intermediate the ends. The ends of each cutter or tooth are abruptly curved as shown at 20, the radius of curvature of the ends being considerably greater than the radius of curvature of the intermediate portion of the teeth. The abruptly curved ends receive the longitudinal side bars 10 and 11 of the frame, as best shown in Figure 5, and also the ends of adjacent teeth abut each other so that spaces 21 exist between the teeth through which coarse filings may escape from the file and thus promote speed and efficiency in smoothing rough work.

The front end tooth of the series of teeth straddles a rib 22 on the front end bar 12 of the frame, as best shown in Figure 6. A follower 23, best shown in Figure 4, is provided in the ends with notches 24 which slidably receive the side bars 10 and 11 of the frame. The follower abuts the rear most tooth of the series of teeth. A pair of set screws 25, best shown in Figure 2, are engaged through the rear end bar 13 of the frame and abut the rear face of the follower 23. By tightening the set screws against the follower all of the teeth may be tightly nested at the ends within each other and firmly secured in place on the sides 10 and 11 of the frame.

The spaced longitudinal edges 26 of each tooth are sharpened to provide cutting edges and since each tooth has two longitudinal edges by virtue of its U-shaped cross sectional contour the file will be reversible to use either working face upon the work to be smoothed.

In operation the rasp may be manipulated over the work in the usual manner and during such manipulation coarse filings will escape through the spaces 21 between the teeth so that the rasp is self-clearing. By loosening the set screws 25 the follower 23 may be slid back against the rear bar 13 of the frame so that the teeth may be swung diagonally of the frame in succession to replace any worn or broken tooth with a new tooth. Also in this manner the teeth may be removed at will from the frame for the purpose of sharpening. By loosening or tightening the turnbuckle 14 the longitudinal bars 10 and 11 of the frame may be deformed into arcuate contour so that greater spaces will exist between the teeth to suit various conditions of service.

From the above description it is thought that the construction and operation of the invention will be fully understood without further explanation.

What is claimed is:

1. A file embodying a substantially rectangular frame, a plurality of gently curved cutters of substantially V-shaped cross sectional contour slidably engaged at the ends with the frame, a follower in the frame for forcing said cutters at the ends into tight engagement with each other, said cutters being spaced apart intermediate their ends to permit coarse filings to escape between the cutters, and a set screw carried by the frame and bearing against said follower to hold the follower in operative position, backing off of the set screw permitting the follower to be moved out of engagement with the cutters to permit the cutters being removed from the frame.

2. A file embodying a frame having resilient longitudinal bars and end bars connecting the longitudinal bars together, a turnbuckle, handles carried by the turnbuckle secured to the end bars of the frame, movement of the turnbuckle flexing the longitudinal bars of the frame, a plurality of cutters disposed transversely of the frame of substantially V-shaped cross sectional contour and having their ends straddling the longitudinal bars of the frame, and a follower carried by the frame for holding said cutters in operative position, said cutters being spaced from each other intermediate their ends to permit coarse filings escaping from between the cutters.

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