

# United States Patent

Coon et al.

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[54] **FILE HANDLE**

[72] Inventors: **James A. Coon**, 929 Drever Street, W. Sacramento, Calif. 95691; **Elwin Theobald**, 4631 Solano Way, Fair Oaks, Calif. 95628

[73] Assignee: **said Coon, by said Theobald**

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[52] U.S. Cl. .... **29/80**

[51] Int. Cl. .... **B23d 71/04**

[58] Field of Search ..... **29/78.80**

[56] **References Cited**

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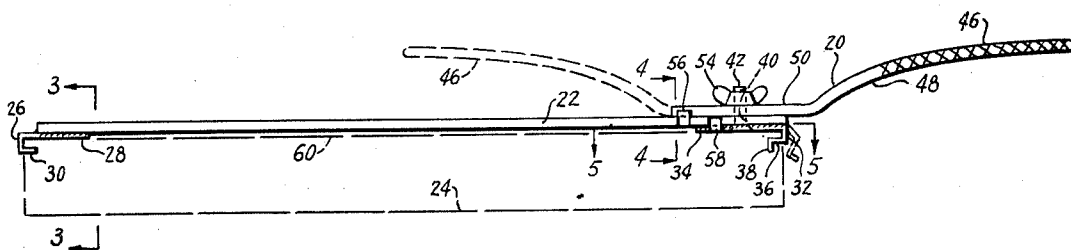
*Primary Examiner*—Harrison L. Hinson

*Attorney*—Alexander B. Blair

[57] **ABSTRACT**

A longitudinal shaft having projections on each end thereof extending downward and inward toward each other for gripping the side wall of the end portions of a hollow file, a bolt inserted therethrough at one end thereof, a handle attached thereto at one end thereof, one of the projections and the handle having a longitudinal slot in which the bolt is inserted for adjustment of the handle and adjustment of the projection to grip the end of the file, and vertical extensions extending from both surfaces of the shaft to prevent unwanted side slippage and twisting of the adjustable handle and projection.

**6 Claims, 12 Drawing Figures**



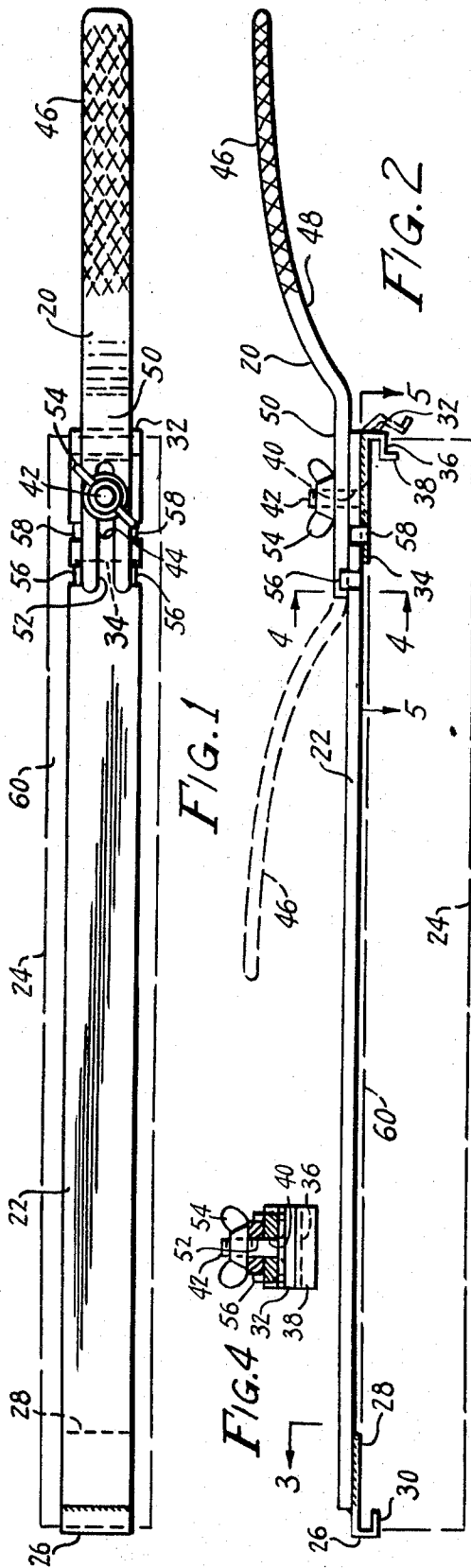


FIG. 1

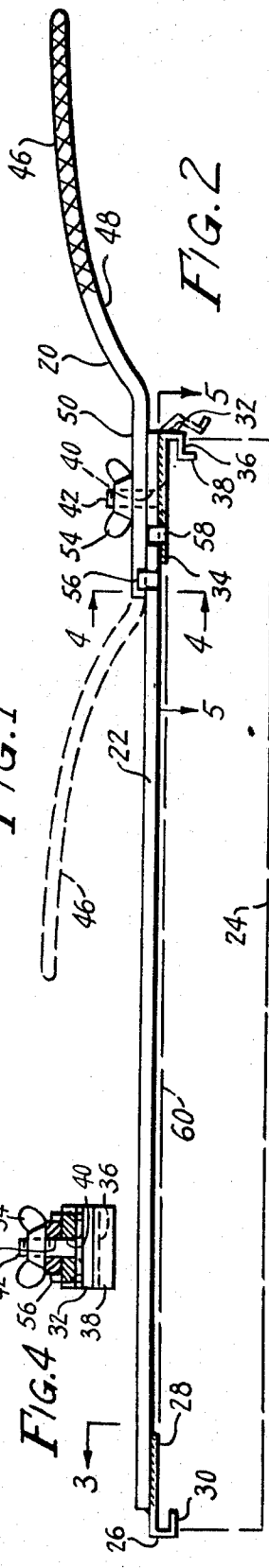


FIG. 2

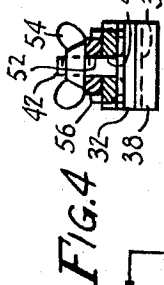


FIG. 3

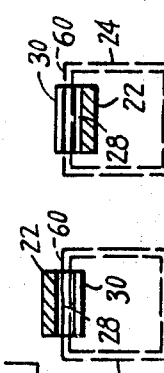


FIG. 3A

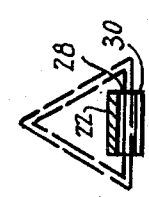


FIG. 3B

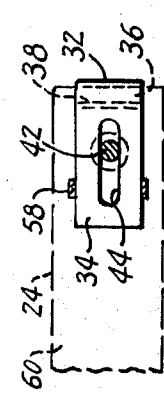


FIG. 4

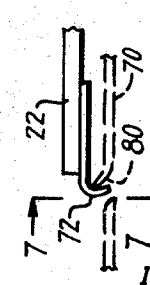


FIG. 5

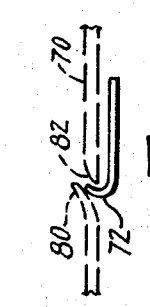


FIG. 6

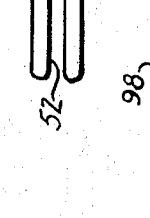


FIG. 7

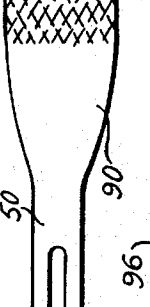


FIG. 8

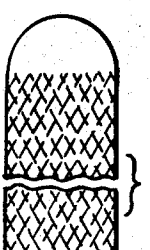


FIG. 9

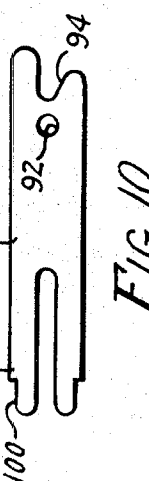


FIG. 10

INVENTORS.  
 JAMES A. COON  
 ELWIN THEOBALD  
 BY

Alexander B. Blair  
 ATTORNEY.

## FILE HANDLE

This invention relates to a handle for hollow files.

The primary object of this invention is to provide a handle whereby a hollow file may be utilized with a maximum of efficiency.

Another object of this invention is to provide means for allowing a handle to be used in different ways and for allowing various handle portions to be substituted quickly and simply.

A further object of this invention is to provide means for gripping and removing the hollow file in different ways.

Still another object of this invention is to provide means for attaching the handle to the hollow file solely by gripping the file teeth.

The above and other objects of this invention will become apparent to those skilled in the art after a consideration of the following detailed description of the preferred embodiments of this invention taken together with the accompanying drawing wherein:

FIG. 1 is a plan view of the handle;

FIG. 2 is an elevational view thereof;

FIG. 3 is a sectional view thereof taken on line 3—3 of FIG. 2;

FIGS. 3A and 3B show different types of hollow files to which the handle of FIG. 2 may be attached;

FIG. 4 is a sectional view taken on line 4—4 of FIG. 2;

FIG. 5 is a sectional view taken on line 5—5 of FIG. 2;

FIG. 6 is a cross-sectional view of an embodiment wherein the handle is attached to the teeth of the hollow file;

FIG. 7 is a sectional view taken on line 7—7 of FIG. 6;

FIG. 8 shows the embodiment of FIG. 6 wherein the handle is attached to the file by means of the hole formed by the bent tooth rather than gripping the tooth itself as shown in FIG. 6;

FIG. 9 is a variation of the handle of FIGS. 1 and 2; and

FIG. 10 is another variation thereof.

Referring in detail to the drawing, there is illustrated in FIGS. 1 and 2 a handle 20 attached to a shaft 22 gripping a hollow file 24 shown in dotted outline. Fixed to the bottom surface of shaft 22 at one end thereof is a U-shaped projection 26 having an upper leg 28 welded or otherwise attached to the bottom surface of shaft 22 and a lower and shorter leg 30. On the other end of shaft 22 is a U-shaped projection 32 having an upper leg 34 slidably attached to the bottom surface of shaft 22, the lower and shorter leg 36, and a third leg 38 at the end of leg 36 extending downward therefrom and transverse with legs 34 and 36. Shaft 22 has a hole 40 through which a bolt 42 is inserted. Projection 32 has a longitudinal slot 44 in leg 34 through which bolt 42 is also inserted. Handle 20, which is shown with a knurled section 46 at the curved end 48, has a straight end 50 having a longitudinal slot 52 open at the end of straight end 50. Bolt 42 is also inserted through slot 52 for slidably attaching handle 20 to the top surface of shaft 22. A wing nut 54 allows handle 20 and projection 32 to be adjusted when loosened and fixes them in place when tightened. A pair of extensions 56, shown bent upward from shaft 22, and a pair of downward extensions 58 form a guide for and prevent unwanted slippage and twisting of handle 20 and projection 32 should wing nut 54 loosen while file 24 is being used.

As clearly shown in FIG. 3, the end of side 60 of file 24 fits between and is held in place by means of legs 28 and 30 of projection 26. The other end of side 60 fits between and is held in place by means of legs 34 and 36 of projection 32. Projection 32 is slidably moved along slot 44 in order to accommodate various length files. When hollow file 24 is to be removed from shaft 22, wing nut 54 is simply loosened and projection 32 is moved outward so that leg 38 is beyond the end of hollow file 24. If hollow file 24 is to be removed quickly and if there is not sufficient time to loosen the wing nut for removal, projection 32 may be made of an appropriate spring-type material allowing the user to put his finger within file 24 to press leg 38 out of the file 24 as shown by the dotted outline so that file 24 may be quickly and easily removed and another file quickly inserted in minimum same manner in a minimum of time. This quick way of removing and replacing a file is

even more simplified when leg 38 extends out from side 60 on the outside of hollow file 24 in a situation where shaft 22 is within hollow file 24, as shown in FIG. 3A, rather than outside as is the case in FIG. 3. FIG. 3B illustrates one of the many shaped hollow files for which this invention is adapted.

FIGS. 6—8 show another embodiment for attaching a hollow file 70 to shaft 22. A crow bar shaped projection 72 is attached to the bottom of shaft 22 in the same manner as projection 26. The curved end of projection 72 curves downward from shaft 22 and has a notch 74 at the end thereof forming portions 76 and 78 on each side of the notch which easily slip over two or three file teeth 80 that extend up from the surface of hollow file 70. In this manner hollow file 70 may be attached to shaft 22 by hooking the curved end portions 76 and 78 over file teeth 80 such as those illustrated in FIGS. 1—3 of U.S. Pat. No. 3,389,447, dated June 25, 1968. As already described in connection with FIG. 3A, projection 72 may hook onto hollow file 70 with shaft 22 being within hollow file 70 rather than outside thereof as shown in FIG. 8, the curved end of projection 72 slipping between clearance 82.

If it is desired to use the hollow file such as one might use a scrub brush, it is only necessary to loosen wing nut 54 in order to raise straight end 50 above extensions 56 so that handle 20 may be swung around 180° to be put in the dotted line position as shown in FIG. 2.

A variation of handle 20 is shown in FIG. 9 having a rounded hand grip portion 90, centered along the mid-longitudinal axis of straight end 50, rather than curved end 48 of FIG. 2. It should be noted that portion 90 may have a small diameter for insertion in any chuck or holding collet normally used on file machines wherein the workpiece is pushed up against the file which merely moves in a straight line up and down.

FIG. 10 shows another variation of handle 20 which can be used in conjunction with various types of shafts such as reciprocal type saws, jig saws, etc. Hole 92 and cut out 94 correspond to the configuration required for inserting end 96 in the tool jaw or receptacle. Slotted end 98 is shown with reduced portions 100 for proper fitting between extensions 56. The handle of FIG. 10 will fit the holding collet of a file machine in a manner which is even an improvement over the handle of FIG. 9.

While the preferred embodiments have been illustrated and described, it will be apparent to those skilled in the art that modifications and changes may be resorted to without departing from the spirit and scope of the invention.

We claim:

1. A hollow file holder, comprising a shaft, a hooked projection secured to the bottom of said shaft at one end thereof, a second hooked projection slidably attached to the bottom of said shaft at the other end thereof, a handle slidably attached to the top of said shaft at said other end thereof, means connected to said shaft and said second projection and said handle for alternatively securing said second projection and said handle in a fixed position and allowing longitudinal movement of said second projection and said handle and rotational movement of said handle, said projections adapted to receive and hook on to the end portions of a side of a hollow file which is to be held, said means allowing said projections to firmly grip various length hollow files.

2. The hollow file holder of claim 1, wherein said projections are U-shaped, the legs of said projections being parallel with the bottom surface of said shaft, and the legs of said projections extending toward each other.

3. The hollow file holder of claim 2, including a leg extending downward below said shaft and attached at the end of the lower leg of said second projection, and wherein said second projection and said downward extending leg is comprised of a spring-like material allowing the hollow file to be replaced by another hollow file in a minimum of time without the use of said means.

4. The hollow file holder of claim 1, wherein said projections are shaped in the form of a crow bar with the straight portions thereof being secured to said shaft and the curved

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ends thereof extending downward and toward each other, the curved ends thereof hooking onto and gripping the file teeth jutting from the surface of the hollow file and entering the clearance holes formed by the jutting file teeth of the hollow file in the alternative for firmly holding the hollow file to said shaft with said shaft respectively being positioned outside the hollow file and inside the hollow file in the alternative.

5. The hollow file holder of claim 1, wherein said second projection has a longitudinal slot in the portion thereof attached to the bottom of said shaft and wherein said handle has a longitudinal slot at one end thereof, the slot being open at one end thereof; and including a bolt inserted through said

slots of said second projection and said handle and inserted through said shaft, a wing nut threadedly engaged with said bolt at the top surface of said handle, a pair of extensions extending vertically upward from said shaft adjacent the sides of said handle, and a pair of extensions extending downward from said shaft adjacent the sides of the portion of said second projection attached to the bottom of said shaft.

6. The hollow file holder of claim 5, wherein the other end of said handle is shaped to be inserted in the tool jaw of a file machine and a hand tool in the alternative and to be held manually in the alternative.

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