

(No Model.)

A. C. WELLS.

TOOL HANDLE.

No. 375,786.

Patented Jan. 3, 1888.

Fig. 1.

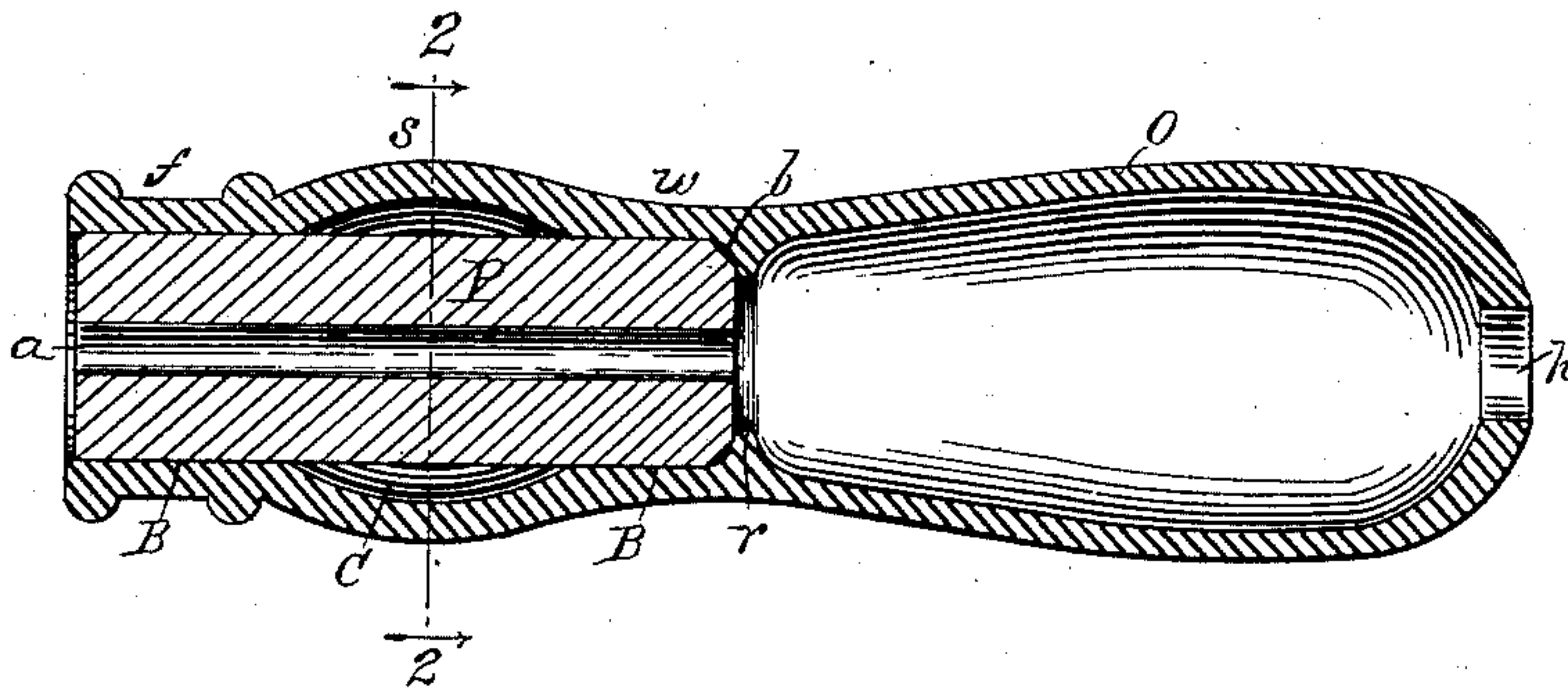


Fig. 2.

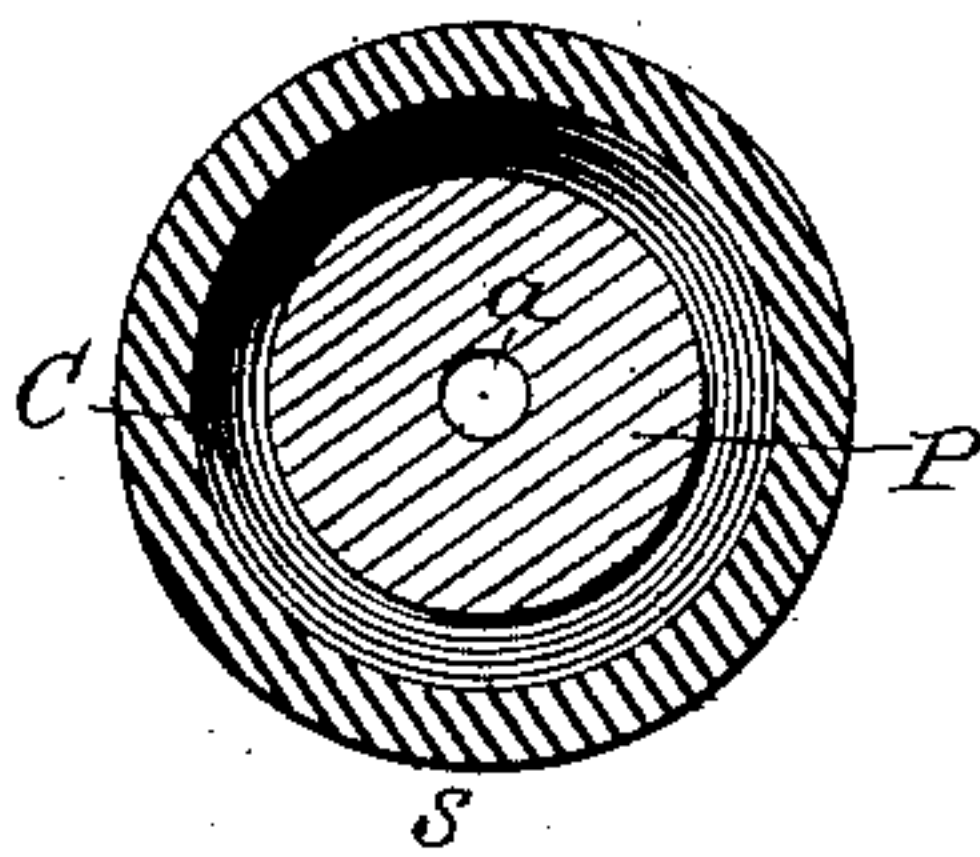
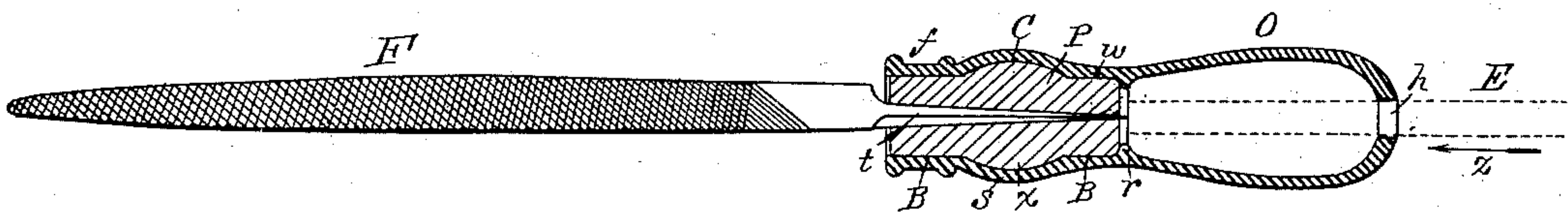


Fig. 3.



Witnesses:

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Inventor.

ARTHUR COLLINGS, WELLS,

By his Attorney

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UNITED STATES PATENT OFFICE.

ARTHUR COLLINGS WELLS, OF MANCHESTER, COUNTY OF LANCASTER,
ENGLAND.

TOOL-HANDLE.

SPECIFICATION forming part of Letters Patent No. 375,786, dated January 3, 1888.

Application filed August 9, 1886. Serial No. 210,418. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR COLLINGS WELLS, a subject of the Queen of Great Britain and Ireland, and a resident of Manchester, in the county of Lancaster, England, have invented certain new and useful Improvements in Tool-Handles, of which the following is a specification.

This invention relates to that class of tool-handles in which a metallic outer shell is employed in connection with a wooden plug into which a file-tang or a like tang on any tool may be conveniently driven, the shell resisting the bursting strain and insuring a smooth and symmetrical grasping-surface. Heretofore such handles have been practically useless after the first plug became worn out, and, owing to their greater first cost as compared with the ordinary wooden handles, could not be economically substituted for the latter.

My present invention consists in a metallic shell of novel construction, in combination with normally-cylindrical or substantially-cylindrical interchangeable wooden "plugs," as hereinafter set forth, whereby provision is made at once for securely fastening the tang and for readily and quickly renewing the wooden plug when worn.

It consists, further, in the combination, with such a plug, of a shell of a specific construction having an efficient thrust-swell with an efficient holding-chamber of corresponding curvilinear shape in longitudinal section within it, so that both may be formed, without surplus metal, by one and the same core enlargement.

A sheet of drawings accompanies this specification as part thereof.

Figure 1 of these drawings represents an axial section of a tool-handle constructed according to this invention as it appears before use. Fig. 2 represents a cross section on the line 2 2, Fig. 1; and Fig. 3 represents a small-scale axial section of the same handle applied to a file, with dotted lines and arrow illustrating the mode of ejecting a worn plug therefrom.

Like letters of reference indicate like parts in all the figures.

O represents said metallic outer shell; P, the

wooden plug; F, a triangular file, representing any hand-tool having a drive-tang, *t*; and E, an ejecting-pin, which may be any tool or piece of metal adapted to be so used. Said outer shell, O, is preferably a malleable-iron casting. The plug P may be of any suitable wood. Their construction is illustrated by Figs. 1 and 2. The plug is normally cylindrical, with an axial bore, *a*, to receive and guide the tool-tang, and a bevel, *b*, at its inner end to facilitate inserting the plug. The outer shell is externally of an approved shape for file-handles and the like, including a curvilinear thrust-swell, *s*, between a terminal ferrule-neck, *f*, and a contracted waist, *w*. Within said neck and waist a smooth cylindrical bore, B B, is formed, and within said thrust swell a holding-chamber, C, of corresponding shape, is formed as a mid-length enlargement of said bore. An internal circumferential rib, *r*, forms a stop at the inner limit of the bore B B, and beyond this the shell is cored out with reference simply to the requisite combination of strength and lightness. In the outer end of the shell a central hole, *h*, provides for inserting the ejecting-pin E, as illustrated in Fig. 3.

The wooden plug P having been loosely inserted within the outer shell, O, against the stop-rib *r*, as shown in Figs. 1 and 2, the tang *t* of the file or other tool F is inserted in the plug-bore *a* and driven home, said stop-rib forming an abutment for the plug. The fibers of the wood displaced by the tang find accommodation within the holding-chamber C, where they form a bulge, *x*, as seen in Fig. 3. This precludes accidental escape of the plug, while the tang may be driven therefrom and a worn plug may be ejected at will in a moment by inserting the ejecting-pin E through said hole *h* and driving it lengthwise, as represented by the arrow *z*.

Interchangeable plugs for the handle will be made in quantity and sold by the dozen, so that worn plugs may be replaced by new ones without loss of time.

I am aware that the tool-holder of the dental engine has been provided with an ejecting-bore in line with its holding-bore to facilitate removing the tools, and also that a "socket-handle" for dentists' tools has been provided

with a lateral hole for the same purpose. In both of these devices provision is made solely for acting on the end of the tang so as to eject the tool. In my device the primary difficulty met and overcome is to so hold the wooden plug of a handle of wood and metal combined as to provide at once for securely fastening the same and for readily ejecting the plug when it becomes worn. The broad idea of providing an ejecting-hole is disclaimed.

I am also aware that the handle-socket of a ferrule has been made of curvilinear shape in longitudinal section, but not so as to coact with a cylindrical plug, nor so as to be formed within a thrust-swell, as in my handle.

Having thus described my said invention, I claim as new and desire to patent under this specification—

1. In a tool-handle, a metallic outer shell constructed with a socket-bore, a holding-chamber curvilinear in longitudinal section midway of said bore, and an internal circum-

ferential stop-rib at the inner end of said bore, and having a central hole in the outer end of the shell to admit an ejecting-pin, in combination with a wooden plug fitted to said socket-bore, substantially as herein specified.

2. The within-described metallic shell having a curvilinear thrust swell between a terminal ferrule-neck and a contracted waist, and constructed with a smooth cylindrical socket-bore within said neck and waist, a holding-chamber curvilinear in longitudinal section within said thrust swell, and a central hole in the outer end of the shell, in combination with a wooden plug expanded within said socket-bore and holding-chamber, for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ARTHUR COLLINGS WELLS.

Witnesses:

JOHN G. WILSON,
JOHN SLATER.