No. 666,281. Patented Jan. 22, 1901.

J. H. MORGAN.

METHOD OF FIXING HANDLES TO FILES OR OTHER LIKE TOOLS.

(Application filed June 12, 1900.)

(No Model.)

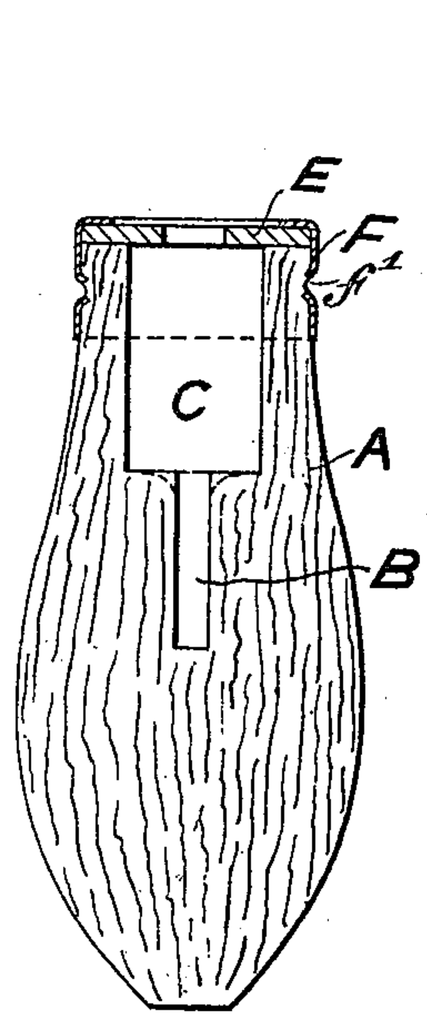

FIG. 1.

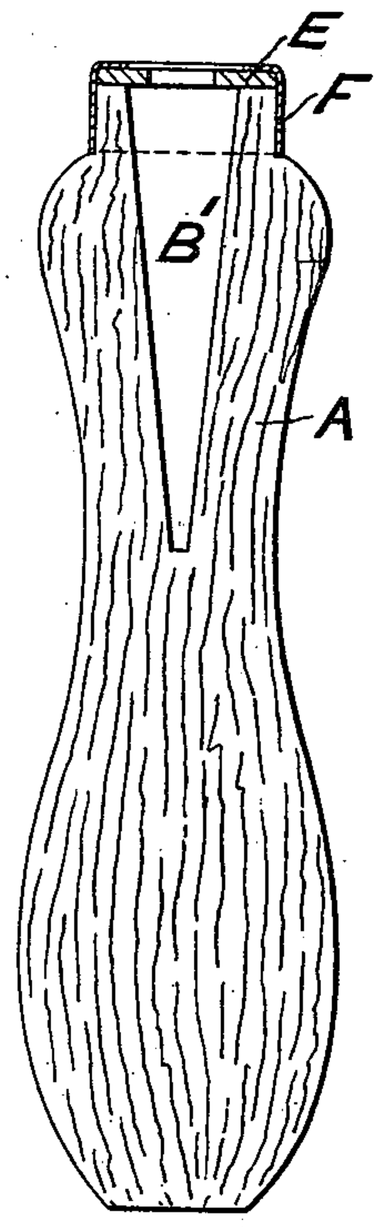

FIG. 2.

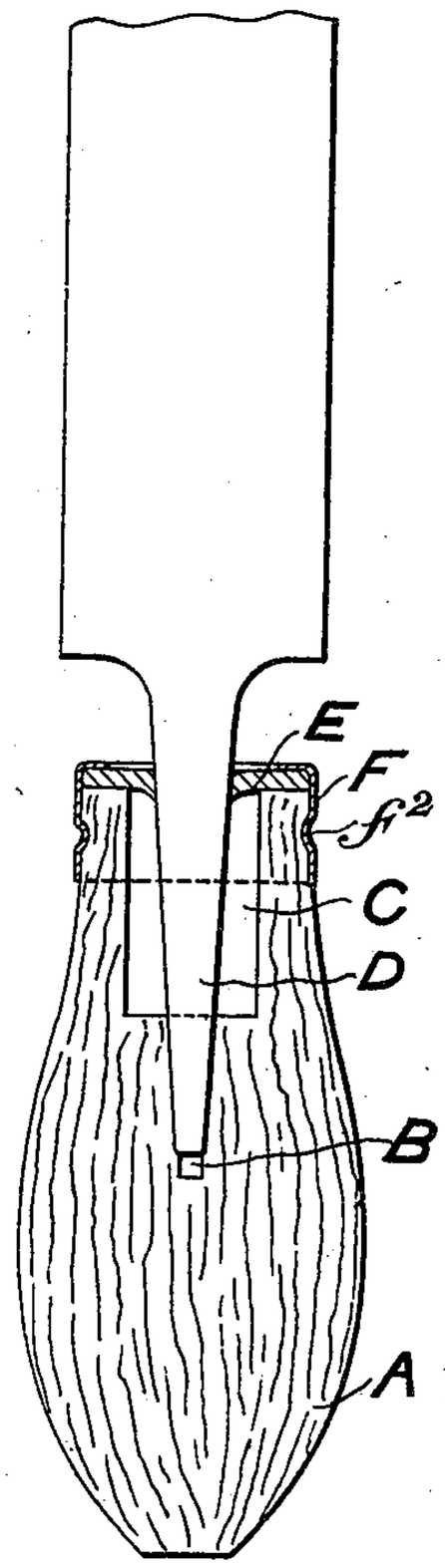

FIG. 3.

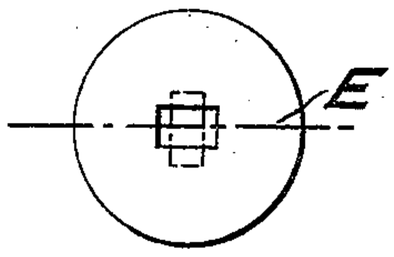

FIG. 6.

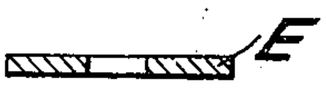

FIG. 7.

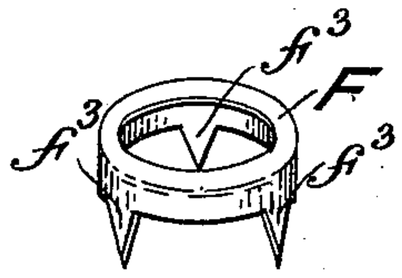

FIG. 4.

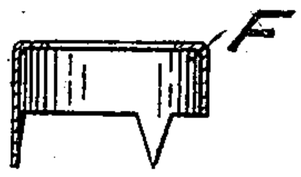

FIG. 5.

WITNESSES:
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JOHN HENRY MORGAN, OF LONDON, ENGLAND.

METHOD OF FIXING HANDLES TO FILES OR OTHER LIKE TOOLS.

SPECIFICATION forming part of Letters Patent No. 666,281, dated January 22, 1901.

Application filed June 12, 1900. Serial No. 19,989. (No model.)

To all whom it may concern:

Be it known that I, JOHN HENRY MORGAN, a subject of the Queen of Great Britain and Ireland, and a resident of 27 Thornton avenue, Streatham Hill, Streatham, London, in the county of Surrey, England, have invented certain new and useful Improvements in the Method of Fixing Handles to Files or other Like Hand-Tools, (for which I have made application for Letters Patent in Great Britain, No. 2,756, dated February 12, 1900,) of which the following is a specification.

This invention has for its object improvements in the method of fixing handles to files and other like hand-tools.

According to the ordinary method of fixing wooden handles to files and other like hand-tools the tapering tang of the file or other hand-tool is driven into a parallel hole provided in the handle, which is strengthened by means of a ferrule. It is found that notwithstanding the provision of the ferrule the tapering tang acts as a wedge and frequently causes the splitting of the handle. Now my invention has been devised with the object of preventing the splitting of wooden file and other like tool handles. A file-handle made according to my invention, especially when the lead washer or ring hereinafter referred to is used, possesses the additional advantage that the tremor or jarring effect which is experienced when working with an ordinary file-handle is isolated and is not transmitted in the case of my handle to the hand of the user, thus decreasing the fatigue incidental to working. In the case of the ordinary wooden handle the tang is mainly supported at the forward part of the handle, in consequence of which the inner end of the tang has a tendency to move, which after a time necessitates the forcing in of the tang a farther distance into the handle. In the case of my improved handle the tool-tang is supported at both ends.

Referring to the drawings accompanying this specification, Figure 1 is a section of one form of my improved file-handle. Fig. 2 is a section of a second form of my improved file-handle, in which the axial hole and the flanged ferrule are modified in form. Fig. 3 illustrates the manner in which a file is fixed and supported in my improved handle. Figs 4 and 5 are perspective and sectional views of another form of flanged ferrule. Figs. 6 and 7 are respectively a plan and a section of the lead or other washer or ring.

According to my invention I provide the wooden file or other like tool handle A with an axial hole of the required depth. As shown in Fig. 1, the smaller and inner hole B is of such a diameter that it supports and grips the inner end of the tang D when it is driven into the handle. The outer hole C is formed of a greater diameter than that part of the forward portion of the tang D which it normally contains, which is supported in position in the outer hole C by means of a washer or ring E of lead or other suitable material of the requisite thickness, which adapts itself to and grips the tang D when it is driven into the handle. The washer or ring E of lead or the like is kept in position by means of a flanged ferrule F or other suitable device.

I may instead of forming the junction of the holes B and C with a sharp angle, as shown in Fig. 1, round off this angle or corner, as shown in dotted lines in Fig. 1, as this tends to facilitate the entrance of the tang into the smaller hole B.

In lieu of forming the axial hole of two diameters I may, as shown in Fig. 2, provide the wooden handle with a tapering hole B′, having a greater taper than that of the tool-tang with which it is adapted to be used.

I prefer to make the washer or ring E of lead, as it is not only cheap but I have found that that metal, owing to its peculiar nature or physical properties, gives excellent results as regards its isolating property and the facility with which it grips and adapts itself to the tang of the tool as the same is driven into the handle; but any other material or substance which will readily adapt itself to the tang of the tool as it is driven into the handle and which will not split or spread too easily and forms an efficient support for the outer end of the tang may be used, and good results, but of a less satisfactory nature, can be obtained with copper, for instance.

The hole in the washer or ring E, which must be formed of a smaller size than the part of the tool-tang which it has eventually to grip and support, may be round; but I prefer, when using a tang rectangular in cross-

section, to make the hole of a corresponding shape, as shown in Fig. 6, as this insures the axis of the tang coinciding with that of the handle when the latter is being fixed to the tool.

The flanged ferrule may be fixed in position by any suitable means—such, for instance, as that shown at f' in Fig. 1, where the ferrule is provided with perforations, the edges of which are pressed into recesses provided in the handle, or by means of inwardly-projecting portions adapted to snap into recesses provided in the handle, as shown at f^2 in Fig. 3. In Fig. 2 I have shown an ordinary flanged ferrule tightly fitting the handle. As a further means of fixing the ferrule I may provide the lower edge of the ferrule with three or more triangular projections, as shown at f^3 in Figs. 4 and 5, adapted to embed themselves in the substance of the handle when the ferrule is driven on. An obvious method of securely fixing the ferrule would be to close or spin the lower part of the ferrule on or into the handle.

By my method of fixing wooden handles to files and other like hand-tools the hereinbefore-described splitting action of the tang is avoided, as only the smaller portion of the tang is in contact with the wooden handle and with that portion of the same best adapted to bear the strain, while the forward end of the tang, which necessarily exerts the greatest splitting action, is not in contact with any portion of the interior of the handle or of a part located therein, but is supported by the lead or other washer or ring, so as to be isolated therefrom. A further advantage of my invention is the facility with which the tool can be removed from its handle. Another advantage incidental to my invention is that in the case of a handle provided with the lead washer or ring the user can still employ the handle when the hole made by the continued forcing in of the tang has become of such a size that the broader part of the tang is nearly in contact with the inner edge of the flanged ferrule or when it abuts against the body of the wooden handle, and thus tends to exert a wedge-like or splitting action on the wood. Under these circumstances the handle is detached from the file and the tang is driven into the handle at right angles to its former position, and it is then supported by another portion of the lead washer or ring, as will be readily understood from an inspection of Fig. 6, in which the second position of the tang is shown in dotted lines. It is also obvious that for the same reason one handle can be used with two tools having different-sized tangs.

In the foregoing description I have mainly described my invention as being applicable to a file-handle; but it is obvious that my improved handle can be used in connection with other like hand-tools.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a tool having a tang, of a handle having an axial opening to receive said tang, said tang filling said opening tightly at its end and loosely throughout the main part of the tang, a washer adapted to fit against the end of the handle and close the opening therein, said washer having an opening in line with the opening in the handle but of less diameter, and a ferrule to retain said washer in place, the edges of the opening in said washer being adapted to be forced down and to grip the tang on the insertion of the latter, substantially as described.

2. As a new article of manufacture, a handle for files and other like hand-tools provided with an axial hole of one or more diameters the inner end of which is adapted to receive and support the smaller part of the tool-tang, a washer or ring of lead exterior to said axial hole and adapted to support the outer end of said tang, and kept in position by means of a flanged ferrule, substantially as and for the purposes described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

JOHN HENRY MORGAN.

Witnesses:
WM. PIERCE,
S. MCCREADY.