No. 656,321. Patented Aug. 21, 1900.

L. GROTE.

TOOL HANDLE.

(Application filed Nov. 9, 1899.)

(No Model.)

Fig. 1.

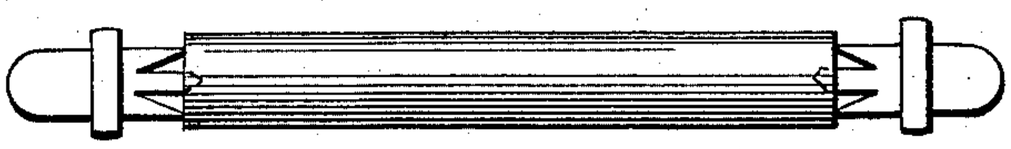


Fig. 5.

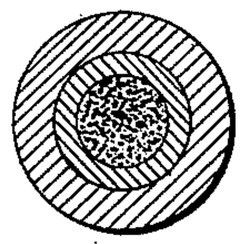


Fig. 2.

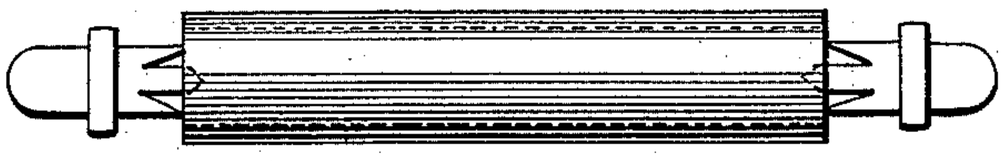


Fig. 7.

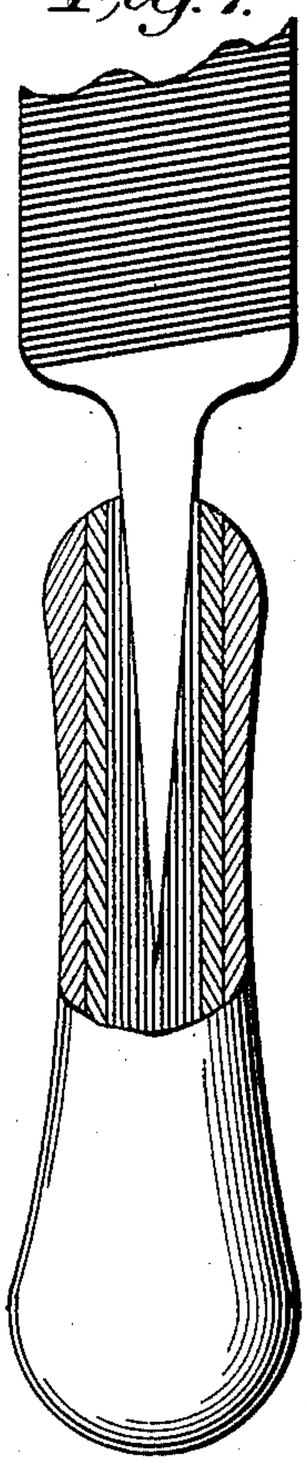


Fig. 3.

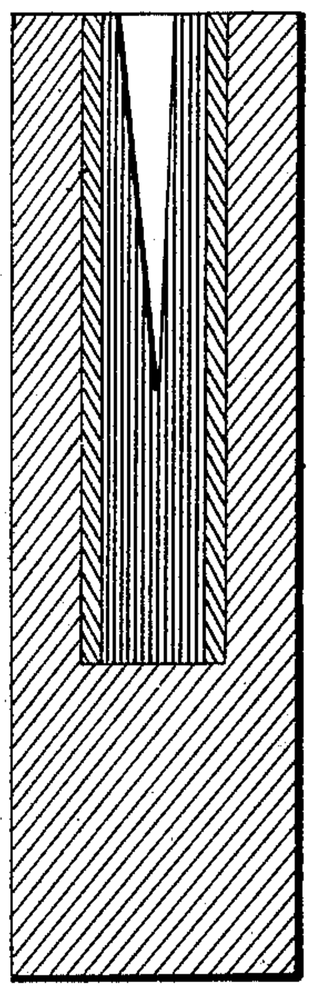


Fig. 4.

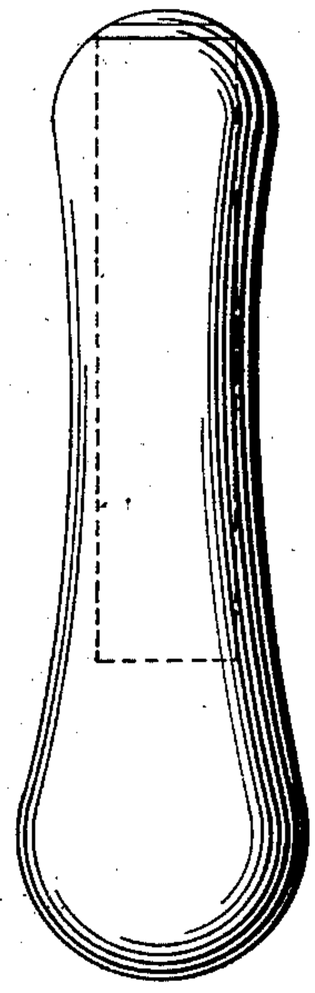
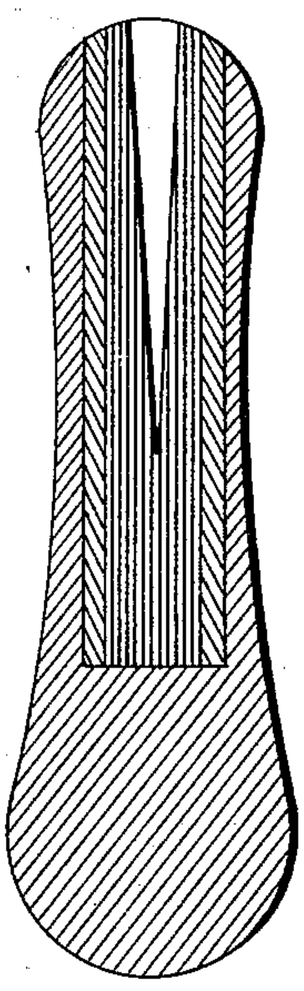


Fig. 6.



Witnesses:
E. Thos. Loftus
Jas. W. Graham.

Inventor:
Ludwig Grote,
by his attorney,
A. L. Ewin.

UNITED STATES PATENT OFFICE.

LUDWIG GROTE, OF LONDON, ENGLAND.

TOOL-HANDLE.

SPECIFICATION forming part of Letters Patent No. 656,321, dated August 21, 1900.

Application filed November 9, 1899. Serial No. 736,420. (No model.)

To all whom it may concern:

Be it known that I, LUDWIG GROTE, manufacturer, a citizen of Germany, residing at 84[B] East India Dock road, London, in the county of Middlesex, England, have invented a new and useful Improvement in and Relating to Wooden File and other Tool Hafts or Handles with Paper-Cased Reed Cores, of which the following is a specification.

The wooden file and other tool hafts or handles hitherto known are attended with the drawback that they are apt to split and crack while the tangs or shanks of the files or other tools are being driven into them. Although metal ferrules have been employed to strengthen them, it was necessary to previously drill or burn such handles in order satisfactorily to fit and secure the files or other tools in their sockets. This involved an expenditure of both time and money, which in many cases proved unavailing, as the shank of the tool when fixed in its socket was very frequently found to deviate from the straight line, while apart from this the wood by shrinking as it dried would cause the metal ferrules to slip off, and thereby render the tool-handle unserviceable.

The present invention obviates the drawbacks stated; and it consists in providing each handle with a nucleus or core-piece inserted in its center and comprising a length of reed, ratan, bamboo, or the like enveloped in a paper case, into which the shank or tang of the file or other tool may be forced without any fear of splitting or cracking the surrounding wood. The ease and safety wherewith the tangs of files or the like may be driven home into the improved handles or hafts are accounted for by the yielding texture peculiar to reed, &c., which as it gives way to the pressure of the tang adheres with proportionately-increasing tightness to its outer paper casing, which thus takes up the pressure that would otherwise be transmitted to the wood of the haft or handle and might lead to its disruption.

In the accompanying drawings, Figure 1 represents a piece or length of reed or the like retained by two centers in a winding-machine and ready to be wound with paper. Fig. 2 shows the length of reed provided with its paper winding. Fig. 3 is a longitudinal section of a "blank" with a hole drilled into it and ready for turning in a lathe. Fig. 4 shows a file-haft after it has been turned in the lathe. Fig. 5 is a cross-section of the upper end of the finished file-haft, illustrating the manner in which the paper-cased reed core is fitted within the wooden socket. Fig. 6 is a longitudinal section of the paper-cased reed core provided with a guiding-aperture for the insertion of the tool-shank. Fig. 7 shows the finished tool haft or handle, one-half of the figure being a longitudinal section, showing the shank or tang of a tool inserted into the paper-cased reed core and illustrating the manner of securing the same in the handle or haft.

In producing the improved haft or handle I first fix the ratan-like reed, (ratan or the like,) hereinafter termed the "reed," which has previously been cut to the required length in a winding-machine, by means of two centers. The reed is then wound with an endless strip of paper, which is fed along through a receptacle filled with a suitable adhesive substance, the winding being continued until the reed corresponds in size to the aperture drilled in the wooden blank. (*Vide* Figs. 2 and 3.) The wooden blanks, which have previously been drilled in a lathe or otherwise, as shown in the longitudinal section, Fig. 3, are now turned in the lathe to the shape presented in Fig. 4. The paper-wound reed core is next covered with suitable adhesive material and driven or forced into the aperture prepared for its reception in the haft or handle blank, so that the core-piece and the wood surrounding it jointly form one compact body, as shown in the cross-section, Fig. 5. After the tool haft or handle so constructed has had time to dry the protruding end of the paper-wound reed core is cut away and the tool-handle is mounted upon a tapering mandrel in the lathe to be planed, polished, or varnished, as may be desired. In consequence of the handle being driven upon the taper mandrel there will form within the same an aperture of conical shape adapted to receive and accurately guide the tool shank or tang subsequently to be inserted into the handle, Fig. 6. The yielding texture of the reed affords the tool-shank ready access, while owing to its

great elasticity it retains the shank in position in the center of the haft, inasmuch as its yielding power is limited by its outer paper casing, which, in fact, constitutes a species of armor for the protection of the reed, and in consequence of its own elasticity intercepts the pressure to which the reed is subjected in the process of insertion of the shank of the tool and prevents its transmission to the wood, whose immunity from any cracks or fissures is thereby insured.

As shown in Fig. 4, the handle or haft is preferably turned or rounded off at the tool end in the shape of a bead or head for the purpose of protecting it from violent contact with the article being operated upon at the time, the resulting concussion having heretofore been a frequent cause of tools becoming loose in their handles in a comparatively short time.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A wooden file or other tool haft or handle consisting of a paper-cased reed core-piece or nucleus surrounded by a wooden shell adapted to firmly retain in position the file or other tool shank or tang at both ends and to prevent its becoming loose in the reed, ratan, bamboo or the like of its own accord while at the same time protecting the wooden shell or handle from cracking, splitting or warping.

2. A tool haft or handle consisting of a paper-cased reed core-piece or nucleus, surrounded by a wooden shell, and rounded off at the end wherein the extremity of the tang or shank of the tool is embedded, for the purpose of affording better protection to that end of the handle-core, and also for securing the tang from concussion and its consequent loosening through the violent contact of the handle with the article operated upon at the time.

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

LUDWIG GROTE.

Witnesses:
RICHARD BAYER,
FRANCIS W. FRIGOUT.