(No Model.) 2 Sheets—Sheet 1.

E. STOWELL.

MEANS FOR AND METHOD OF MAINTAINING TIGHT JOINTS.

No. 515,887. Patented Mar. 6, 1894.

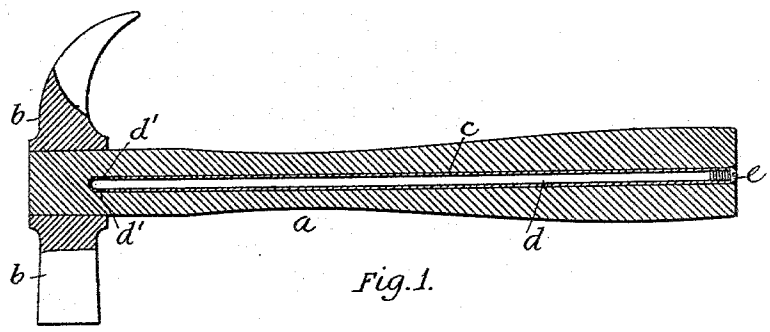

Fig. 1.

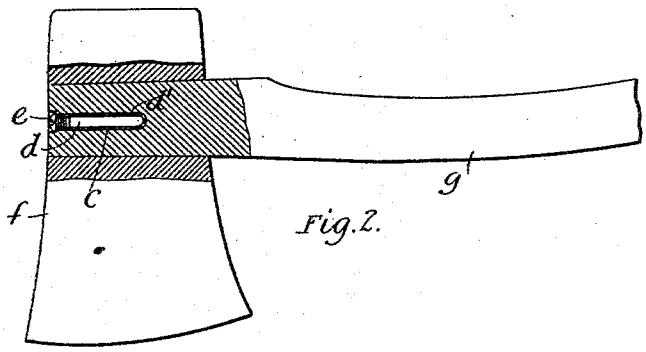

Fig. 2.

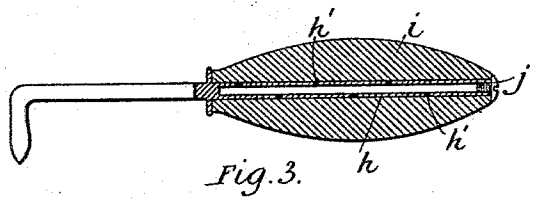

Fig. 3.

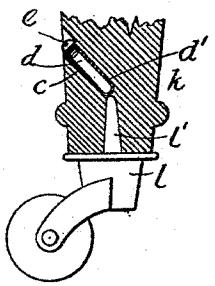

Fig. 4.

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(No Model.) 2 Sheets—Sheet 2.

E. STOWELL.

MEANS FOR AND METHOD OF MAINTAINING TIGHT JOINTS.

No. 515,887. Patented Mar. 6, 1894.

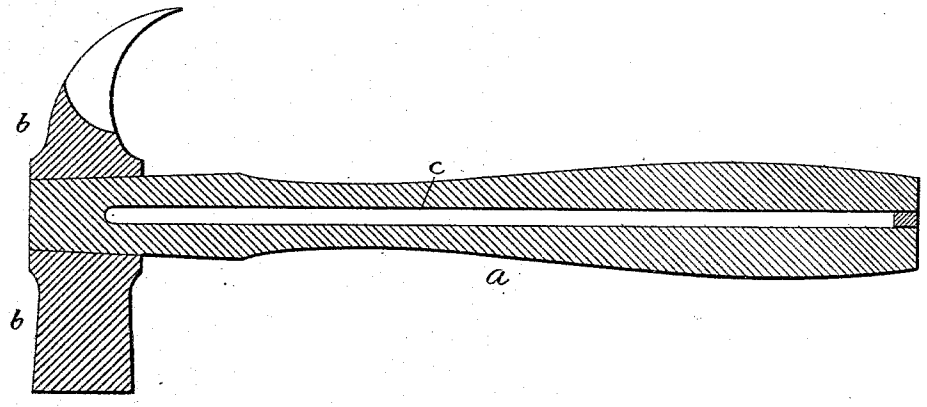

Fig. 5.

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MEANS FOR AND METHOD OF MAINTAINING TIGHT JOINTS.

SPECIFICATION forming part of Letters Patent No. 515,887, dated March 6, 1894.

Application filed May 20, 1893. Serial No. 474,923. (No model.)

To all whom it may concern:

Be it known that I, ELLERY STOWELL, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Methods of and Means for Maintaining Tight Joints; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

In manufactured articles, as for instance, tools and implements in every day use, which are made wholly of wood or wood and metal or other material, it is universally known that although, originally, the parts of such articles may be nicely and firmly fitted and connected together, exposure to a drying atmosphere for a comparatively short time will cause the union to become imperfect and loose, with the ultimate result of a disconnection of the parts, and a repairing of the article, generally under very adverse circumstances, and this effect with above mentioned ultimate result, will be produced the more speedily when the article is repeatedly used. The primary cause of the difficulty lies in the drying out of the fibers of the wood, which causes the same to contract and fit loosely in or around the part to which it is connected, and to eventually render the article unfit for use. It is also well known that a remedy is found by immersing the article or a part thereof in water, which acts on the outer surface of the wood and causes the fibers to swell and to again conform to the original design. This remedy is however but a very temporary one, and must be often repeated to maintain a tight union between the parts.

I have provided a method of and means for maintaining a tight connection between the parts of an article, for a considerable length of time, which will overcome the difficulties experienced in the use of such articles, and prolong their period of usefulness.

My invention while susceptible of many uses, is especially adapted to tools and implements, such as hammers, hatchets, mallets, axes, chisels and other wood-working tools, files, pokers and various other articles of every day use.

My invention consists in the method hereinafter described of maintaining a tight joint between the parts of a tool or other article, and in the means whereby such method may be carried into effect, all of which will hereinafter fully and clearly appear from a reading of the following description taken in connection with the accompanying drawings which form a part of this specification and in which—

Figure 1 represents a sectional view of a hammer with my invention applied. Fig. 2, is a sectional view of an ax with my invention applied. Fig. 3, is a sectional view of a poker showing an application of my invention, and Fig. 4, is a sectional view of a leg of a table or desk and a caster thereon, and showing another application of my invention. Fig. 5 is a sectional view of a hammer and showing another application of my invention.

My invention consists generally in so making an article of the character above stated as that it is susceptible of carrying a supply of moisture sufficient to keep the fibers moistened and expanded or swelled for a considerable length of time. By reference to the accompanying drawings it will be seen that this may be carried into effect in various ways, all tending to the same object.

I will first describe my invention with reference to a hammer, of ordinary construction and in the drawings, attention is called to Fig. 1, as illustrating the same, in which *a* represents the handle, and *b* the hammer head, the former being of wood and fitted within the latter. Longitudinally with the handle a hole *c* of small diameter is bored which extends to a point convenient for the application of moisture to the fibers of that portion of the handle which is fitted within the head, and in this hole or socket is fitted a tube *d*, the inner end of which is either entirely or partially open and adjacent to this end the tube is preferably provided with a series of perforations *d'* as shown. The outer end of the tube is internally screw-threaded to admit of the insertion of a screw-plug *e* which entirely closes the tube at this end.

The tube in operation is intended to carry a supply of water or other suitable liquid, which escapes through the openings in the inner end thereof and acts through the inner fibers of the wood to such an extent that the portion of the handle within the head is maintained in its normal condition, and entirely fills the space allotted to it as long as the moisture remains in the fibers. The application of moisture to the fibers of the wood may be carried into effect without the employment of a tube such as described, as the hole *c* may be filled with water and the opening closed by a suitable plug. I prefer however to employ a tube in applying the moisture, as by its use the perforations permit of the escape of the moisture at that point only where it can be used advantageously, and furthermore the tube when in place compensates for the strength of the handle lost in forming the same with the necessary hole.

In Fig. 2 is shown an ax of ordinary construction, the head being at *f* and the handle at *g*. In this case the hole *c* is made from the other end of the handle, and only penetrates a distance sufficiently to apply the moisture where necessary. The tube *d* in this case is substantially the same in construction as that just described, and the operation is the same.

In Fig. 3 I have shown a poker, which is an illustration of that class of implements where the shank passes entirely through the handle, and may be secured in position by a screw. In this instance the shank *h* can be made to answer for the purposes of a tube, by centrally boring the same out, and providing it with a series of lateral perforations *h'* through which the moisture escapes to the fibers of the handle *i*. The screw *j* which may connect the handle and shank may serve also as a plug to close the opening after the same is filled or partially filled with water.

In Fig. 4 is shown another application of my invention. *k* represents the leg of a table or desk, and *l* is a caster the stem *l'* of which is inserted in a socket made therefor in the lower end of the leg. In order to apply the moisture in this case, a hole *c* is bored from the surface of the leg above the upper end of the stem inclining downward to or nearly to said stem, and in this hole is inserted the tube *d* as in the first instance.

The above descriptions of the different applications of my invention are illustrative of a few uses to which my invention is applicable, and it is obvious that many other instances exist where my invention might be very advantageously employed.

The tube or other carrier is supplied with water sufficient in quantity to furnish moisture for a very considerable length of time, and this moisture is readily absorbed by the fibers of the wood which are swelled to the desired extent and constantly fill the space designed therefor.

In practicing my invention, tools or other articles are not necessarily specially constructed for the application of the device, as the same may be applied to the article during or after its manufacture or after it has been used.

By my invention the fibers of that portion of tool or other article which is originally intended to fill an allotted space, are kept moistened and swelled, and the disadvantages due to the disconnection of the parts of such article are entirely overcome.

The invention may be applied and the carrier may be filled from time to time with a minimum of labor.

The device may be cheaply produced and will outlast the tool or other article to which it is applied.

I claim—

1. The method herein described of maintaining a tight joint between the fibrous and other part or fibrous parts of a tool or the like, which method consists of introducing moisture into the inner fibers of such fibrous part after the parts are assembled.

2. Means for maintaining a tight joint between the fibrous and other part or the fibrous parts of a tool or the like, consisting of an opening formed in said fibrous part adapted to contain moisture, and a device for closing said opening, substantially as and for the purpose set forth.

3. In a tool or the like, means for maintaining a tight joint between the fibrous and other part or the other parts thereof, consisting of a perforated tube adapted to be inserted in a hole in said fibrous part, and to contain moisture, and a device for closing the outer end of said tube, substantially as and for the purpose set forth.

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

ELLERY STOWELL.

Witnesses:
THOS. F. WALSH,
SAMUEL N. LEE.