W. T. NICHOLSON.

FILE-HOLDER.

No. 191,811. Patented June 12, 1877.

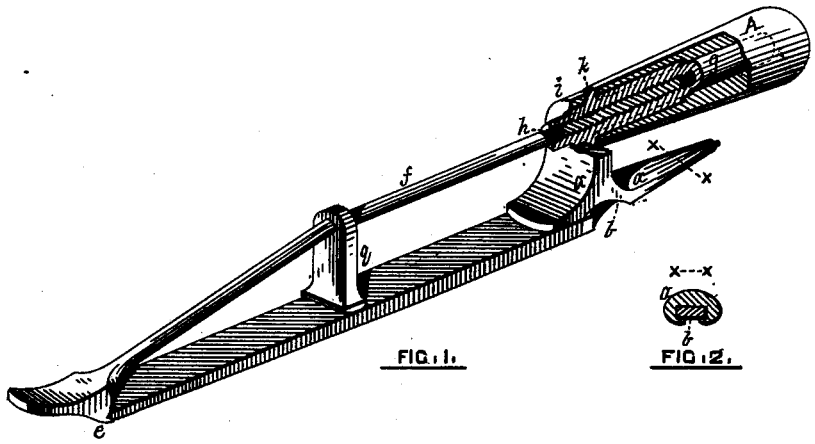

FIG. 1.

FIG. 2.

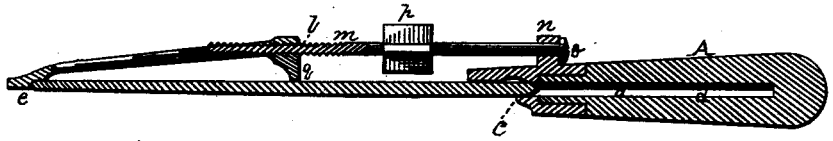

FIG. 3.

FIG. 4.

ATTEST.

INVENTOR.

William T. Nicholson

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UNITED STATES PATENT OFFICE.

WILLIAM T. NICHOLSON, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE NICHOLSON FILE COMPANY, OF SAME PLACE.

IMPROVEMENT IN FILE-HOLDERS.

Specification forming part of Letters Patent No. **191,811**, dated June 12, 1877; application filed March 15, 1877.

To all whom it may concern:

Be it known that I, WILLIAM T. NICHOLSON, of the city and county of Providence, in the State of Rhode Island, have invented certain new and useful Improvements in File-Holders; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part thereof, is a clear, true, and complete description thereof.

The prime object of my invention is to provide a file-holder with which a file may be readily sprung or bent, and held in that condition for service. File-holders, as heretofore made, have in reality been mere handles of peculiar construction for receiving the tang of a file. Saw-filing machines have, however, heretofore embodied a file-holder having as a part thereof a guiding rod or bar, which is fitted to slide-bearings, whereby the file may be moved longitudinally to and fro at certain prescribed angles for securing uniformity in the teeth of saws. These machine file-holders are provided with a tang-socket and also with a tip-socket, which receives bodily the tip of a file, and these sockets are adjustable with relation to each other, so that the file may be clamped thereby, and held parallel with the guiding rod or bar. With these machine-holders, any desired degree of endwise compression on the file may be attained, but the construction of the tip-socket is such that the tip of the file would be broken if it should be bent, because it is held bodily within the socket.

My invention consists mainly in the combination, with a suitable handle, of a rear socket which engages with the tang of a file, a front socket which is provided with a shallow recess for receiving the tip of a file with abutting contact, and suitable means for adjusting these sockets with relation to each other, whereby the file may be sprung or bent, and worked in that condition.

A file-holder having the characteristics described, in combination with a file which is sprung, constitutes as an entirety a novel tool; and my invention further consists in the combination, with a suitable holder, of a file, which is sprung or bent therein.

The value of this novel characteristic of my holder will be readily comprehended when it is remembered that a longitudinally-convex file is operated with greater ease and efficiency than a flat straight file, especially when working on large surfaces. The convex-surfaced file is also less liable to clog and glaze, and is more easily worked than the straight flat file, because of the variety of positions which the convex surface is made to assume with relation to the surface filed during the filing operation, and the consequently limited section of its teeth which are brought into action.

My improvement is of importance in enabling the operator to take almost any common file, without special selection as to its curvature of face, and give to it such additional curvature, by springing it, as for the occasion he may require.

To more particularly describe my invention, I will refer to the accompanying drawings, in which Figure 1 represents, in perspective, one of my file-holders with a file therein. Fig. 2 represents in lateral vertical section the rear socket of the holder and the tang of a file on line *x x*, Fig. 1. Fig. 3 represents, in longitudinal central vertical section, another form of holder embodying my invention. Fig. 4 represents, in edge view, a file without a tang, fitted for use with the holder shown in Fig. 3.

The handle of the holder is shown at A. In Fig. 1 the handle is so arranged that the file may be used on large surfaces, the axis of the handle being in a plane above that occupied by the file. In Fig. 3 the handle is arranged for using the file on the surfaces of pieces which may be held in a vise, for instance, the axis of the handle being, in this case, in the same plane as the file.

In both forms of handle, a socket is provided for securing the rear end of the file. In Fig. 1 the socket is shown at *a*, provided with a tapered interior for the reception of the tang *b*, with which files are usually provided. This socket, with a tang therein, is shown in section in Fig. 2.

In Fig. 3 a socket is shown at *c*, which is V-shaped, for receiving the butt of a file when, in case the tang has been broken, the end is prepared for the purpose, made V-shaped, as

shown in Fig. 4. The handle in Fig. 3 has also an axial socket for the reception of a tang.

It will be seen that in both cases the rear socket will freely permit the file to be bent outward or downward, because there is beneath the file no portion of the socket to prevent such downward or outward bending. Each rear socket has, however, at its front end, an overlapping portion, which, being in contact with the upper surface of the file near the tang, prevents it from bending upward.

Both forms of holders have at the outer end thereof a tip-socket, as at *e*, which has a V-shaped recess for receiving the tip of a file, which is beveled from each side, as shown. These sockets may be varied in form; but the V-recess is best suited for general service, as it affords a good seat for the file, and is one to which any file may be readily fitted, and, at the same time, no portion of a tip-socket thus formed projects downward, so as to interfere with the operation of the cutting-face of the file when applied to large surfaces. Any other form which will securely hold the file at both ends may, however, be employed, provided that the tip-socket does not embrace the tip of the file, and has a recess, which will serve simply to retain the socket in abutting contact with the prepared tip of the file, and which will permit it to adjust itself therein, regardless of the extent to which the file may be bent or curved.

It is obvious that, for convenient service, considering my device as a mere holder, it is important that the tip-socket be movable with relation to the rear socket not only for readily taking and releasing a file, but also for adapting it for use with files of different lengths. When my holder is considered, however, as a device by which a file, securely held therein, may be bent to any desired degree, and worked in that condition, the movable tip-socket has a decided value.

The simplest and most effectual means for controlling the tip-socket is a threaded rod and nut, and I have shown two methods of applying them, the two forms of handle shown requiring different methods.

In Fig. 1 the tip-socket is connected with the handle by a bent rod, *f*, on the end of which the socket is formed. The rear end of this rod is threaded and housed in a tap, *g*, which is within and connected to the handle. The outer end of the tap is squared up, as at *h*, so that a wrench may be used thereon, if necessary. Adjacent to the squared portion the tap is cylindrical, and is loosely embraced in a collar, as at *i*, which is connected to, and forms a part of, the shank-socket.

An annular shoulder, as at *k*, on the tap, engages with the rear surface of the collar *i*, so that when the handle is turned the tip-socket is drawn toward the shank-socket.

In Fig. 3 the tip-socket is prolonged, and provided at its rear end with a tap, as at *l*, for receiving the threaded rod *m*, which is free to turn in a collar, as at *n*, on the handle. The rear end of this rod is headed, as at *o*, and has a bearing against the rear surface of the collar *n*, so that, when the rod is turned by means of the finger-wheel *p*, the tip-socket is drawn toward the handle.

Although by no means essential, I have applied to my holders a central post between the rod and the upper surface of the file, as shown at *q*. This post tends to a more secure holding of the file. In the holder shown in Fig. 1 this post is centrally located on the the rod *f*, while in Fig. 3 it is shown to be connected to, and form a part of, the tip-socket below the tapped portion thereof.

Should it be desirable to work a file so bent as to present a longitudinally-concave surface, the rear socket should correspond practically with the tip-socket, and no post would then be employed, for this latter would prevent the upward curve of the file, and the same is true of the tang-socket shown in Fig. 1. The rear socket in Fig. 3 has a proper recess; but the upper portion of the socket extends forward and engages with the upper surface of the file, and this would prevent the file from freely bending upward, and when intended for that peculiar service the upper portion should be shortened, so that the socket-recess will practically correspond with that in the tip-socket.

It will be readily seen that, by rotating the handle or the rod, as the case may be, the tip-socket is moved to and fro for taking in or releasing a file, or for bending it, and that, while the file is mounted in the holder, it is securely held, and in a position thoroughly convenient for service.

I do not limit my invention to the precise construction shown, for I am well aware that holders possessing the novel characteristics herein described may be made in various ways without departing from the spirit of my invention.

I claim as new and desire to secure by Letters Patent—

1. A file-holder, embodying in combination a suitable handle and two sockets, which are adjustable with relation to each other, and have recesses therein, which retain the file by abutting contact therewith, substantially as described, whereby a file may be sprung longitudinally, to adapt the curvature of its face to various kinds of work to be dressed, as set forth.

2. The combination, with a suitable longitudinally-compressing file-holder, of a file which is sprung or bent therein, substantially as described.

WILLIAM T. NICHOLSON.

Witnesses:
GEORGE FULLER,
THOMAS F. COSGROVE.