H. DISSTON.

Files.

No. 142,445. Patented September 2, 1873.

FIG. 1.

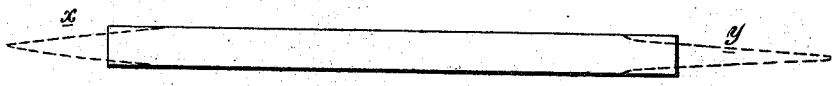


FIG. 2.

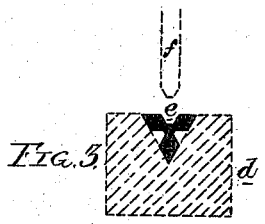


FIG. 3.

FIG. 4.

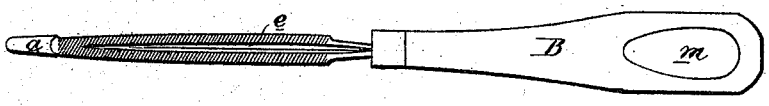
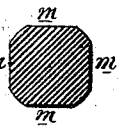


FIG. 5.



Henry Disston
by his Attys
Howson and Son

Witnesses, Hubert Howson
Harry Smith

UNITED STATES PATENT OFFICE.

HENRY DISSTON, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN FILES.

Specification forming part of Letters Patent No. **142,445**, dated September 2, 1873; application filed April 18, 1873.

To all whom it may concern:

Be it known that I, HENRY DISSTON, of the city and county of Philadelphia, State of Pennsylvania, have invented an Improved Saw-File, of which the following is a specification:

The object of my invention is to economize the manufacture of saw-files and improve their quality by making them of straight pieces of steel of the desired sectional form and distending them so as to impart the desired taper to the files by a longitudinal indentation made in each of their flat sides, as shown in Figs. 1, 2, and 3 of the accompanying drawing. A further object of my invention is to afford better facilities than heretofore for the proper and effective manipulation of a saw-file by providing its outer end with a tip, *a*, on which the operator's thumb can bear without discomfort.

The blanks, Fig. 1, are, in the first instance, cut from a rolled parallel bar of steel of the desired triangular sectional form, and each blank is reduced to the desired tapering shape at its outer end *x*, and a shank, *y*, formed at its opposite end by the usual forging process, which, however, is not permitted to disturb the main body of the blank. After this operation the blank is placed in a recess formed in a die, *d*, Fig. 3, and a longitudinal indentation, *e*, is made in it by a tool, *f*, attached to a drop-press, the tool having a rounded edge of such a form that the indentation will insure the lateral distension of the blank necessary for imparting the desired rounded edges to the file. After each side of the blank has been thus distended, it may be ground and polished prior to the cutting of the teeth, in the usual manner, after which the file may be hardened. If desired, the indentations and distension of the blank may be made by a rolling process.

By the above-described plan of shaping the file much of the usual labor is avoided, as that exactitude of shape, which has hitherto been accomplished by tedious forging and grinding, is produced by a few blows with a properly-shaped tool.

Another source of economy due to this mode of shaping the file is experienced in cutting the teeth, an operation rendered more easy by the presence of the longitudinal indentations. A more perfect hardening of the file also results from the indentations, for the mass of metal in a solid file interferes with the equal hardening throughout, whereas the indentations permit the equal action of the hardening fluids throughout the metal. To form the tip *a* of the file I prefer to cut a few notches on the point of the file and then insert it into a two-part mold having a cavity of the same shape as the desired tip, and then to pour into the mold type-metal, spelter, or other alloy which will melt at a comparatively low temperature and be of sufficient hardness when cool.

I do not claim broadly a tip for files, as this may form the subject of a separate application for Letters Patent; but

I claim as my invention—

1. The method of shaping saw-file blanks, by making therein longitudinal indentations, as herein set forth.

2. As a new manufacture, a saw-file having the within-described longitudinal indentations.

3. A saw-file, having at the outer end a tip, *a*, secured to or forming part of the file, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY DISSTON.

Witnesses:

A. H. SHOEMAKER,

SAMUEL BEVAN.