

No. 666,322.

Patented Jan. 22, 1901.

P. LORD.  
SAW FILE.

(Application filed Aug. 14, 1899.)

(No Model.)

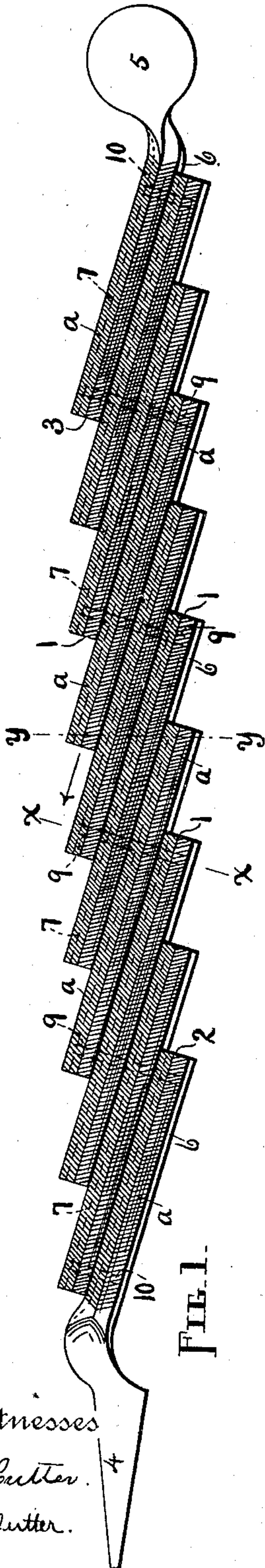


FIG. 1.

Witnesses  
A. T. Cutter.  
J. E. Cutter.

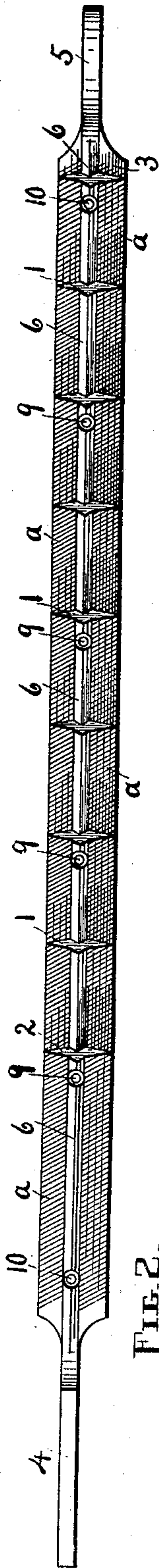


FIG. 2.

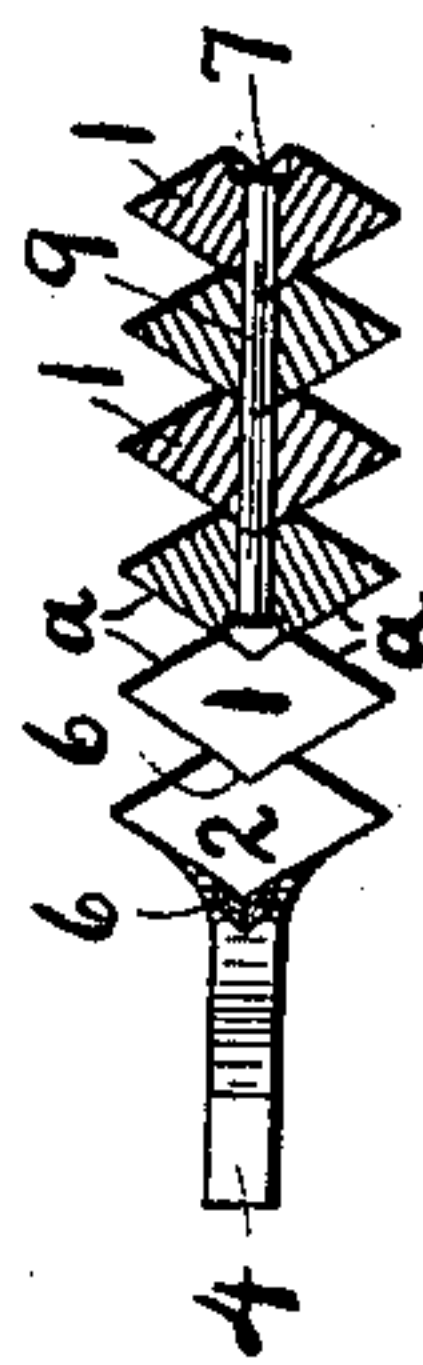


FIG. 3.

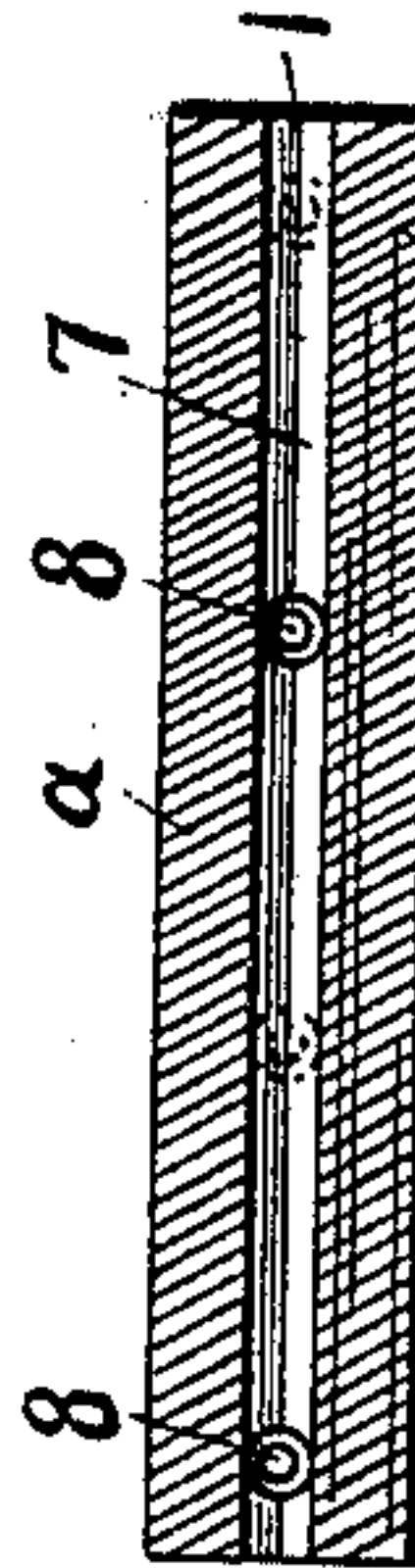


FIG. 4.

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# UNITED STATES PATENT OFFICE.

PETER LORD, OF WORCESTER, MASSACHUSETTS.

## SAW-FILE.

SPECIFICATION forming part of Letters Patent No. 666,322, dated January 22, 1901.

Application filed August 14, 1899. Serial No. 727,181. (No model.)

*To all whom it may concern:*

Be it known that I, PETER LORD, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Saw-File, (the same being an improvement on a former invention covered by United States Letters Patent No. 603,909, issued to me May 10, 1898,) of which the following is a specification.

My invention relates to files for sharpening saws; and it consists, essentially, of a collection of file-plates bound together and incorporated into a single serviceable and useful implement; and the objects of my improvement are, first, to so simplify the construction of the tool specified above that it can be produced with ordinary machinery and by the exercise of common mechanical skill; second, to materially decrease the cost of manufacturing the same, and, third, to provide means for readily regulating the length of said tool.

While the file covered by my patent of May 10, 1898, is in all respects practical and capable of performing its work satisfactorily, it has been found desirable to improve the construction thereof in the manner hereinafter fully set forth and claimed.

I attain the objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is a side view of my file; Fig. 2, an edge view of the same; Fig. 3, a cross-section on lines  $x x$ , Fig. 1, looking in the direction of the arrow; and Fig. 4, a view of one of the intermediate file-plates, showing the groove and the location of the rivet-holes.

Similar letters and figures refer to similar parts throughout the several views.

The file proper is made up of any reasonable number of file-plates 1, having a suitable handle at one end and preferably provided with a thumb-piece at the other end. In the drawings eight intermediate file-plates 1 are shown, with the end file-plate 2 terminating in the integral handle 4 and the end file-plate 3 terminating in the integral thumb-piece 5. The top and bottom of each of the plates 1, 2, and 3 correspond, respectively, with two sides of a three-cornered file—that is, said top and bottom each have the sides or surfaces  $a$ , which converge as they extend outward from

the center, and these surfaces are cut like a file. The angular rib 6 extends along the center of one side of each plate 1, 2, and 3, and the corresponding V-groove 7 is formed in the opposite side, said rib being adapted to accurately register with said groove. Each of the plates 1, 2, and 3 is provided with the holes 8 to receive the rivets 9 and 10—two holes to a plate. The holes 8, dotted in the intermediate plate 1 shown in Fig. 4, indicate the location of said holes in alternate intermediate plates. The positions of the rivet-holes in the end plates 2 and 3, as well as in the other plates, are indicated in Fig. 1 by the rivets 9 and 10, all of which appear in dotted lines in said figure. The ends of the rivets 9 and 10 are countersunk in the file-plates, as shown in Fig. 3.

The file-plates 1, with the end file-plates 2 and 3, are assembled side by side and arranged so that one end of each extends beyond the plate adjoining on one side of the file and the opposite end falls short of the plate adjoining on the opposite side, except at the terminals of said file, as best illustrated in Fig. 1, the ribs 6 registering with the grooves 7. The two short end rivets 10 and the four long rivets 9, with the ribs 6, securely hold the plates 1, 2, and 3 in the position just described, two rivets passing through each plate, and a rigid, accurate, durable, and economical tool is the result.

The several file-plates stand at an acute angle with a line passing longitudinally through the center of the file substantially corresponding with the angle of the beveled or cutting edge of a saw-tooth. This angular direction of the said plates permits the file to be held at right angles to the saw, thereby enhancing the accuracy of the operation of sharpening the same, as explained in my patent hereinbefore referred to. Moreover, the saw-teeth “track” the file constructed in this manner, imparting a lateral movement to the same while it is receiving a reciprocating motion thus permitting the implement to act upon a larger number of teeth in a given time than would otherwise be possible and to perform more accurate work.

The spaces between the filing-surfaces  $a$  of adjacent plates are sufficiently wide to re-



ceive two teeth of the saw within each of said spaces and deep enough to allow clearance for the points of said teeth.

By referring to the lines *y y*, Fig. 1, it will be readily understood that, with the exception of the extreme ends of the file, three plates are always in contact with the saw-teeth when in operation, as a fourth plate comes in contact with said teeth before the first of any given group of three leaves the same. It is obvious, too, that by lengthening the file-plates or changing their angle more than three of said plates can be brought into constant contact with the saw-teeth, while the plates can, on the other hand, be shortened and arranged so as to have but two in such contact.

This file is applied to and acts upon a saw in a similar manner to that shown and described in my prior patent, and it is not deemed necessary to encumber this specification with a repetition of the same. It may be well to state, however, that the pitch of the filing-surfaces *a* is the same as that of the saw-teeth when correct. Hence the front or cutting edges of said teeth are all filed alike by one set of said surfaces or corresponding surfaces, while the opposite surfaces true up the back edges of the teeth. It will be necessary, of course, to vary the pitch and angle of the said filing-surfaces in tools designed for sharpening different kinds and sizes of saws to adapt the same for the work required.

As before intimated, this improvement enables me to make my file of any length desired by simply adding file-plates, which is a desirable feature.

I do not wish to confine myself to the exact construction in detail of this file, as minor changes may be made without departing from the nature of my invention, notably in the matter of the handle and thumb-piece, the ribs, grooves, and rivets. A wooden or other suitable handle may be substituted for that shown and described, and the thumb-piece, which is designed to be grasped by the thumb and fingers of the hand that is not occupied

with the handle, may be omitted entirely, the end of the file being grasped instead. By increasing the number of rivets the rib and groove can be dispensed with or a different style of interlocking connection may be employed.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination in a saw-file, of a collection of independent file-plates having ribbed and grooved sides, arranged and bound together at an angle corresponding to the bevel of the cutting edge of a saw-tooth, said plates being provided with the converging cut sides *a*, substantially as set forth.

2. The combination in a saw-file, of a collection of independent file-plates including an end file-plate terminating in a handle, having ribbed and grooved sides, arranged and bound together at an angle corresponding to the bevel of the cutting edge of a saw-tooth, said plates being provided with the converging cut sides *a*, substantially as set forth.

3. The combination in a saw-file, of a collection of independent file-plates including an end file-plate terminating in a thumb-piece, having ribbed and grooved sides, arranged and bound together at an angle corresponding to the bevel of the cutting edge of a saw-tooth, said plates being provided with the converging cut sides *a*, substantially as set forth.

4. The combination in a saw-file, of a collection of independent intermediate file-plates and two independent end file-plates terminating respectively in a handle and a thumb-piece, having ribbed and grooved sides, arranged and bound together at an angle corresponding to the bevel of the cutting edge of a saw-tooth, said plates being provided with the converging cut sides *a*, substantially as set forth.

PETER LORD.

Witnesses:

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F. A. CUTTER.