

T. BOSWELL.  
FILE AND SIMILAR ABRADING TOOL.  
APPLICATION FILED DEC. 29, 1908.

934,882.

Patented Sept. 21, 1909.

FIG. 1

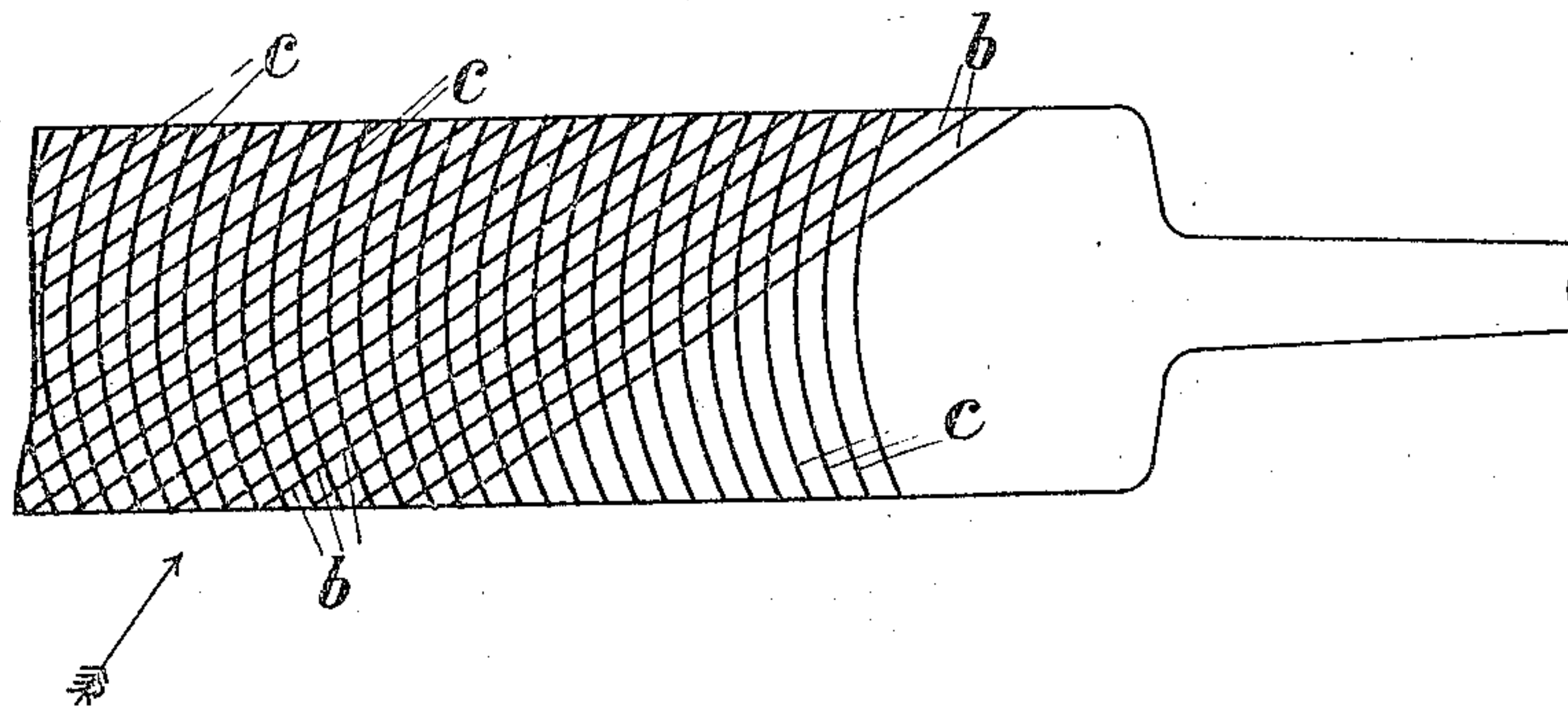


FIG. 2

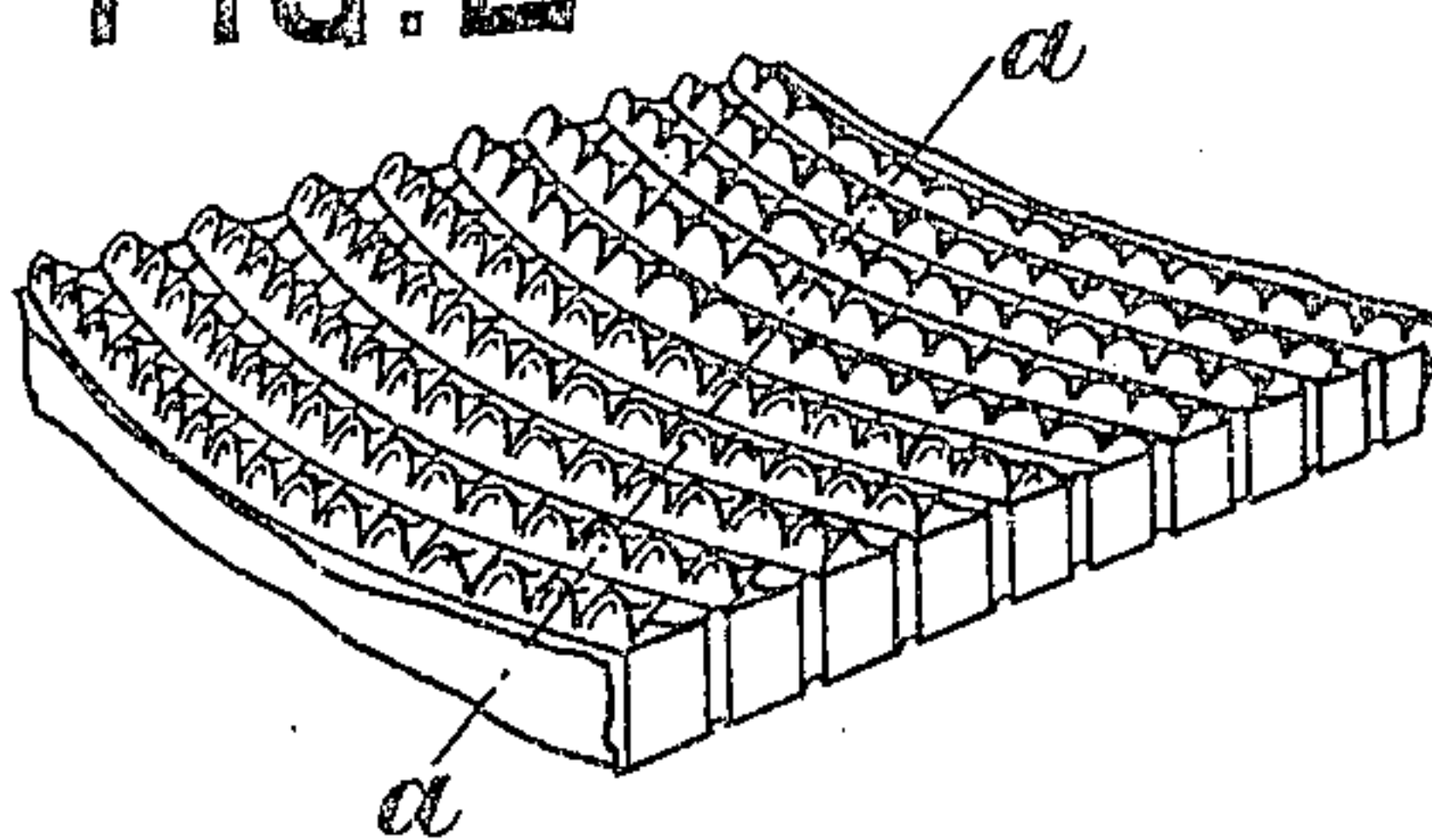


FIG. 3



WITNESSES  
W. P. Banks  
Edw. D. Spring.

INVENTOR  
Thomas Boswell  
BY  
J. M. Hallan White  
ATTY.

# UNITED STATES PATENT OFFICE.

THOMAS BOSWELL, OF SHEFFIELD, ENGLAND.

FILE AND SIMILAR ABRADING-TOOL.

934,882.

Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed December 29, 1908. Serial No. 469,855.

*To all whom it may concern:*

Be it known that I, THOMAS BOSWELL, a subject of the King of Great Britain and Ireland, residing at Sheffield, in the county of York, England, have invented new and useful Improvements in Files and Similar Abrading-Tools, of which the following is a specification.

The object of my invention is to improve the abrading or cutting power of files and the like.

Referring to the drawings, which form a part of this specification: Figure 1 is an elevation or plan of part of the tang end of a file, the face of which is cut or formed according to my invention. Fig. 2 is a magnified perspective view of part of the face of the file looking almost edgewise of it in the direction of the arrow on Fig. 1. Fig. 3 is a magnified section of a row of teeth taken on the line *a-a* of Fig. 2.

In carrying my said invention into effect I depart from the usual method of cutting a file by means of a series of straight cuts diagonally across the face thereof and crossing each other at an angle, and substitute therefor a series of curved cuts either crossed by other curved cuts or by diagonal straight cuts.

Referring to Fig. 1 of the drawings, the straight cuts *b* are first imparted to the file, while the curved cuts *c* are made afterward. This operation may be reversed if desired, the curved cuts being made first and the straight cuts last. Again, the curved cuts *c* of small radius may be first imparted to the surface of the file and curved cuts of larger radius afterward given or imparted to the said surface. This procedure may again be reversed if desired. Further, it is not essential to the latter application of my invention that the curved cuts in one direction be of a different radius or curve to those in the opposite direction.

Although I have described several different ways of producing the desired tooth I

am of opinion that in practice the best results are obtained from the method of cutting first described, when the curved cuts are of a fairly large radius and crossed by either long straight cuts as shown upon Fig. 1 or by other curved cuts of much greater radius, the size of the tooth is kept more even from one side to the other when the above methods are adopted. Although the size of the tooth increases slightly from one side of the file to the other the cutting power is not materially affected thereby. The cutting of the file face may be done with an ordinary file cutting machine having a fixed chisel therein.

It will be noticed upon referring to Figs. 2 and 3 that the tooth produced is of an arch shape viewed from the front or cutting side and tapers away rapidly and diagonally backward, thus insuring a highly efficient cutting power and ampler clearance backward for getting rid of the waste metal or the like cut away, than is obtained in a file cut in the ordinary way, consequently more work is got through in a given time.

I am aware that it has been proposed to form a file or abrading surface with a series of concentric cuts, but curved cuts have not to my knowledge been crossed diagonally with other either curved or straight cuts.

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

A file having its teeth formed by a parallel series of long straight diagonal cuts crossed by a series of curved cuts having their arches arranged convex with the direction of the file stroke.

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

THOMAS BOSWELL.

Witnesses:

LUTHER J. PARR,  
CHAS. N. DANIELS.