

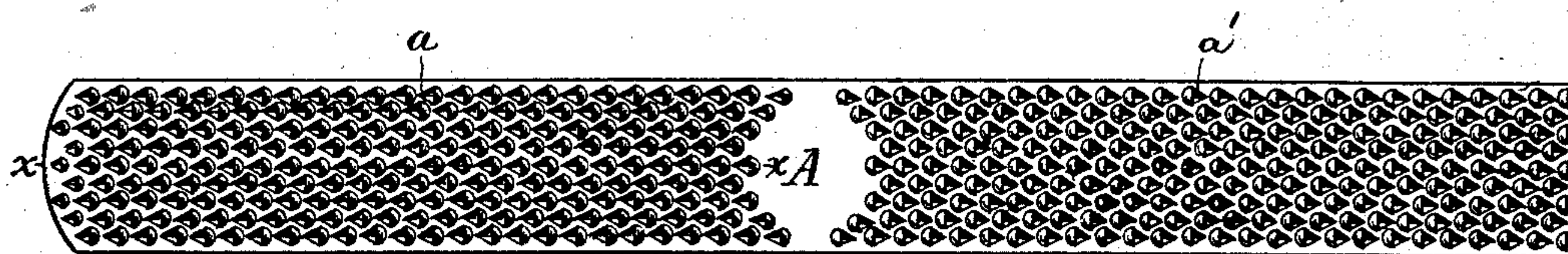
(No Model.)

J. RIDGE.  
FILE OR RASP.

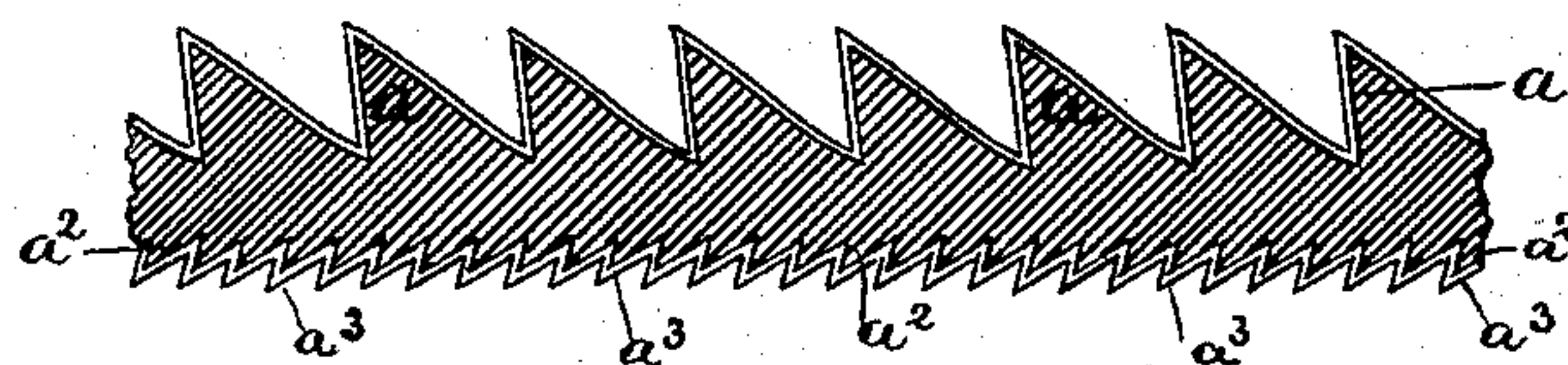
No. 416,805.

Patented Dec. 10, 1889.

*Fig 1.*



*Fig 2.*



*Witnesses:*  
*J. P. Theo. Lang*  
*Robt. Stenwick*

*Inventor:*  
*John Ridge*  
*by Atty*  
*Maam, Fenwick & Lawrence.*



# UNITED STATES PATENT OFFICE.

JOHN RIDGE, OF NASHUA, NEW HAMPSHIRE.

## FILE OR RASP.

SPECIFICATION forming part of Letters Patent No. 416,805, dated December 10, 1889.

Application filed October 24, 1889. Serial No. 328,025. (No model.)

### *To all whom it may concern:*

Be it known that I, JOHN RIDGE, a citizen of the United States, residing at Nashua, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Files or Rasps; and I do hereby 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.

My invention consists in an improved article of manufacture—to wit, a file or rasp, or a combined file and rasp, coated with a metallic substance which is not liable to rust or corrode, such files or rasps being by the means stated prevented from having their working-surfaces more or less filled and clogged with filings of horses' hoofs, metal, or other substances upon which they are used, and thus soon rendered comparatively useless.

Heretofore files and rasps, or combined files and rasps, have been finished ready for being placed in paper packages and put upon the market by oiling their surfaces to prevent them from rusting. This mode of finishing files and rasps or combined files and rasps, however, is objectionable in that the oil renders the surfaces sticky, and thus horse-hoof and metal filings, as well as other filings, will soon more or less clog up the teeth, rendering the working-surfaces of these implements smooth and glossy and prematurely ineffectual. By my invention I not only prevent such implements from rusting, but also render them capable of freely shedding the filings of the metal and other substances upon which they are used.

In the drawings, Figure 1 shows a combined file and rasp, this figure presenting in plan view the working-surfaces  $a a'$  of a rasp as ordinarily constructed. Fig. 2 is a longitudinal section, on enlarged scale, in the line  $x x$  of Fig. 1, and exposes to view a portion of the working-teeth  $a^2$  of an ordinary file formed upon the file-blank A obverse to the surfaces  $a a'$ .

Having constructed a rasp or file or a combined file and rasp, as the case may be, I then, as a finish therefor, treat the same to a bath or wash or coating of, preferably, a copper alloy consisting of a solution of blue vitriol (sulphate of copper) and tin in water. This coating solution (represented at  $a^3$  in Fig. 2 in exaggerated view) having been applied to the working-surfaces of files and rasps constitutes a dry finish for these implements, serving to prevent the same from rusting, and also rendering them freely capable of shedding filings in the act of use. I thus use a non-oxidizable deposit of metal solution, as indicated at  $a^3$ , which soon dries upon and over the working-surfaces of files and rasps, which prevents them from rusting, although made of oxidizable metal, and also allows them to freely shed filings, said metallic deposit constituting a dry, smooth, and slippery finish for such implements, instead of a sticky, cohesive, oil finish, as heretofore practiced.

Files or rasps or combined files and rasps are well adapted for the application and retention of the coating on account of the overhanging construction of their teeth, which construction serves for protecting the coating against rapid wearing away, while it co-operates with the smoothness of the coating in aiding in the shedding of the filings.

I do not confine my invention to any special unoxidizable coating, as it is a file or rasp or combined file and rasp coated as described that constitutes my invention.

What I claim is—

As an improved article of manufacture, a file or rasp or combined file and rasp which has an exterior coating of unoxidizable metal, substantially as and for the purpose described.

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

JOHN RIDGE.

Witnesses:

R. T. SMITH,  
C. A. MASON.