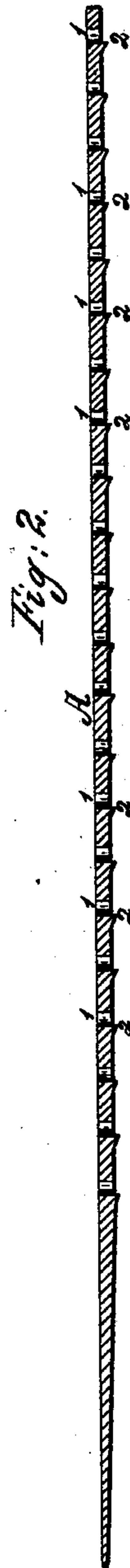
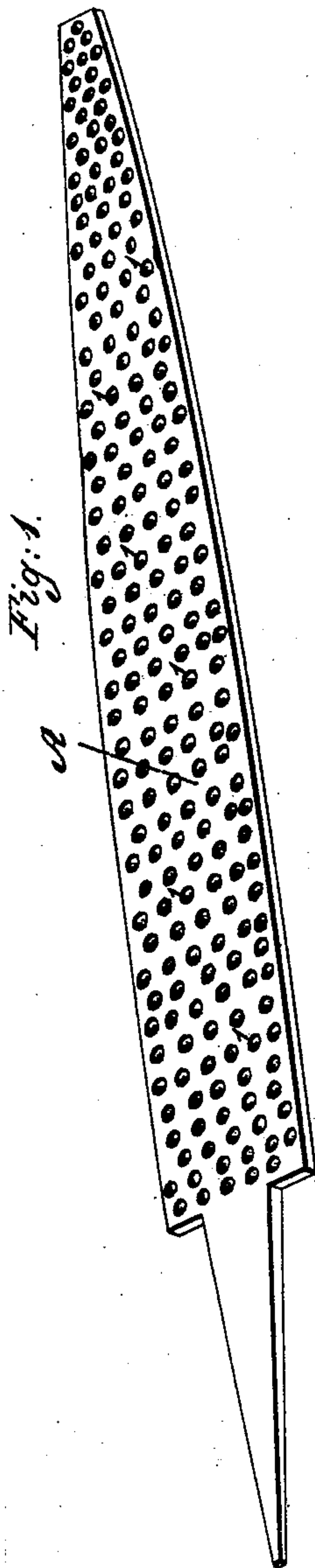


H. POWERS.

File.

No. 10,088.

Patented Oct. 4, 1853.



# UNITED STATES PATENT OFFICE.

HIRAM POWERS, OF FLORENCE, ITALY.

## FILE AND RASP.

Specification of Letters Patent No. 10,088, dated October 4, 1853.

*To all whom it may concern:*

Be it known that I, HIRAM POWERS, a citizen of the United States, but now residing in Florence, Italy, have invented certain new and useful Improvements in the Mode or Manner of Constructing Files or Rasps; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1, represents a perspective view of a file, and Fig. 2, represents a longitudinal section through the same.

The nature of my invention consists in forming perforations or throats to the fin, feather or other cutting surfaces of rasps or files, for the purpose of allowing said rasps or files to clear themselves of the material cut away by them, and to prevent their filling or choking, by admitting or allowing the particles to pass through said perforations or throats.

To enable others skilled in the art to make and use my invention I will proceed to describe the same with reference to the drawings in which A, represents the file or rasp. The perforations 1, 1, 1, &c., in the plate of which the instrument is formed, may be round, oblong, oval or angular, and the cutting edges 2, 2, 2, &c., which partially surround each perforation or throat may be either curved, straight or pointed—plain or serrated, as the different purposes to which it is to be applied may require.

The cutting edges may not entirely surround the perforations but be raised on one side of them only, and inclined at such an angle, as to cut to the best advantage, and at the same time to throw the particles removed by them into and through the perforations or throats.

The files or rasps may have cutting edges raised on one or both surfaces, as may be

found essential; and they may be made of any desired form, whether flat, curved, angular or hollow, and be used generally for all purposes, where the removal of surface, or the comminution of substance is required.

The common rasps or files now in use, cast the dust or filings from their toothed or cutting sides, and thus these instruments are liable to be clogged or filled with obstructions when used upon tough or adhesive substances. My improved rasp or file is free from this liability to clog or fill. The form of the cutting edges, their position relative to the perforations or throats, which allow the particles to escape and pass through, or by, the body of the instrument, render filling or clogging almost impossible, and it can be used upon lead, zinc, copper and tin or other adhesive substances, as well as upon the harder metals, the perforations serving the same purpose that the throat in a common hand-plane serves in clearing the instrument from the shavings removed by it.

These files or rasps can be made entirely by machinery and at small expense, and may be made of any of the known metals, and of almost any degree of fineness, having due regard to the material as well as the use to which they are to be applied.

Having thus fully described the nature of my invention, what I claim therein as new and desire to secure by Letters Patent is.

The forming of perforations or throats to the cutting edges of files or rasps, for allowing the particles cut away to pass through, and to prevent the instrument from clogging or choking, substantially as described.

HIRAM POWERS.

Witnesses:

WALTER GOULD,  
O. M. MITCHEL.