

E. VERNAZ.
 FILING OR PLANING TOOL.
 APPLICATION FILED MAR. 20, 1909.

991,566.

Patented May 9, 1911.

Fig. 1

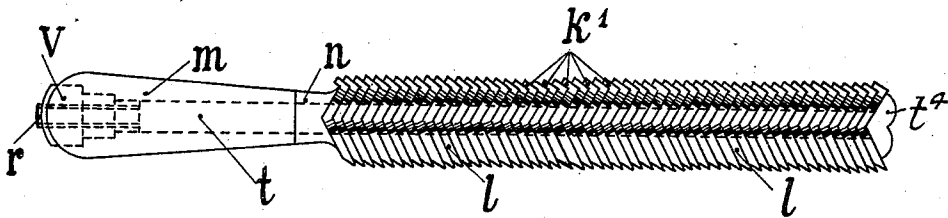


Fig. 2

Fig. 3

Fig. 4

Fig. 5

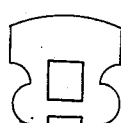
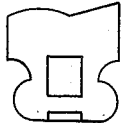
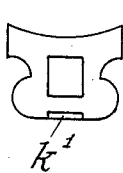


Fig. 6

Fig. 7

Fig. 8



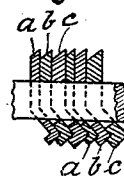
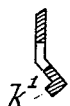
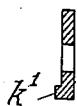
Fig. 9

Fig. 10

Fig. 11

Fig. 12

Fig. 13



Witnesses:

A. J. Hadden

S. Ford

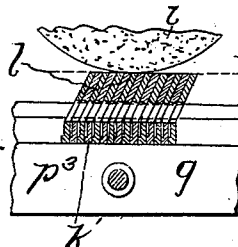


Fig. 14

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UNITED STATES PATENT OFFICE.

EUGENE VERNAZ, OF GENEVA, SWITZERLAND.

FILING OR PLANING TOOL.

991,566.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed March 20, 1909. Serial No. 484,756.

To all whom it may concern:

Be it known that I, EUGENE VERNAZ, a citizen of the Swiss Republic, residing at Geneva, in Switzerland, have invented certain new and useful Improvements in Filing or Planing Tools, of which the following is a specification.

This invention relates to improvements in filing or planing tools.

10 The improved tool is of the kind formed of a series of metal plates with cutting edges traversed all at the same place by a rectangular or similar rod to prevent lateral displacement of the plates. The rod terminates in a head or washer which prevents the plates from falling off, and the other end has a screw or the like by which the plates are forced and held together.

20 In my improved file the plates are bent along a straight line transversal of said plates and substantially parallel to the plane of the cutting edges so as to form an obtuse angle and each has a claw arranged at its base or opposite the cutting edge.

25 The advantage of the improved tool is the facility with which the plates may be removed for sharpening.

The accompanying drawings illustrate an example of construction of the improved tool.

30 Figure 1 is an elevation of the complete tool. Figs. 2, 3, 4, 5, 6, 7 and 8, show by way of example different shapes of plates. Fig. 9 shows a plate before it is bent, in section. Figs. 10, 11, 12, show sections of plates of different thickness. Fig. 13 is a section showing the latter arranged on the stem. Fig. 14 is a detail view illustrating a method of sharpening the plates.

40 The tool shown in Fig. 1 consists of plates l slid on to the rod t against the head thereof t^4 a collar n being arranged between said plates and the handle m and the whole held by the nut v screwed on the threaded extension r of the rod t . The tool may be composed of plates of equal thickness which would give a regular cut, but it may also be composed of plates of different thicknesses arranged in a determined order, for example as shown in Fig. 13 the plates are

arranged in the order of their thickness, for example $a b c$, $a b c$, etc. This arrangement has an advantage over a cutting surface the teeth of which are even, for experience has proved that an irregular cutting surface absolutely prevents any unevenness of the surface filed which can be explained by the fact that a serration produced by a tooth of the file is at once removed by the following tooth provided that the edges or teeth of the file are irregular.

55 In Figs. 2 to 8 are shown different shapes of plates. The claw k^1 with which each plate is provided gives to the tool great solidity as each claw k^1 bears on the adjacent plate (Fig. 1). To sharpen the plates they are placed between bars p^3 held together by bolts q . A face view of one of said bars is shown in Fig. 14. By reciprocating the bars with the plate in engagement with an emery wheel i the plates can be sharpened.

70 What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. A tool comprising a stem, a series of juxtaposed plates, each having a cutting edge and threaded on said stem, said plates being bent along a line transversal of said plates and substantially parallel to the plane of the cutting edges of the same to form an obtuse angle, and means for clamping the plates together upon said stem.

2. A tool comprising a stem, a series of juxtaposed plates, each having a cutting edge and threaded on said stem, said plates being bent along a line transversal of said plates and substantially parallel to the plane of the cutting edges of the same to form an obtuse angle, an abutment at one end of said stem, means for clamping the plates together against said abutment and a claw on each plate adapted to overlap the next plate when the latter are clamped together.

3. A tool comprising a stem, a series of juxtaposed plates of different thicknesses each having a cutting edge and threaded in determined order on said stem, said plates being bent along a line transversal of said plates and substantially parallel to the plane of the cutting edges of the same to form an

obtuse angle, an abutment at one end of said stem and means for clamping the plates together with the outermost plate bearing against said abutment.

- 5 4. A tool blade comprising an obtusely bent apertured plate having a cutting edge at one side and a rectangular claw at the side opposite the cutting edge.

In witness whereof I have signed this specification in the presence of two witnesses. 10

EUGENE VERNAZ.

Witnesses:

LOUIS H. MUNIAR,
CHS. HUMBERT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
