

UNITED STATES PATENT OFFICE.

FRANK ROWLEY, OF WHALEY BRIDGE, ENGLAND.

METHOD OF SHARPENING WORN-OUT FILES.

SPECIFICATION forming part of Letters Patent No. 685,299, dated October 29, 1901.

Application filed March 16, 1901. Serial No. 51,464. (No specimens.)

To all whom it may concern:

Be it known that I, FRANK ROWLEY, a subject of the Queen of Great Britain, residing at Rock Cottage, Whaley Bridge, in the county
5 of Chester, England, have invented new and useful Improvements in the Process of Sharpening Worn-Out Files, of which the following is a specification.

This invention relates to the method of
10 sharpening files described in the British patent specification, No. 19,326, A. D. 1893; and it consists in the hereinafter-described improvements therein. In carrying out the said method it has been found that notwithstanding
15 a thorough cleansing of the files in soap and soda and rinsing in water the nitric acid in many cases was acting slowly and irregularly in attacking and biting away the bottom and sides of the teeth.

20 The object of my improvement is to render the action of the nitric acid more certain and regular. For this purpose after washing and brushing the files with soap and soda and rinsing them in water I immerse and pickle
25 them for about half an hour in diluted sulfuric acid, one part of commercial acid being mixed with about four parts of water. The sulfuric acid slightly corrodes or attacks the surface of the file and prepares it for the subsequent
30 action of the nitric acid, imparting a surface to the file which enables the subsequent process to operate more certainly and efficiently and to produce a greater and more uniform sharpness of the tooth than when such preliminary pickling is not applied. With the

same object after pickling the files in sulfuric acid, as aforesaid, I also draw the point of a needle through all the grooves of the file, slightly scraping or scratching the surface of
40 the bottom of the grooves, in consequence of which the nitric acid is enabled to act more certainly at this point and bite away the sides of the teeth from the bottom toward the top. After cleaning and drying the files I coat the
45 worn or flat tops of the teeth with varnish, such as Brunswick black, capable of resisting the corrosive action of acids, and immerse them in a mixture of nitric acid and water in the manner described in the aforesaid specification till the bottom and sides of the teeth
50 are bitten away sufficiently to throw off the flat tops, leaving the newly-formed teeth very sharp.

I claim as my invention—

The method of sharpening worn-out files by
55 first cleansing them with soap and soda and rinsing them in water, then immersing them in diluted sulfuric acid and drawing a needle-point through the grooves of the file, cleaning and drying them, coating the worn
60 tops with a varnish capable of resisting the corrosive action of acids and immersing them in diluted nitric acid.

In testimony whereof I have hereunto set
65 my hand in the presence of two witnesses.

FRANK ROWLEY.

Witnesses:

R. J. URQUHART,
C. BOLLÉ.