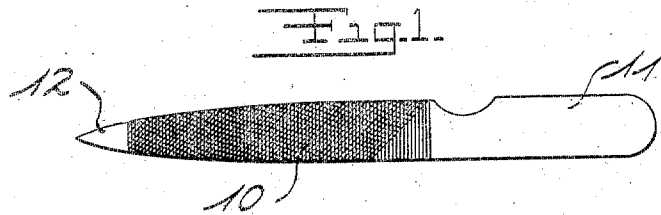
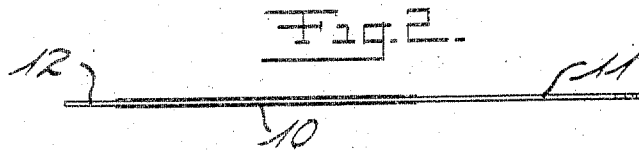
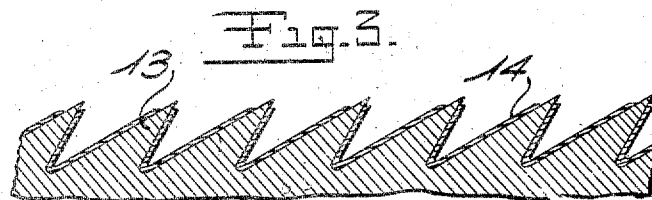


W. L. MOFFAT.
FILE.
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1,255,819.

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Inventor
William L. Moffat
By his Attorney
George F. Seale

UNITED STATES PATENT OFFICE.

WILLIAM L. MOFFAT, OF BROOKLYN, NEW YORK, ASSIGNOR TO JOSEPH ROSS & CO., OF
IRVINGTON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

FILE

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM L. MOFFAT, a citizen of the United States, and a resident of Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Files, of which the following is a specification.

The present invention relates to means whereby cutting teeth, particularly on fine toothed files, such as the so-called manicure files, may be protected in an efficient manner from rusting, and at the same time the file may be given a permanent, pleasing appearance. In files of this character, wherein the teeth are very small, it has been heretofore the custom to plate the article with nickel. But electrolytically deposited nickel, until it has been buffed, is dark colored and unsightly, especially when deposited in a broken surface, such as the teeth of files. It is impossible to buff such nickel deposited on the walls of these fine teeth because the spaces are so small, and because the teeth are so fine that buffing would destroy their cutting edges.

In order to avoid this unsightly appearance, silver plating has been resorted to, but this is ineffectual, because, although the electrolytically deposited silver is white and pleasing in appearance on the cutting teeth, nevertheless, it is relatively expensive because of the value of the silver, and moreover, as is well known, silver-plated articles readily tarnish and while smooth tarnished silver surfaces may be brightened by rubbing, obviously in the case of the file surface, this is impossible for the reasons pointed out above in reference to the polishing of the nickel deposit.

While there are some of the commoner metals, such as tin or zinc, which are white when electrolytically deposited and which do not tarnish in the air, plating with such metals is not commonly resorted to for any article because the deposit is so soft and adheres so loosely to the metal on which it is deposited that it readily rubs off.

I have discovered, however, that some of these metals overcome the difficulties heretofore found in the plating of file teeth, for I have discovered that while such metals, as for instance, tin, when electrolytically deposited on surfaces, are readily rubbed off, yet when deposited on the walls of the fine teeth of files, is as effective in adhering to

such walls as nickel is in adhering to ordinary smooth surfaces, this result being obtained because, by reason of the fineness of the teeth, the plated walls thereof are never touched by anything, such as the finger nails on which the files are used, because the cutting edge of the teeth keep the surface which is being filed, away from the walls. In the cutting process, the cutting edges will have the plating removed by friction, but these cutting edges are so small compared with the total area of the file surface that the appearance of the file is not materially changed, and when such a file is electrolytically plated with tin, for instance, it maintains permanently a pleasing, white appearance, the tin not being subject to attack by oxygen or sulfur in the air.

In the accompanying drawings, I have illustrated one kind of article to which my invention may be applied, Figure 1 showing a side elevation and Fig. 2 an edge elevation of an ordinary manicure file in which represents the file surface and 11 and 12 the flat, smooth surfaces usually left at either end of the file surface.

Fig. 3 shows an enlarged section of the cutting teeth of such a file in which 13 represents the metal of the teeth which is usually hardened steel, and 14 represents the soft, white metal deposited on the walls of the teeth, such metal being removed from the cutting edges as shown in Fig. 3.

My novel article of manufacture may be produced either by first nickel plating the entire article, including the cutting teeth, and then over this thin coating of nickel, electrolytically depositing a coating of tin. This latter coating is white so that the area 10 is clean-appearing and pleasing and at the same time has a permanent protective coating. The portions 11 and 12 may then be polished to produce the usual nickel finish. The article may also be produced by having the coating of nickel extend over the portions 11 and 12 only, the portion 10 being protected merely by the coating of tin. This may be accomplished by coating the portion 10 with some resistant while the portions 11 and 12 are being plated and then plating all of the article with the coating of tin. In the burnishing process, this coating of tin on the parts 11 and 12 would be removed, leaving the nickel surface only.

While I have found tin to be effective for

my purposes, there are, of course, other cheap forms of metal which are white and soft when electrolytically deposited, and which are also not readily affected by oxygen and sulfur or other gases of the air. Such another metal, for instance, is zinc. Plainly such metal may be used in place of the tin which I have described as my preferred kind of plating.

10 I claim:

1. As an article of manufacture, a fine-toothed file having the non-cutting portions only of the walls of the teeth covered with a loosely adhering coating of a soft metal
15 which is white when applied as such coating and which is substantially unaffected by atmospheric gases.

2. As an article of manufacture, a fine-toothed file having the non-cutting portions only of the walls of the teeth covered
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with an electrolytically deposited coating of tin.

3. As an article of manufacture, a fine-toothed file having only a portion of its surface provided with teeth, the non-cutting portions only of the walls of the teeth being covered with a coating of electrolytically deposited tin and the non-toothed portion of the file being covered with a coating of nickel.
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4. As an article of manufacture, a fine-toothed file having the walls of the teeth covered with a coating of nickel and an electrolytically deposited coating of tin over the nickel coating on the non-cutting portions of the walls of the teeth.
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WILLIAM L. MOFFAT.

Witnesses:

C. B. LARSON,

CHARLES RIEGLER.