E. W. WEBBON.

Manufacture of Bracelets.

No. 224,620. Patented Feb. 17, 1880.

Fig. 1.

Fig. 2.

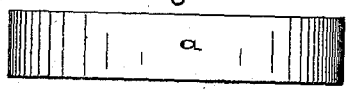

Fig. 3.

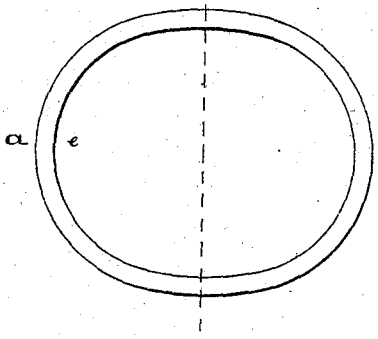

Fig. 4.

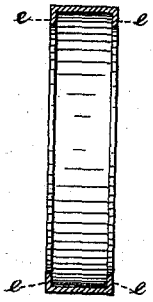

Fig. 5.

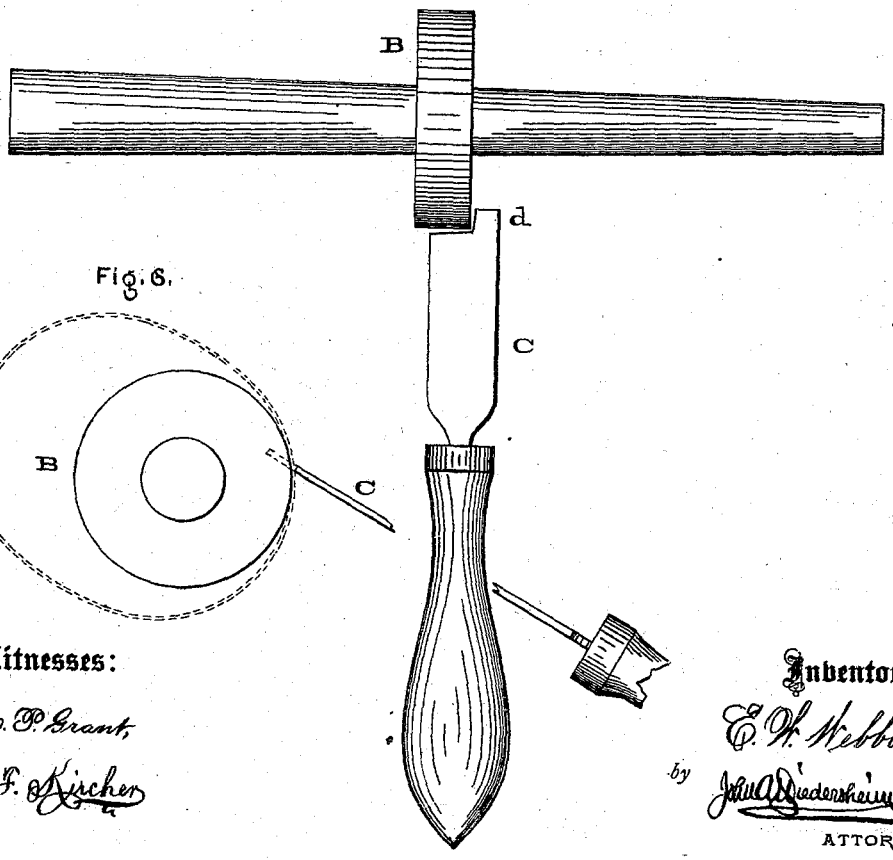

Fig. 6.

Witnesses:

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UNITED STATES PATENT OFFICE.

ERNEST W. WEBBON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO W. H. SHEAFER & CO., OF SAME PLACE.

MANUFACTURE OF BRACELETS.

SPECIFICATION forming part of Letters Patent No. 224,620, dated February 17, 1880.

Application filed February 10, 1879.

To all whom it may concern:

Be it known that I, ERNEST W. WEBBON, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in the Manufacture of Bracelets, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side elevation of the band from which the bracelets are made. Fig. 2 is a face view of a bracelet. Fig. 3 is a side view thereof. Fig. 4 is a transverse section thereof. Figs. 5 and 6 are side elevations of the apparatus employed for imparting a sharp edge to the flanged sides of the bracelet-band.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in certain improvements in the manufacture of Roman bracelets, as hereinafter set forth and claimed, whereby they are made light, strong, and inexpensive.

A Roman bracelet as usually made is of the same color as Roman or fine gold; but it is made of gold alloyed with copper and silver, which copper, after the bracelet is duly shaped, soldered, and polished, is eaten out by the action of a bath containing muriatic acid, saltpeter, salt, and alum. The withdrawal of the copper changes the color of the composition from red to the color of pure gold, as the amount of silver left behind will not greatly affect the tint. Before such submersion in the bath (technically called the "color") the composition consists of one hundred parts of gold, ten parts of silver, and fifty-three parts of copper. As the proportion of gold to the aggregate ingredients in said composition is about as 14 to 24, the composition, as a whole, is called "fourteen-carat gold." The term "fourteen-carat gold," however, applies to any other composition in which fourteen-twenty-fourths are of gold, whatever may be the character of the remaining ten-twenty-fourths.

In order to prevent the acid in the bath or color above referred to from eating through the bracelet, and thereby destroying or unduly weakening it, the bracelet is necessarily made very thick.

This construction involves a considerable waste of valuable material, which waste my invention is designed to obviate.

I construct my bracelet from a sheet or band made of a thin outer strip, *a*, and an inner strip, *b*, which are united by solder to form a compound strip, A, as shown in Fig. 1. The outer strip, *a*, is of a composition formed of one hundred parts of gold, ten parts of silver, and fifty-three parts of copper, the inner strip, *b*, consisting of any suitable inferior metal or composition.

These two pieces *a* and *b* are soldered together by a solder consisting of one hundred parts gold, sixty parts silver, and forty parts copper. They are then rolled down to the proper thickness to form the body of the bracelet. The compound strip thus formed is then bent into the form of an elliptical band, its ends connected and sides flanged, and the band then "randeled" on a lathe, the inferior metal being on the inside, so that the surface is smooth and the flanges *e* are square with sharp corners. To effect this I employ the cylindrical die B and the shaping-tool C, after which the bracelet has its ornaments and other parts connected to it by the kind of solder above described. One of these other parts is the ordinary gold-lining or wrist-guard, which extends across the bracelet, connecting the inner edges of flanges *e*, and entirely incloses the central hollow of the bracelet. This lining protects the wrist from being cut by the sharp edges of flanges *e*, and also prevents the acid from entering the hollow of the bracelet and acting on strip *b* from behind.

After the ornaments, lining, &c., have thus been soldered on, the bracelet is dipped very briefly in the bath or color above referred to. The acid of said bath then abstracts from said bracelet all the copper to which it has access. The solder, owing to the great predominance of gold and silver over the copper therein, retains nearly its full strength and holds the bracelet together. The surface of the outer strip, *a*, of the bracelet is somewhat eaten, and, having lost most of its copper, appears as pure gold, its proportion of silver being sufficient to aid in holding it together, but not to resist any considerable strain nor to greatly modify the natural color of the gold. The inner strip, *b*, which remains untouched by the acid, braces said outer strip, *a*. Thus my bracelet has the strength of a very thick bracelet composed wholly of the expensive material

employed in strip *a*, and the solder need not be of exactly the proportion stated.

Gold-solder has been known and used in the jeweler's art, but of a low grade. I have found that bracelets require to be subjected to intense heat for some time, owing to the length of surface of such articles. Hence a low grade of solder will be burned and the pieces of the bracelet will separate.

Bracelets have been made of plates of inferior and superior metals, the solder employed being a low grade and applied at the end edges. It is essential to provide for the objections or defects of such constructions by applying beads to said edges for purposes of protection. Bracelets so constructed are not desired by the trade, as they are expensive and appear clumsy; but in my invention the pieces of superior and inferior metal are united throughout by gold-solder of a high grade prior to rolling, so that when I solder the lining-plate the compound plate or band will not be separated by the heat to which it is subjected, and when the whole bracelet is immersed in the bath its Roman-gold color is produced without materially weakening the plate, for while the outer plate has some of its alloy metal removed the inferior interior metal provides the proper stiffening or strength for the weakened outer superior plate in the condition it remains after coloring.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The improvement in the art of making Roman bracelets herein described, the same consisting in uniting an alloyed gold strip and a strip of inferior metal or alloy by gold-solder of a high grade, rolling said compound strip to the proper thickness and forming it into a flanged band, the superior metal being outward, soldering a lining-plate onto the flanges, applying the ornaments or finish, and immersing the otherwise perfected bracelet in the color-bath, as set forth.

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