

## **GORHAM'S UNIQUE INLAY PATENTS**

By Neil Shapiro

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On December 11, 1900 and July 23, 1901, William A. Day, of Providence, Rhode Island an assignor to the Gorham Manufacturing Company of the same place patented a technique for producing ornamental metal articles with the appearance of inlay work.

Traditionally, inlay metal work is a technique used to create an ornamental design, pattern, or scene by inserting or setting into a shallow or depressed ground or surface a material of a different color or type. Usually, precious metals, such as gold, silver, platinum are used with a different base metal, e.g., steel.

The inlaying process begins with cutting out a pattern in the base metal. The depth of the cut out pattern is relative to the thickness of the material to be in laid. After the cut out is leveled the inner edges are under cut (beveled) and the material to be inlaid is hammered into place. This makes the hammered metal expand into the undercut area. The remaining material on the surface is trimmed level with a chisel or by stoning or sanding and the artisan then adds any decorative touches that he deems necessary. Good inlay is very stable, and not easily removed.

This is the technique that was generally used for bidri, damascene and nielloed objects. It is a slow, costly and labor intensive job. William Day's invention cleverly reproduces the appearance of inlay work more cheaply and with less labor.

Day's patent lays out these steps for creating an inlayed looking ornamental object:

1. Create a precious metal ornamental design, in a different metal than the base metal.
2. Solder or sweat the ornamental design to the base object, e.g., in the original patent Day uses a blank, silver cigarette case.
3. Place the entire case in an electrolytic bath and deposit the silver base metal over the whole case, including the ornamental design so that a sufficient thickness is applied to cover the ornamentation.(see note)
4. Remove the case from the bath and grind down the surface until the ornamental design is exposed.
5. The finished surface shows an even plane and the ornamentation is firmly fixed in place. There are no solder joints to this method; hence, any oxidation will not affect the final appearance of the work.

Day's patent, really Gorham's, was used on some match safes. There are archival records that have photographs of match safes that used this technique. Some of these special pieces are shown below:



(Note: All images come from the Gorham Archives at the John Hay Library at Brown University. These images are copies of images made by Gorham in 1901. The original images are not in excellent condition and hence the copies are not the best quality.)

All of these match safes were made in 1901 and the costs ranged between \$11.25 and \$12.00 each. \$12.00 in 1901 had the same buying power as \$320.70 current USA dollars. (Data:from:<http://futureboy.homeip.net/fsp/dollar.fsp?quantity=12&cy=dollars&fromYear=1901>)

All of these match safes were made in 1901 or later. Gorham made other safes that appear to have used this inlay technique in subsequent years but we do not have images of those safes. There are cost records but no images.

Note: In 1842, silver plating by electrolysis replaced Sheffield Plate, a type of ware made by sweating or fusing sterling on copper, by using a galvanic current to lay a layer of nickel silver (an alloy of 65% copper, 17% zinc and 18% nickel) on the base metal.