

# UNITED STATES PATENT OFFICE.

DANIEL DAVIS, JR., OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN GILDING, SILVERING, &c., IN DEAD COLORS.

Specification forming part of Letters Patent No. 3,015, dated March 21, 1843.

*To all whom it may concern:*

Be it known that I, DANIEL DAVIS, JR., of Boston, in the county of Suffolk and State of Massachusetts, have discovered a new Method or Process of Producing Dead Metallic Colors on Brass, Copper, Iron, Steel, and various other Metals, or of producing by galvanic agency metallic surfaces resembling what is termed in the arts "dead-gilding;" and I do hereby declare that the following is a full and exact description of the same, wherein I have set forth the nature and principles of my discovery, by which it may be distinguished from others of like character, together with such parts or combinations thereof as I claim and consider new.

The process of gilding upon clocks, lamps, and other ornamental metallic articles has generally heretofore been carried on through the agency of acids, the articles being dipped or suspended in the solution (which is heated during the operation) until the requisite color is produced. The "deadening" has been performed by several processes, generally during the operation of cleaning, by means of an acid known in the arts by the term "deadening aqua fortis," or by a weak solution of nitrate of mercury applied to the articles previous to the gilding process.

My improvement in the deadening of the gilding is applicable to that method by which metals are coated or covered with metals by the operation of the galvanic battery, or that usually known in the arts by the term "electrotyping;" and it consists, when brass or copper articles are to be gilded, in first depositing a thin coating of copper upon them, and next a layer of gold, or of the metal required upon the said coating of copper. The layer of copper first put on in connection with the gold or other metal afterward deposited produces a deadening of the latter in a most thorough and beautiful manner. Such part of the articles on which I may be desirous of producing a bright gold color or reflecting-surface may be burnished in the ordinary manner.

In order to produce the deadened metallic surface upon articles of iron or steel, it becomes necessary to prevent the local action of the acid solutions in which said articles are dipped and subjected to the action of the galvanic battery, the said local action having hitherto prevented such metals from receiving the deposit of copper to that degree of perfection necessary. I have discovered that by adding cyanuret of potassium to the solution of sulphate of copper in which the article is immersed the acid of the solution is neutralized and the deposit of metal readily takes place upon any article of iron or steel. The article having thus received a coating of copper from the neutralized solution it may next have a thicker coating of copper applied by the ordinary solution in the usual manner. The gold or other metal, as may be required, is not deposited thereon, the combination of the two metals—copper and gold—producing the deadening of the latter to the degree required.

Having thus explained my discovery, I shall claim—

The above-described mode of producing a deadened metallic surface upon iron, steel, and various other metals—that is to say, by first precipitating copper upon the iron or steel from a solution of copper in the cyanide of potassium in order to prevent the effects of local action, then precipitating copper from the sulphate, and lastly gold or silver thereon, the whole process being substantially as hereinbefore set forth.

In testimony that the foregoing is a true description of my said discovery and improvements I have hereto set my signature this 26th day of November, in the year 1842.

DANIEL DAVIS, JR.

Witnesses:

R. H. EDDY,  
E. LINCOLN, JR.