

UNITED STATES PATENT OFFICE.

LEOPOLD BRANDEIS, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN BRONZING COLUMNS, PILLARS, MONUMENTS, &c.

Specification forming part of Letters Patent No. 129,207, dated July 16, 1872.

SPECIFICATION.

I, LEOPOLD BRANDEIS, of Brooklyn, Kings county, and State of New York, have invented a new process or processes to bronze large iron castings, columns, pillars, monuments, statues, railing or grating, vases, settees, chairs, lamp-posts, fountains, stable furniture, &c., and to give them the true color of antique bronze, (*patina antiqua*,) where required.

It has been found impracticable so far to galvanize or plate such large objects, on account of the tremendous size of the tanks needed for pickling, (viz., for the removal of the oxide and hydrates,) and their great weight and bulk.

To dispense with this entirely I direct a stream of sharp clean sand from an elevation on the object to be cleaned. This stream of sand can be directed to any part by means of flexible tubes or pipes. The article of iron gets a perfect scouring and polish by this means, and I proceed then to deposit copper on it by the usual mode of applying a solution of a copper-salt, or by solution and battery. The next step is the depositing of zinc by means of the battery, or of lead if the bronze is likely to be exposed to the action of gases

or acids, and the shade of the bronze formed now is conditioned by the thickness of the last deposit. If the bronze-antique is required, a second deposit of copper is made on the zinc or lead coat. Four drams of sal ammonia (*salmiac*) and one dram of binoxalate of potash are dissolved in one pound and a half of white vinegar, and this solution is applied to the copper, and the real antique bronze is formed. When, exceptionally, the deposit of metal is irregular, strongly-diluted muriatic or nitric acid, or chloride of antimony is desirable.

What I claim as my invention is—

The new and original process of bronzing in gold-color or in bronze-antique all the large iron goods which can now only be protected by paint repeated at short intervals, like pillars, columns, statues, railing, grates, vases, settees, chairs, lamp and letter posts, fountains, &c., and to increase thereby their beauty and durability, substantially as described.

LEOPOLD BRANDEIS.

Witnesses:

LUDWIG BRANDEIS,
HENRY BERAGHEIMER.