

UNITED STATES PATENT OFFICE.

WILLIAM C. STARR AND HORACE C. STARR, OF RICHMOND, INDIANA.

PROCESS OF ORNAMENTING CHAINS.

SPECIFICATION forming part of Letters Patent No. 346,786, dated August 3, 1886.

Application filed November 19, 1885. Serial No. 183,359. (Specimens.)

To all whom it may concern:

Be it known that we, WILLIAM C. STARR and HORACE C. STARR, citizens of the United States, residing at Richmond, in the county of Wayne, State of Indiana, have invented certain new and useful Improvements in Processes of Ornamenting Chains, of which the following is a specification.

Our invention relates to that class of chains known as "trace," "saddlery," and other chains in common use.

Our invention consists in the hereinafter-described process of giving such chains a lustrous metallic coating, constituting a fine finish, colored differently from the metal of which the chains are made, and which, by increasing the style and finish of the chains, renders them proof against rust, corrosion, or discoloration, thereby adding largely to the durability and value of the chains.

Our object is to make this class of chains more durable, more salable, and at the same time more valuable.

To produce the desired result we first put the fully constructed and polished chain into a rattler or wooden cylinder, made watertight, of a capacity of, say, thirty gallons, when water is added sufficient to cover the chain, and into the water is put one quart of sulphuric acid and one-quarter of a pound of caustic soda. The cylinder is then tightly closed and briskly revolved for one hour. The chain is then placed in an air-tight cylinder containing water and heated until the water reaches the boiling-point, when a half-gallon of sulphuric or kindred acid is added. The cylinder is then tightly closed and put in motion, which is continued for two hours. The chain is then removed to a tank of warm wa-

ter and submerged, after which it is strung on wires and subjected to a bath of cold water, after which it is immersed for one minute in a solution of sulphuric acid composed of one part of sulphuric acid to twenty parts of pure water, after which it is immersed in a solution of sulphate of copper, from thence plunged into cold water, then into hot water, from whence it is removed and dried. When dry, the chain is immersed in lacquer composed of one pound of shellac, three gallons of alcohol, and one-quarter of a pound of gum-gamboge, the alcohol to be kept warm until both the shellac and gamboge are dissolved, and after being settled carefully pour off the lacquer from the sediment, when it is ready for use.

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

The process of ornamenting chains, consisting in the following steps: first, putting the chain into an aqueous solution of sulphuric acid and caustic soda and agitating the same; second, boiling the chain in water, with sulphuric acid added when it reaches the boiling-point, and agitating this solution; third, washing the chain in water and in a solution of sulphuric acid; fourth, immersing the chain in a solution of sulphate of copper, washing and drying, and finally immersing the chain in a lacquer composed of shellac, alcohol, and gamboge, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM C. STARR.
HORACE C. STARR.

Witnesses:

ADA G. CHIPMAN,
ALVIN E. CROCKER.