

No. 706,701.

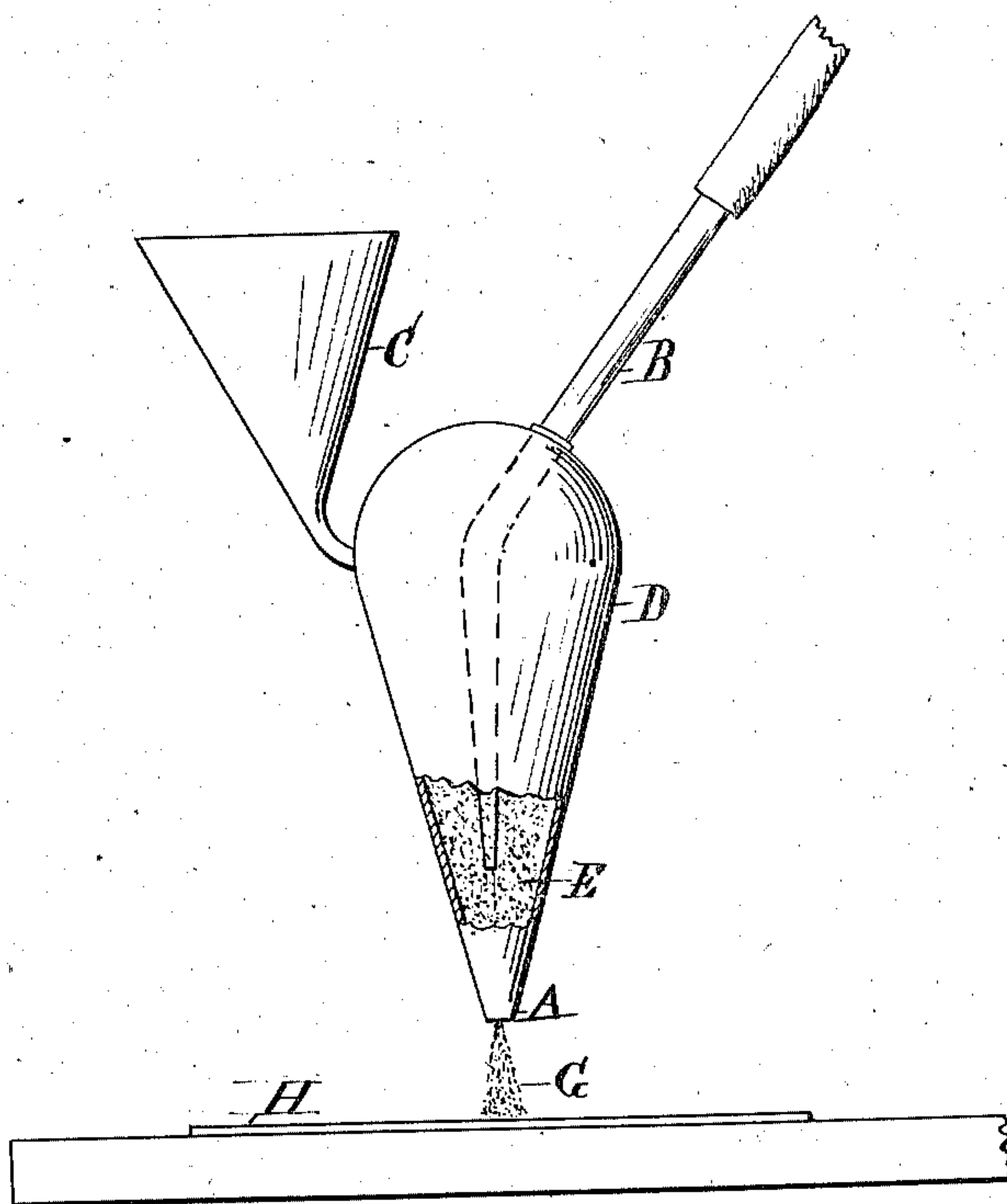
Patented Aug. 12, 1902.

S. H. THURSTON.

METHOD OF IMPACTING ONE METAL UPON ANOTHER.

(Application filed Mar. 23, 1900.)

(No Model.)



WITNESSES

J. S. Cadel
Charles W. Low

INVENTOR

Samuel Herman Thurston
By *James M. Hicks* ATTY

UNITED STATES PATENT OFFICE.

SAMUEL HEMAN THURSTON, OF LONGBRANCH, NEW JERSEY.

METHOD OF IMPACTING ONE METAL UPON ANOTHER.

SPECIFICATION forming part of Letters Patent No. 706,701, dated August 12, 1902.

Application filed March 23, 1900. Serial No. 9,881. (No specimens.)

To all whom it may concern:

Be it known that I, SAMUEL HEMAN THURSTON, a citizen of the United States, and a resident of Longbranch, in the county of Monmouth and State of New Jersey, have invented a certain new and useful Method of Impacting One Metal upon Another, of which the following is a specification.

My invention relates to a method for carrying out the process of coating one metal with another set out and claimed in my application filed December 8, 1898, No. 698,670; and it consists in certain elements and combinations fully set out and claimed in this specification.

In order that those skilled in the art to which my invention appertains may understand, construct, and use my invention, I will proceed to describe it, referring to the drawing herewith, in which the figure is a side elevation of an apparatus adapted to carry out my invention, a portion being broken away to show the internal structure.

A is a nozzle.

B is an air-pipe; C, a hopper.

D is a chamber into which both the air-supply and metal particles enter from the air-pipe B and hopper C.

E and G represent the metal particles being forced by the current of air under pressure against a plate of metal H.

I am aware that various substances have been forced by air-pressure from suitable nozzle against surfaces for various purposes and that such an operation is not broadly new; but I am not aware that metal particles have ever been thrown upon or against a metal plate for the purpose of driving the said metal particles with such force as to cause them to be incorporated with the body of said metal and form a coating by impact or impingement. This I accomplish by means of metal particles driven by pneumatic pressure against the surface to be coated with such force as to embed the metal of the said particles in the surface of the metal against which they are driven and incorporate the two together, thus forming a stable and efficient metal coating of one metal upon another which is irremovable without removing the

metal of the plate or object thus coated. A stable, commercial, and efficient product is formed by the means herein described.

The form of apparatus may of course be varied to suit the circumstances under which it is used.

The air-pressure may be derived from any source. Superheated steam or any gas under high pressure may in some cases be available. I propose sometimes to heat the object to be coated to open up its pores while or before operating upon it; but the effect of the impingement of the metal particles driven with the force of the air-conveyer upon the object being coated is such that the surfaces are first cleaned from all foreign matter and heated to a degree and its pores opened by the forceful impingement of said particles, and immediately the metal from the said particles is impacted into and incorporated with the metal of the object being coated in such a perfect manner that the two cannot be separated in any ordinary manner and are practically permanent. That the particles are thus driven into the said pores of the object being coated and become inherent therein is undoubtedly true. The metals I have so far employed for this purpose are copper and aluminium as a coating upon iron and steel; but my invention is broad enough to include a vast number of other metals.

Having now fully described my invention and the manner in which I have embodied it, what I claim as new and as my invention, and desire to secure by Letters Patent, is—

The method of providing a metal article with a coating of another metal, which consists in forcing particles of the coating metal, by a blast of a gas, against the said article with such force as to cause the particles to become embedded in the surface of the said article and form a permanent coating thereon.

Signed at New York, in the county of New York and State of New York, this 17th day of March, A. D. 1900.

SAMUEL HEMAN THURSTON.

Witnesses:

M. D. WHEELER THURSTON,
CHARLES W. LOW.