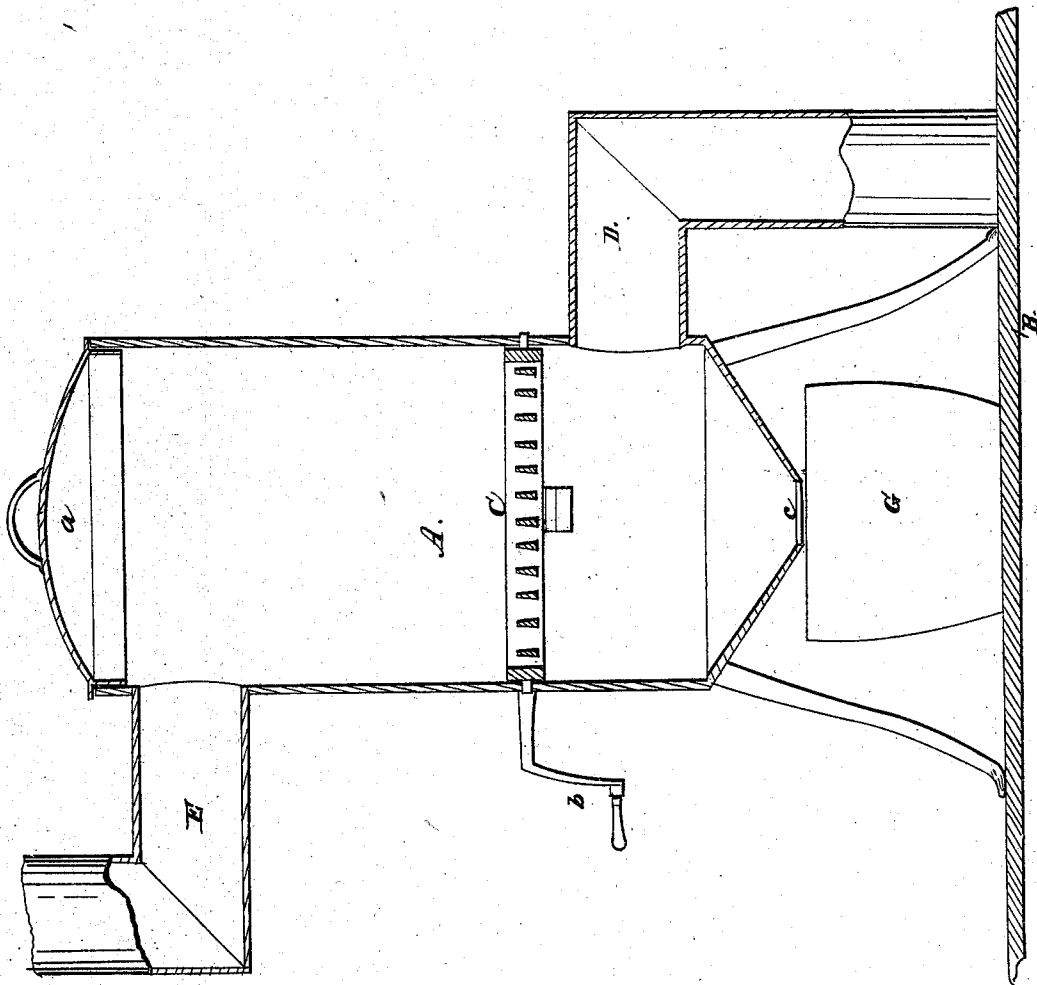


Sturdevant & Harmon.

Removing Tin from Sheet Metal.

Nº 75,804.

Patented Mar. 24, 1868.



Witnesses:

J. R. Drake
Geo. W. Mott.

Inventor:

D. B. Sturdevant &
R. H. Harmon by
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attys

United States Patent Office.

D. B. STURDEVANT AND B. H. HARMON, OF CLIFTON SPRINGS, NEW YORK.

Letters Patent No. 75,809, dated March 24, 1868.

IMPROVED MODE OF REMOVING TIN FROM SHEET METAL.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, D. B. STURDEVANT and B. H. HARMON, of Clifton Springs, in the county of Ontario, and State of New York, have invented a certain new and useful Method of Removing Tin Coatings from Sheet Metal; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

The figure represents a central vertical section of our improved apparatus.

The object of this improvement is to remove tin coatings from sheet metal, such, for instance, as scraps, old tin-ware, &c.

The process covers the combined employment of steam and hot air, and the apparatus consists of a retort, having induction and eduction-air passages, a shaking-grate, and a contracted bottom, employed in connection with a water-receptacle beneath, for the generation of the steam.

In the drawings, A indicates the retort, which may rest upon a furnace, B, or be otherwise connected with any apparatus by which heat may be imparted. It has a cover, *a*, by which the sheet metal is inserted, and also a grate, C, for sustaining the same, and allowing a free passage of the hot air and steam through. This grate is made to shake freely in the retort, being preferably provided with a hand-crank, *b*, extending out through the sides. An induction hot-air pipe, D, opens beneath the grate, and an eduction-pipe, E, extends from above it. The bottom of the retort is in funnel-form, and has a small opening, *c*, as shown, and beneath this opening rests a water-receptacle, G, for the generation of steam.

The operation is as follows: The scraps of sheet metal are placed upon the grate, and hot air let on through pipe D, and steam through orifice *c*. When heated, the grate is shaken, and the particles of tin, as they are released, fall down through the open bottom into the receptacle beneath.

This combination of the principles of hot air and steam has a special effect in removing and preserving coatings of tin. The dry hot air loosens the coatings, while the steam softens and retains the tin in its semi-liquid form, after being loosened, till it finally escapes into the outside receptacle. Neither could act alone to produce the desired result. Hot air alone would dry or harden the coating upon the body of the sheet metal itself, and also cause it to adhere and deaden upon the sides of the retort. Steam alone would not have the effect to remove the tin. In combination the hot air reduces the tin, while the steam adds that fluidity which is essential not only to disengage the coatings from the dross, but also to free the same from the retort itself. To accomplish this the vapor constantly fills the whole interior of the retort, and permeates thoroughly the material, keeping the whole lubricated or bathed in such a manner as to obviate sticking. While this action is taking place the loose grate allows the mass to be thoroughly agitated, which is essential in the process to produce a thorough removal of the tin.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The process, herein described, of removing tin coatings from sheet metal, by the combined use of hot air and steam acting upon the mass in a closed retort, substantially as herein set forth.
2. We also claim the special combination and arrangement of the apparatus for producing the result, the same consisting of the retort A, grate C, hot-air pipes D E, and water-receptacle G, the whole operating in the manner and for the purpose herein set forth.

In witness whereof, we have hereunto signed our names in the presence of two subscribing witnesses.

D. B. STURDEVANT,
B. H. HARMON.

Witnesses:

J. A. DAVIS,
FRED. A. HATCH.