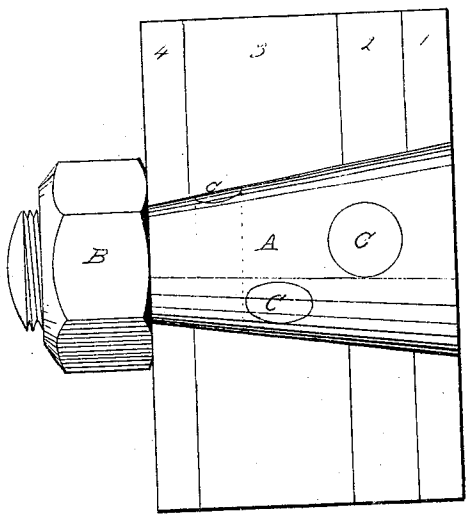
J. Farrel,

Bolt for Safes.

No. 104,793. Patented May 10. 1870.



Witnesses

John L. Roberts Jr.

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United States Patent Office.

JOHN FARREL, OF NEW YORK, N. Y.

Letters Patent No. 102,793, *dated May* 10, 1870.

IMPROVEMENT IN BOLTS FOR SAFES.

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

Be it known that I, JOHN FARREL, of the State, city, and county of New York, have invented an Improved Safe-Bolt, termed "The Combination Metal Bolt," of which the following is a specification.

The invention relates to the various bolts, shafts, spindles, rivets, &c., used for different purposes in safes and safe and vault-doors and locks, but particularly the fastenings known as conical bolts used for holding together the various laminæ of metal of which the exterior walls of safes are constituted.

Heretofore such bolts have been made of metal more or less ductile, and the practice is to harden the bolts by a manual operation or process, in order to prevent their being operated upon with burglars' tools and removed.

The objection to such bolts is that by a similar operation the metal may be softened, and its original inherent ductility restored, rendering the bolt susceptible to the attack of burglars' tools.

The object of this invention is to make a bolt for safes that will successfully resist all attempts at removal by operating upon it from the outside.

To enable others skilled in the art to make and use the invention, I will proceed to describe it.

In the drawing annexed—

A represents a conical bolt, used for holding together the several layers of metal composing the exterior wall of a safe: 1, for example, representing wrought iron; 2, welded iron and steel; 3, Franklinite or spiegeleisen; and, 4, wrought iron or steel.

The bolt is inserted from the outside, and held in place by a nut, B, on the inner end, making it secure against removal, except by destroying the entire bolt by means of drills, chisels, or other sharp instruments.

To prevent this, I combine with the metal or metals of which the bolt is made, such as wrought iron or steel, or both welded together, being more or less ductile, another metal of an entirely different nature, being inductile, and, in its own normal condition, inherently hard and imperviable; said combination of the hard or inductile with the less hard and ductile metal being mechanical and effected by reducing the hard metal to a melting heat, and then pouring the same around the other metal, or into holes made therein lengthwise or transversely, as indicated at C in the drawing, or in any other manner by which the combination of the two metals may be mechanically effected.

The result is that, although the temper or hardness of the ductile metal may be drawn, as by the use of the blow-pipe, no heat less than that of a furnace can reduce the inherent hardness of the cast metal.

For the hard metal, I use "white" iron, Franklinite, spiegeleisen, or any other hard, inductile, or cast metal requiring a white or melting heat to bring it into a working condition.

The invention is applicable to all bolts, shafts, rivets, spindles, or like parts employed in safes, and safe or vault-doors, or the locks thereof, whether in the original construction or in their practical use.

I claim as my invention—

The making of conical and other bolts for safes and vaults, or the locks thereof, substantially as described, for the purposes specified.

JOHN FARREL.

Witnesses:

JOHN L. ROBERTS, Jr.,

S. H. NOYES.