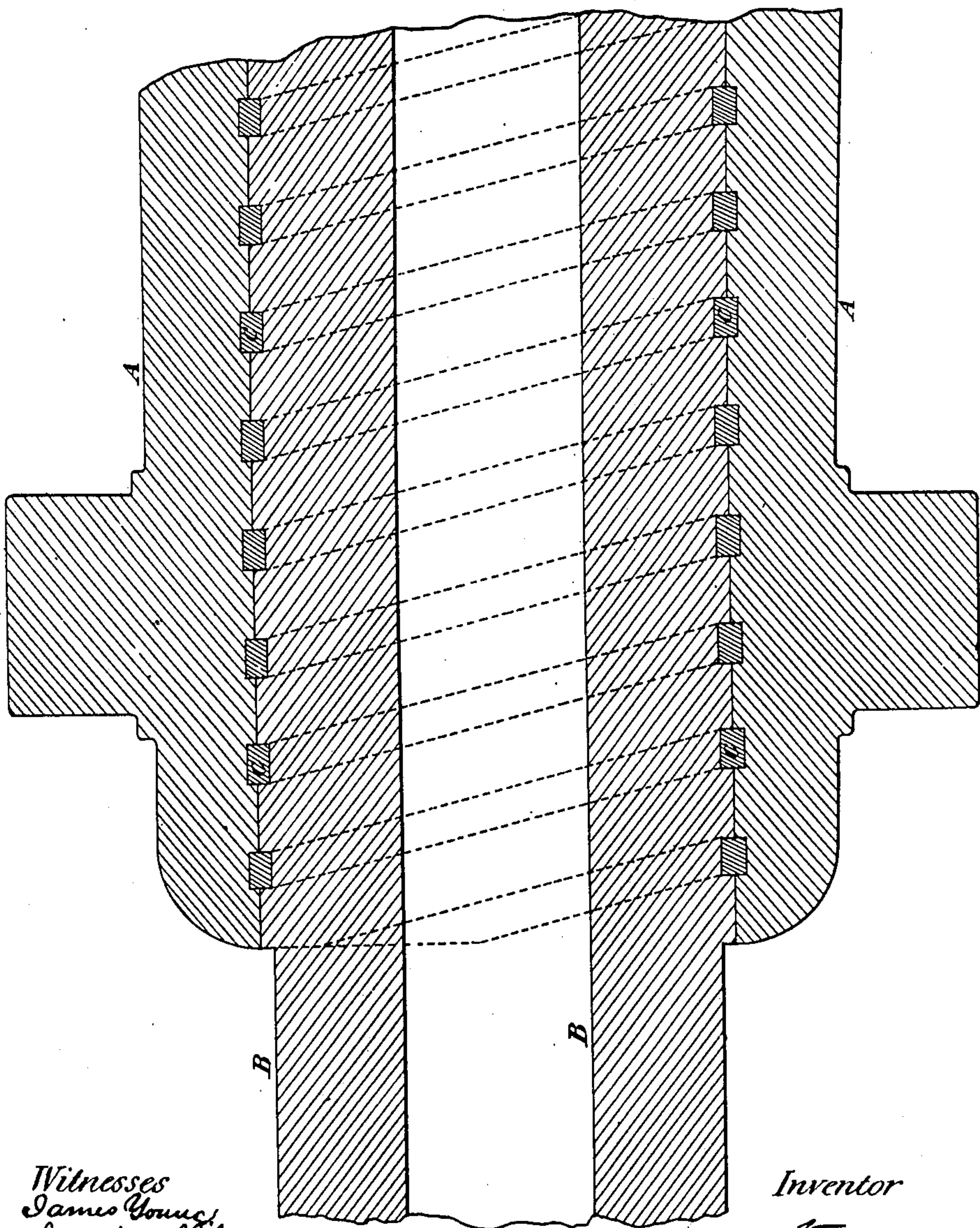


(No Model.)

J. VAVASSEUR.  
ORDNANCE.

No. 277,634.

Patented May 15, 1883.



Witnesses  
James Young,  
Willie Holmes.

Inventor  
Josiah Vavasseur.  
by his attorneys -  
Baldwin, Hopkins & Ayton.



# UNITED STATES PATENT OFFICE.

JOSIAH VAVASSEUR, OF BEAR LANE, SOUTHWARK, COUNTY OF SURREY,  
ENGLAND.

## ORDNANCE.

SPECIFICATION forming part of Letters Patent No. 277,634, dated May 15, 1883.

Application filed January 3, 1883. (No model.) Patented in England November 22, 1882, No. 5,559, and in France December 9, 1882, No. 140,283.

*To all whom it may concern:*

Be it known that I, JOSIAH VAVASSEUR, a subject of the Queen of Great Britain, and residing at Bear Lane, Southwark, in the county of Surrey, England, have invented certain new and useful Improvements in Ordnance, (for which I have made application for Letters Patent in Great Britain, No. 5,559, dated November 22, 1882, and in France, No. 140,283, dated December 9, 1882,) of which the following is a specification.

This invention has for its object improvements in ordnance, and relates especially to devices for obtaining greater strength longitudinally.

Where tubes forming a gun are fitted over each other any tendency for one to slide on the other longitudinally from the effect of firing has been hitherto counteracted in various ways—as, for instance, by screwing the parts together, or by leaving comparatively shallow projecting rings or collars on one piece, to be shrunk into corresponding recesses formed in the other piece, or by making coinciding annular grooves in the tubes and providing channels leading to them from the outside, by which the grooves have been filled with melted metal.

My improved method consists in cutting a coarse screw groove on the exterior of the inner piece or tube at the part where it is desired to couple it to the outer piece, and to cut an exactly corresponding groove in the bore of the outer piece, so that when the two pieces are shrunk or fitted together there will remain a spirally-formed recess, by preference square or rectangular in section, into which I pass a

spirally-formed bar of steel or other metal of corresponding section, to fit as closely as possible into the space thus left for it. The two tubes will thus be longitudinally-coupled together by the spiral bar, which must be sheared or deformed before one can slide on the other to any extent likely to endanger the structure. I prefer making the thread in such a direction with respect to the rifling of the tube that any tendency to move the tube on its axis will tend to screw the tube farther into its jacket or the piece to which it is coupled.

The annexed drawing is a longitudinal section of two portions of a gun united in accordance with my invention.

A is the outer and B the inner part. Within A a spiral groove is cut, and a like groove is cut upon the exterior of B. The outer part is then shrunk upon the inner in the usual way, but with care that the grooves shall coincide and form a spiral passage. A spirally-formed bar of steel or other suitable metal, C, of a size just to be able to pass, is then inserted by screwing into the passage.

I claim—

As an improvement in ordnance, the combination of the tubes A and B, provided with the coinciding spiral grooves, and a spiral bar secured in the grooves, substantially as and for the purpose hereinbefore set forth.

JOSIAH VAVASSEUR.

Witnesses:

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