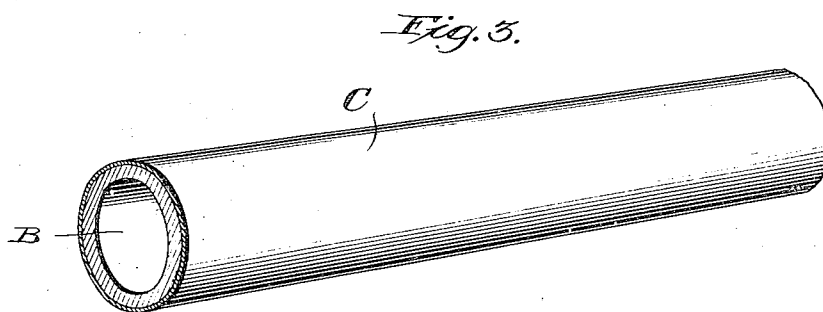
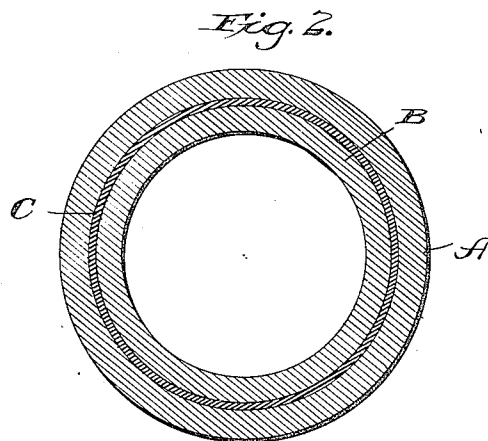
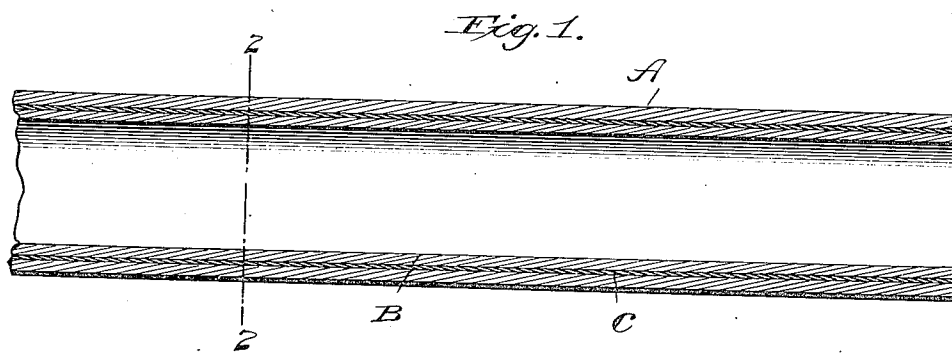


R. H. BERKSTRESSER.
GUN BARREL AND PROCESS OF PRODUCING THE SAME.
APPLICATION FILED MAR. 19, 1906.

930,927.

Patented Aug. 10, 1909.



Inventor

Witnesses

G. L. Koechling
R. C. Braddock

Robert H. Berkstresser
By *William W. Deane*
his Attorney

UNITED STATES PATENT OFFICE.

ROBERT H. BERKSTRESSER, OF YORK, PENNSYLVANIA.

GUN-BARREL AND PROCESS OF PRODUCING THE SAME.

No. 930,927.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed March 19, 1906. Serial No. 306,807.

To all whom it may concern:

Be it known that I, ROBERT H. BERKSTRESSER, citizen of the United States, residing at York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Gun-Barrels and Processes of Producing Same, of which the following is a specification.

My invention relates to ordnance and more particularly to gun barrels; and it consists in a process of cheaply and expeditiously producing a gun barrel having a rust-proof lining calculated to withstand exposure and wear and materially prolong the usefulness of the gun-barrel as a whole.

With the foregoing in view, the invention will be fully understood from the following description and claim when the same are considered in connection with the accompanying drawings, forming part of this specification, in which:

Figure 1 is a longitudinal, diametrical section of so much of the barrel of a piece of ordnance as is necessary to illustrate the present and preferred embodiment of my invention; Fig. 2, a transverse section of the same, taken in the plane indicated by the broken line 2—2 of Fig. 1; and Fig. 3, a detail view illustrating a portion of the lining tube as the same appears subsequent to being tinned and precedent to being secured in the outer tubular body of the barrel in accordance with my invention.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which:

A is the outer tubular body of a barrel which may be and preferably is the barrel of a piece of ordnance, though I desire it distinctly understood that when deemed expedient my invention may be employed in the barrels of shoulder guns and other firearms. The said outer tubular body A is of steel, and may be made in the manner well known in the art or in any other manner compatible with my invention without involving departure from the scope of the same.

B is the tubular lining of the barrel, and C is the coating of tin applied to the outer side of the said tubular lining and having for its purpose to join the outer tubular body A and the lining tube B and securely fix the latter in the former in the manner hereinafter pointed out in detail. The tubular lining B is of brass, German-silver, phosphor-

bronze or other metal that is rust-proof and at the same time possessed of good wearing capacity; and it may be rifled or not in the discretion of the manufacturer; also, when the rifling is resorted to, it may be accomplished either before or after the lining tube is placed in and joined to the outer tubular body. The coating of tin C which entirely covers the outer side of the lining tube B and is of even thickness throughout, as shown, may be applied in the ordinary manner resorted to in the deposition of tin or may be applied in any other manner compatible with my invention without affecting the scope of the same.

In practicing my novel process and producing my improved gun barrel, I first apply the tin coating C to the tubular lining B; and then after the tin is set, introduce the coated tubular lining into the outer tubular body A. Incident to this latter step it will be apparent that the tin coating C, of even thickness throughout, will position the lining tube B centrally in the outer tubular body A; also, that the said tin coating will render easy the operation of driving the tubular lining home in the tubular body. Subsequent to the insertion of the tubular lining in the tubular body sufficient heat is applied externally to the tubular body to fuse the outer portion of the tin coating C, when, as will be readily appreciated, the said coating will strongly join the tubular lining to the outer tubular body and hold the former in correct position in the latter. The fusing of the outer portion only of the coating is important, inasmuch as if the whole coating were made molten or soft, the tubular lining could become readily displaced laterally in the tubular body, thus resulting in an inaccurate and defective product, as will be evident.

I prefer to coat the tubular lining B with tin because of the facility with which such material may be applied and subsequently fused to join the tubular lining to the outer tubular body. I do not desire, however, to be understood as confining myself to a coating of tin inasmuch as a coating of any other material adapted to be deposited on the tubular lining, and susceptible of being subsequently fused to join the tubular lining to the outer tubular body may be employed without involving departure from the scope of my invention.

It will be gathered from the foregoing

that my improved barrel is but little more expensive than an ordinary gun barrel, and yet is adapted to withstand a great amount of usage and is not liable to be rusted or
5 corroded by moisture collected in its bore. This latter will be appreciated as an important advantage when it is remembered that it is frequently necessary to use guns in the vicinity of water where the air is
10 always laden with more or less moisture.

Having described my invention, what I claim and desire to secure by Letters Patent, is:—

The process described, which consists in
15 taking a steel tube, taking a lining tube of rust-proof metal, the exterior diameter of which is less than the interior diameter of the steel tube, applying to the said lining tube an external coating of tin of even
20 thickness throughout and corresponding in

thickness to the difference between the interior diameter of the steel tube and the exterior diameter of the lining tube, driving the coated lining tube, subsequent to the setting of the coating, into the steel tube, 25 whereby the lining tube is concentrically positioned in said steel tube, and applying heat externally to the steel tube sufficient to fuse the outer portion of the tin coating while leaving the remainder set or solid to 30 cause said outer portion to join the steel tube while retaining the lining tube in its concentric position.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT H. BERKSTRESSER.

Witnesses:

JOS. R. STRAWBRIDGE,
JACOB E. WEAVER.