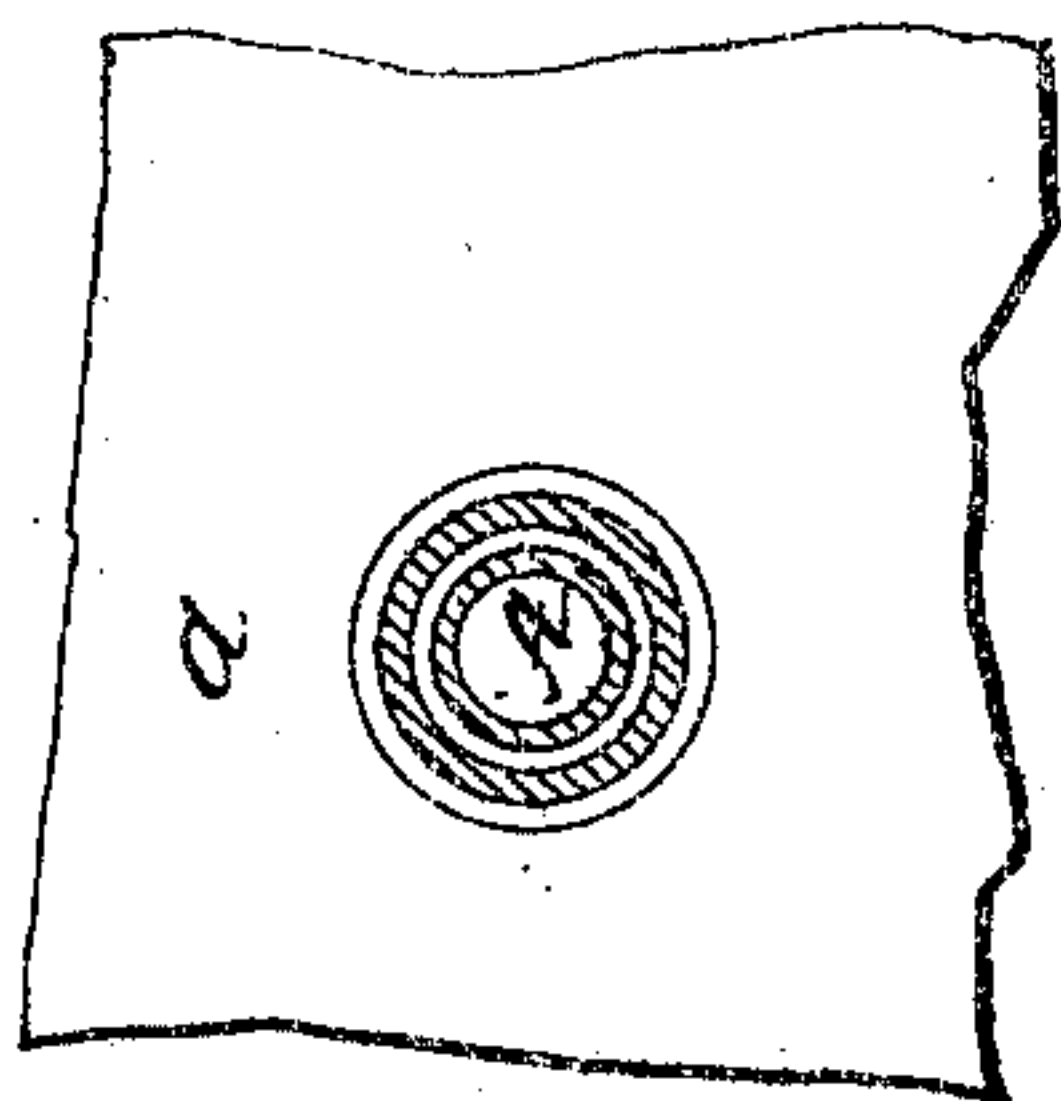


*J. U. Adams,  
Boiler-Tube Ferrule.*

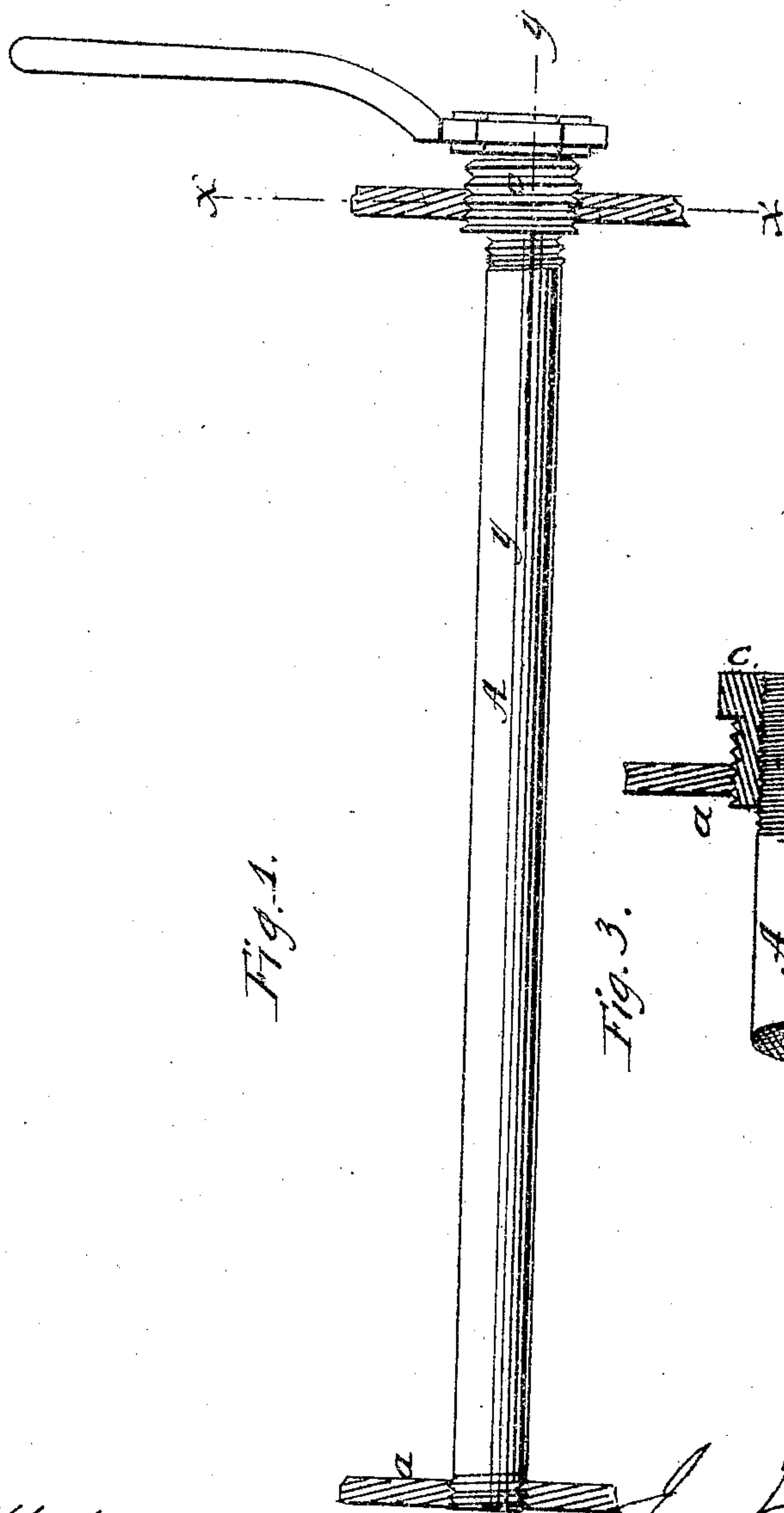
*N<sup>o</sup> 74,028.*

*Patented Feb. 4. 1868.*

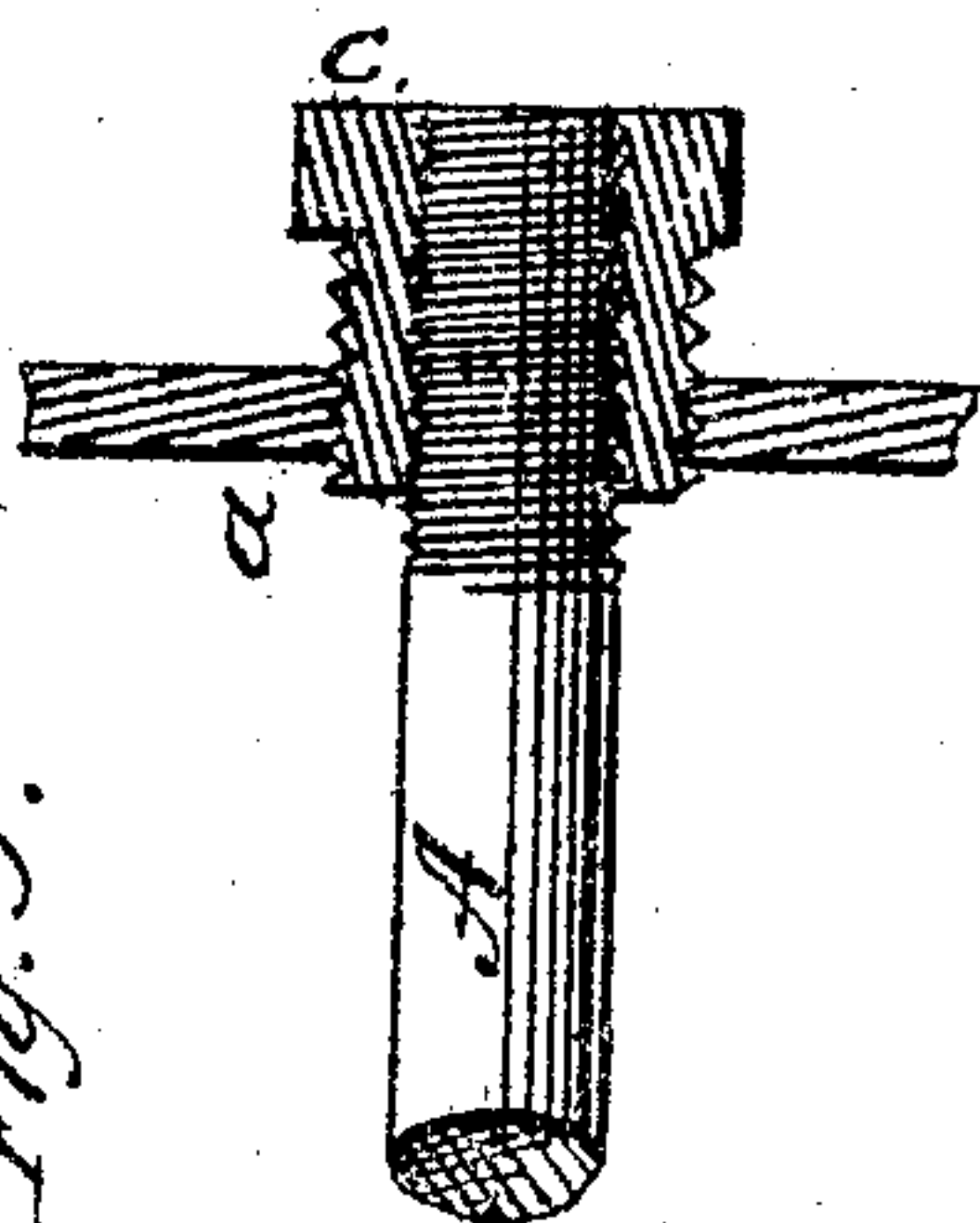
*Fig. 2*



*Fig. 1.*



*Fig. 3.*



*Attest:  
Theo. Incke  
J. Adams Secy.*

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J. U. Adams  
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Attorneys*

# United States Patent Office.

JAMES U. ADAMS, OF RICHFIELD, MICHIGAN.

*Letters Patent No. 74,028, dated February 4, 1868.*

## IMPROVEMENT IN BOILER-TUBE FERRULES.

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

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES U. ADAMS, of Richfield, in the county of Genesee, and State of Michigan, have invented a new and useful Improvement in Ferrules for Fastening Boiler-Tubes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 represents a boiler-tube secured to the plate by my improved screw-ferrule.

Figure 2 is a cross-section, taken in the line *x x*, fig. 1.

Figure 3 is a longitudinal section, taken in the line *y y*, fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and improved mode of fastening tubes in steam-boilers, and consists in a thimble or ferrule, having external and internal threads cut on it, which screws with the internal threads upon the end of the boiler-tube, and with the external threads upon the boiler-plate, in combination with the plate and tube, as hereinafter more particularly described.

A represents a boiler-tube, and *a a* the shell of a steam-boiler. The end of the tube has a screw cut upon the outside of it, on which is fitted a thimble-nut or ferrule, *c*, which has a thread cut upon the outside as well as the inside, and screws into the boiler-plate at the same time that it screws upon the tube A, thus securely fastening the tube in the boiler.

The double-threaded ferrule *c* can be attached to one or both ends of the tube, or one end of the tube may be screwed into the boiler-plate, as shown in fig. 1.

By means of this improved double-threaded ferrule, the end of the tube will be greatly strengthened, and it may be taken out, to clean or repair the boiler, without injury to the tube. The tube can be kept perfectly tight, and leakage will be prevented.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—  
The combination of the ferrule *c* with the tube A and plate *a*, substantially as herein described.

Witnesses:

OSCAR ADAMS,  
L. G. BICKFORD.

JAMES U. ADAMS.