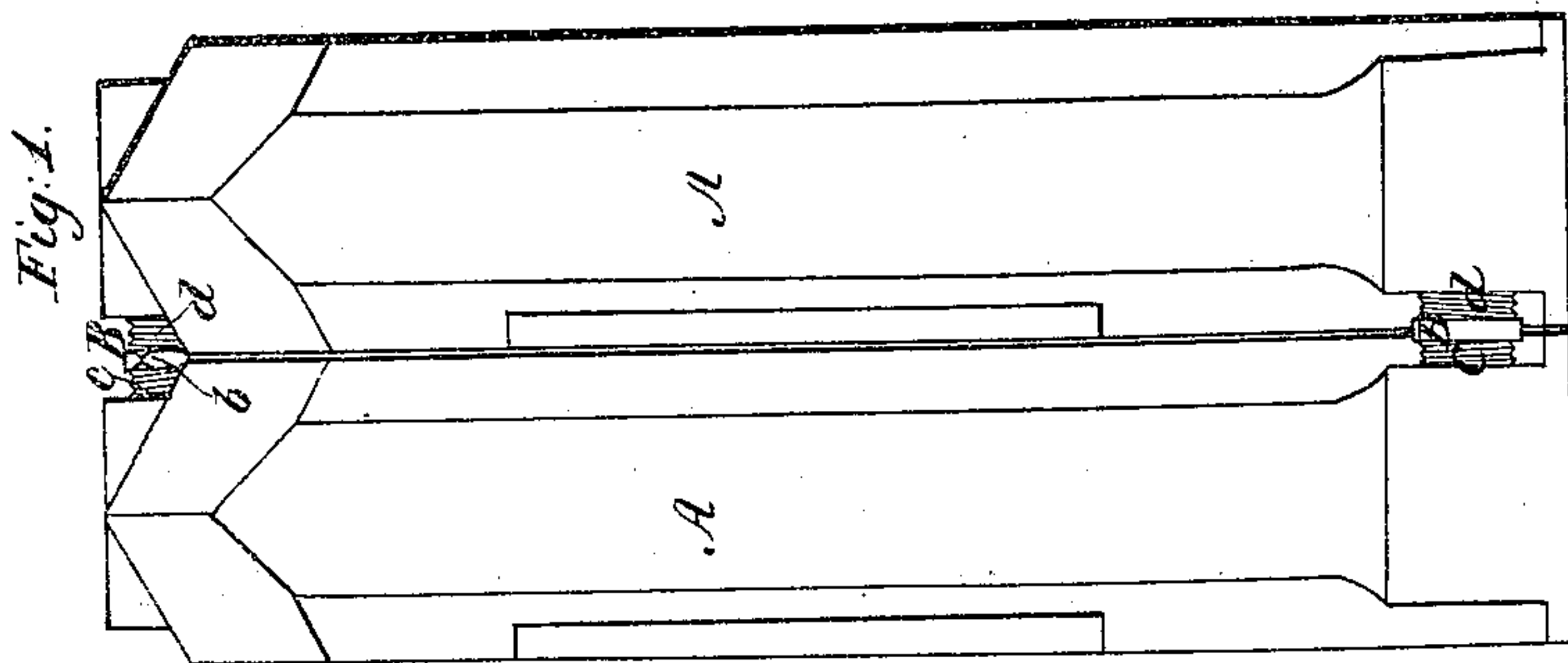
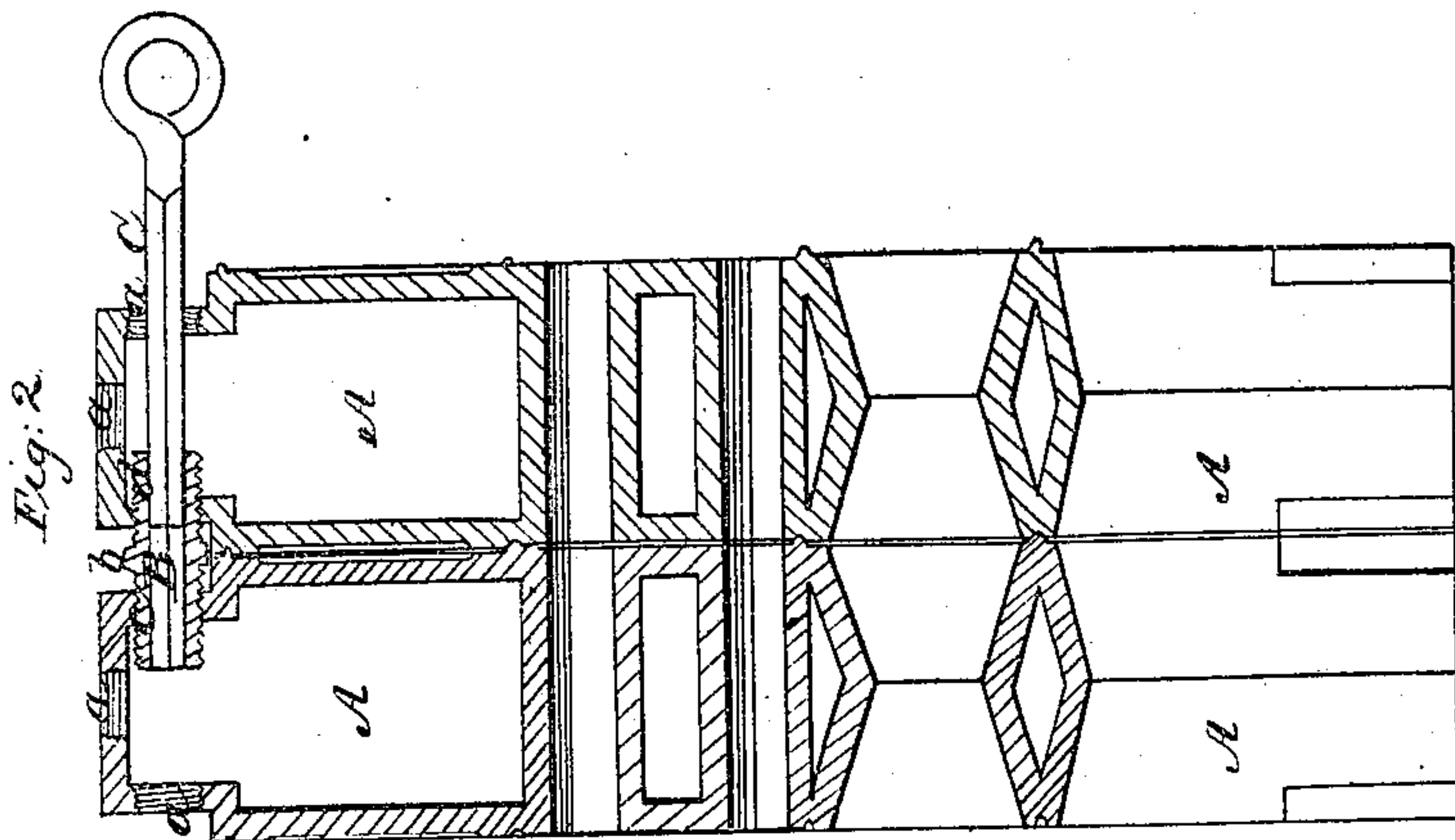
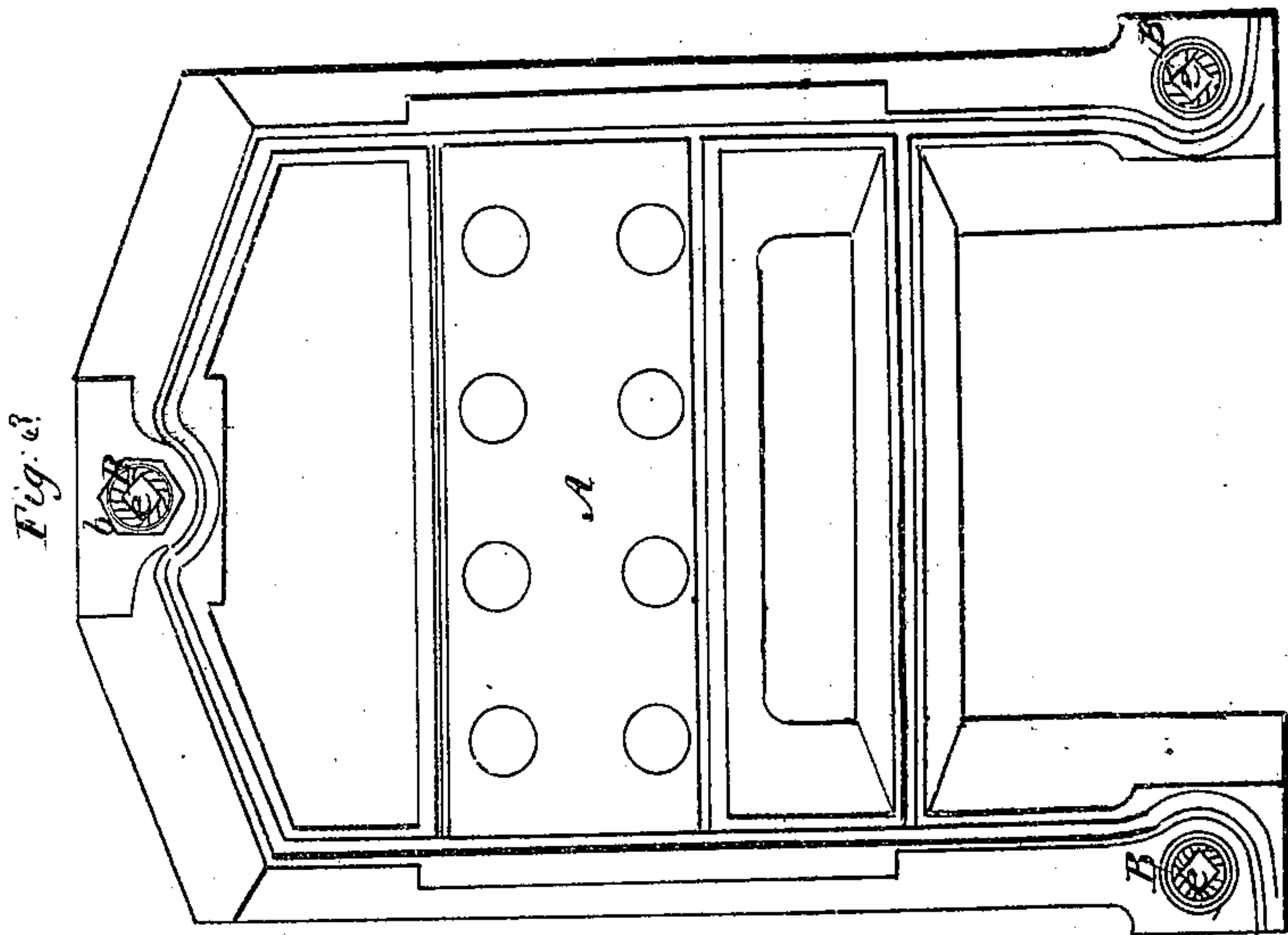


*C. Whittier.*  
*Method of connecting Sections of Steam Boilers.*  
*No 38,855.*      *Patented June 9-1863.*



Witnesses;  
*J. W. Corbitt*  
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Inventor;  
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*per J. W. Corbitt*  
*Attorney.*

# UNITED STATES PATENT OFFICE.

CHARLES WHITTIER, OF ROXBURY, MASSACHUSETTS.

## IMPROVED METHOD OF CONNECTING SECTIONS OF STEAM-BOILERS.

Specification forming part of Letters Patent No. 38,855, dated June 9, 1863.

*To all whom it may concern:*

Be it known that I, CHARLES WHITTIER, of Roxbury, in the county of Norfolk and State of Massachusetts, have invented a new and useful mode of dispensing with the perishable packing usually employed in connecting sections of steam boilers, generators, or radiators; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of two sections of a steam-radiator to which my improvement is applied. Fig. 2 is a vertical section parallel with Fig. 1. Fig. 3 is a vertical section taken between the two sections of the radiator, at right angles to Figs. 1 and 2.

It is well known that it is customary in connecting together the sections of steam boilers, generators, and radiators, to use a packing formed of cement, putty, india-rubber gaskets, or similar materials, and that these substances, being soft and perishable, rapidly deteriorate and become worthless, requiring frequent renewal, and thereby causing much inconvenience and expense.

This invention consists in the application of hollow metallic thimbles to the connecting of the said sections, so as to dispense with all these kinds of packing. These thimbles have a right-hand screw thread on one end and a left-hand screw thread on the other end of its exterior, one end screwing into a hole with a corresponding internal thread in one section of the boiler, generator, or radiator, and the other into a hole with a corresponding internal thread in the adjacent or contiguous section thereof, such thimbles constituting not only the means of connecting the several sections without requiring packing, but also serving as durable communications between them for the circulation of steam and water.

It also consists in the construction of the interiors of such thimbles of square or other suitable form for the reception of a key of corresponding form by which to screw them into their places to make the connections.

To enable others skilled in the art to make and apply my invention, I will proceed to describe it with reference to the drawings.

A A are the sections of the radiator, made of any suitable form. B B are the right and left hand metallic screw-thimbles, of which there may be as many as there are joints at which packing is to be dispensed with, applied between any two adjacent or contiguous sections. In the example represented three thimbles are used. *a a* are the tapped holes into which the thimbles are screwed. These holes must be exactly opposite each other in the adjacent or contiguous sections A A. The uppermost thimble is represented as having a portion, *b*, of its exterior between its right and left hand screw-threads *c* and *d* of polygonal form for the reception of a wrench; but in some cases the parts in which the holes *a a* are formed may require to come so close together as to leave no room on the exterior of the thimble for the application of a wrench, and in such case I make their interiors of square or other suitable form, as shown at *e e* in Fig. 3, for the reception of a key C, which may be inserted into them through the holes on the opposite side of either of the sections in which the respective thimbles are placed, as shown in Fig. 2. In screwing up the thimbles one screw-thread screws into the hole of one section, and the other into the corresponding hole of the adjacent or contiguous one, and the two sections are thus drawn together, and by screwing the thimble till it comes tight a perfectly tight joint is made without the need of any packing whatever.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The application of the herein-mentioned metallic thimbles to the connecting of the sections of steam boilers, generators, or radiators, for dispensing with packing, substantially as set forth.

2. Constructing the interiors of the herein-described metallic thimbles of square or other suitable form, for the reception of a key of corresponding form by which to turn them, substantially as represented.

CHARLES WHITTIER.

Witnesses:

FRANCIS B. PERKINS,  
C. R. RANSOM.