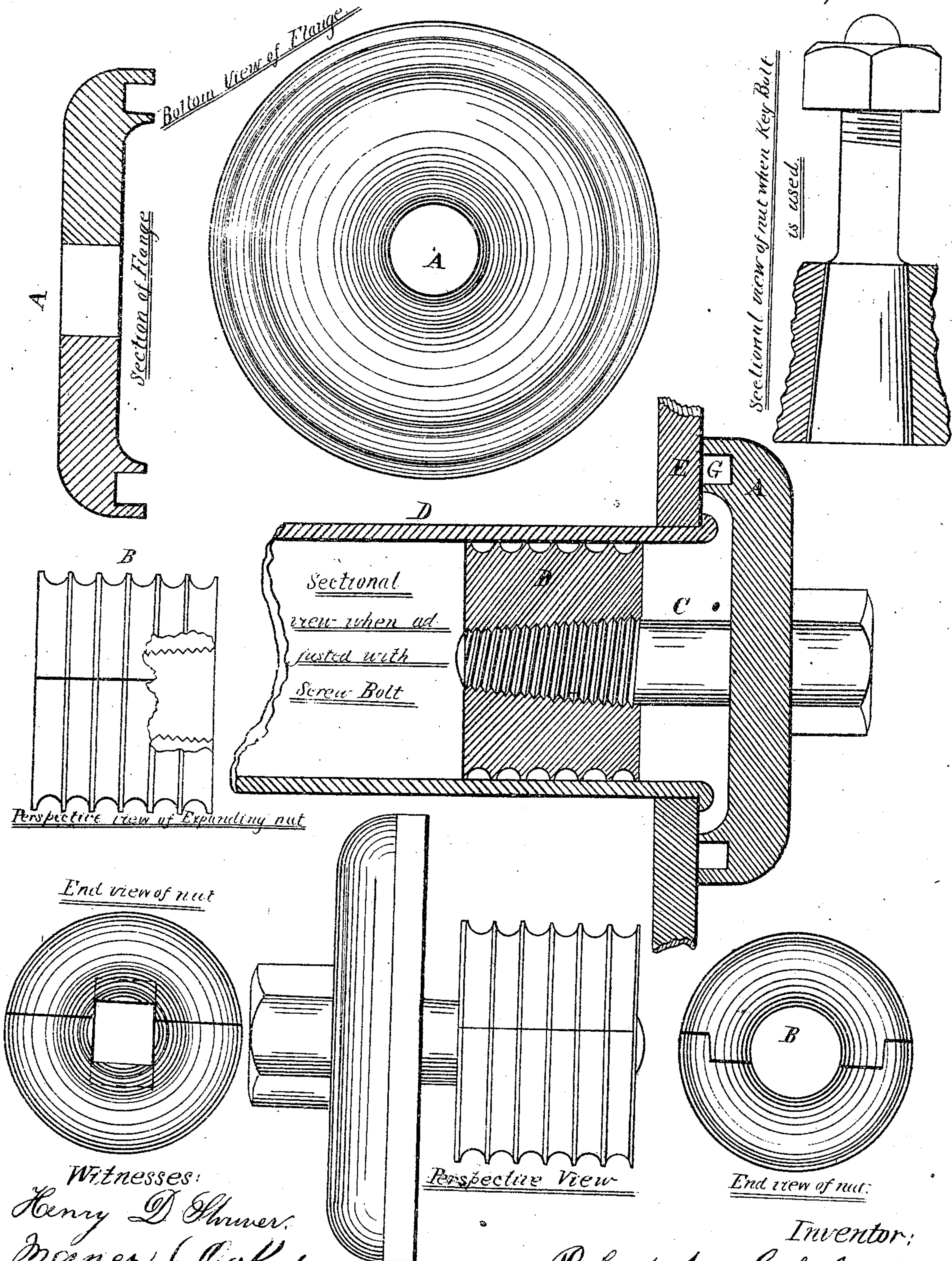


R. A. Copeland.

Stop for Leaky Boiler-Tubes &c.

N^o 73439

Patented Jan. 21, 1868.



Witnesses:
Henry D. Shriver.
Mason & Cakes.

Inventor:
Robert A. Copeland

United States Patent Office.

ROBERT AVIS COPELAND, OF BALTIMORE, MARYLAND.

Letters Patent No. 73,439, dated January 21, 1868.

IMPROVEMENT IN DEVICES FOR LEAKY BOILER-TUBES.

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, ROBERT AVIS COPELAND, of Baltimore, in the county of Baltimore, in the State of Maryland, have invented a new and useful device for closing or plugging leaky "boiler-tubes," called an "Adjustable Flange and Stop for Leaky Boiler-Tubes;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a perspective view.

Figure 2 is a sectional view, showing expanding-nut, flange, screw-bolt, tube, and tube-sheet, as adjusted.

Similar letters of reference indicate corresponding parts.

My said invention consists in forming or making the flange A, the expanding-nut B, and the screw-bolt C, passing through the centre of the expanding-nut B, which causes the nut B to expand, and forces it firmly against the inside of the tube D, at the same time drawing up the flange A to its place on the outside of the tube-sheet E, with a gasket in the recess G, all of which makes a tight joint, closing up the tube D entirely, thereby dispensing with the use of the rod and caps now commonly used, and, therefore, saves time and expense.

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

The flange A, screw-bolt C, and expanding-nut B, constructed and arranged substantially as herein set forth.

The above specification of my invention of adjustable flange and stop for leaky boiler-tubes signed, this 23d day of October, 1867.

ROBERT AVIS COPELAND.

Witnesses:

FRANCIS GEORGE,
DANIEL GREENE,
HENRY D. SHRIVER,
FRANCIS J. OAKES.