

(No Model.)

G. SCHISLER.
WATER TUBE BOILER.

No. 569,239.

Patented Oct. 13, 1896.

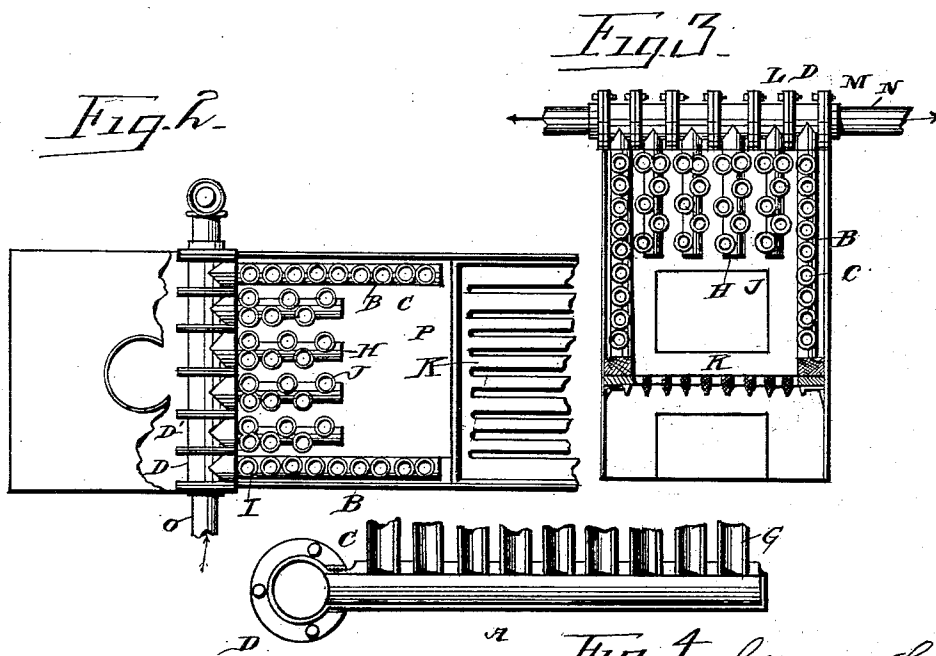
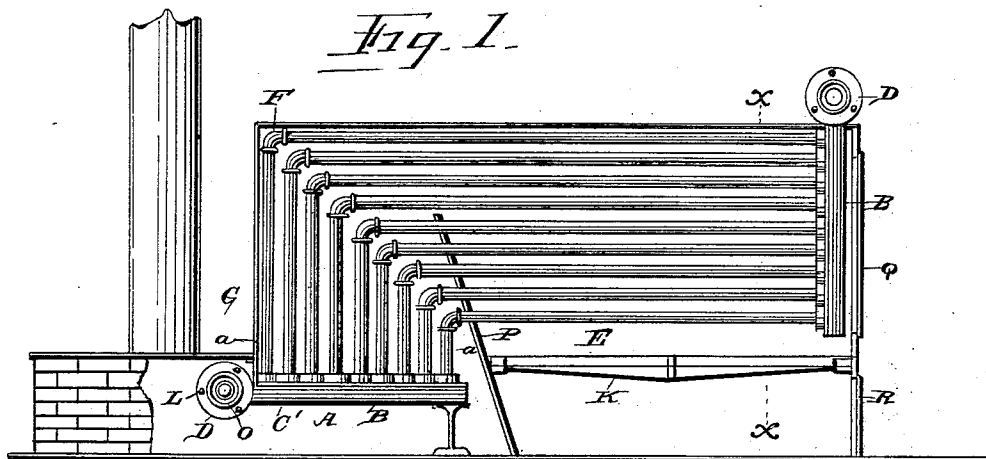


Fig. 4-George Schisler

Inventor:

by Thomas C. Barrow,
Atty-

Witnesses

D. P. Moore.

D. P. Moore.

UNITED STATES PATENT OFFICE.

GEORGE SCHISLER, OF MANSFIELD, OHIO.

WATER-TUBE BOILER.

SPECIFICATION forming part of Letters Patent No. 569,239, dated October 13, 1896.

Application filed May 7, 1896. Serial No. 590,616. (No model.)

To all whom it may concern:

Be it known that I, GEORGE SCHISLER, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Water-Tube Boilers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in water-tube boilers; and the objects of my invention are, first, to construct a boiler wholly of tubes; second, to so arrange the tubes and connect them together that the heat from the furnace will have a direct action upon all the water-tubes; third, to so connect and arrange the tubes that a perfect circulation is obtained, and, fourth, to make a cheap, durable, and efficient means for the purpose stated.

In the accompanying drawings, Figure 1 is a side elevation of my improved boiler, showing the general construction of one side of the same, also showing the boiler set in position for operation. Fig. 2 is a top plan view of rear end of boiler, taken in line *a a*, Fig. 1, showing the general construction and arrangement of the tube connections at the rear end of the boiler, also grate-bars and back wall or deflecting-plate. Fig. 3 is a transverse view taken in line *x x*, Fig. 1, showing the water-tube connections connected together at the front end of the boiler, also showing the arrangement of the water-tubes through the center of the boiler. Fig. 4 is a longitudinal sectional view of one of the side tube connections enlarged, also showing broken tubes connected.

Similar letters refer to similar parts throughout the several views.

In the accompanying drawings, A indicates the side tube connection, which is composed of a hollow cast case B, provided upon one side with the threaded openings C. One end of the said connection is provided with the T connection D. This may be attached to or form part of the tube connection. The said connection is used at the front and rear end

of the boiler. In the front the connections are placed vertical and at the rear end horizontal, as shown in Fig. 1. I have shown in the said connection nine threaded openings; but any number may be used, according to the size of the boiler required.

E indicates tubes threaded upon both ends. The front ends are screwed within the threaded openings C in the tube connection A, and are provided upon their rear ends with the elbows F. The vertical tubes G are also threaded upon both ends, one end right-hand and the other left-hand threads. The threaded openings C in the tube connection A are also left-hand threads, so that the vertical tubes can be connected or taken out at any time when required. The tubes E and G may be of any length, so as to construct a boiler of any size required. The difference in the length of tubes to construct this side combination would be the difference from center to center of the threaded openings C. This combination of tubes forms each side of the boiler.

H indicates tubular tube connections which are similar in construction to the tube connection A, but are shorter, six threaded openings only being shown. The openings I are formed upon each edge of the casting and in line with each other at the top. The object is to place the tubes as near together as possible to form the top and rear end of the boiler. The tubes J are placed one below the other and at opposite edges of the casting. The object is to allow the heat to pass around the water-tubes. The said center tube connections are provided upon one end with the flanged T and are connected the same as the side tubes. The object of using less tubes in the center connections is for the purpose of forming a space for the furnace above the grate K. When each section of tubes is connected together, as shown in Fig. 1, and the T connections are bolted together by the bolt L, there is a connection between all the pipes and connections and a perfect circulation of the water through the same.

M indicates threaded flanged rings which are bolted to the T connections D, and in which are secured the discharge-pipes N for conveying water to any portion of the building.

O indicates the return-pipes for the pur-

pose of forming a perfect circulation of hot water or steam through the building.

P indicates the back wall or deflecting-plate, which extends upward on a line with the lower ends of the tube connections H. The said plate also forms the end of the ash-pit. When all the sections of pipes are connected, as shown, they are then covered upon the outside with asbestos covering and then covered with sheet-iron or brick wall. The front end is provided with a cast front, with suitable doors, as are now in general use.

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

The water-tube boiler herein shown and described, consisting of the casing or shell, the grate arranged therein, the inclined bridge-

wall or plate at one end of the grate, the vertical castings at the front end, the horizontal sections at the rear, the flanged connections secured to each other and connected with the said castings, the horizontal and vertical water-tubes arranged in series of tubes at the side, the depending or vertical short intermediate pipes arranged above the grate, and the horizontal intermediate pipes communicating or integral with the vertical intermediate pipes and arranged reversely on each side thereof.

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

GEORGE SCHISLER.

Witnesses:

L. J. MCCRAY,
T. Y. MCCRAY.