

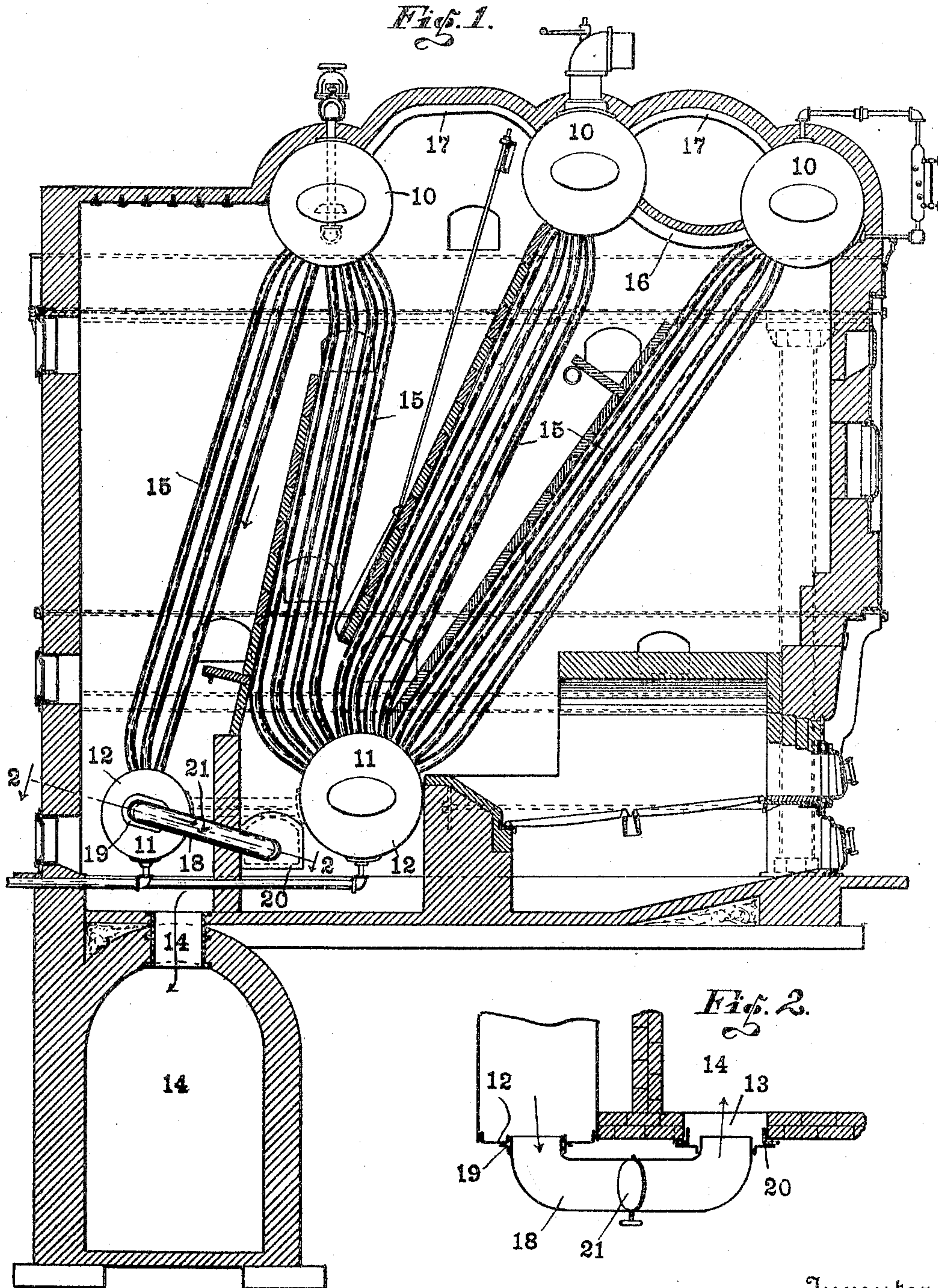
No. 776,479

PATENTED NOV. 29, 1904.

E. METTLER.
COOLING DEVICE FOR WATER TUBE BOILERS.

APPLICATION FILED MAR. 17, 1904.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

EUGENE METTLER, OF INDIANAPOLIS, INDIANA.

COOLING DEVICE FOR WATER-TUBE BOILERS.

SPECIFICATION forming part of Letters Patent No. 776,479, dated November 29, 1904.

Application filed March 17, 1904. Serial No. 198,596. (No model.)

To all whom it may concern:

Be it known that I, EUGENE METTLER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Cooling Devices for Water-Tube Boilers, of which the following is a specification.

It is found necessary, especially in regions where boiler feed-water is impregnated with carbonates and sulfates, to clean water-tube boilers quite frequently. In order to do this, it is necessary to drain the boiler and run a cutting-tool through each water-tube. Before this can be done it is necessary that the boiler be cooled to a reasonable degree; and the object of my invention is to provide a simple yet efficient means by which the boiler may be cooled by natural draft, the arrangement being such that a natural draft may be established originating with one of the steam-drums and passing thence through the connected water-tubes to the mud-drum and from thence to the chimney, the arrangement being such that an air-current may be maintained during the process of cleaning.

The accompanying drawings illustrate my invention.

Figure 1 is a vertical section of a standard Stirling boiler provided with my attachment, and Fig. 2 is a horizontal section on line 2 2 of Fig. 1.

In the drawings, 10 10 indicate the steam-drums; 11 11, the mud-drums; 12, the mud-heads of the mud-drums, and 13 a door-opening leading into the passage 14, which leads to the chimney or stack.

15 indicates the water-tubes leading from the steam-drums to the mud-drums, 16 the water-tubes leading from one steam-drum to the other, and 17 the steam-circulation tubes between the steam-drums.

All of the parts and features thus far described are of any desired type to be found, either directly or their equivalents, in many different types of boilers.

My invention consists in the provision of a duct which may form a communication between the mud-drum and the chimney and in the present case consists of a tubular duct 18,

provided at one end with a fitting 19, adapted to be introduced into the opened mud-opening of either drum 11, and at the other end provided with a fitting 20, adapted to be inserted into and to close the opening of the passage 14, leading to the chimney. A suitable damper 21 is arranged in duct 18.

In operation the heads of the drums 10 are removed and the head of drum 11 is also removed. The air-duct 18 is then placed in position, as shown, so as to form a communication between the stack and the mud-drum, whereupon a circulation of air is immediately established (in the directions indicated by the arrows) and the boiler may be rapidly but uniformly cooled to a point where the operator may comfortably enter, and this natural circulation may be continued during the entire time of the cleaning. As a consequence experience has shown by actual use that the operation of cleaning boilers of this type is no longer the exceedingly-uncomfortable operation which it has heretofore been, and consequently an operator may work much more rapidly and continuously than has heretofore been possible.

I claim as my invention—

1. The combination with a water-tube boiler, of a duct forming a communication between the water-containers of said boilers and the stack.

2. The combination with a boiler, of means for establishing a natural circuit of air through the water-containers thereof, for the purpose set forth.

3. As an article of manufacture, an air-duct formed at one end for attachment to an opening leading to the water-container of a boiler and at the other end for communication with the stack-duct.

4. The combination with a boiler, of a duct forming a communication between the water-container of said boiler and the stack.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 8th day of March, A. D. 1904.

EUGENE METTLER. [L. s.]

Witnesses:

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