

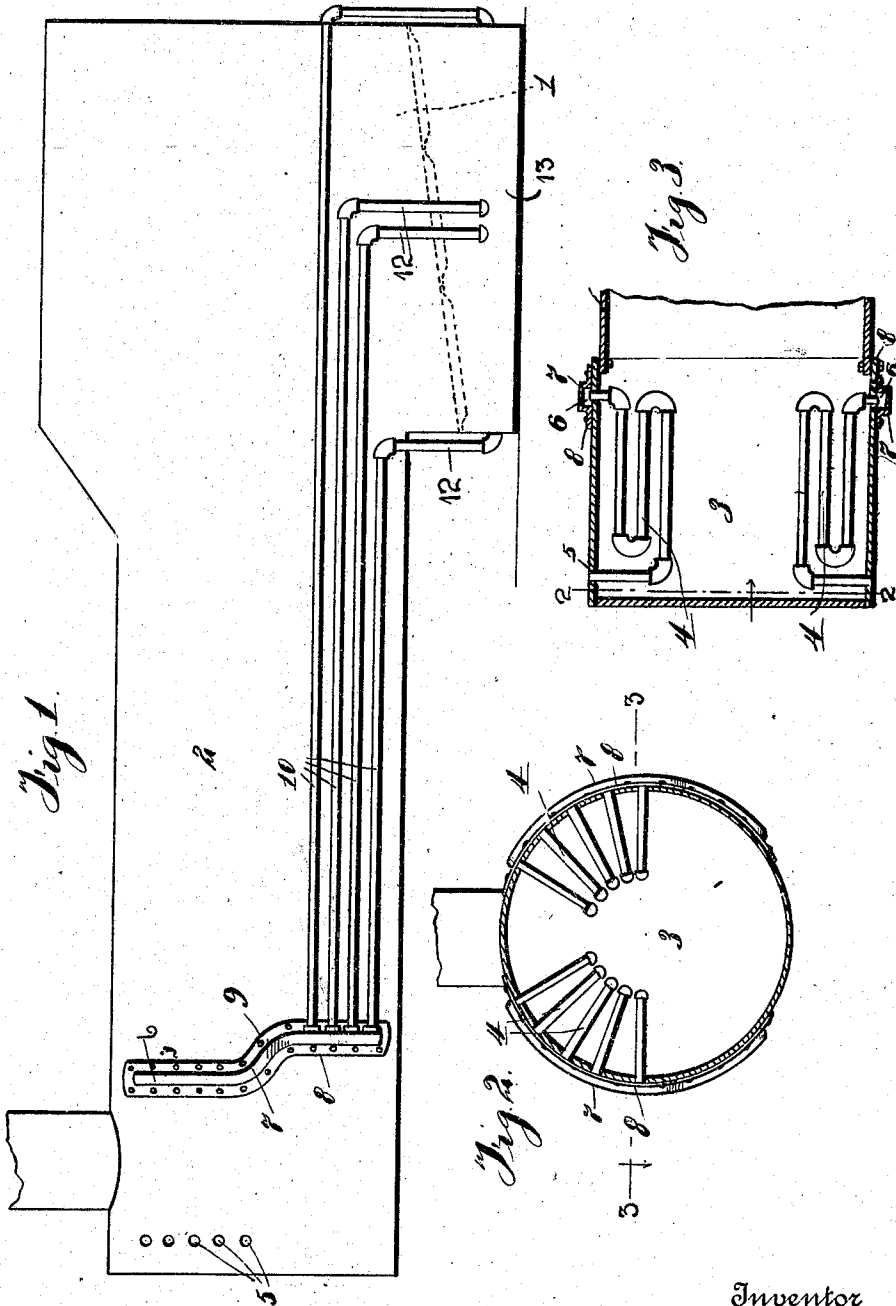
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F. L. HOLCOMB.

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ATTACHMENT FOR PROMOTING FUEL COMBUSTION IN
LOCOMOTIVE FIRE BOXES.

APPLICATION FILED JULY 23, 1906.



Witnesses
Edg. C. Murray
C. N. Giesbauer

Inventor
Frank L. Holcomb

by *A. B. Wilson & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

FRANK L. HOLCOMB, OF KINGSTON, NEW YORK.

ATTACHMENT FOR PROMOTING FUEL COMBUSTION IN LOCOMOTIVE FIRE-BOXES.

No. 884,926.

Specification of Letters Patent.

Patented April 14, 1908.

Application filed July 23, 1906. Serial No. 327,426.

To all whom it may concern:

Be it known that I, FRANK L. HOLCOMB, a citizen of the United States, residing at Kingston, in the county of Ulster and State of New York, have invented certain new and useful Improvements in Attachments for Promoting Fuel Combustion in Locomotive Fire-Boxes; 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.

This invention relates to attachments for promoting fuel combustion in locomotive fire boxes.

The object of the invention is to provide an attachment by means of which heated air may be supplied to the fire box to aid the combustion of the gas or other fuel therein.

A further object is to provide an attachment of this character by means of which the air may be heated by the waste heat in passing from the locomotive.

With the above and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings:—Figure 1 is a side view of a locomotive fire box and boiler, showing the application of the invention thereto. Fig. 2 is a vertical, cross sectional view through the smoke box of the locomotive taken on line 2—2 of Fig. 3 and looking in the direction of the arrows thereon; and Fig. 3 is a horizontal sectional view through the smoke box and a portion of the boiler, taken on the line 3—3 of Fig. 2 and looking in the direction of the arrow thereon.

Referring more particularly to the drawings, 1 denotes the fire box, and 2 denotes the boiler of the locomotive. On the forward end of the boiler is arranged the usual smoke box 3. In the smoke box 3 around the upper portion of the same and arranged in an arc is a series of air pipe coils 4, one end of said coils opening through the side of the smoke box, as shown at 5, while the opposite end of the coil is adapted to open into a passage 6 formed by sheet metal strips 7 bent in channel-iron form and secured to the opposite sides of the smoke box by laterally projecting flanges 8 formed thereon.

The strips 7 are offset below the connection of the lowermost coil of pipes, as shown at 9, and with said offset portion of the strips

is connected the forward ends of a series of air conducting pipes 10. The pipes 10 are arranged along the side of the boiler and extend downwardly at different points when they reach the fire box, as shown at 12, said downwardly bent ends being turned into the ash pit 13 immediately below the grate of the fire box, whereby the heated air of the coils 4 of the smoke box will be discharged into said ash pit from which the air will pass into the combustion chamber, thereby materially promoting combustion of the fuel gases therein.

By arranging the heated coil and conducting pipes as herein shown and described air passing through the fire box will be thoroughly heated by the smoke and waste products of combustion passing into the smoke box, thus providing for the heating of the air without utilizing or wasting any of the heat in the fire box.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention, as defined by the appended claims.

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

1. The combination with the smoke box of a locomotive boiler, of channeled members or passages applied to the outside of said box, a series of air supply pipes arranged interiorly of said smoke box and embracing a plurality of horizontal tortuous pipe sections, each of the latter communicating at one end with the atmosphere and at the other end with said passages, and a second series of pipes, communicating with said passages and extending alongside of said boiler, the rear ends of said last referred to pipes extending into the fire box of said boiler below the grate.

2. The combination with a smoke box of a locomotive boiler of channeled members or passages applied to the outside of said smoke box, a series of air supply pipes arranged interiorly of said smoke box and embracing a plurality of horizontal tortuous pipe sections, each of the latter communicating at one end with the atmosphere and at the other end

with said passages, and a second series of pipes communicating with said passages and extending alongside of said boiler, the rear end of said last referred to pipes extending
 5 into the fire box of said boiler below the grate, said channel members or passages having lower offset portions at their points of connection with said last referred to pipes.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FRANK L. HOLCOMB.

Witnesses:

REMSEN B. DU BOIS,
 W. A. VAN VALKENBURGH.