(No Model.)

T. A. TRAVES.

AIR FEEDING DEVICE FOR STEAM GENERATORS.

No. 532,612. Patented Jan. 15, 1895.

Fig. 1

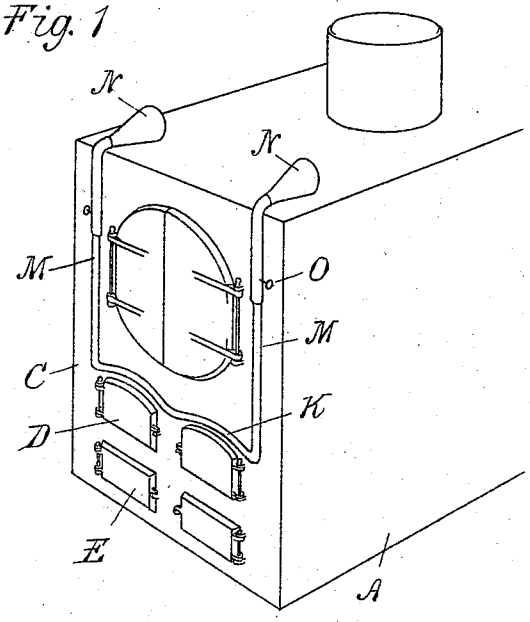


Fig. 2

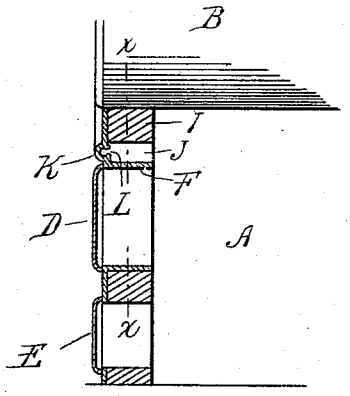


Fig. 4

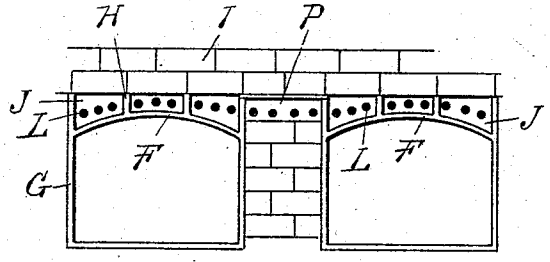
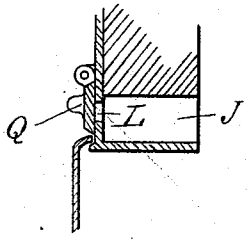


Fig. 3



Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS A. TRAVES, OF DETROIT, MICHIGAN.

AIR-FEEDING DEVICE FOR STEAM-GENERATORS.

SPECIFICATION forming part of Letters Patent No. 532,612, dated January 15, 1895.

Application filed March 26, 1894. Serial No. 505,138. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. TRAVES, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Air-Feeding Devices for Steam-Generators, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention consists in the peculiar construction of an air feeding device designed to feed air into the furnace taking it from the top of the room and discharging it into a channel over the arch over the furnace doors in a thin stream whereby perfect combustion is obtained, and whereby the hot air is taken from the top of the room and delivered into the furnace, such air being best for combustion and effecting a cooling of the room, all as more fully hereinafter described and shown in the drawings, in which—

Figure 1 is a perspective view of the front of a steam generator showing my device applied thereto. Fig. 2 is a vertical section centrally through one of the feed doors. Fig. 3 is a similar section showing a slightly modified form. Fig. 4 is a cross section on line *x x* Fig. 2.

A is an ordinary furnace under the steam generator B.

C is the usual boiler front having the feed doors D and the ash doors E. Over each feed door and extending inwardly is the arch F, connecting on the other sides of the door with a continuous flange G. On the top of the arch F I form or support a series of ribs H, having their upper edges in line and adapted to receive and support the fire brick lining I of the furnace, leaving between the top of the arch and the bottom of these fire bricks air ducts J.

K is an air pipe, either fastened to or formed integral with the outer face of the boiler front and extending across the same above the arches in line with the air ducts J. Communication is had from the air pipe into the ducts J by means of the apertures L. At each end the air pipe K connects into the vertical pipes M extending to the top of the boiler and these connect into the horizontal funnel shaped mouths N which extend over the top of the boiler, as plainly shown in Fig. 1. The pipes M are provided with suitable dampers O for controlling the air supply to the pipe K. Between the feed doors I arrange an air duct P also provided with suitable apertures in the front wall to connect with the air supply pipe K.

The parts being thus constructed their operation is as follows: Fire being started in the furnace in the usual manner, the dampers O being open, the draft will draw air in through the funnels and pipes M into the feed pipes K from which it will be discharged through the apertures L into the horizontal ducts J all the way across the furnace chamber in a thin stream. This not only forms an efficient aid to perfect combustion but also keeps the arch F always cool, preventing damage from burning or warping. I consider this an important feature of my invention.

Instead of having the air pipes extending to the top of the furnace I may control the apertures L by means of a damper or flap valve Q pivoted above said apertures on the front as shown in Fig. 3, but I prefer the construction shown in Figs. 1 and 4.

What I claim as my invention is—

1. The combination with the front of a furnace, having suitable doors therein, of an arch on the front extending inwardly over the doors, vertical ribs on top of the arch having ducts formed between the ribs and above the arch, and an open ended air pipe extending across the front of and up to and above the top of the furnace having apertures therein registering with the ducts, substantially as described.

2. The combination with the furnace of the boiler front, the arch F over the feed doors on the interior of the boiler front, the ribs H on said arch, the fire brick lining supported on said ribs forming the ducts J between the ribs above the arch, the air pipe K on the exterior of the front connecting with said ducts by means of the apertures J, the valved vertical pipes M connecting with the ends of the air pipe, and the horizontal funnels N extending rearwardly over the furnace and connecting with the pipes M, the parts arranged and operating as and for the purpose described.

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

THOMAS A. TRAVES.

Witnesses:
M. B. O'DOGHERTY,
O. F. BARTHEL.