

(No Model.)

2 Sheets—Sheet 2.

C. E. COLTON.

SMOKE BAFFLER FOR LOCOMOTIVE BOILERS.

No. 585,556.

Patented June 29, 1897.

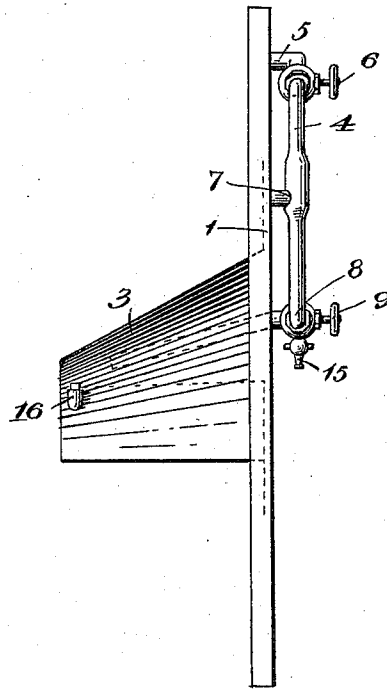


Fig. 3.

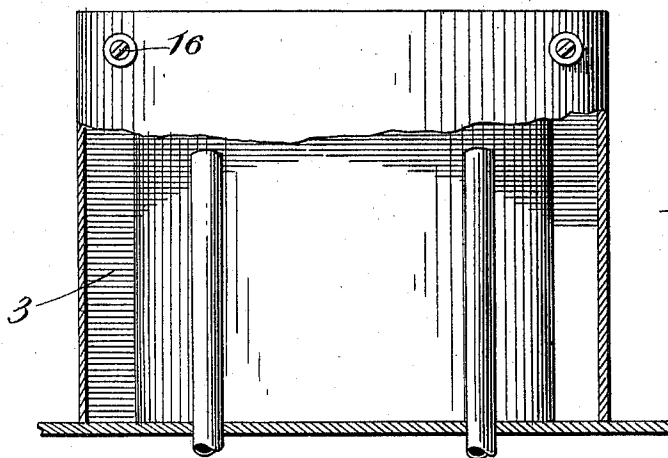


Fig. 4.

WITNESSES

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SMOKE-BAFFLER FOR LOCOMOTIVE-BOILERS.

SPECIFICATION forming part of Letters Patent No. 585,556, dated June 29, 1897.

Application filed February 16, 1897. Serial No. 623,666. (No model.)

To all whom it may concern:

Be it known that I, CORNELIUS E. COLTON, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Smoke-Bafflers for Locomotive-Boilers; and I do hereby 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 steam-boilers, and has for its object to provide, in connection with locomotive and other boilers, a steam-generating smoke-baffler which is placed in communication with the steam and water spaces of the boiler, so that the circulation of water through the baffler is promoted and effected by means of steam-pressure.

The detailed objects and advantages of the invention will appear in the course of the subjoined description.

The invention consists in a steam-generating smoke-baffler embodying certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claims.

In the accompanying drawings, Figure 1 is a view in elevation of the rear head of a locomotive-boiler. Fig. 2 is an elevation, looking toward the reverse or inner side of said head. Fig. 3 is an edge view of the same. Fig. 4 is a horizontal longitudinal section through the baffler, showing the arrangement of the circulating-pipes therein.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

For the purpose of illustrating the present invention I have shown the improved baffler as applied to the inner side of the rear head-plate of a locomotive-boiler, 1 designating said head, and 2 the fuel-opening therein, leading to the fire-box.

Secured fixedly to the inner surface of the head 1 is the improved baffler 3, which is substantially semifrusto-conical in shape. In other words, the baffler in its general shape approximates one-half of the frustum of a

cone divided longitudinally and diametrically. In cross-section the baffler is U-shaped, so as to extend over the fuel-door 2 in the form of an arch or cope. The baffler is also closed on all sides, so that it will contain and permit the circulation of water.

The head 1 is provided exteriorly of the boiler with a curved steam-pipe 4, communicating at 5 with the steam-space of the boiler, and provided with a cut-off valve 6. The steam-pipe 4 is tapered and provided with a reduced end 7, which enters a water-pipe 8, which communicates with the water-space of the boiler, the admission of water to said pipe 8 being controlled by means of a cut-off valve 9. The water-pipe 8 passes through an opening 10 in the head 1 and is then deflected obliquely, as shown at 11, extending thence longitudinally within the baffler and for approximately two-thirds or three-fourths the length thereof, the free open end of said pipe thus communicating with the interior of the baffler in proximity to the inner end thereof.

12 designates a second water-pipe arranged at the opposite side of the head 1 and having one end extended through an opening 13 in the head 1 and communicating with the internal space of the baffler adjacent to the head 1. The opposite end of the pipe 12 communicates with the water-space of the boiler, and intermediate its ends the pipe 12 is provided with a cut-off valve 14. The pipe 12 is further provided with a safety-cock 15, by means of which it may be ascertained whether the circulation is going on properly or not.

16 designates a pair of removable plugs in the pipes 8 and 12 for facilitating the washing out of the same whenever necessary.

By means of the construction above described it will be seen that by opening the valves 9 and 14 water may be admitted from the boiler to the baffler and carried from thence back to the boiler again. By opening the steam-valve 6 a jet of steam is allowed to pass into the pipe 8, thereby forcing the hot water from the boiler into the rear end of the baffler, said water passing thence out through the pipe 12 and back into the water-space of the boiler, thus keeping up a con-

stant circulation of water in the baffler, and as the baffler is located above the bed of coals it not only serves to baffle or deflect the smoke within the fire-box, but it also materially assists in the generation of steam, thus effecting the generation of a greater amount of steam without a proportionate increase in the amount of fuel used.

The improvement may be applied to any locomotive-boiler and also to other types of boilers.

It will be understood that the device is susceptible of changes in the form, proportion, and minor details which may be accordingly resorted to without departing from the principle or sacrificing any of the advantages of the invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a steam-boiler, a smoke-baffler consisting of a hollow arch or cope extending over the fuel-door beneath a steam-boiler, in combination with inlet and outlet water-pipes entering the front of said baffler and affording communication between said baffler and the water-space of the boiler, one pipe ex-

tending within and near the inner end of the baffler and another terminating within and near the front or opposite end of the baffler, and a steam-injector communicating with one of said water-pipes for promoting circulation in the baffler, substantially as described.

2. A combined smoke-baffler and steam-generator consisting of a hollow arch or cope extending over the fuel-door of a steam-boiler and secured with the casing, in combination with supply and exhaust water-pipes entering the front of the baffler and communicating with said baffler at or near opposite ends thereof, cut-off valves for controlling said water-pipes, a steam-pipe communicating with the steam-space of the boiler and also with one of said water-pipes, and a cut-off valve for controlling said steam-pipe, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CORNELIUS E. COLTON.

Witnesses:

JACK ADAMS CURTIS,
JOHN COLTON.