

1,270,147.

A. GOLLINGE.
STEAM BOILER ATTACHMENT.
APPLICATION FILED NOV. 21, 1917.

Patented June 18, 1918.

2 SHEETS—SHEET 2.

Fig. 2.

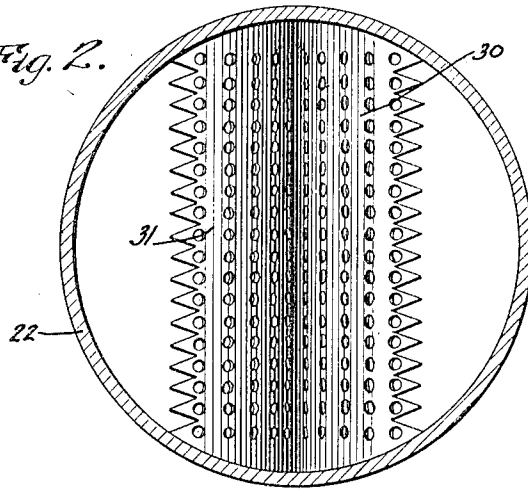


Fig. 3.

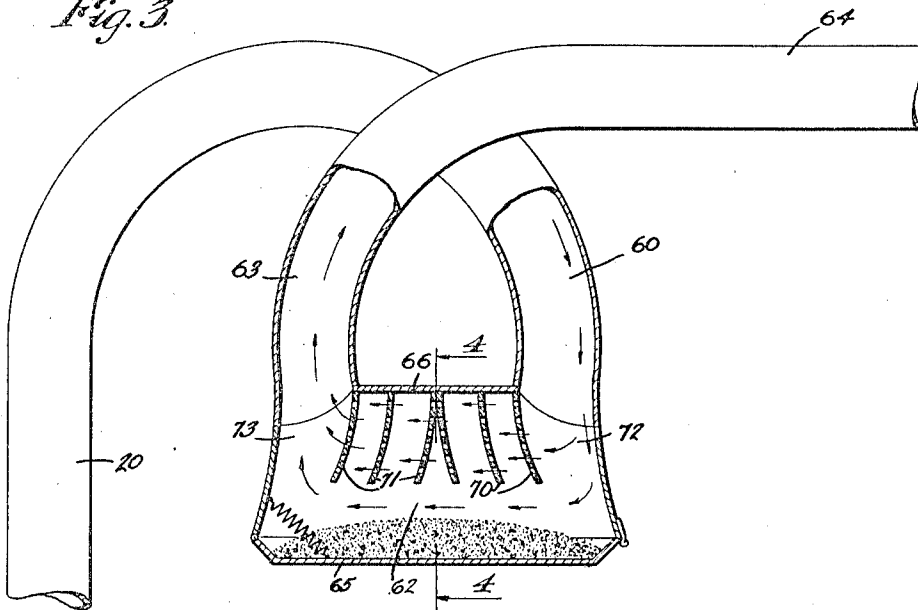
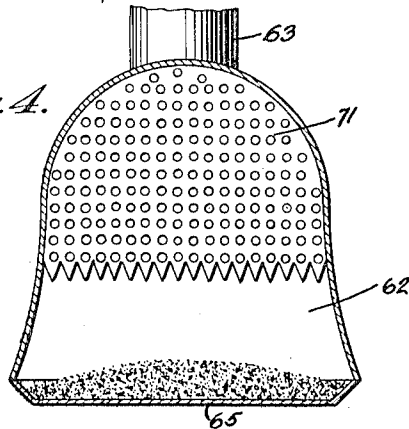


Fig. 4.



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STEAM-BOILER ATTACHMENT.

1,270,147.

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To all whom it may concern:

Be it known that I, ALEXANDER GOLLINGE, a citizen of the United States, and a resident of the city of New York, borough of the Bronx, in the county of Bronx and State of New York, have invented a new and Improved Steam-Boiler Attachment, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved attachment for stationary steam boilers such as are used for generating steam for heating and power purposes, and arranged to insure proper combustion of the coal or other fuel and to utilize the latter economically and to the fullest advantage.

In order to accomplish the desired result, use is made of a flue in the form of a gooseneck leading from the smoke box of the boiler, a drum in which terminates the said flue, a chimney flue leading from the said drum to a chimney and retarding and deflecting means in the said drum at the junction of the said flue with the said drum.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side elevation of the attachment as applied to a steam boiler partly shown broken away;

Fig. 2 is an enlarged sectional plan view of the attachment on the line 2—2 of Fig. 1 looking in the direction of the arrows;

Fig. 3 is a sectional side elevation of a modified form of the attachment; and

Fig. 4 is a cross section of the same on the line 4—4 of Fig. 3.

The stationary steam boiler 10 provided with the attachment is of usual construction and is provided with a fire box 11 connected by tubes 12 with a combustion chamber 13 connected by tubes 14 with a smoke box 15 at the front end of the boiler. From the top of the smoke box 15 extends a flue 20 in the form of a gooseneck having its terminal 21 merging with the top of a drum 22, from the top of which extends the curved inlet end 23 of a chimney flue 24 connected with a chimney 25.

In the upper portion of the drum 22 are arranged deflecting and retarding plates 30 and 31 provided with perforations and

curved in outward directions to restrict the throats or entrances 32, 33 of the ends 21 and 23 of the flues 20 and 21. The bottom of the drum 22 is provided with a self-closing and self-opening door 40, hinged at one end at 41 and pressed on by a spring 42 to normally hold the door 40 in closed position. The door 40 swings automatically into open position by the weight of accumulated cinders on the door to periodically discharge such cinders from the drum 22. In the inlet end 23 of the chimney flue 24 is arranged a damper 50 of usual construction and under the control of the operator.

When the boiler is in use, the products of combustion arising from the burning fuel in the fire box 11 pass into the smoke box 15 from which the products of combustion pass into the flue 20 and are retarded and deflected by the deflecting plate 30 so that a retarding action is had on the products of combustion in the smoke box 12 to insure proper combustion therein. The products of combustion, passing through the narrow throat 32 and the perforations in the plate 30, pass into the drum 22 and from the latter, by way of the perforations of the plate 31 and the narrow throat 33, into the end 23 of the chimney flue 24 to eventually pass through the latter to the chimney 25. It will be noticed that the deflecting and retarding plate 30 retards and deflects the products of combustion passing from the flue 20 into the drum 22, and the perforate retarding and deflecting plate 31 retards the products of combustion in their passage from the drum 22 into the chimney flue 24. By the retarding action described a proper combustion of the fuel is obtained thus insuring an economical use of the coal or other fuel burned in the fire box 11. The lower edges of the deflecting and retarding plates 30 and 31 are preferably serrated, as plainly indicated in Fig. 2, thus preventing cinders from adhering and accumulating on the said plates 30 and 31.

The attachment shown and described can be readily applied to boilers as now generally used in buildings for the generation of steam for heating or power purposes without requiring any change in the boiler itself.

As illustrated in the modified form in Figs. 3 and 4, the end 60 of the boiler flue 61 connects with a drum 62 from which

leads the inlet end 63 of the chimney flue 64. The drum 62 is provided with a self-opening and closing bottom door 65, the same as the door 40, and from the top 66 of the drum 62 extend two sets of spaced perforate plates 70 and 71 curved in opposite directions to retard the products of combustion in their passage through the drum 62. It will also be noticed that the outermost plate 70 is provided with retracted throats 72 and 73 for the ends 60 and 63 of the flues 61 and 64, the same as above described in reference to the plates 30 and 31.

The operation of the modified form shown in Figs. 3 and 4 is practically the same as above described in reference to the construction illustrated in Figs. 1 and 2 so that further description of the same is not deemed necessary.

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

1. A separator, comprising an upwardly extending flue terminating in a downwardly curved gooseneck, a chimney flue having a downwardly curved inlet end, a drum depending from the adjacent curved ends of the said gooseneck and the said inlet end of

the chimney flue, and perforate retarding and deflecting plates in the said drum at the junction of the said gooseneck and the said inlet end of the chimney flue with the said drum, the said plates being curved outwardly and downwardly in opposite directions to restrict the throats of the said flues, the lower edges of the said plates terminating a distance from the bottom of the said drum.

2. A separator, comprising an upwardly extending flue terminating in a downwardly curved gooseneck, a chimney flue having a downwardly curved inlet end, a drum depending from the adjacent curved ends of the said gooseneck and the said inlet end of the chimney flue, and perforate retarding and deflecting plates in the said drum at the junction of the said gooseneck and the said inlet end of the chimney flue with the said drum, the said plates being curved outwardly and downwardly in opposite directions to restrict the throats of the said flues, the lower edges of the said plates terminating a distance from the bottom of the said drum and the lower edges being serrated.

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