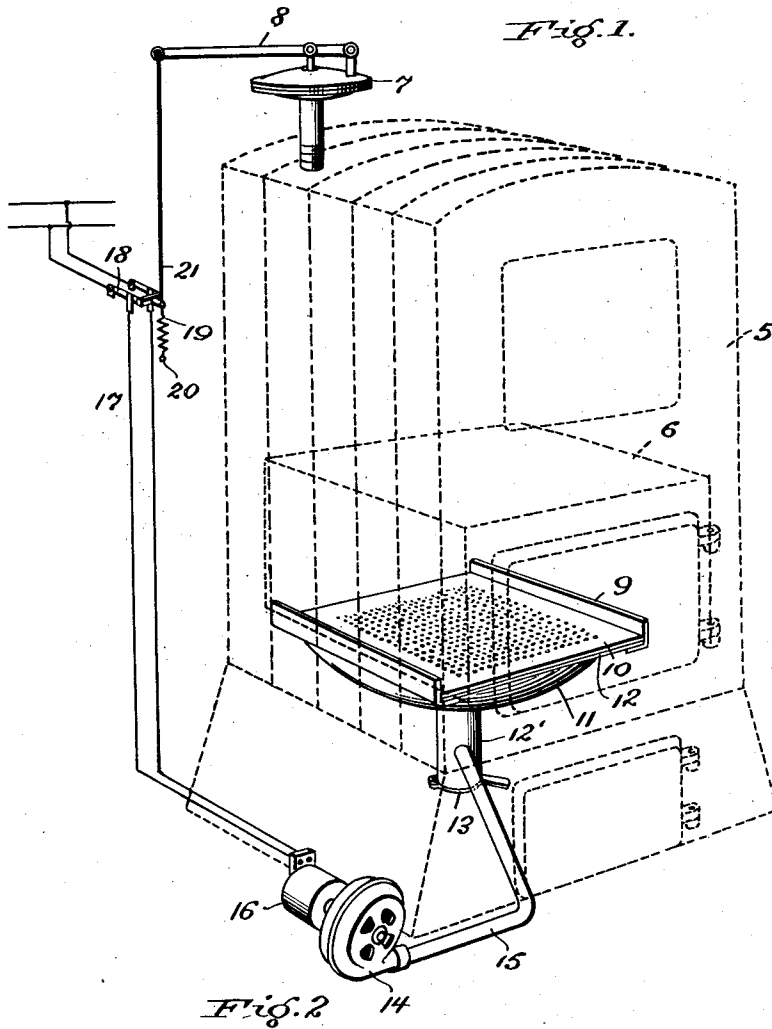


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O. VOIGT  
HEATING APPARATUS  
Filed May 10, 1924



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INVENTOR

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WITNESS: *Gerald Kennedy*

# UNITED STATES PATENT OFFICE.

OSCAR VOIGT, OF LYONS, NEW YORK.

## HEATING APPARATUS.

Application filed May 10, 1924. Serial No. 712,393.

### *To all whom it may concern:*

Be it known that I, OSCAR VOIGT, a citizen of the United States, residing at Lyons, in the county of Wayne and State of New York, have invented new and useful Improvements in Heating Apparatus, of which the following is a specification.

My invention is a heating apparatus for boilers furnaces and the like and its principal object is the provision of an attachment to be arranged in the fire-box of a conventional boiler to permit coal screenings and the like to be burned therein.

A further object is to provide an attachment of the above character which will adequately and completely burn coal screenings and other like cheap fuel and get the maximum amount of heat therefrom.

A still further object is to provide a furnace attachment having means for supplying and automatically regulating draft air to the grate element which construction includes an apertured flat plate for receiving the fuel.

With the preceding and other objects and advantages in mind, the invention consists in the combination of elements, the construction and arrangement of parts and operation to be hereinafter fully referred to, claimed and illustrated in the accompanying drawing, wherein:

Figure 1 is a perspective of the conventional boiler equipped with my invention.

Figure 2 is a transverse sectional view of the grate or fuel supporting means.

Referring in detail to the drawing wherein corresponding characters of reference designate corresponding parts throughout the several views, the numeral 5 designates a conventional boiler having the usual fire-box 6, and mounted on this boiler is the usual thermally operated diaphragm 7 including a horizontally arranged pivoted lever 8.

Arranged within the fire-box 6 is a pair of spaced parallel longitudinally extending angle bars or guides 9 and supported thereon is a grate element including a flat perforated plate 10 upon which the coal screenings are placed. Arranged beneath the plate 10 is a bowl or air receiving receptacle 11 provided with lateral flanges 12 at its upper end which are received between the under face of the plate 10 and the angle bars 9. A vertical tube 12' extends downwardly and centrally from the bowl 11, the lower end of this tube 12 being normally closed by a

pivoted cutoff or valve 13 secured in a manner to be moved in a horizontal plane and to form a tight connection with the tube. As shown in Figure 1 this valve is arranged so that it can be conveniently reached from the clean-out door of the boiler and may be swung to one side for the purpose of permitting the small clinkers and foreign matter which may sift through the apertures of the plate into the bowl 11, to gravitate into the ash chamber of the furnace. A conventional blower is designated at 14 and leading therefrom is a conduit 15 having communication with the tube 12' at a point above the valve 13. This blower 14 is driven by a conventional electric motor 16. An electric circuit is designated generally at 17 and included therein is a knife switch 18 normally held in operative position by a contractile spring 19 having one end fixed to the switch 18 and its opposite end secured to a suitable base as at 20. A flexible element 21 is attached to the switch 18 and extends upwardly and is connected with the outer end of the lever 8 above mentioned.

Under ordinary conditions the blower supplies air to the bowl 11 and is discharged through the perforated plate 10 below the coal screenings contained thereon or in other words creates sufficient draft to adequately burn or consume the fuel to get the maximum amount of heat therefrom. When the boiler is heated sufficiently to operate the thermal diaphragm 7 the lever 8 will be moved upwardly and through the instrumentality of the flexible element 21 the knife switch 18 will be disengaged from its respective contacts to stop the rotation of the motor 16. However, as soon as the boiler has cooled sufficiently to permit the thermal diaphragm to return to normal position, the spring 19 will return the switch to its normal or operative position to again start the motor.

While I have shown and described the preferred embodiment of the invention, it is to be understood that changes in the arrangement of parts may be made and that I am only limited by the appended claims. Having thus described the invention, I claim:

1. An attachment of the character described comprising a pair of parallel angle brackets adapted to be arranged in the fire box of a furnace, a perforated plate adapted to receive coal screenings and the like, a

bowl arranged below the plate, a tube depending from the bowl and being in communication therewith, a valve controlling the lower end of said tube, and a blower in communication with the tube and adapted to supply draft air to the bowl and through the perforated plate.

2. An attachment for furnaces comprising a pair of angle brackets adapted to be associated with the fire box of the furnace, a perforated plate supported by the brackets and being adapted to receive fuel, a bowl arranged below the plate, lateral flanges formed on the upper end of said bowl and being received between the under face of the side edges of the plate and the angle brackets respectively, a tube depending centrally from the bowl and being in communication therewith, a valve controlling the lower end of the tube, and a blower communicating with the tube in a manner to provide draft air to the bowl and to the fuel on the perforated plate.

In testimony whereof I affix my signature

OSCAR VOIGT.