April 9, 1935. D. W. LAKE 1,996,927

HEATER

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FIG. 1.

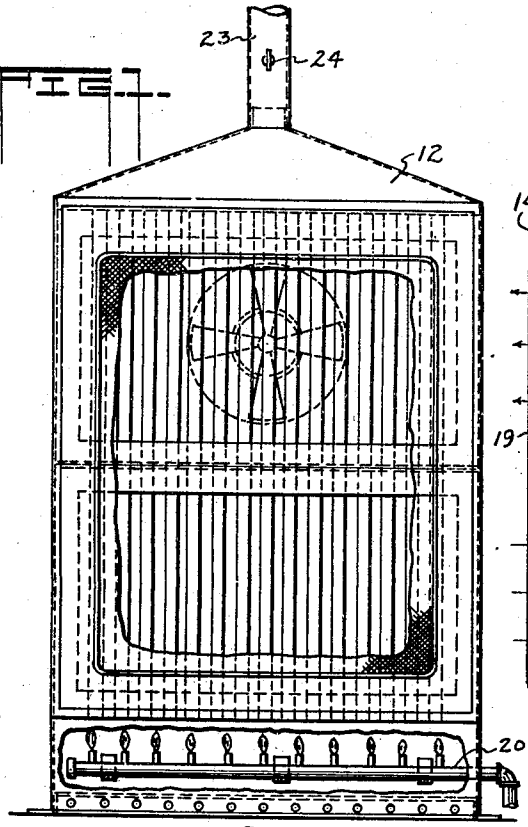
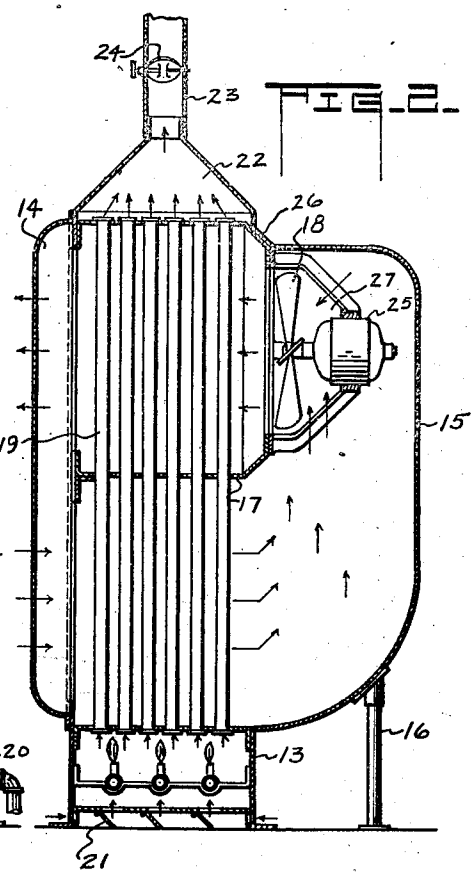


FIG. 2.



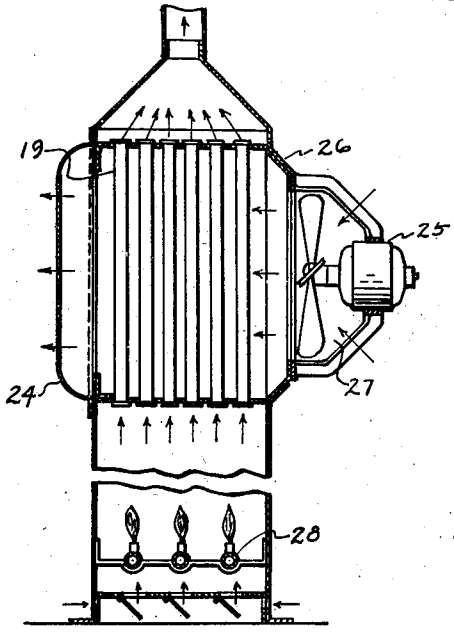


FIG. 3.

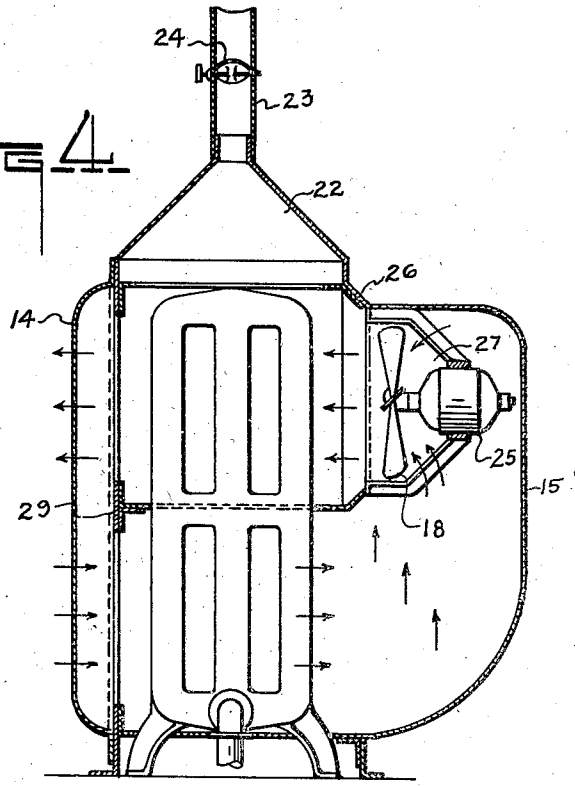
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HEATER

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FIG 4



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HEATER

Donald W. Lake, Chicago, Ill.

Application October 10, 1930, Serial No. 487,722

1 Claim. (Cl. 257—137)

This invention relates to heating devices.

One of the objects of the invention lies in the provision of a heating structure which comprises a radiator surrounded by a housing having a forced draft means therein for projecting a blast of air through the radiator portion into the room or dwelling to be heated, the casing being formed, however, to also absorb the heat developed from the radiator, and by means of conduits to conduct same to other portions of the dwelling.

Another object lies in the provision of a heater member comprising a tubular radiator adapted to be heated by any character of heating element, the radiator being surrounded by a housing having a forced draft mechanism therein for inducing a flow of air through the radiator into a room or dwelling to be heated, the air being heated during its passage through the radiator.

Still another object lies in the provision of a heater mechanism comprising a tubular radiator portion, heating mechanism of any kind therefor, a housing for the radiator having a forced draft means therein, said housing being so constructed and arranged as to induce a flow of air thereinto in a manner to initially preheat same and then by means of the forced draft arrangement to project said initially preheated air about the tubes of the radiator directly into a room or dwelling to be heated and finally there being provided in connection with the housing member a means for absorbing and conducting the remaining heat from the radiator to other parts of the dwelling.

A further object lies in the provision of a heating member which comprises a housing capable of operative arrangement with any character of heating mechanism, said housing having a forced draft member in connection therewith and so arranged as to induce a flow of air into the housing and to permit projection of said air through the heating member, thus raising the temperature of the air prior to its projection into the room or dwelling to be heated.

A still further object lies in the provision of a housing member having a forced draft member therein, said housing member being adapted to be operatively associated with any character of heating element in a manner to project air about the heating device, thus raising the temperature thereof prior to its projection into the room or dwelling to be heated, there also being associated with said housing member a means for absorbing additional heat from the heating mechanism and conducting same to other portions of the dwelling.

Yet a further object lies in the provision of a portable heating device comprising a housing member including a forced draft arrangement therein, same being adapted to be associated with any character of heating element in such manner as to induce a flow of air into said heater and to project said air upon being heated by the heating mechanism from said structure directly into a room or dwelling desired to be heated.

An additional object lies in the construction of a portable heating unit comprising a housing member having a forced draft member therein, said forced draft member operating to induce a flow of cool air into the heater, to initially preheat same and finally to project said initially preheated air through or about the heating mechanism to which it is attached in such manner as to heat in a forced manner a room or dwelling to be heated, said housing also being provided with means for absorbing any remaining heat from the heating mechanism and conducting same to other portions of the room or dwelling to be heated.

Other objects will appear in the following specification taken in connection with the annexed drawings, in which—

Fig. 1 is a front elevational view of my heating device;

Fig. 2 is a cross-sectional view thereof;

Fig. 3 is a view showing a modification of the housing member; and

Fig. 4 is another view showing a modification of my heating device as a portable unit and in connection with a conventional radiator.

Before referring specifically to the drawings, it might be stated that the present application is directed to a type of heating device which is adapted to be used either in connection with a conventional radiator of hot water or hot air design, or with any character of heating mechanism, whether it be of the tubular radiator type heated by gas, electricity or the like, or whether it be associated with heating devices of other than the tubular radiator type.

For simplicity, in the drawings the heating device has been shown at first in connection with a simple tubular radiator heated by the conventional gas jets. However, it is emphatically stated at this time that the character of radiator and the heating element therefor need not be necessarily gas but might as well be electricity, oil, coal or the like.

Referring to the drawings, a housing member is shown comprising an upper cover portion 12, a lower base member 13, a front portion 14 partially closing the forward portion of the heater,

and a rear cover member 15 for the device. Additional supporting means is found in the tubular portions 16.

The housing member is divided into upper and lower sections by means of a wall 17, which in turn operates as a lower support for an electrically driven fan or forced draft member 18, said member being supported, as clearly shown in Figs. 1 and 2 of the drawings, in an upper and elevated position rearwardly of the upper section of a tubular hot air radiator portion 19.

The radiator 19, as disclosed, is divided into two sections by means of the wall 17. Beneath the radiator 19 are disposed a gas heating arrangement 20 of conventional construction.

Adjustable louver construction 21 is provided for controlling the amount of air at atmospheric pressure which is delivered to the conventional gas jet mechanism, the same obviously being necessary for combustion purposes.

In Fig. 2 it will be noticed that upon operation of the electric fan the air is drawn into the heater in the direction of the arrows, the same passing about the lower radiator portion and therefore being initially heated prior to its exit from the heater through the upper portion of the radiator, as again shown by the direction of the arrow.

In all of the figures with the exception of Fig. 3 it will be found that forming a part of the housing is a heat collecting chamber 22, which has connected therewith a conductor pipe or flue 23 having disposed therein a draft regulator 24. Such structure is used in connection with the housing member, and in order to absorb the remaining heat from the radiator and to conduct same either to a different part of the room to be heated or to another room of the dwelling to be heated.

As respects Fig. 3 of the drawings, the fashioning of the gas heater is substantially the same, and for this reason it is not thought necessary to describe same, other than to say that in this instance the rear wall 15 as well as the lower portion of the radiator and housing thereof has been removed, and the fan is disposed in the rear of the casing in such manner as to force air at atmospheric pressure directly through the radiator portion in the direction of the arrows. In this instance, also, the front cover 24a merely encloses radiator 19 inasmuch as the lower portion has been removed. Further, the electrically driven fan member 25 is supported as at 26 in the rear of the casing in such manner as to induce a flow of air through the open rear portion 27 thereof, forcing same about the heated tubes of the radiator 19 and out of the device in the direction of the arrows, as shown in said figure.

As far as the structural arrangement and disposition of the conventional gas jet mechanism is concerned, same is shown at 28 and is exactly the same as in the other figures.

As respects the operation, as is apparent from the drawings, the only difference lies in the fact that the air forced about the radiator is not initially heated. For certain types of dwellings, such a gas heater may be operated just as efficiently as in the first described construction.

In Fig. 4 of the drawings, a housing member 29 is found corresponding exactly to the housing mechanism shown in Figs. 1 and 2 of the drawings and bearing the same numerals, with the exception that in this instance the housing is formed as a portable unit and is placed about a conventional radiator which may be either of the hot air or hot water type.

Inasmuch as the operation of such unit is exactly the same as that shown in Figs. 1 and 2, the operation of the units shown in Figs. 1 and 2 and that shown in Fig. 4 will be described as one.

Whether the heating unit be formed as a stationary member in connection with a fixed radiator portion, or whether it is formed as a portable unit and associated with any character of radiator or any other kind of heating device, as far as the operation thereof is concerned, the cool air, by means of the forced draft member, namely, the fan, is induced into the housing at the lower portion, said air being initially preheated and finally forced by means of the fan through the upper part of the radiator and finally ejected into the room or dwelling to be heated.

The upper portion of the housing member being a heat collecting unit, is capable not only of receiving but also of conducting any additional heat from the radiator to a different portion of the room or to other rooms in the dwelling. It might be stated at this time that it is immaterial whether the fan or forced draft member is disposed in the upper or lower part of the radiator or whether the air initially induced into the housing is taken in at the lower part or at the upper part, this being merely a matter of construction.

Similarly, with respect to the operation of the device when formed as a portable unit, the only difference is that the structure itself is either placed about a conventional radiator or is placed over and in connection with some heating unit, either electric, gas, oil or coal, in which instance likewise the fan induces a flow of air into the unit, finally projecting the heated air directly into the room to be heated, the remaining heat being absorbed and re-conducted by the upper portion of the housing as heretofore described.

Further, as respects the operation of applicant's heating structure, it may be stated that adjustment of the amount of heat given off therefrom may be controlled either by varying the opening through which the heat is projected by means of louver mechanism or the like, or varying the opening in the rear of the forced draft member in any well known manner. As far as the amount of heat delivered to the radiator, or as a matter of fact, any heating unit desired is concerned, this of course is so conventional as to require no description, but it is apparent that the degree of heat delivered to the radiator may be maintained in a uniform manner as well as being adjustable by well known means.

What I claim is:

A heater comprising a portable housing member entirely closed upon three sides, mechanism for adapting the portable housing to be associated with a heater unit, forced draft mechanism adapted to induce a flow of cool air into the housing as well as to project the heated air directly from the housing in a forced manner and an auxiliary heat receiving chamber adapted to collect any remaining heat from the heating element with which the portable housing is associated and means to conduct the same to any desired point.

DONALD W. LAKE.