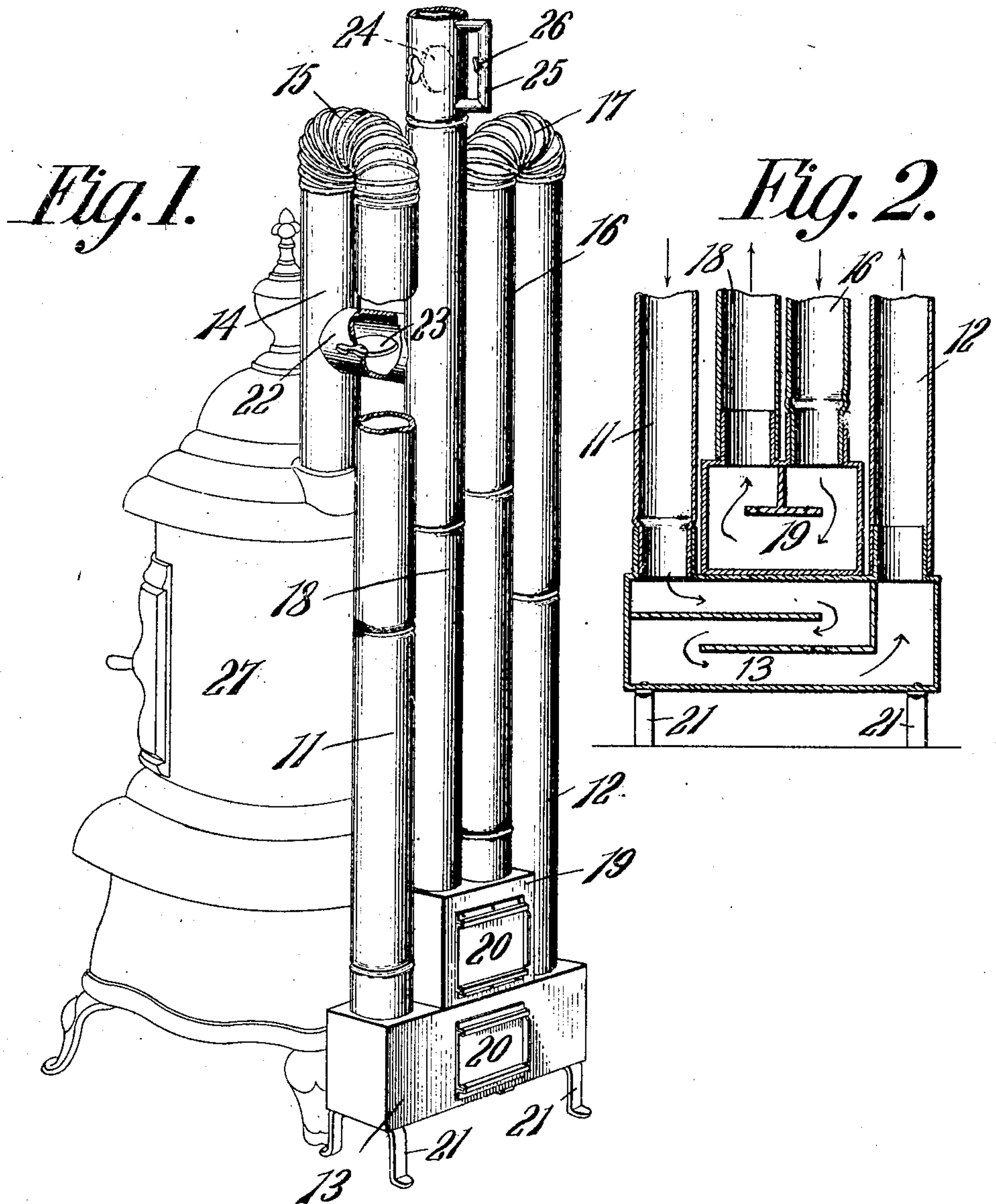


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AUXILIARY HEATER FOR STOVES.
APPLICATION FILED SEPT. 1, 1906.

912,883.

Patented Feb. 16, 1909.



WITNESSES:
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UNITED STATES PATENT OFFICE.

WILLIAM PETT, OF MUSKEGON, MICHIGAN.

AUXILIARY HEATER FOR STOVES.

No. 912,883.

Specification of Letters Patent.

Patented Feb. 16, 1909.

Application filed September 1, 1906. Serial No. 332,984.

To all whom it may concern:

Be it known that I, WILLIAM PETT, a citizen of the United States, residing at Muskegon, in the county of Muskegon and State of Michigan, have invented a new and useful Auxiliary Heater for Stoves, of which the following is a specification.

This invention relates to an auxiliary heating device designed for use in connection with stoves for heating living rooms, so as to utilize the heat units of the fire gases which would otherwise pass to the chimney without the heating energy being fully abstracted.

The invention has for one of its objects to provide a device of this character composed of a plurality of lengths of conductors connected in series relation so as to produce a relatively long, circuitous path for the products of combustion from the stove or other heating apparatus to the point of final exhaust, for abstracting practically all the heat.

A further object of the invention resides in the employment of a draft device whereby the auxiliary heating apparatus can be cut out of service during time of excessive heat, by permitting the products of combustion to pass directly to the chimney, or when it is desired to obtain a maximum draft for kindling a fire.

Another object is to maintain a substantially constant draft through the apparatus by means of a by-pass for the products of combustion arranged in shunt relation to a damper located in the conductor nearest the point of final discharge.

With these objects in view, and others, as will appear as the nature of the invention is better understood, the invention comprises the various novel features of construction and arrangement of parts, which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates certain of the embodiments of the invention, Figure 1 is a perspective view of the auxiliary heating apparatus shown in connection with an ordinary heating stove. Fig. 2 is a detail view in section of the lower end of the device.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

The device shown in Figs. 1 and 2 is what may be termed a double return heater, that is to say, the fire gases pass downwardly

from the top of the stove to the floor and then to the top of the auxiliary heater, thence toward the floor again, and finally up to the chimney. The double return heating device is obviously of much larger capacity and, in practice, it has been found that during normal operation, the conductor at the point where it enters the chimney is of about the same temperature as the air of the apartment being warmed by the stove and auxiliary heater, thus illustrating that practically all of the available heat units are abstracted.

Specifically, the device comprises two outer conductors 11 and 12 which at their lower ends communicate with a horizontal receiver box or radiator 13. The upper end of the conductor 11 is suitably connected with the combustion space of the stove by the uptake 14 and the double elbow 15, or equivalent means. The upper end of the other conductor 12 is connected with the intermediate conductor 16 by a double elbow or return connection 17. The lower end of the conductor 16 communicates with the exit pipe 18 either directly or through a smaller or secondary receiver box or radiator 19. The several conductors are disposed parallel with their long dimension vertical, so as to be as compact as possible. The two receiver boxes 13 and 19 are independent of each other and each is provided with a slide that normally covers an opening through which the boxes can be cleaned of soot. The device 19 is supported on the floor by means of legs 21 on the large receiver 13, which legs support the device directly off the floor, so that the intense heat will not be dangerous. It will thus be seen that the course of the products of combustion through the device is comparatively long, so that a large heat radiating surface is produced. In order to permit a maximum draft to be obtained, or to shunt the hot gases directly to the chimney, the exit conductor 18 and uptake 14 are directly connected by a short connection or pipe 22. This short pipe is provided with a damper which is constructed to completely cut off communication directly from the conductor 14 to the exit conductor 18, when the damper is turned at right angles to the position shown. Thus, when the damper 23 is closed, the auxiliary heater is cut into service and the products of combustion pass the full length thereof. In the exit pipe is arranged a damper 24

which coöperates with the damper 23 for regulating the draft. At the damper 24, which latter is also constructed so as to be capable of completely closing the pipe in which it is located, is provided a restricted by-pass 25 of practically the same nature as that described in connection with Fig. 3. In this by-pass is arranged a controlling damper 26. In normal operation, the dampers 23 and 24 are turned to their closed position and the damper 26 is opened. The fire gases thus pass from the stove through the auxiliary heating device and discharge to the chimney or point of final exit through the restricted by-pass. While in this condition, the draft can be regulated by the by-pass damper 26 when close regulation is desired. By manipulating the dampers 23 and 24, a coarser regulation is obtained. The reservoirs 13 and 19 are provided with suitable baffle plates.

The auxiliary heat radiating device is comparatively inexpensive and easy to make, since the conductors are made up of stove pipe section and the receiver or radiator boxes of sheet metal. The parts are compactly arranged, so that the device takes up little space compared with its capacity, and can be placed conveniently behind the ordinary stove, such as 27, Fig. 1, where it will be largely concealed and out of the way.

I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, but I desire to have it understood that the apparatus shown is merely illustrative, and that various changes may be made, when desired, as are within the scope of the invention.

What is claimed is:—

1. In combination with a stove; a radiator box to the rear of the base of the stove, an uptake pipe connected to the stove, a return bend connected to the upper end of the uptake pipe, a downcomer pipe connecting

the return bend to the top of the radiator box near one end thereof, a second uptake pipe leading from the top of the box at the opposite end, a second return bend at the upper end of the second uptake pipe, a second radiator box positioned on top of the first mentioned box between the pipes communicating therewith, a second downcomer pipe leading from the second return bend to the top of the second box near the end adjacent the uptake from the first box, a third uptake pipe leading from the top of the second box near the opposite end, a bypass pipe leading from the first uptake to the third uptake, and a damper held in the by-pass pipe.

2. In combination with a stove; a radiator box to the rear of the base of the stove, an uptake pipe connected to the stove, a return bend connected to the upper end of the uptake pipe, a downcomer pipe connecting the return bend to the top of the radiator box near one end thereof, a second uptake leading from the top of the box at the opposite end, a second return bend at the upper end of the second uptake pipe, a second radiator box positioned on top of the first mentioned box between the pipes communicating therewith, a second downcomer pipe leading from the second return bend to the top of the second box near the end adjacent the uptake from the first box, a third uptake pipe leading from the top of the second box near the opposite end, a by-pass pipe leading from the first uptake to the third uptake, a damper held in the by-pass pipe, and baffle plates held in each of said radiator boxes.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM PETT.

Witnesses:

CAROLYN MORRIS,
JESSIE URQUHART.