Oct. 12, 1926. 1,603,006

P. E. M. GENEVÉE

HEAT GENERATOR

Filed Jan. 9, 1923

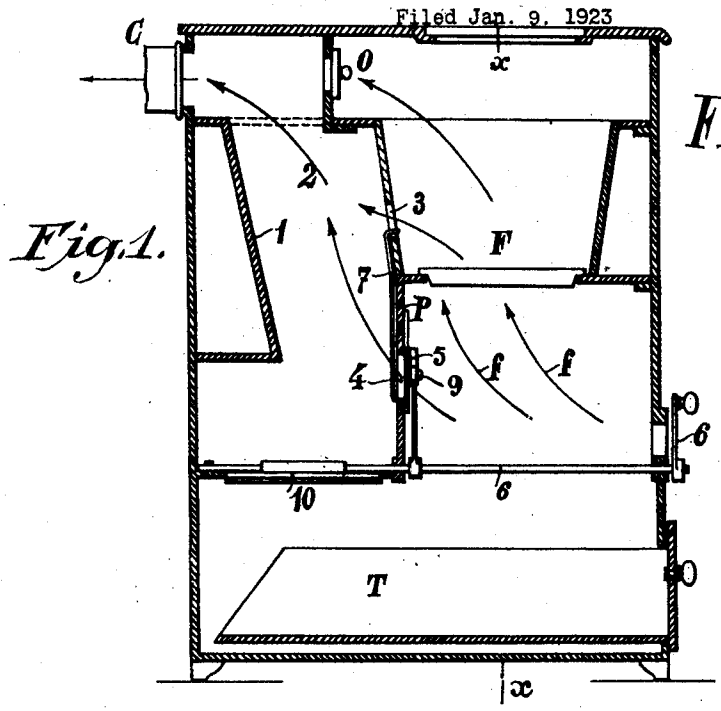


Fig. 1.

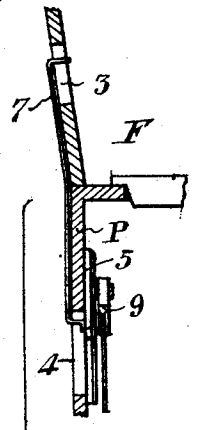
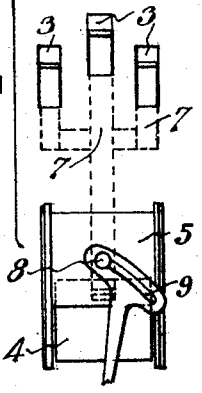


Fig. 3.



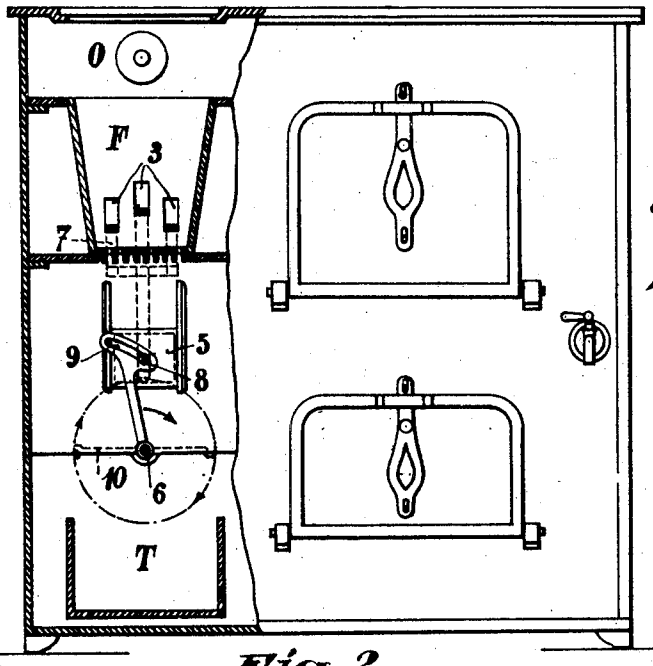


Fig. 2.

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UNITED STATES PATENT OFFICE.

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HEAT GENERATOR.

Application filed January 9, 1923, Serial No. 611,619, and in France January 27, 1922.

This invention relates to heat generators, more especially to the kind of generators providing continuous fire, and its object is to provide an improved heat generator adapted to permit the conditions of heating to be changed at will by controlling of the air supplied from the exterior of the generator.

By this arrangement which is hereinafter described, the generator may be changed alternatively from a bright fire to a continuous or slow fire by the simple manipulation of a regulator, which permits of the direct admission of air to the hearth in order to accelerate combustion or in order to cause this air to pass through an opening which debouches into a chamber leading to the flue to cause steady and continuous combustion. In this latter condition of heating the entrainment of the gases from the combustion in effected indirectly by the speed of the hot air which is produced in rear of the fire-box and which escapes into the main flue.

An application of the invention to a generator adapted more particularly for culinary purposes is shown in the way of an example in the accompanying drawings, illustrating:

In Fig. 1 a vertical section of the generator, hereinafter referred to as a range;

In Fig. 2 a section on the line X—X of Fig. 1, through the axis of the fire-box and showing a front view of the regulator;

In Fig. 3, drawn to an enlarged scale, a plan of the regulator in the open position.

Referring to the drawing, F is the fire-box, C the flue of the range and P a wall extending below the fire-box and terminating immediately above the ashpit T. Behind the wall P is another wall 1 disposed obliquely and forming with the wall P a chamber 2 in back or against a side of the fire-box F.

In the rear wall of the fire-box are provided openings 3. These openings may be closed or opened to any desired extent by means of slides 7. In the wall P is provided an opening 4 having a register 5, the said opening 4 being opened or closed by the regulator 6 according to whether a bright or a slow fire is desired.

At the same time that the register 5 is opened the slides 7 partially obstruct the openings 3. On the contrary when the register is closed the said openings are open. The displacement of the register 5 and the slides 7 is therefore effected simultaneously and regulates the fire as desired. The upper ends of the slides 70 are bent at right angles and extend into the openings 3 so that said openings form guides for said slides. The register 5 is controlled by a knob 8 which moves in an eccentric slot of a cam 9 which is keyed on a rock shaft 6. Said shaft is mounted in bearings in the walls of the heater as shown and has a hand crank 6′ by which it may be manually operated.

When the regulator, which is adapted to oscillate in opposite directions, is moved to the left, the register 5 is closed and the openings 3 are in direct communication with the main flue C. In this position of the regulator a bright fire is obtained because the feed of air which is effected in the direction of the arrows *f* is drawn through the chamber F′ between the fire box and also through the grate F^2 and promotes active combustion. Said combustion may be further promoted by opening the damper O in front of the flue C.

If the regulator 6 is moved to the right it uncovers the opening 4 and simultaneously and in part obstructs the openings 3 (Fig. 3). The latter being only opened to effect slow combustion, the air which flows in the direction of the arrow *f* is not drawn wholly through the fire-box but deviates towards the opening 4 through which it passes so as to escape at the back of the fire-box into the chamber 2. While passing through the chamber 2, the air takes along the hot gases which escape from the openings 3 and thus causes slow combustion or a continuous fire.

Further, in the chamber 2 and on the rod of the regulator 6 is disposed a flap or shutter 10 which receives the cinders and soot which fall from the openings 3 when the latter are completely uncovered for brisk fire. By a simple displacement of the shutter 10 the cinders are diverted into the ashpit at the same time as the hooks or catches 7, which are displaced by the same action, prevent all accumulation of ash and cinders in the openings or slots.

It should be clearly understood that the arrangement for closing the slots to obtain a slow fire or a bright fire described above is, as has been said, not strictly limited in its application to culinary or cooking ranges,

but the invention may be applied to all kinds of heat generators, stoves, ranges and the like.

What I claim is:—

1. In a heater of the class described, a structure providing a fire box and also providing a chamber below said fire box, a flue in rear of said fire box and chamber and an ash pit below said chamber and said flue, said structure having a wall separating said flue, said fire box, said chamber and said ash pit and provided with openings permitting communication between said flue, said fire box, said chamber and said ash pit, closures for said openings and common operating means for said closures.

2. In a heater of the class described, a structure providing a fire box and also providing a chamber below said fire box, a flue in rear of said fire box and chamber and an ash pit below said chamber and said flue, said structure having a wall separating said flue, said fire box, said chamber and said ash pit and provided with openings permitting communication between said flue, and said fire box, said chamber and said ash pit, a valve to control the opening between said ash pit and said flue, a shaft to operate said valve; a slide to control the opening between said chamber and said flue, an arm operated by said shaft and connected to said slide to cause said slide to be operated simultaneously with said valve; and slides to control the openings between said fire box and said flue, said slides being connected to and operated by the first named slide.

In witness whereof I affix my signature.

PIERRE EMILE MARIE GENEVÉE.