

F. MOENCH.
PEAT BURNER.

APPLICATION FILED MAY 4, 1911.

1,000,620.

Patented Aug. 15, 1911.

Fig. 1.

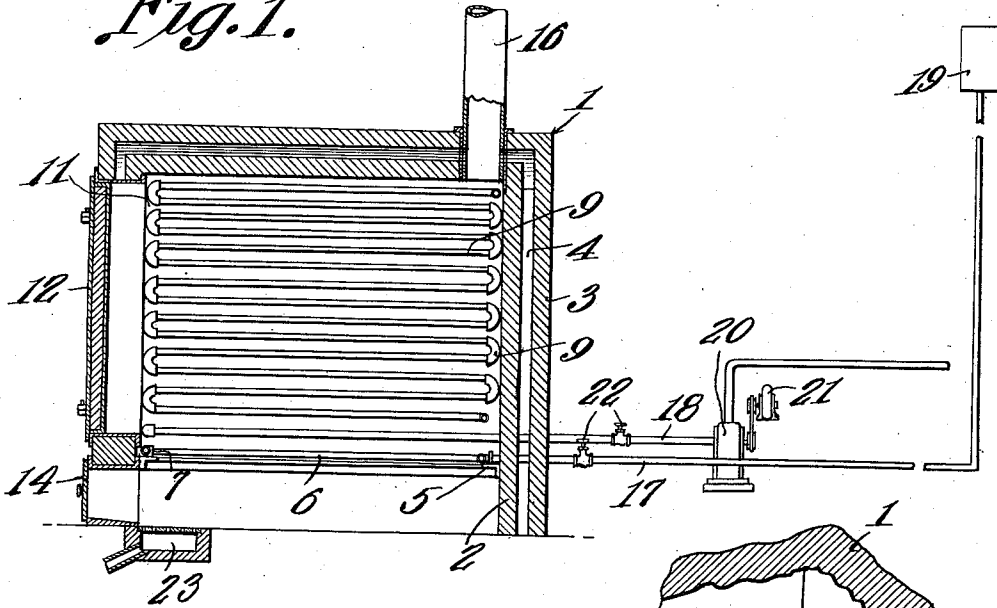


Fig. 2.

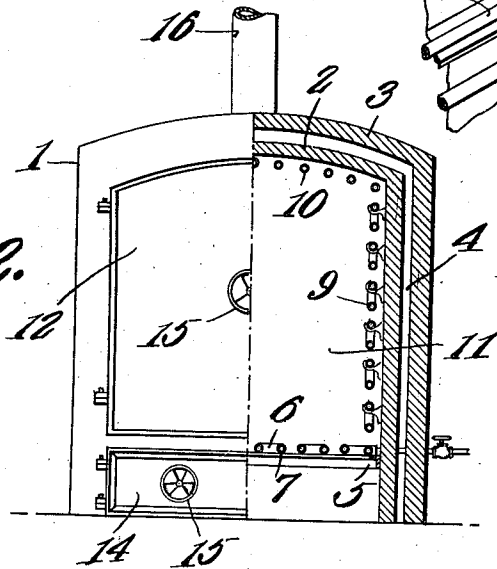
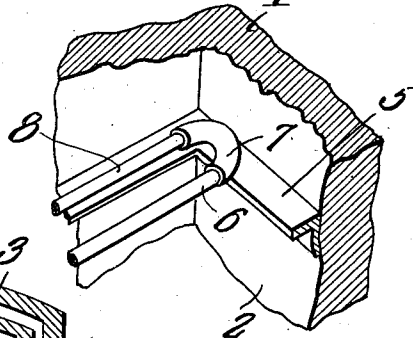


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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PEAT-BURNER.

1,000,620.

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To all whom it may concern:

Be it known that I, FREDERICK MOENCH, a citizen of the United States, residing at Lesueur Center, in the county of Lesueur and State of Minnesota, have invented a new and useful Peat-Burner, of which the following is a specification.

It is the object of the present invention to provide a furnace of novel and improved construction, in which peat, or any other combustible material, may be burned, to raise the temperature of a coil within the furnace, through which coil, the heated fluid is pumped, a forced feed thus being provided, whereby the furnace may be located at considerable distance from the building to be heated.

A further object of the invention is to provide a novel form of heat-interchanging element, adapted to be interposed into a circulatory system, the interchanging element being so constructed that it may be used either as a heating structure or as a refrigerating structure.

A further object of the invention is to provide a novel form of furnace.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made without departing from the spirit of the invention.

In the drawings,—Figure 1 shows the invention in vertical longitudinal section, parts appearing in elevation; Fig. 2 is a sectional elevation; and Fig. 3 is a fragmental perspective showing a portion of the interior of the furnace, together with the grate, and the means whereby the grate is supported.

The furnace is denoted generally by the numeral 1, and comprises inner and outer casings, denoted by the numerals 2 and 3, the casings 2 and 3 being separated, to form a dead air space 4 between them, this dead air space 4 extending across the top of the furnace, and about the same in the upright walls of the furnace. The casings 2 and 3 may be fashioned of any desired material; preferably, brick is employed in their construction.

Secured to the upright walls of the inner

casing 2, relatively near to the bottom of the furnace 1, is an open frame 5, the frame 5 preferably being fashioned from angle members, the upright flanges of which are secured to the inner casing 2, the horizontal flanges of these angle members projecting inwardly into the interior of the furnace. This frame constitutes a support for the grate, denoted generally by the numeral 6. The grate 6 is in the form of a sinuous pipe, extending backwardly and forwardly, across the furnace. As denoted by the numeral 7, the ends of the several convolutions of the pipe grate 6, rest upon the frame 5, the outermost convolutions of the grate 6 resting upon the frame 5, throughout their entire extent, and along the sides of the furnace, as denoted by the numeral 8. The sinuous pipe which forms the grate 6 is carried upwardly, in superposed convolutions, along the sides of the furnace, as shown at 9, the convolutions 9 being carried across the top of the furnace, in the interior thereof, as shown at 10. The construction, therefore, is such that there is a continuous, sinuous pipe line within the furnace, extended entirely around the furnace, in the interior of the same, to define a fuel chamber 11.

Access is had to the fuel chamber 11 through a hinged mounted stoke door 12, the ashes being removed from beneath the grate portion 6 of the heating pipe, through an ash door 14 hinged to the outer casing 3 of the furnace. The doors 12 and 14 may be supplied with suitable dampers 15, of any desired construction. Communicating with the fuel chamber 11, is the stack 16.

The pipe coil which lines the entire inner face of the furnace, transversely, communicates with an inlet pipe 17, and with an outlet pipe 18. These pipes 18 and 17, as will be understood, communicate with each other, so that there is a continuous circulation through the pipes 17 and 18, and through the coil wherewith the furnace 1 is lined in its interior. In the drawings, for the purpose of economizing space, the pipes 17 and 18 have been broken away, but the continuous circulation above referred to, and afforded by the pipes 17 and 18 and by the coil which is within the furnace 1, will be readily understood.

Interposed into the circulatory system, at any suitable point therein, is a tank 19 or the like, whereby the circulatory system may

be filled with the liquid which is to be heated. Interposed in the outlet pipe 18, is a pump 20, the pump 20 being preferably of the rotary type, the pump being operatively connected with a prime mover, in the present instance, shown in the form of an electric motor 21.

The practical operation of the device is as follows. Through the opening closed by the door 12, peat or other fuel may be introduced into the fuel chamber 11, the fuel resting upon the grate portion 6 of the pipe coil, the fuel being stacked up, to any desired extent, against the side portions 9 of the pipe coil. When the fuel which is within the chamber 11 is ignited, it will be seen that the pipe coil will be heated to a high degree, raising the temperature of the liquid which is within the pipe coil. When the pump 20 is put into operation, the heated liquid within the pipe coil will be withdrawn through the pipe 18, and forced through the circulatory system, the liquid, having traversed the building to be heated, returning to the pipe coil through the pipe 17, there being, of course, as is common, suitable cut-off valves 22 in the pipe line, at any accessible points.

It will be seen from the foregoing, that the construction of the device is such that the furnace 1 may be placed at a considerable distance from the building to be heated, the pump 20 serving to force the heating medium through the circulatory system. At this point it may be stated that the specific location of the pump 20 in the circulatory system, may be varied to suit the exigencies of the particular case. It is to

be noted, moreover, that in warm weather, the chamber 11 may be filled with ice, the device operating, in the manner hereinbefore described, the pump 20, however, serving to cause a circulation of a cooling medium, instead of a heating medium. Under such circumstances, the device acts as a refrigerating plant. When the structure is employed for refrigerating purposes, a suitable drain 23 may be placed in the bottom of the furnace 1, to lead away the drip from the ice which is within the furnace structure.

Having thus described the invention, what is claimed is:—

In a device of the class described, a furnace comprising inner and outer casings, separated, to define a dead air space between them; a centrally open frame secured to the inner casing; a sinuous pipe coil supported upon the frame and extended across the centrally open portion of the frame, to constitute the grate of the furnace, the pipe coil being continued in sinuous form, along the sides of the furnace and across the top of the furnace; a circulatory system of which the pipe coil constitutes a part; a pump in the circulatory system; a motor for operating the pump; and an element in the circulatory system, whereby the fluid to be heated, may be introduced into said system.

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

FREDERICK MOENCH.

Witnesses:

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C. E. KOLARS.