

(No Model.)

M. R. PETERS.

COMBINED HEATING DRUM, RADIATOR, AND EVAPORATOR.

No. 541,499.

Patented June 25, 1895.

Fig. 2.

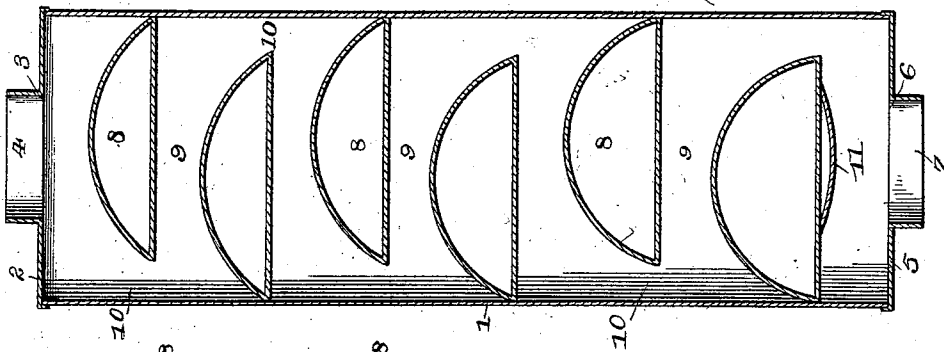
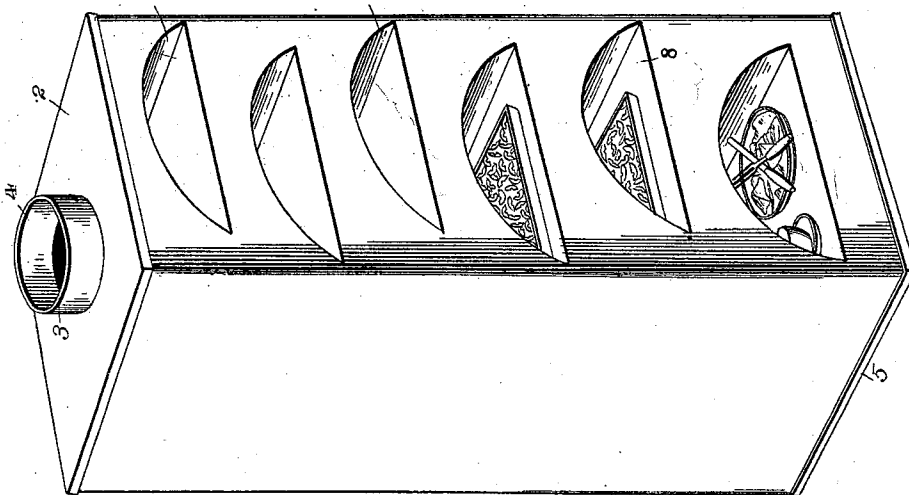


Fig. 1.



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Witnesses

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UNITED STATES PATENT OFFICE.

MILTON R. PETERS, OF BOILING SPRINGS, PENNSYLVANIA.

COMBINED HEATING-DRUM, RADIATOR, OR EVAPORATOR.

SPECIFICATION forming part of Letters Patent No. 541,499, dated June 25, 1895.

Application filed March 22, 1894. Serial No. 504,820. (No model.)

To all whom it may concern:

Be it known that I, MILTON R. PETERS, a citizen of the United States, residing at Boiling Springs, in the county of Cumberland and State of Pennsylvania, have invented a new and useful Combined Heating-Drum, Radiator, or Evaporator, of which the following is a specification.

My invention relates to heating drums or radiators adapted for use as evaporators, and it has for its object to provide a device of the class named having the maximum heating or radiating surface for given cubic measurements; to provide means whereby the current of heated air and products of combustion are impeded in their passage therethrough by surfaces arranged perpendicular to the direction of the current; and to provide means whereby the radiated heat may be utilized for the purpose of evaporating or drying fruit, and for heating victuals and medicines for the sick and for children as well as for keeping cooked victuals warm.

Further objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claim.

In the drawings, Figure 1 is a perspective view of a device embodying my invention. Fig. 2 is a vertical section of the same.

Similar numerals of reference indicate corresponding parts in both figures of the drawings.

1 designates the casing, which is rectangular in cross section, and it is adapted to be inserted between two sections or parts of stove-pipe or otherwise arranged whereby a current of hot air and products of combustion may pass therethrough. The top of the casing is covered with a plate 2 having a central opening 3 surrounded by a collar 4, and the bottom is fitted with a corresponding plate 5 having an opening 6 encircled by a collar 7, both for the attachment of the ends of stove-pipe sections.

The upward draft through the casing is intercepted at intervals by the transversely disposed ovens or receptacles 8 having flat and horizontal bottoms and arched, tops or upper sides. These ovens or receptacles are arranged, alternately, in contact with and are

secured at one side edge to opposite sides of the casing, whereby the current of heated air and products of combustion follow a zig-zag course in passing upwardly through the same. The horizontal passages 9 between contiguous ovens or receptacles are preferably about three inches in height, and the vertical passages 10 between the ovens or receptacles and the separated sides of the casing are about two inches in width thereby offering an obstruction or impediment to the upward movement of the air or products in addition to that caused by the alternate or zig zag arrangement of the ovens or receptacles and this arrangement causes the various surfaces of the drum or radiator to lie at all points, approximately, at right angles to the direction of the current of air or products. Thus, when the air or products reach the top of the casing they have parted with the larger portion if not all of their heat, and the top of the casing remains comparatively cool.

It is obvious that various articles may be placed in the ovens or receptacles to utilize the radiated heat, and when the device is used as an evaporator the fruit is exposed to radiated heat from all sides and is not brought into contact with the gases forming the constituents of the products of combustion. The ovens or receptacles being open at opposite sides of the casing are readily accessible, and when the device is employed merely as a heating device they afford passages for currents of air to convey away the heat.

In connection with my improved radiator I also preferably employ a downwardly convexed sheet metal deflector 11, arranged in contact with the under side of the lowermost oven or receptacle, and directly over the inlet opening at the bottom of the device, to deflect the current of heat and products of combustion.

At this point attention is directed to the fact that by reason of forming the ovens or receptacles 8 with arched tops or upper sides, the said ovens may be arranged to have one side edge thereof in direct contact with one side of the casing to provide, by an alternate arrangement of the ovens, for a zigzag or circuitous circulation of the heated air around the ovens, while at the same time the said arched tops or upper sides for said ovens provide a con-

struction of oven in which the heated air may come in contact with the entire exterior surface of the ovens up to the very point or edge where the said ovens meet at one side edge
5 with one side of the rectangular casing. It will therefore be apparent that the arched tops or upper sides for the ovens serve the function of exposing the entire exterior surface of the ovens to the direct action of the
10 heat, and also allowing the said ovens to be arranged in direct contact with one side of the casing without leaving any dead wall or surface not exposed to the direct action of the heat.

15 Having thus described my invention, I claim—

A combined heating drum and evaporator consisting of an elongated rectangular casing provided at its upper and lower ends with
20 collars for attachment to stove pipe sections, and a series of horizontal alternately disposed open-ended ovens or receptacles 8 arranged in the casing and communicating at their

ends with openings at the opposite sides of the casing, said ovens or receptacles being 25 arranged alternately within the casing with one side edge in contact with one side of the casing and being provided with flat horizontal bottoms, and arched tops or upper sides connecting the side edges of the bottoms and 30 completing with said bottoms a form of oven or receptacle whose entire exterior surface is exposed to the direct action of the circulating heat within the casing, the width of said ovens or receptacles being less than the width of 35 the casing to leave circulating spaces between alternately disposed side edges of the ovens or receptacles and the adjacent sides of the casing, substantially as set forth.

In testimony that I claim the foregoing as 40 my own I have hereto affixed my signature in the presence of two witnesses.

MILTON R. PETERS.

Witnesses:

JNO. S. WEAVER,
D. K. ANGLE.