

(No Model.)

2 Sheets—Sheet 1.

S. ELLIS.  
HEATER AND COOKER.

No. 260,856.

Patented July 11, 1882.

Fig. 1.

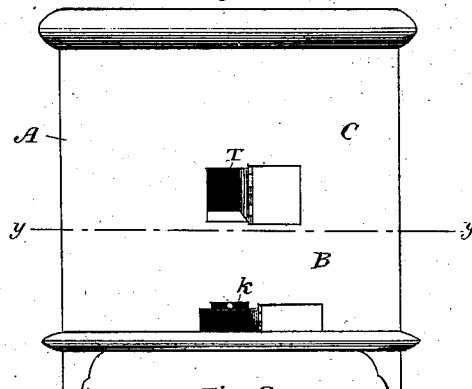


Fig. 2,

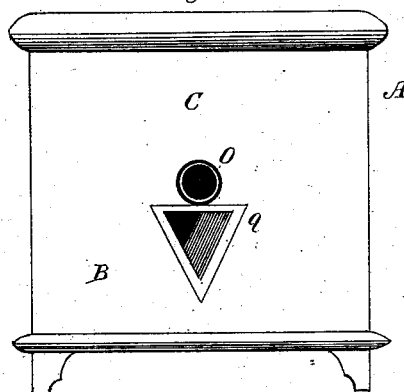


Fig. 3.

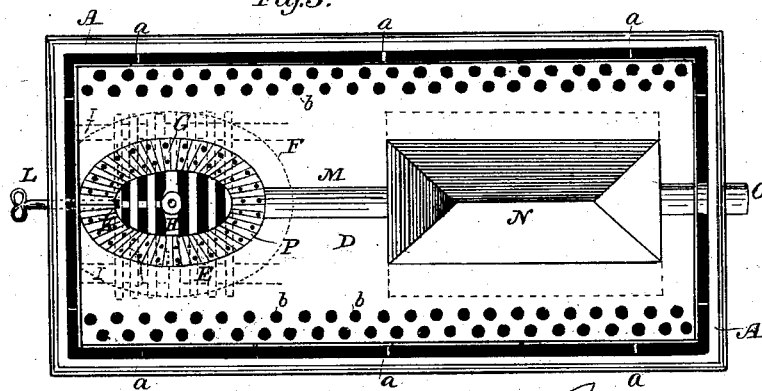
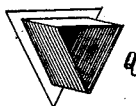


Fig. 5,



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Fig. 7.

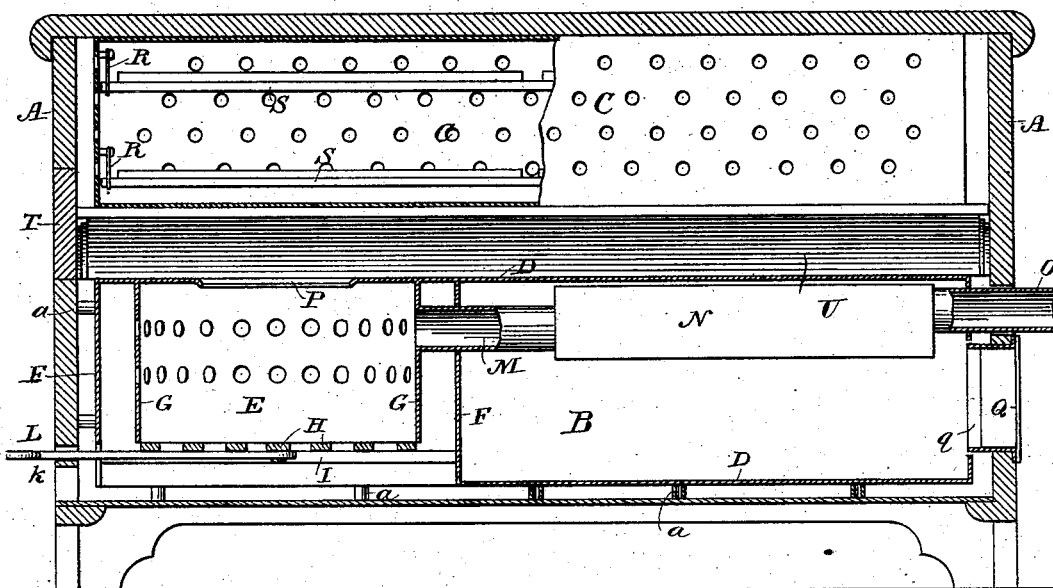


Fig. 6.

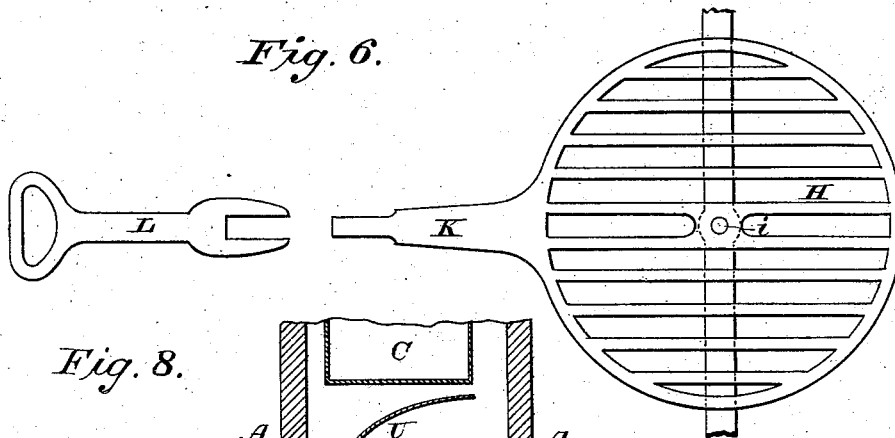
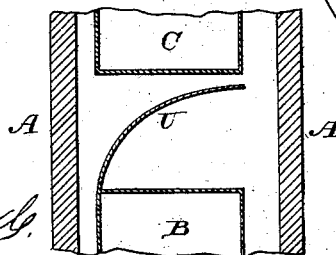


Fig. 8.



WITNESSES

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# UNITED STATES PATENT OFFICE.

SAMUEL ELLIS, OF ST. LOUIS, MISSOURI.

## HEATER AND COOKER.

SPECIFICATION forming part of Letters Patent No. 260,856, dated July 11, 1882.

Application filed August 23, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL ELLIS, of the city of St. Louis, in the State of Missouri, have invented a new and useful Improvement in Heating and Cooking Apparatus, of which the following is a specification.

My invention relates to heating and cooking apparatus of the description shown in Letters Patent of the United States granted Daniel K. Boswell November 20, 1877, and numbered 197,321, which consists of a case or box containing a furnace or fire-box, a removable cooker or heater, and a hot-air flue communicating between them.

My improvement consists in insulating the furnace or fire-place from the surrounding wooden case by an intervening layer of air, and by holding it out of contact with the case at every point. This I accomplish by supporting the iron box on hollow sheet-iron braces. My object in so doing is to get rid of the conduction which would take place were continuous walls or partitions used between the iron box and the case, which with a wooden case is highly dangerous. This insulation from heat by conduction is still further secured by the use of the hollow braces, which reduce to a minimum contact with the external wooden case.

In the accompanying drawings, which illustrate my invention, Figure 1 is a front view of the heating and cooking apparatus. Fig. 2 is a rear view of the same. Fig. 3 is a plan view through line *yy* of Fig. 1, showing the top of the furnace and the fire-place in perspective. Fig. 4 is a view in perspective of the removable drier-chamber; Fig. 5, the lid of the hole for cleaning the lining. Fig. 6 is a plan view of a grate pivoted to a cross-brace and a key fitted to the grate. Fig. 7 is a view in section of the entire apparatus, showing the relation of the furnace, the removable drier-chamber or cooker, the deflecting-chamber, and the exterior case; and Fig. 8 is a view in section of part of the apparatus, showing the relation of the deflecting-chamber to the furnace and the removable drier-chamber.

A is a case of wood, and, as in the patent above referred to, contains a lower section, B, Fig. 3, which is the furnace, and an upper section, C, Fig. 4, which is the cooker or drier-chamber. Section B consists of a sheet-iron

box, D, held out of contact with the sides of case A by hollow sheet-iron braces *a*. The top and bottom plates of box D are perforated near their edges with small holes *b*, Fig. 3. The top and bottom plates are similar in every respect and the perforations similarly disposed in each. This is done to facilitate the circulation of the heated air.

E is the fire-place, of oval form, having a continuous outer wall, F, to protect case A from the heat of the fire-place, and an inner perforated wall, G, which keeps the fuel out of contact with wall F.

H is the grate, sliding on braces I, and having a nib, K, which fits the fork of the key or handle L, by which it is shaken. The key L is inserted through the opening *k* in front of case A, through which the ashes are removed and the air supplied to the fire, or it may be rigidly attached to the grate.

M is the smoke flue, N the flue-box, and O the smoke-exit pipe.

P is the usual opening, which may be either oval or circular, in the top of the furnace for the reception of pots, pans, or other cooking-vessels.

Directly under the smoke-exit pipe O is a triangular opening, *q*, extending through case A into the space between it and the sides of insulated box D for the purpose of cleaning the perforated lining. This opening is closed by the lid Q, Fig. 5, when not in use.

The removable cooker or drier-chamber C, Fig. 4, which constitutes the upper section of the entire apparatus, has all four of its sides perforated to admit of the circulation of the heated air through all its parts. It is provided with hangers R, of galvanized iron or other suitable material. These hangers form seats for wooden bars S, and greatly facilitate the removal of the bars and the adaptation of the cooker, to the sides of which they are riveted or otherwise attached to other purposes.

T is an opening into the cooker for the admission of external air when desired.

U, Fig. 7, is the deflecting-chamber that deflects the heat from the furnace to the cooker or drier-chamber C in a well-known way.

In Fig. 3 I have shown the grate H as resting on braces I. It may also be centrally pivoted to and supported by a single central cross-

brace, as shown at *i*, Fig. 6, the braces I being dispensed with. It is obvious that the form of the grate may be either oval or circular.

By the above improvement I secure a complete insulation of the furnace from the outside wooden case and interpose a medium of constantly-changing air, which greatly protects the case from the radiation of heat from the furnace, while the insulation protects it from conduction, both of which are a source of danger. This security I further increase by the double walls of the fire-place, which prevent the frequent burning out of the fire-place—an objection to the above-named patent.

I am aware that heating, cooking, and drying apparatus have been made consisting of a case containing a furnace, a removable drier, and cooker, with a hot-air deflector communicating between them. Such an apparatus is described in Boswell's patent, before mentioned; but

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a heater, cooker, and drier, of the outer wooden shell or case and the iron box containing the fire-place, said iron box being vertically, laterally, and immovably braced against and insulated from the wooden shell, substantially as and for the purpose hereinbefore set forth.

2. The combination, in a heater, cooker, and drier, of the outer wooden shell or case, the iron box containing the fire-place, and hollow iron braces which brace the iron box vertically, laterally, and immovably against the wooden shell, and also support the wooden shell and iron box wholly out of contact with each other, substantially as and for the purpose hereinbefore set forth.

SAMUEL ELLIS.

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