

(No Model.)

E. C. FROST.
COOKING STOVE.

No. 472,533.

Patented Apr. 12, 1892.

FIG. 1.

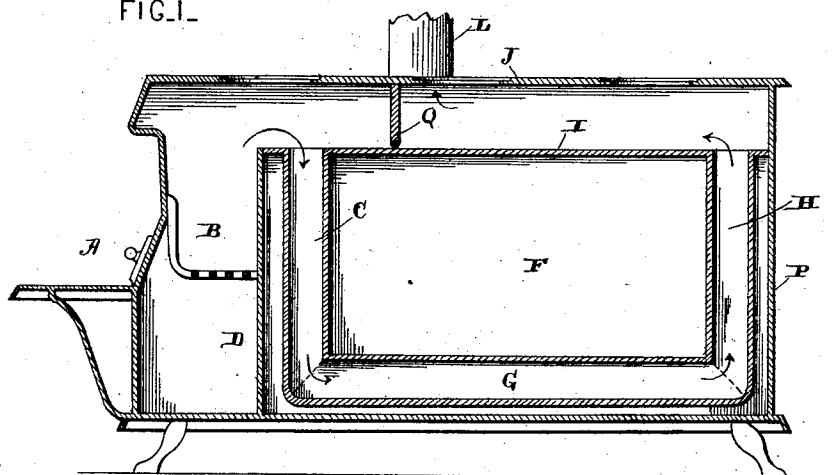
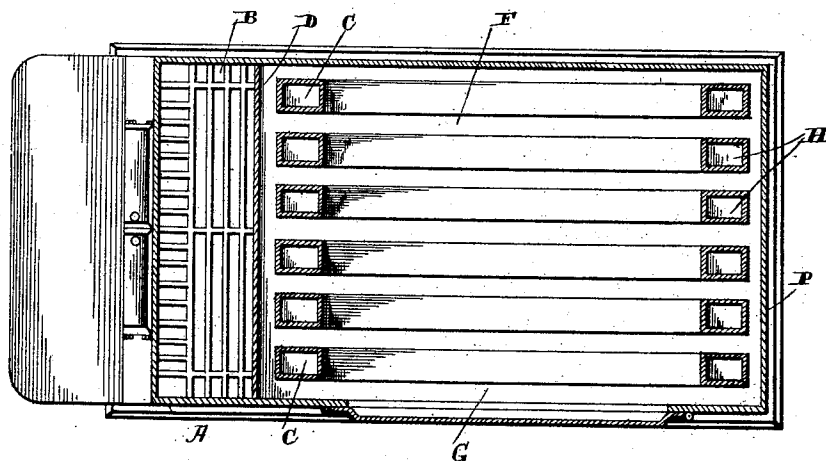


FIG. 2.



WITNESSES.

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UNITED STATES PATENT OFFICE.

ELI C. FROST, OF ELMIRA, NEW YORK, ASSIGNOR TO NORMAN J. THOMPSON,
OF SAME PLACE.

COOKING-STOVE.

SPECIFICATION forming part of Letters Patent No. 472,533, dated April 12, 1892.

Application filed May 13, 1891. Serial No. 392,601. (No model.)

To all whom it may concern:

Be it known that I, ELI C. FROST, of Elmira, in the county of Chemung and State of New York, have invented certain new and useful
5 Improvements in Cooking-Stoves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being
10 had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in cooking-stoves; and it consists in a series of vertical flues arranged just behind the fire-
15 pot, a series of horizontal flues which form the bottom of the oven, a series of vertical flues which form the rear of the oven, and but a single damper, by means of which the movement of the products of combustion is controlled, as will be more fully described hereinafter.

The object of my invention is to produce a cooking-stove in which a series of separate flues or pipes are arranged at each end and
25 below the oven, the flues or pipes being separated sufficiently far to allow all of the heat radiated therefrom to escape directly into the oven, whereby a greatly-increased heating-surface is obtained and but a single damper
30 is used.

Figure 1 is a vertical section taken through a stove which embodies my invention. Fig. 2 is a horizontal section of the same taken at right angles to Fig. 1.

35 A represents the frame of the stove, which may be of any desired shape, size, or construction. Arranged in a vertical position just back of the fire-pot B are a series of vertical flues C, which are entirely separate and distinct from each other and through which
40 the products of combustion are made to pass when they are not allowed to escape directly up the chimney. The upper ends of these pipes or flues are connected together, so that the products of combustion may pass through
45 and not between them; but below the upper ends of the pipes or flues they are separated sufficiently far, as shown in Fig. 2, and from the rear wall D of the fire-pot to allow all of
50 the heat which is radiated from them upon any side to communicate directly with the

oven F. The bottom of the oven F is formed by a series of pipes or flues G, which are connected air and gas tight with the lower ends
of the pipes or flues C, and these pipes or flues 55 G are raised a suitable distance above the bottom of the stove, as shown in Fig. 1, so as to allow all of the heat radiated from each pipe or flue, which are also separated a suitable distance from each other, to rise freely
60 into the oven F. The rear ends of these flues or pipes G connect air and gas tight with the third series of flues or pipes H, which form the rear side of the oven and which pipes are separated a suitable distance to allow the
65 heat radiated therefrom to escape freely into the oven, and which flues H are connected air and gas tight with the top plate I of the oven at their upper ends.

Between the top plate I of the oven and the
70 top J of the stove a passage is formed through which the products of combustion pass toward the pipe L, and in which passage is placed the damper O, located between the pipe L and the fire-pot. If this damper O is open
75 the products of combustion pass directly up the pipe L, not heating the oven to any material extent. Should, however, the damper be raised the products of combustion are forced to pass through the three sets of flues C G H
80 and then over the top of the top plate I before they reach the pipe L, and thus they are made to pass entirely around the oven F. As each one of the pipes C G H is entirely separate from the others of the same series, all of the
85 heat radiated from all four sides of each one of the flues escapes directly into the oven, which really extends from the back plate D of the fire-pot to the rear plate P of the stove. These three sets of flues are virtually placed
90 inside of the oven, while they form the front, rear, and bottom thereof.

It will be noticed that but a single damper is used and that the products of combustion are controlled entirely by it, making a stove
95 that is as easily controlled as any other with but a single damper at the same time that a greatly-increased heating-surface for the oven is obtained. The hot air does the cooking by deflected heat, which does not char, waste, or
100 reduce the weight or food value of meats, bread, and pastry, not even in frying, retain-

ing all its food value, moisture, or juices, while
with radiated heat of ordinary cooking-stoves
and ranges fifty per cent. of its weight and
much more of the real food value—its carbon
5 and nitrogen—are wasted in the case of meats,
bread, and pastry, making it hard and dry.
Meats and poultry are roasted or fried in the
oven without basting or turning over.
Seventy-five per cent. of beef is juice, which
10 is its only food value, as there is no food value
in the hard fibers, and when cooked in the
ordinary way forty per cent. of its juice is
wasted or lost, which makes it indigestible
and unhealthful, and twice the bulk is re-
15 quired to sustain the mental and physical
organs. When done by this process, every
particle of the juice is saved, no matter how
it is cooked, whether fried or roasted, and the

same rule applies to all kinds of meat and
fish and all bread and pastry.

Having thus described my invention, I
claim—

In a cooking-stove, the three series of pipes
or flues which form the front, rear, and bot-
tom of the oven, combined with the fire-pot, 25
the damper, and the stovepipe, each one of
the flues or pipes being separated from the
others of the same series, substantially as
shown and described.

In testimony whereof I affix my signature in 30
presence of two witnesses.

ELI C. FROST.

Witnesses:

EDWARD G. HERENDEM,
FREDERICK E. HAWKES.