

J. FINK.

Cooking Range and Air Heater.

No. 13,717.

Patented Oct. 30, 1855.

Fig. 3

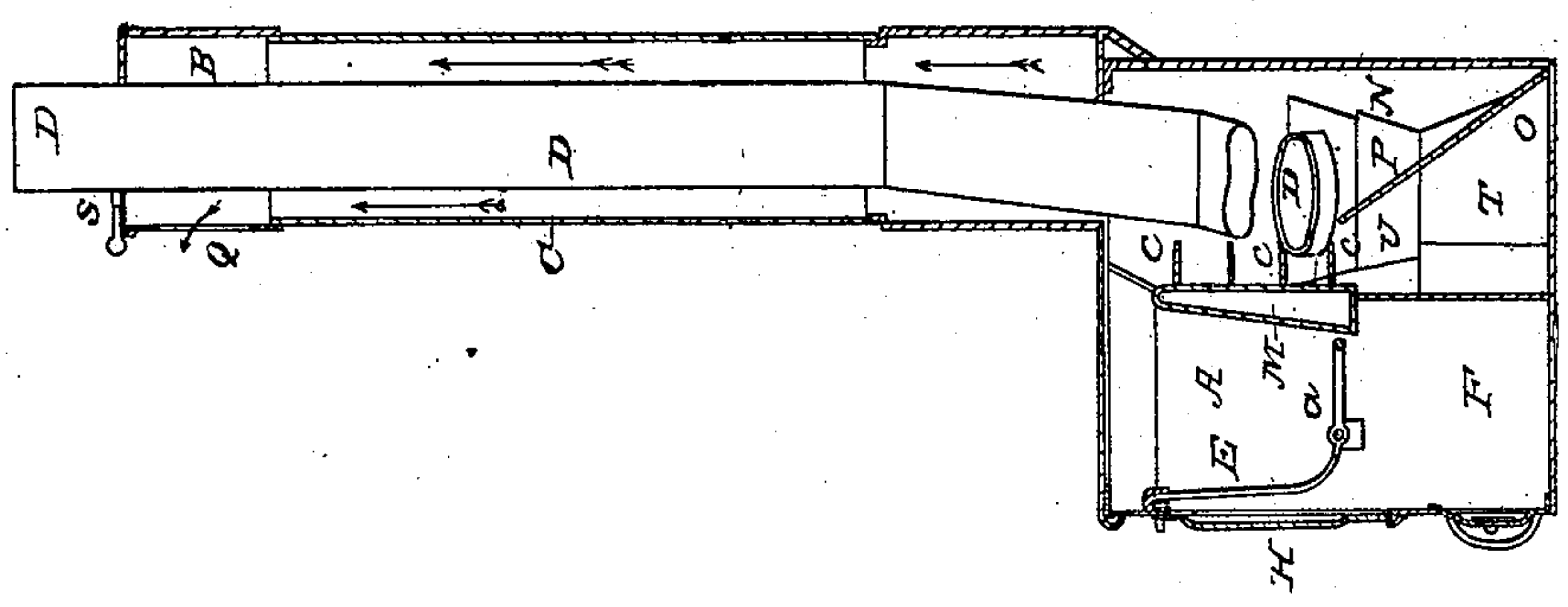


Fig. 2

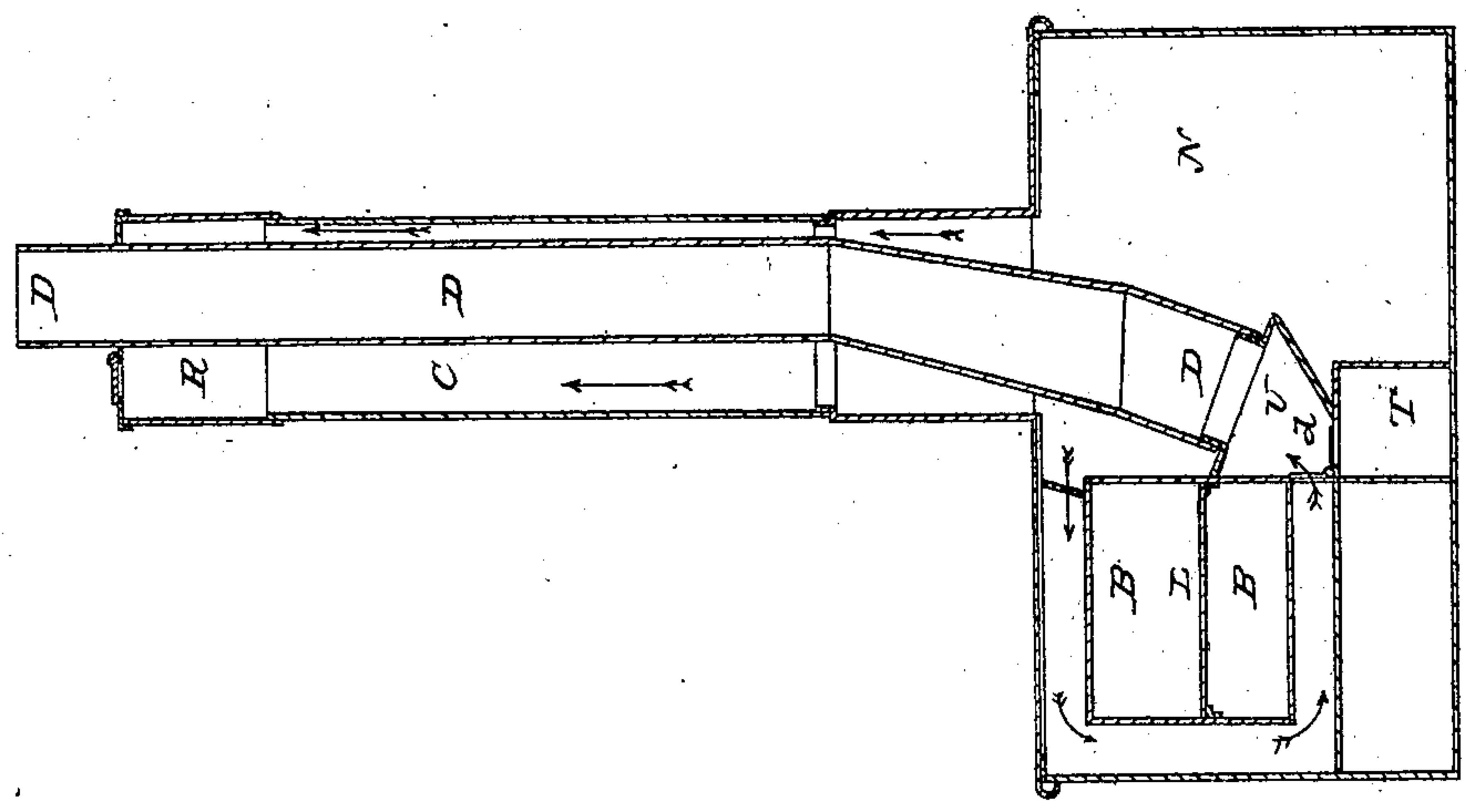
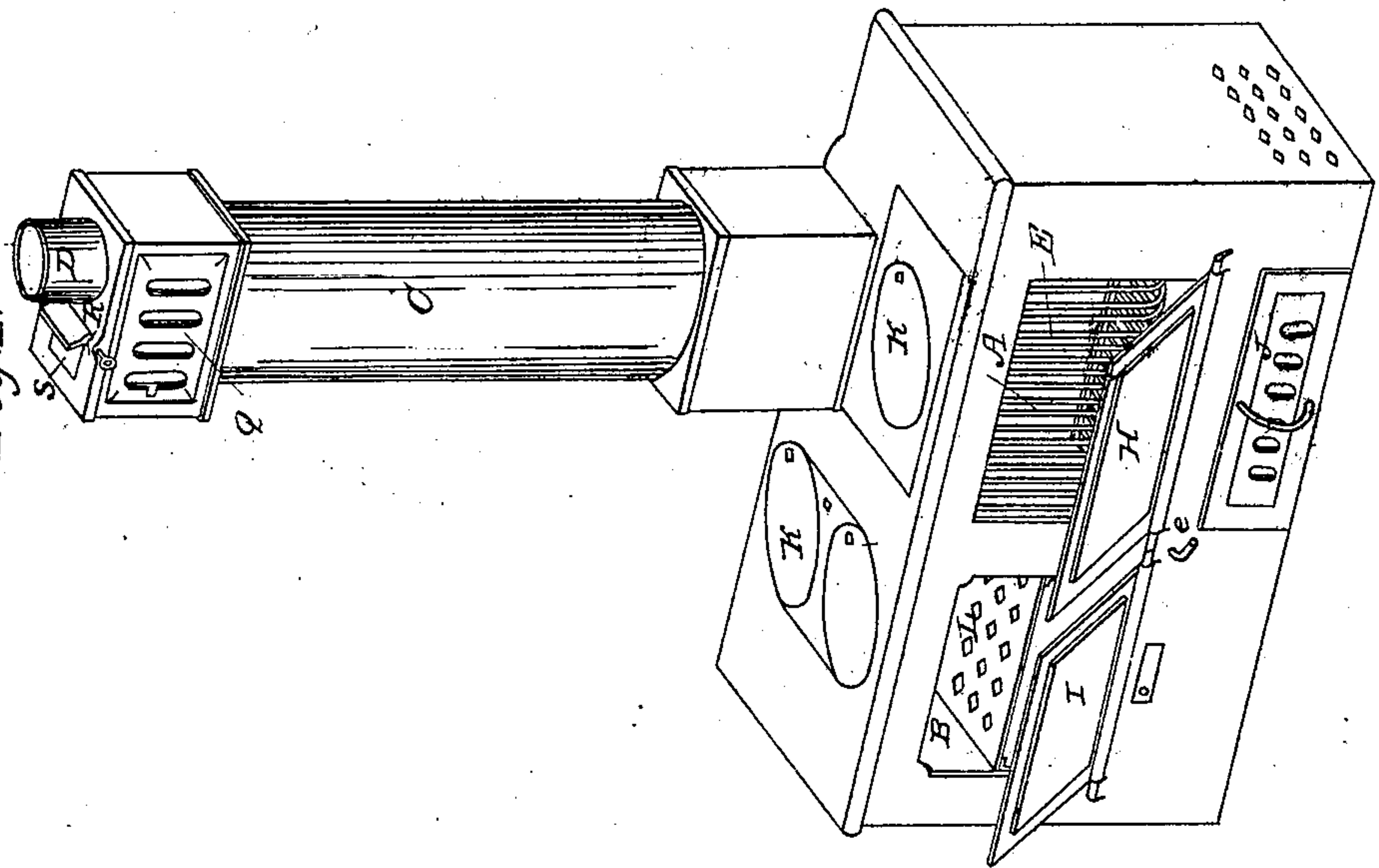


Fig. 1



UNITED STATES PATENT OFFICE.

JULIUS FINK, OF PHILADELPHIA, PENNSYLVANIA.

COOKING-RANGE AND AIR-HEATER.

Specification of Letters Patent No. 13,717, dated October 30, 1855.

To all whom it may concern:

Be it known that I, JULIUS FINK, of the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Cooking-Ranges and Air-Heaters; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part thereof, in which—

Figure 1 represents a perspective view. Fig. 2 represents a vertical and longitudinal section through the same, and Fig. 3 represents a vertical transverse section, both sections passing centrally, or nearly so, through the gas, and hot air pipes.

Similar letters where they occur in the several figures denote like parts.

The nature of my invention relates to the so arranging of the several parts of a cooking range and air heater combined, as that the dust or ashes shall not be allowed to ascend and settle in the flues or passages; and so that the gases shall be prevented from commingling with the heated air, which is to be used for heating rooms or apartments elsewhere, as will be described.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

The range and heater is of an oblong square form, as seen in Fig. 1, the fire chamber A, being located at one end, and the ovens B, at the opposite end, and the hot air pipe C, and gas flue D, within it, centrally placed (or nearly so) in its longitudinal direction though at the back part of the range and heater.

The grate E, is pivoted at the point *a*, (Fig. 3) within the fire box or chamber, so that it may be tipped to discharge its contents into the cinder box F below it. When the grate is filled with fuel, it is held in its place by the fuel resting or pressing against the back G of the fire chamber, and against the front of the grate.

H, is the door for closing the front of the grate, and I, a door for closing the oven. Both of these doors drop back upon their hinges, so as to form a hearth upon which anything may be placed as a support, and that H serving more particularly, for a removable roasting, or baking oven.

J, is a register for regulating the draft to

the fire; K openings with suitable covers, for the reception of cooking or boiling vessels.

The smoke and heated gases, pass from the fire chamber A, in the direction of the red arrows Fig. 2, around the oven B, (which may be divided by a plate L, with openings through it) thence up through the exit pipe or gas flue D, which is placed within the hot air flue or pipe C, for a purpose to be hereafter described.

Behind the fire chamber, and separated from it by the back plate M, Fig. 3, (which may be a waterback, as represented, for heating bath or other water) is the hot air chamber N, into which cold air from without may be introduced through an opening underneath at O, or through the smaller openings *b*, Fig. 1. The side of the back plate or water back M, next the air chamber may be provided with a series of points or projections of metal *c*, for conveying by conduction the heat from the back plate into the hot air chamber.

P, is an inclined plate within the hot air chamber, for directing the inflow or current of cold air, against the back plate, to bring it into more immediate contact with its heated metallic surface. The air being heated in the hot air chamber N, ascends by its rarefaction, up through the pipe C, as indicated by the blue arrows, and may be let out into the apartment above, through the register Q, or be still farther conveyed by branch pipes connected with the hot air, or radiating box R, at the valved opening S, or otherwise.

T, is a dust box, which is accessible through the cinder box F, underneath the grate, and above the dust box is a chamber U, which is common to the gas flue passing around the oven, and to the dust box, as may be required, by means of a single valve or damper *d*, so hung, as by closing the gas passage it will open the passage into the dust box, and vice versa. The object of this arrangement is as follows: In cooking ranges as generally constructed the dampers are so numerous, and their offices so varied, as to confuse the users, if not entirely confound them, as they are generally in the hands of those who do not properly understand them. The consequence is that, the ovens are too much, or too little heated—the dust, upon raking or shaking the grates, flies out into the room, or is allowed to ascend into, and

settle in the flues, and choke them up. By
simplifying the hitherto practised construc-
tion, I obviate all these objections. I use
but a single damper *d*, the rod or axis *e*,
5 of which, protrudes in front of the range.
When the grate is to be raked the damper *d*,
is turned up, (as shown in red in Fig. 2,) 10
closing the gas passage, and opening the
passage into the dust box. The draft
through the stove or range being thus cut off,
the ashes will not ascend through the pipe
D, but a short distance, and then fall back
into the dust box whence they are readily
removed. Then by dropping the valve *d*,
15 (as in black lines) the dust box is closed,
and the gas passage opened. The user will
readily perceive when the valve or damper *d*,
is not in proper position, as either the fire
will not burn, or the gas will escape into the
20 apartment, either contingency indicating
that the damper must be reversed, which
simplifies the management of the range, ex-
ceedingly. After the heated gases pass
around the ovens they enter into the pipe
25 D, which is located within the hot air cham-
ber, where it becomes highly heated, and
imparting its heat to the pipe D, it reheats
the gases within the pipe D, causing them
to ascend with greater rapidity, and thus in-

creases the draft in and through the range. 30
I thus by my manner of arranging the
several parts of the range and heater, very
much simplify and cheapen its construction,
and at the same time put its successful man-
agement within the scope of the most obtuse 35
user.

Having thus fully described the nature
of my invention what I claim therein as new,
and desire to secure by Letters Patent, is—

1. The arrangement of the dust box T, 40
and exit flue U, leading from the passage
surrounding the oven, within the air heat-
ing chamber, substantially as described, and
for the purposes specified.

2. I also claim in combination with a hot 45
air chamber which is heated by conduction,
and independent of the heated or burning
gases which pass around the oven, the carry-
ing of said gases back, and up through a
flue located in said hot air chamber, for the 50
purpose of reheating the gases, and causing
them to ascend more rapidly by their rarefi-
cation, substantially as described.

JULIUS FINK.

Witnesses:

A. B. STOUGHTON,
E. COHEN.