

J. E. LAYTON.

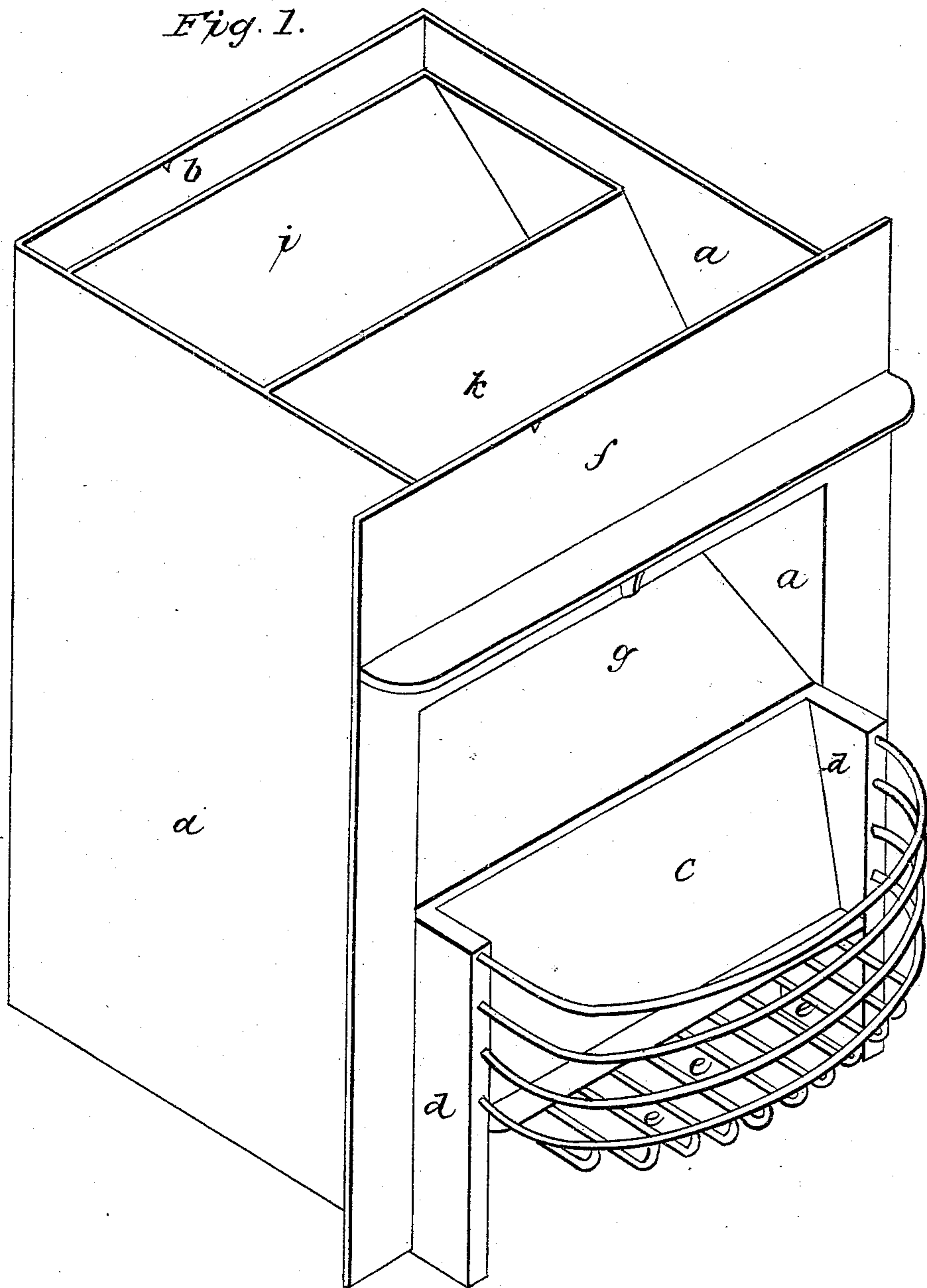
2 Sheets—Sheet 1.

Fireplace.

No. 32,700.

Patented July 2, 1861.

Fig. 1.



Witnesses

Martin G. Cushing
A. C. Bakewell.

Inventor.

John E. Layton.

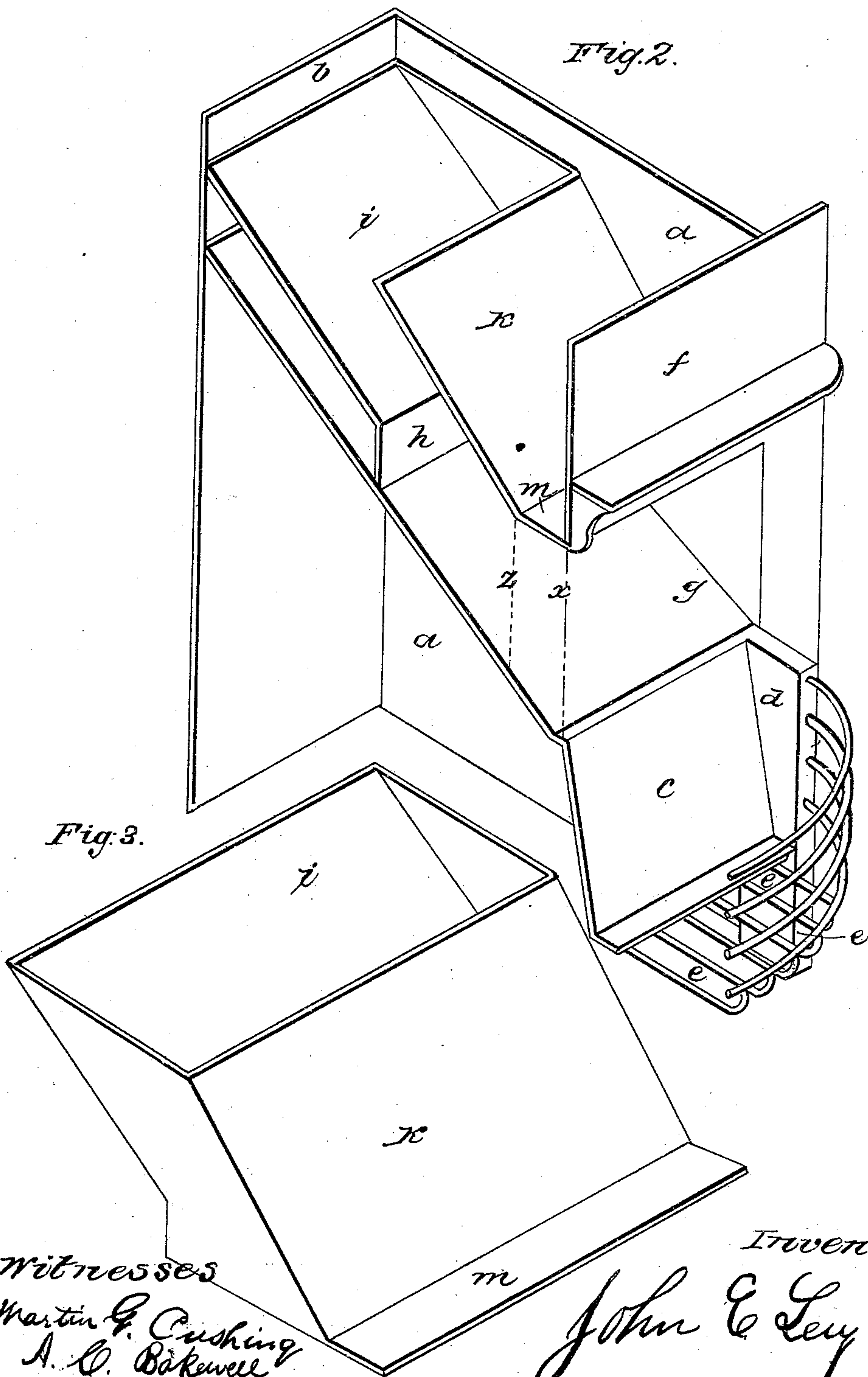
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UNITED STATES PATENT OFFICE.

JOHN E. LAYTON, OF PITTSBURG, PENNSYLVANIA.

FIREPLACE.

Specification of Letters Patent No. 32,700, dated July 2, 1861.

To all whom it may concern:

Be it known that I, JOHN E. LAYTON, of
Pittsburg, in the county of Allegheny and
State of Pennsylvania, have invented a new
5 and useful Improvement in Fireplaces; and
I do hereby declare the following to be a
full, clear, and exact description thereof,
reference being had to the annexed draw-
ing, forming part of this specification, in
10 which—

Figure 1 is a perspective representation
of a fire place or stove, constructed on my
improved plan. Fig. 2 is a sectional per-
spective view of the fire place shown in Fig.
15 1. Fig. 3 is a representation of the throat
piece for the flue, connecting the fire place
with the chimney, showing the shape of the
throat.

In the several figures, like letters of refer-
20 ence, denote similar parts.

Open fire places, as ordinarily construct-
ed, especially when used for burning bitumi-
nous coal and other fuel yielding a large
amount of fuliginous vapors, are liable to
25 three defects, all of which are in a great
measure overcome by my improvement. The
first is that a very large proportion of
heated air passes up the chimney, which
ought to pass into the apartment, so that
30 open fire places often serve rather to draw
the warm air out of a room and cause an
influx of cold air than to heat the air in the
apartment. The second is that a large
amount of fuliginous vapor passes up the
35 chimney unconsumed, which, if ignited,
would give a very bright flame, and emit a
great deal of heat, which is thus entirely
lost; and the third is that the chimney is
apt to smoke. Several improvements have
40 been tried, which remedy one or other of
these defects in a greater or less degree, but
my improvement is designed to combine the
obviation of all these difficulties, and con-
sists in a peculiar construction of the back
45 wall of the fire place and throat of the flue,
and also in combination therewith, project-
ing the fire basket, beyond the throat of the
chimney, so that a perpendicular line let fall
from the front edge of the throat of the flue,
50 shall touch a point back of the rear wall of
the fire chamber.

This improvement is applicable equally
to all descriptions of open fire places,

whether open stoves, or grates set in the
walls of the chimney. 55

In the drawing *a a* represent the side
walls, and *b* the rear wall of the space in
the chimney, in which the grate is to be set,
(or may represent the side and back plates
of a Franklin stove). 60

c, is the back wall of the fire basket, *d d*,
are the sides of the fire basket, and *e e* are
the grate bars.

f is the front wall of the fire place or
stove, and it will be seen by reference to the 65
dotted line in Fig. 2 that the back wall of
the fire chamber, is on a line with the front
wall of the chimney, and by the dotted line
z in the same figure, that it is considerably
in front of the front edge of the throat of 70
the chimney. The horizontal distance be-
tween the dotted lines *x* and *z* shows the dis-
tance from the inner edge of the front wall to
the edge of the throat of the flue which
should not be less in proportion, than is 75
shown in the drawings, and may be in-
creased if desired, it being an important
feature of my improvement, to place the
throat of the chimney near the middle of the
80 wall of the chimney.

From the top of the back plate of the fire
basket, the back wall *g* slopes rapidly back-
ward, at an angle of about 45 degrees, until
it touches the rear edge of the throat of the 85
flue, as seen in Fig. 2. From that point, the
throat of the flue is of the shape shown in
Figs. 2 and 3, the back part rising a short
distance perpendicularly at *h* Fig. 2, and
thence sloping back to the back wall of the 90
chimney, see *i* Fig. 2, and the front wall *h*
of the throat, also slopes backward. This
peculiar construction of throat may be con-
veniently attained, by the use of an iron
casting or throat piece, of the shape shown 95
in Fig. 3, which may be set in the fire place or
stove, while the inclined back wall *g* may be
an iron plate or tile of fire brick, so that my
improved fire places, may be very rapidly
and easily set. If desired, the throat piece 100
Fig. 3, may be furnished at top with a dam-
per or hinged cover, to close when no fire is
used, and prevent the fall of soot.

The operation of my improved fire place
depends greatly on the situation of the 105
throat of the chimney near the middle of

the opening, which leaves a flat space at *m* Fig. 2, over which the cold air must pass, when sucked in by the draft of the chimney, or this cold air, thus becomes heated, before
5 it passes into the flue, and thus does not destroy or impair the draft, as is the case where the opening of the throat is close to the front wall. The back wall sloping backward, has also the effect to reflect the heat of
10 the fire more directly into the room, and the position of the fire basket in the apartment, and entirely outside of the throat of the flue, of course heats the room more effectually, while the draft is such, that no smoke
15 or gas, is permitted to escape into the room.
Having thus described my improvement

in open fire places, what I claim as my invention and desire to secure by Letters Patent, is—

The arrangement in the construction of 20 open fire places of a fire basket placed in front of the throat of the flue, a backwall sloping backward from the top of the fire basket to the back of the throat, and the throat also sloping backward as described. 25

In testimony whereof, I, the said JOHN E. LAYTON, have hereunto set my hand.

JOHN E. LAYTON.

Witnesses:

MARTIN G. CUSHING,
A. S. NICHOLSON.