

C. W. GRANNIS.
Cooking Stove.

No. 8,050.

Patented April 22, 1851.

Fig. 1

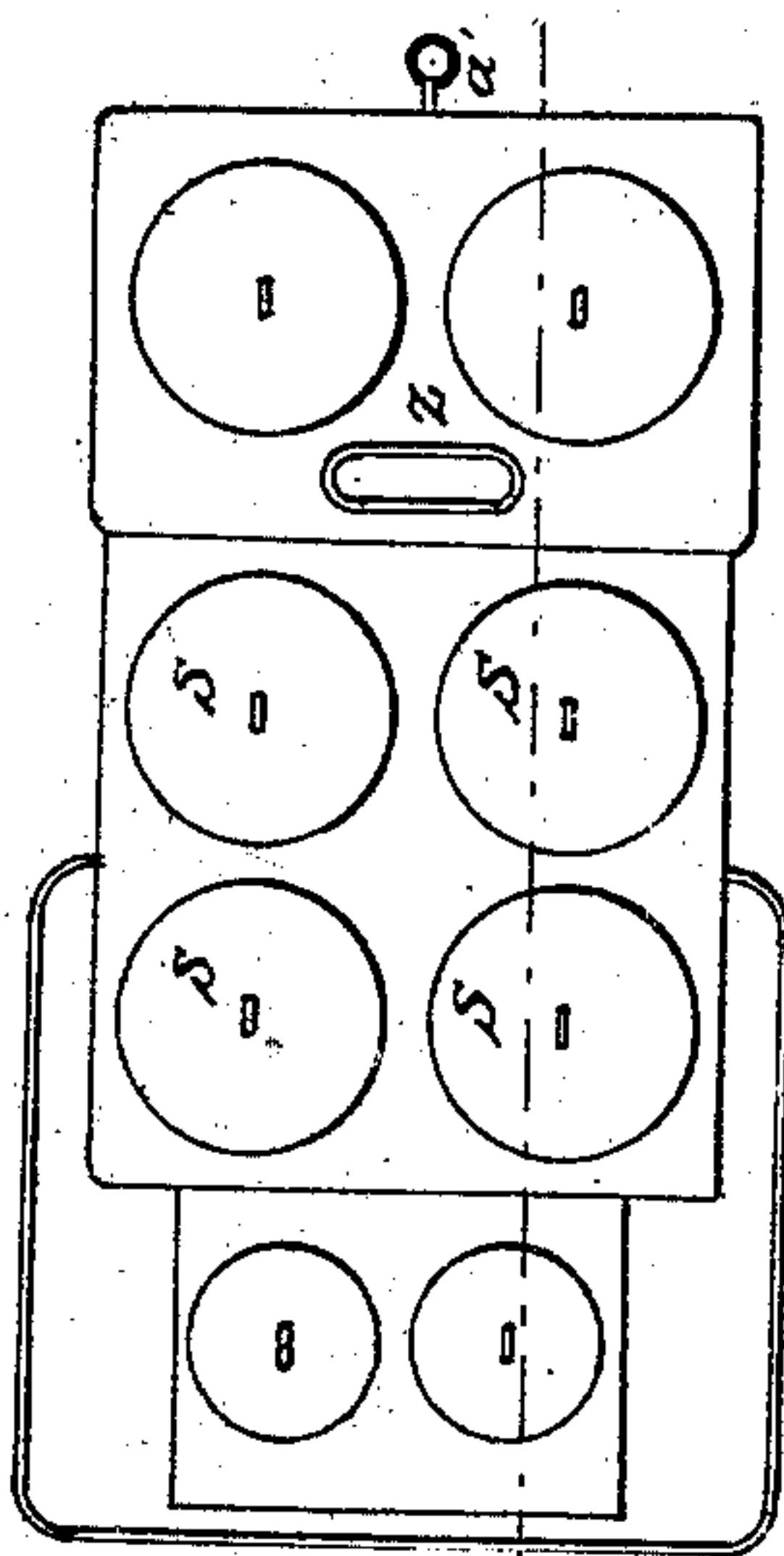


Fig. 3

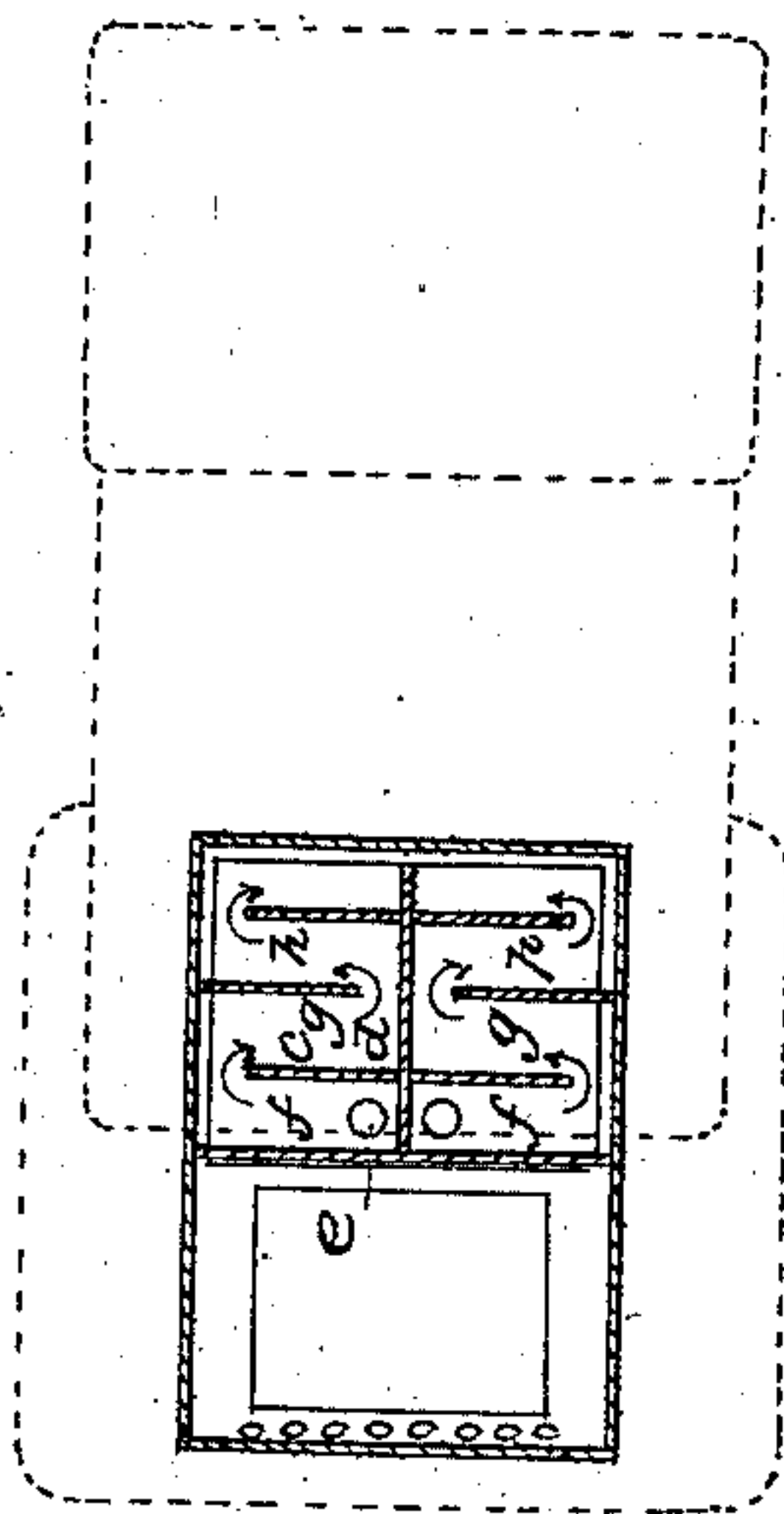


Fig. 2

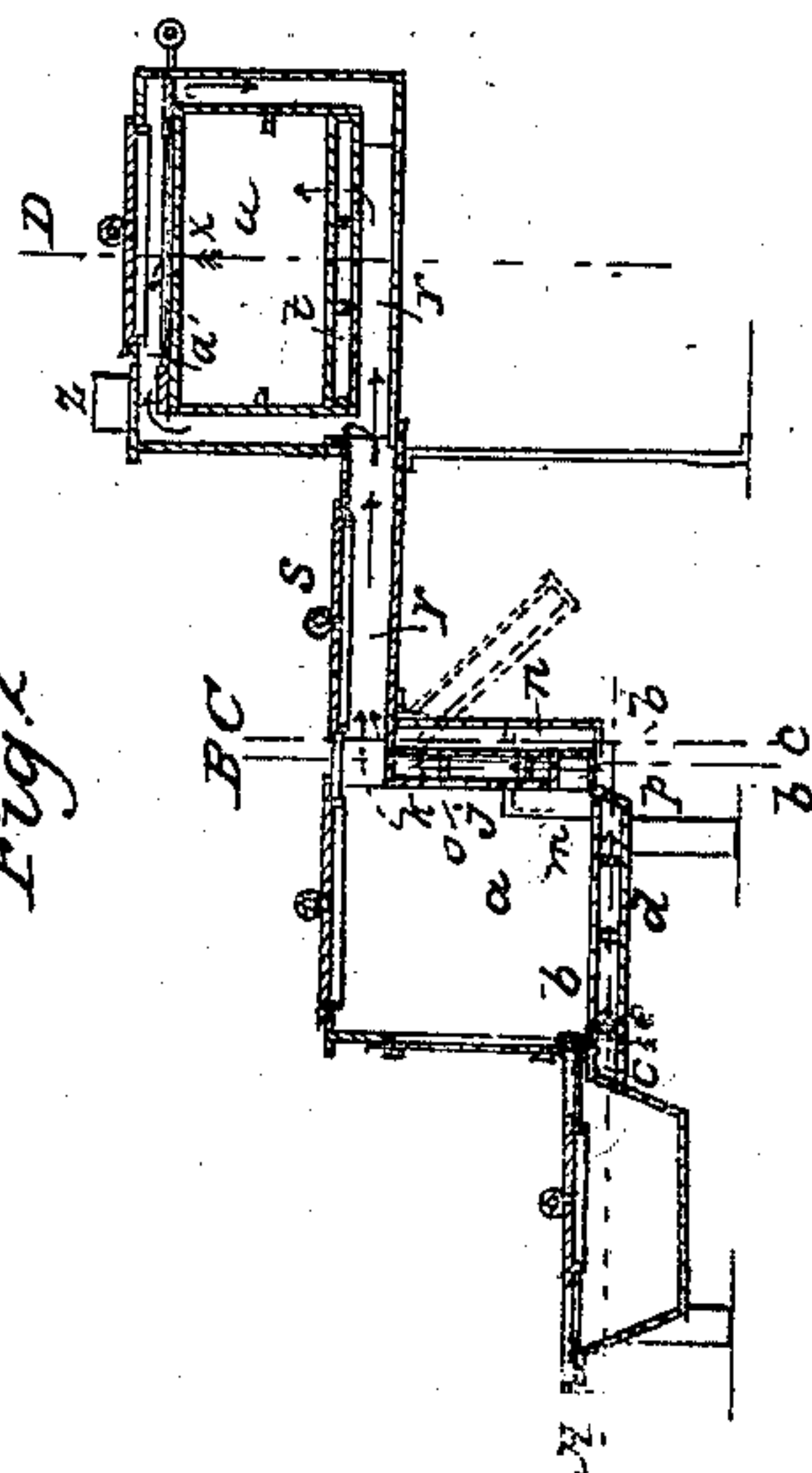


Fig. 4

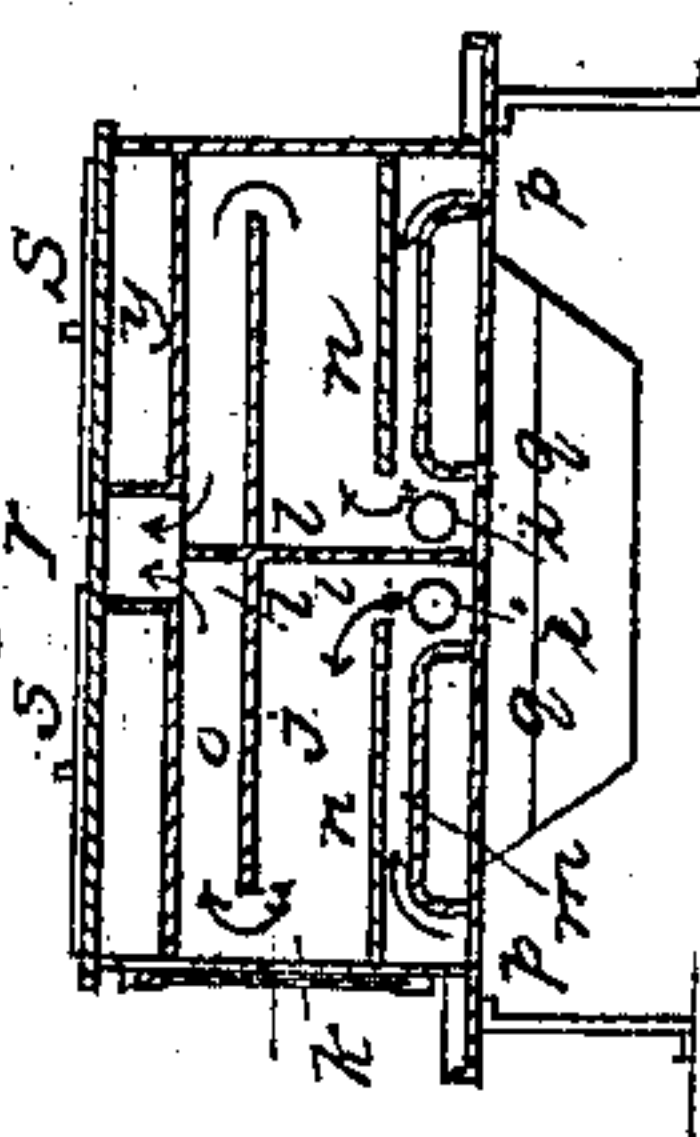


Fig. 5

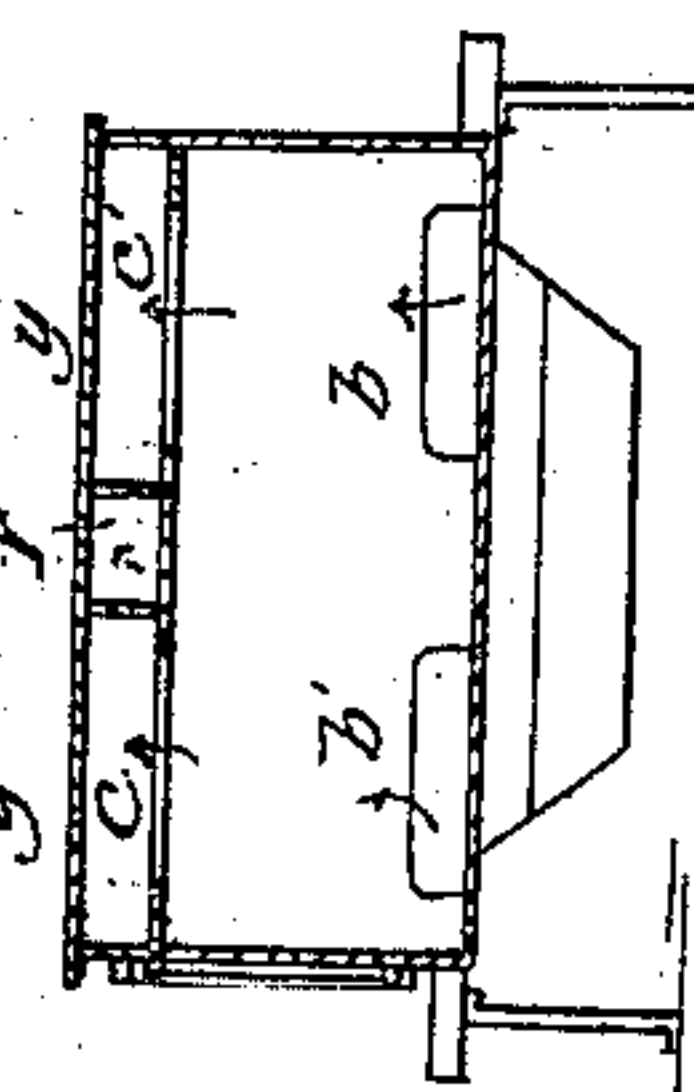
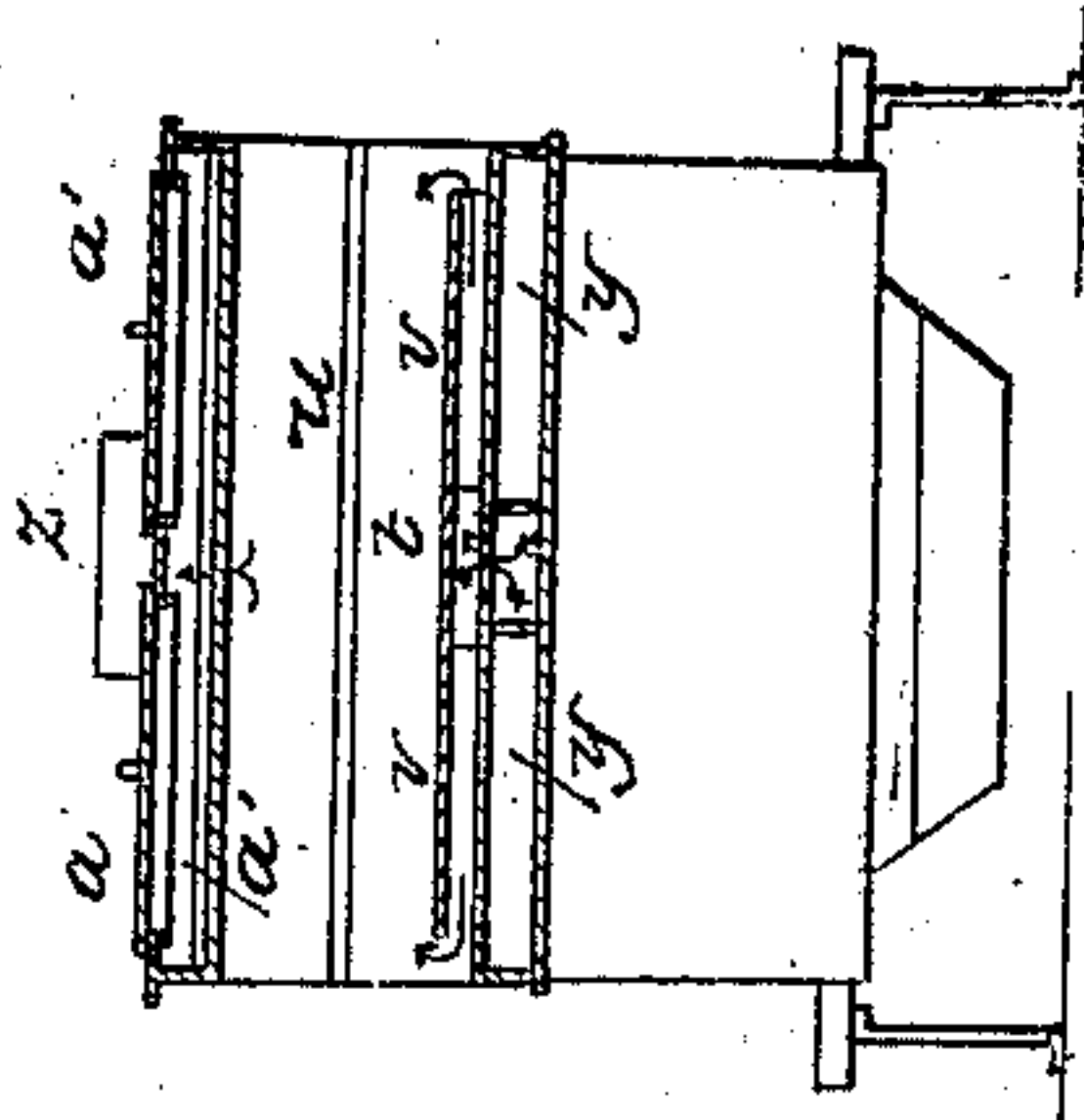


Fig. 6



UNITED STATES PATENT OFFICE.

CHARLES W. GRANNIS, OF GOWANDA, NEW YORK.

COOKING-STOVE.

Specification of Letters Patent No. 8,050, dated April 22, 1851.

To all whom it may concern:

Be it known that I, CHARLES W. GRANNIS, of Gowanda, in the county of Erie and State of New York, have invented new and useful Improvements in Cooking-Stoves, and that the following is a full, clear, and exact description of the principle or character thereof which distinguishes them from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan; Fig. 2, a longitudinal vertical section; Fig. 3, a horizontal section taken at the line (A a) of Fig. 2; and Figs. 4 5 and 6, cross vertical sections taken at the lines (B b) (C c) and (D d) of Fig. 1.

The same letters indicate like parts in all the figures.

In my improved stove the products of combustion pass up from the fire chamber under the kettle or pots, and thence around the elevated oven, while a current of heated air from a hot-air chamber under the hearth and fire back passes into and through the oven.

The first part of my invention consists in arranging flues into which air is to be admitted to pass into the oven through holes in the corner of the bottom plate, the said flues being arranged between two fire flues which conduct the products of combustion from the fire chamber to flues surrounding the elevated oven, so that the air on its way to the oven shall be heated along its whole passage, the said air-flues retaining the same or nearly the same capacity along their entire length to prevent the air passing to the oven from losing its sensible heat by expansion, for it will be obvious that if the hot air flues opened directly into an enlarged chamber under the oven bottom, as in other stoves heretofore made, it would expand and thus lose its sensible heat, before entering the oven, but by my improvement I not only heat the air more effectually but it enters the oven before losing its sensible heat and will therefore be more efficient in baking. And the second part of my invention consists in combining with the air heating chambers in the fire back a flue or flues which pass out from near the bottom of the fire chamber, so that the air in the said chamber shall be heated on one side by the fire in the fire chamber and by the prod-

ucts of combustion in passing through the flues at the back thereof.

In the accompanying drawings (a) represents the fire chamber of my improved stove, and (b) the hearth plate with a chamber (c) below it divided into two compartments by a longitudinal vertical partition (d). Cold air is admitted to each of these compartments through holes (e e) in the bottom, and as it is heated by radiation, it is made to circulate under the hearth plate by passing from each hole outward around the end of two lateral partitions (f f), then toward the middle, around the ends of two other partitions (g g), then outward around the ends of a third set of partitions (h h) and then inward and up two short vertical flues (i i) and thence into two chambers (j j) formed back of the fire back (k), these two chambers being separated by a vertical partition (l). These chambers are provided with lateral partitions (m m), (n n) and (o, o), similar to those in the chambers below the hearth plate and for the same purpose; but in addition to the heated air which enters the chambers from the chambers under the hearth, cold air is introduced into them from the rooms through holes (p p) in the bottom plate (q) of the stove. The heated air in these chambers passes out from the top of the chambers (j j) into a horizontal flue (r) in the top of the stove and between the two ranges of boiler holes (s, s, s, s) and between the two main fire flues, and it is delivered through two holes (t, t,) in the bottom plate of the oven (u) and under a second plate (v) which constitutes the baking bottom of the oven. This latter plate does not, however, extend the whole length of the oven, a space being left at each end and near the oven doors for the passage of the heated air, which after circulating through the oven escapes through a hole (x) in the top plate of the oven to the fire flue above the oven. The products of the combustion pass out from the top of the fire place, over the fire back into two horizontal flues (y, y,) under the boiler holes and one on each side of the hot air flue (r) and thence pass around the elevated oven to the exit pipe (z), a damper (a') being placed near the exit pipe to govern the discharge of the products of combustion, so that when this is closed they shall pass around the oven, and when open pass directly out without heating the oven.

In addition to the flues just described there are two openings (b' , b') near the bottom of the fire back, through which a portion of the products of combustion pass to
5 two branch flues (c' c') that pass along back of the hot air chambers behind the fire backs and thence discharge to the two main flues before described, the passage of the
10 products of the combustion through this branch of flues being for the purpose of giving additional heat to the air in its passage through the hot air chambers at the back, which but for these flues would be kept
15 comparatively cool by the exposure of the outer plate thereof to the cold air of the room.

The number of lateral partitions in the hot air chambers can be increased or diminished at pleasure, but the number described
20 and represented are deemed the best.

What I claim as my invention and desire to secure by Letters Patent is—

1. The arrangement of the flues which

conduct the heated air to the space under the oven bottom from which it is discharged 25 into the oven at the corners thereof and without any enlargement to permit the expansion of the air, before it reaches the oven as described when this is combined with the arrangement of fire flues on each
30 side thereof, as described, whereby the air passing to the oven is heated along the whole distance of its passage by the products of combustion from the fire place as described. 35

2. I also claim as my invention the heating of the air in its passage through the back hot air chambers by combining with such air chambers and the main fire flues, the branch fire flues which pass back of the
40 said air chambers, substantially as described.

CHAS. W. GRANNIS.

Witnesses:

R. MOLERITH,

H. SHATTUCK.