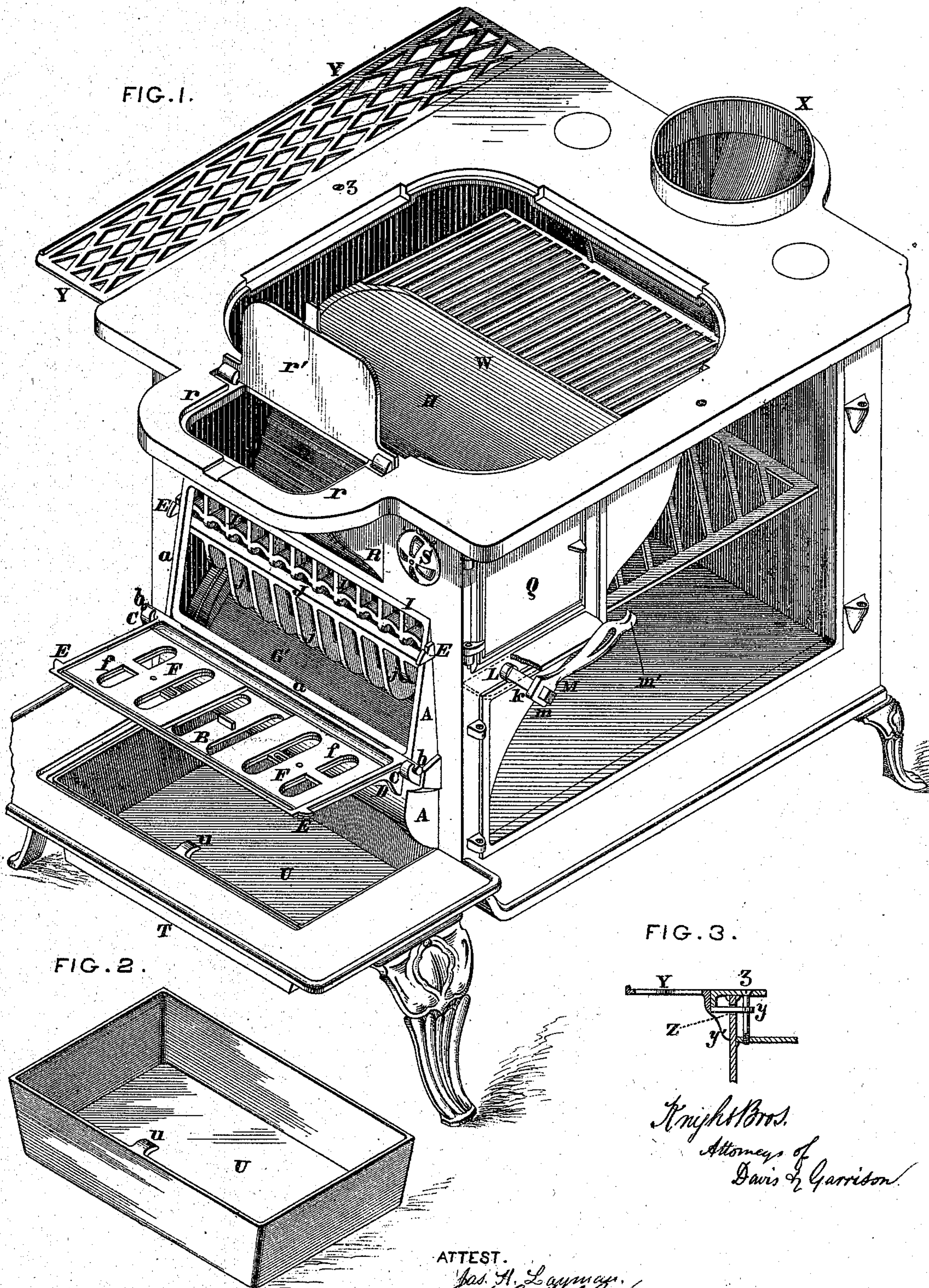


DAVIS & GARRISON.
Cooking Stove.

No. 103,306.

Patented May 24, 1870.



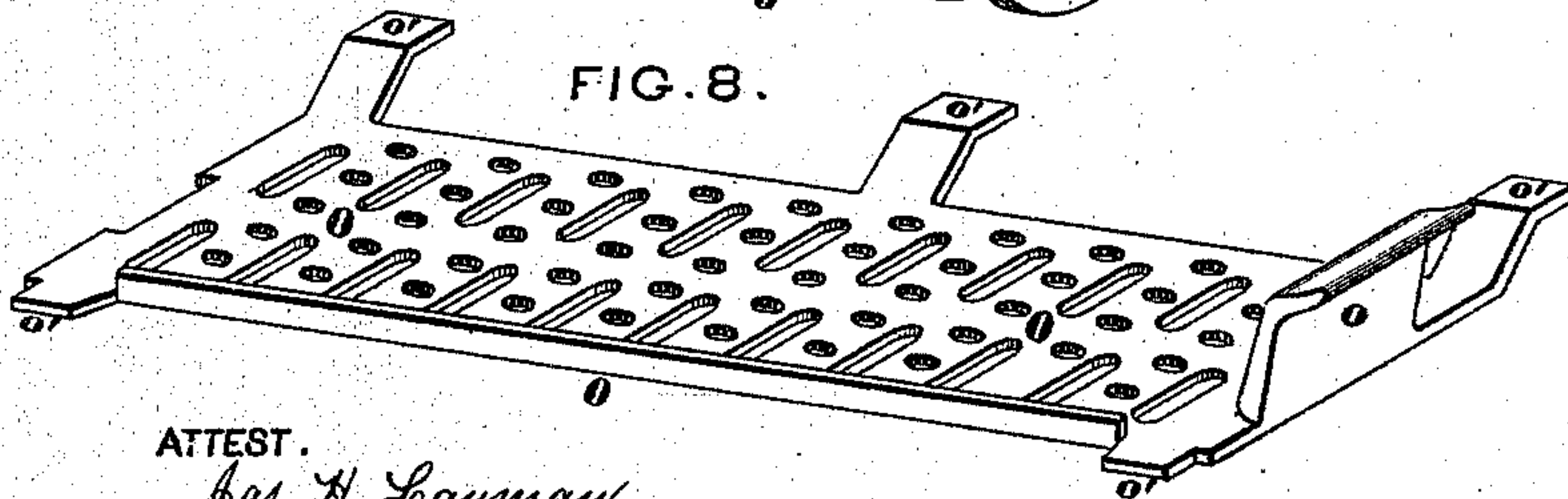
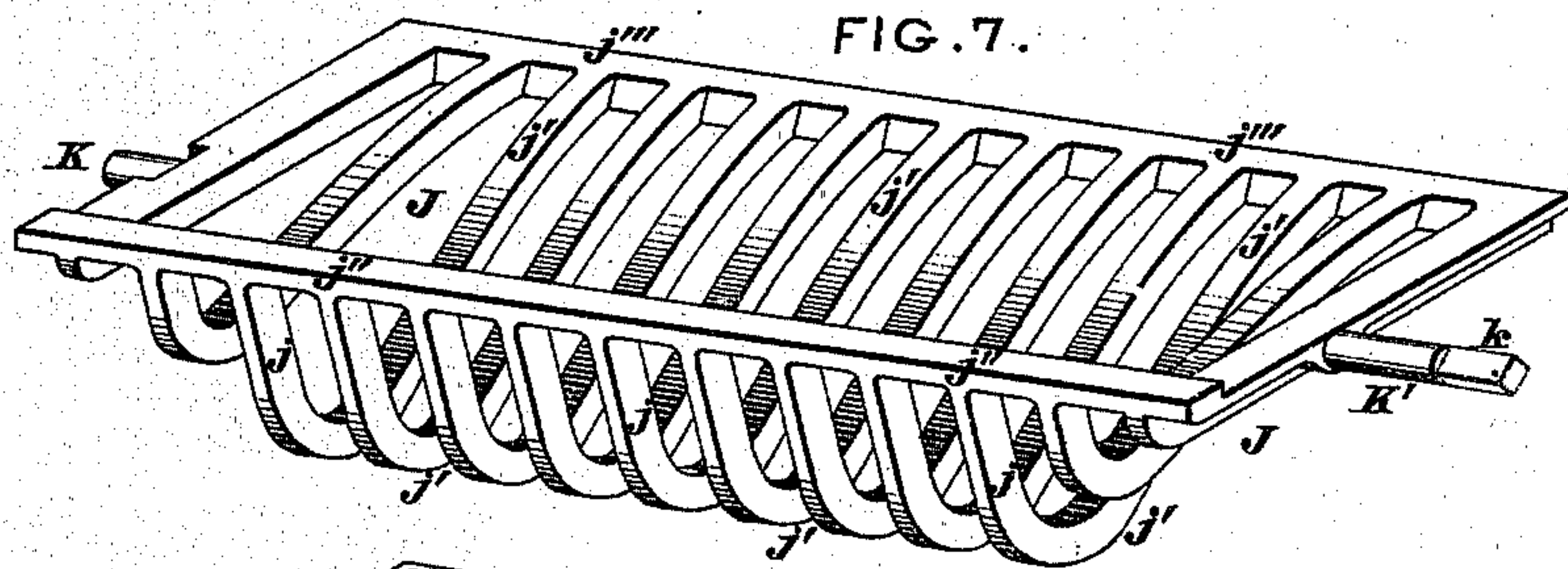
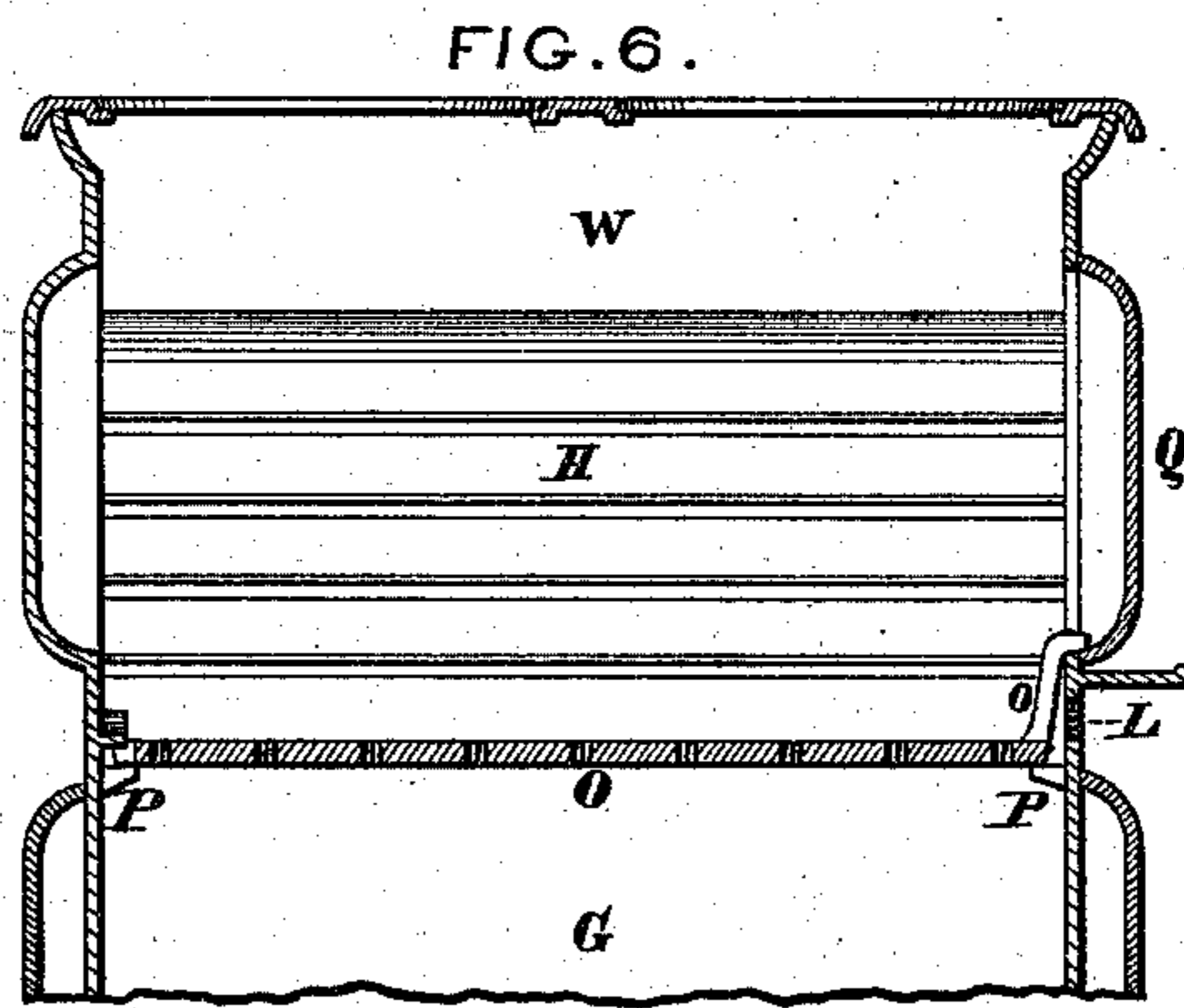
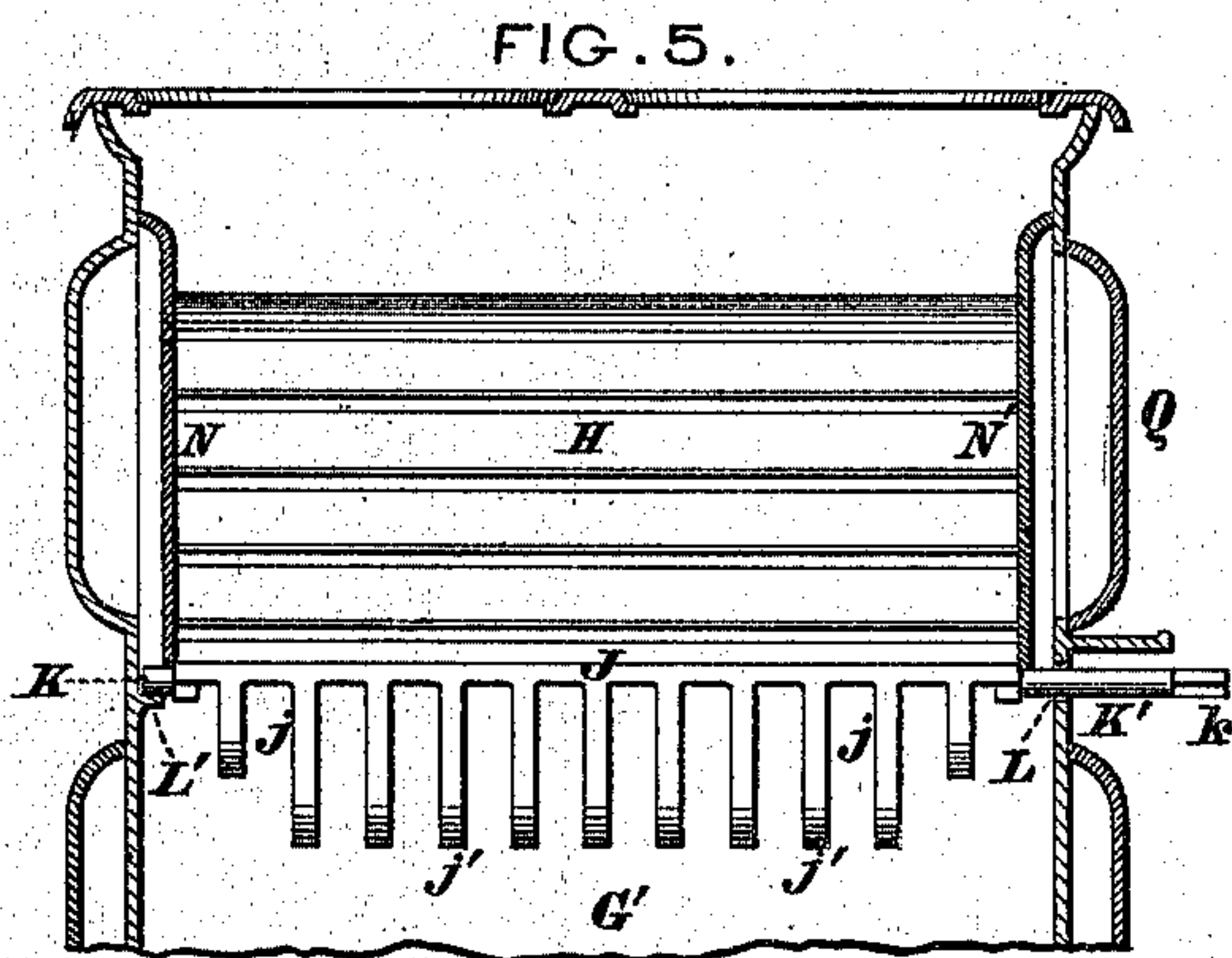
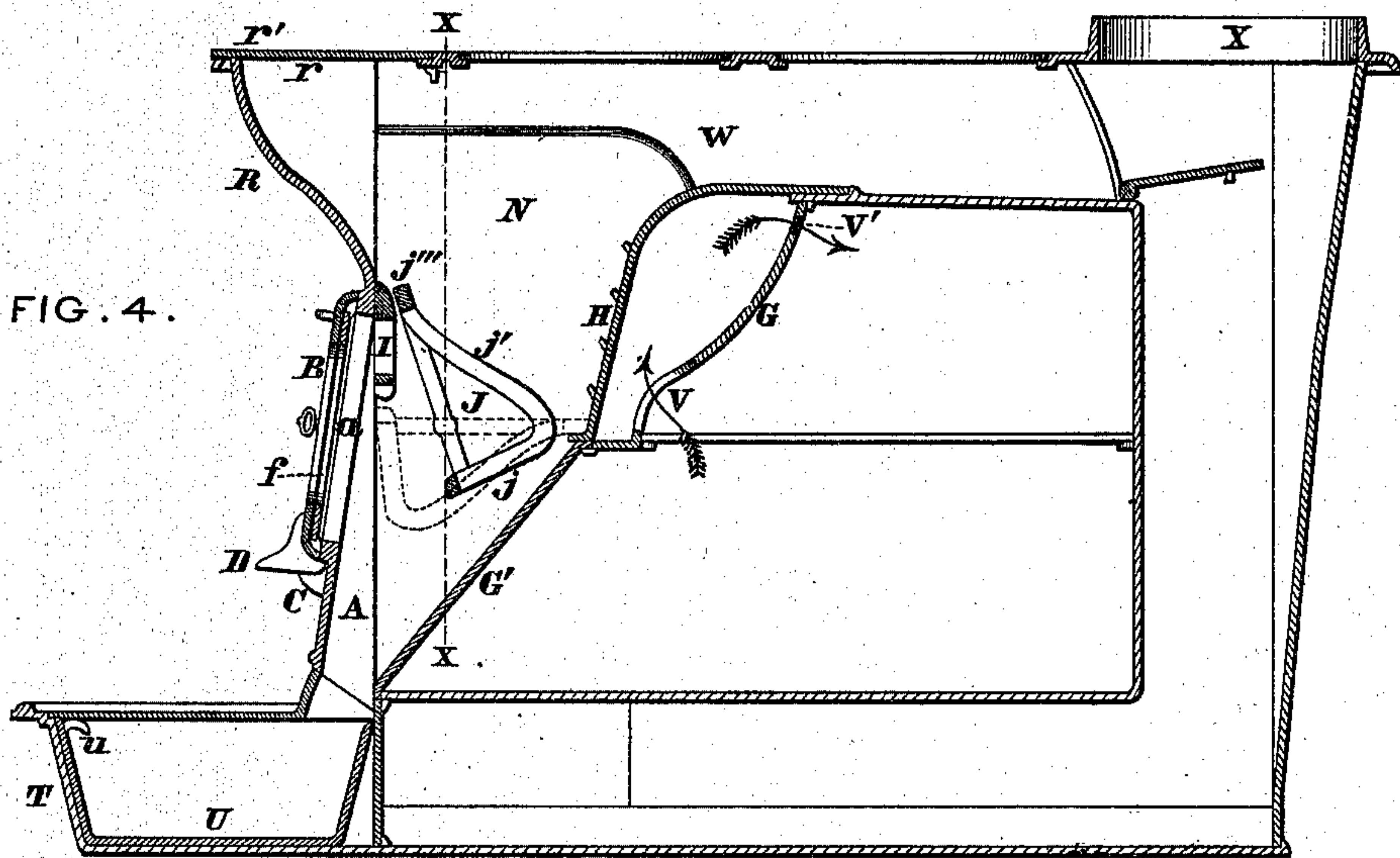
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UNITED STATES PATENT OFFICE.

WILLIAM C. DAVIS AND JOHN W. GARRISON, OF CINCINNATI, OHIO.

COOKING-STOVE.

Specification forming part of Letters Patent No. 103,306, dated May 24, 1870.

To all whom it may concern:

Be it known that we, WILLIAM C. DAVIS and JOHN W. GARRISON, both of Cincinnati, Hamilton county, Ohio, have invented a new and useful Cook-Stove, of which the following is a specification.

The fire-grate of our stove is divided horizontally. The lower member, when used for coal, consists of a shaking and dumping basket, and is replaceable by a wood-burning hearth, to which the upper part of the grate serves as a fender.

In the drawings, Figure 1 is a perspective view of a cook-stove embodying our improvements, the hearth and other removable plates being omitted. Fig. 2 is a perspective view of the ash-pan. Fig. 3 is a transverse section of the warming-shelf in position. Fig. 4 is a longitudinal section of said stove with a coal-grate in its dumped position. Figs. 5 and 6 are transverse sections at the line *xx*, showing the fire-place as adapted for coal and for wood, respectively. Fig. 7 is a perspective view, to a larger scale, of our coal-grate. Fig. 8 is a similar view of the wood-burning hearth or bottom.

That portion of the stove's front plate in front of and below the fire-grate has a bonnet or protrusion, A, which slopes outward and downward, in the manner shown, in order, without encroaching upon the oven-space, to permit the forward dumping of the grate, as hereinafter explained, and at the same time to afford sufficient opening for the free discharge of ashes. The upper portion of the bonnet A has an opening, *a*, which is closable at will by a door, B, whose pivots *b* rest in hooks C, that project from the bonnet, which pivots and hooks coact with lugs D to hold the door in the represented horizontal position when open, so as to constitute said door a shelf or hob for the purpose of holding a dish or pan. The door B, when closed, rests against the sloping front of the bonnet, and is thus, whether closed or open, held in position by its gravity, but, for additional security, may be held to its closed position by customary latches, E. The said fire-door may also be pierced with draft-apertures *f*, closable by a register, F. The front oven-plate should slope forward and downward, substantially as represented, and should have its upper portion, G, protected by a suitable fire plate or back,

H, which may have the represented ribbed and convex contour toward the fire. The lower portion, G', of said oven-plate, except those portions near the jambs, slopes downward and forward, as shown, so as to pass directly underneath the fire, whose heat it receives and transmits to the lower part of the oven, and whose ashes it discharges into the ash-pan.

Our fire-grate is divided horizontally into two portions or members, of which the upper member, I, is stationary, and serves both for wood and coal.

When the stove is to be used for burning coal, the lower member of our grate consists of a basket, J, composed of a series of bars in vertical planes, whose forward portions, *j*, are vertical or nearly vertical, while the portions *j'*, constituting at once the bottom and the back of the grate, slope obliquely upward and rearward to the fire-back H, on which they rest. The extremities of the bars *j j'* are joined by horizontal bars *j'' j'''*. The basket J is suspended, by pivots K K', in suitable bearings or sockets in the stove-jambs, the pivot K extending through the orifice L to the outside of the jamb, and terminating in a square or other non-circular head, *k*, to enable the basket to be shaken, or to be dumped forward, as shown in Fig. 4, by means of a wrench or key, M, which may have at one end an eye, *m*, for engaging with the square head of said pivot, and at its other end a hook, *m'*, for lifting the boiler-covers and other removable plates. The pivot K may rest in a niche, L', on the inside of the jamb-plate.

N N' are customary end fire-plates.

The two end bars of our basket depend, preferably, somewhat less than the others, so as, when the fire is low, to gather the combustible matters to the center, and by approximating a rounded form of cavity to secure the necessary conservation of heat for active combustion. The basket is so formed and supported upon its pivots as to remain at rest, whether in its proper or in its dumping position, and so that when in use all of its downward rays strike the lower portion, G', of the front oven-plate. The form of the bars *j j'* is such as, in their collective capacity in the grate, when the latter is in its proper position for use to gather the burning matters to the front, and when in the dumping position to

freely discharge the same, and to facilitate these functions the portions *j* may slightly overhang, as represented.

When the stove is to be used for wood fuel, the end fire-plates, *NN'*, are first removed, and the basket *J*, being withdrawn, is replaced by a suitable perforated hearth, *O*, which rests by lugs *oo'* upon interior projections, *P*, of the fire-chamber, one of which lugs, *o*, has a vertical position, which serves to close the orifice *L* in the stove-jamb. The withdrawal of the end fire-plates liberates the end fire-door, *Q*.

The upper portion of the front plate and the front portion of the top plate unite to form a hopper, *R*, through whose aperture *r* in said top plate the fire is fed or replenished. The hopper *R* is closed by a door, *r'*, which is hinged at its rear portion to said top plate.

Draft-registers *S* may be provided in the upper part of the front plate.

The bottom plate terminates in front in a sink or depression, *T*, which constitutes the ash-pit, fitted to occupy which is an ash-pan, *U*, (preferably of cast-iron,) having one or more inwardly-projecting ears or hooks, *u*, to enable the pan to be withdrawn by means of the wrench *M*.

In order to heat the air of the oven and at the same time to cool the fire-back, we provide, at different elevations in the portion *G* of the front oven-plate two series of apertures, *V V'*, through which the oven-air circulates in the manner indicated by the arrows. We secure active draft and combustion and prevent smoke by gradually increasing the flue-area from the throat *W* and the neck *X*.

Y is a warming-shelf to receive a pan or vessel. It may be made without openings, or may be perforated, as shown, so as to freely conduct to the bottom of anything placed upon it the heated air ascending from the stove sides. This shelf may be cast in one piece with the top or other plate of the stove, or may be bolted or otherwise secured to the stove, or may be simply engaged by lugs *y*, which entering notches *Z* in the jambs, may be held in

place by one or more bolts, *z*, passing through the top plate. Brackets *y'*, resting against the sides of the stove, may assist in supporting the shelf.

The specific forms and arrangements of parts selected to illustrate our invention may be variously modified. For example, when designed for the use of coal exclusively, the grate may consist of a single casting, and the bonnet *A* have sufficient protrusion to permit the forward dumping of the grate as thus modified. Two or more ears may replace the single ear or hook in the ash-pan. It will be seen that our grate dumping forward, in connection with the bonneted front, makes a large opening for the passage of cinders and ashes from the fire-chamber outward, and enables the oven to be extended forward under the entire fire-bed, so as to secure both more space and greater heat for baking purposes, whereas, if dumped backward in the usual manner, the rear edge of the grate would form, with the oven-plate, a contracted throat, liable to become clogged with cinders, &c., even when the oven is not extended under the fire; and our grate being separable can be replaced piecemeal as the parts warp or burn out.

We claim as our invention—

1. The horizontally-divided convertible wood and coal fire-grate, having an upper permanent member, *I*, to receive either the coal-basket *J* or the wood-burning hearth *O*, substantially as set forth.

2. The perforated wood-burning hearth or bottom fire-plate, *O*, provided with lugs *oo'*, to support same on projections *P*, one of which lugs, *o*, serves to close the orifice *L* in the stove-jamb.

In testimony of which invention we hereunto set our hands.

W. C. DAVIS.
J. W. GARRISON.

Witnesses:

GEO. H. KNIGHT,
JAMES H. LAYMAN.