

(No Model.)

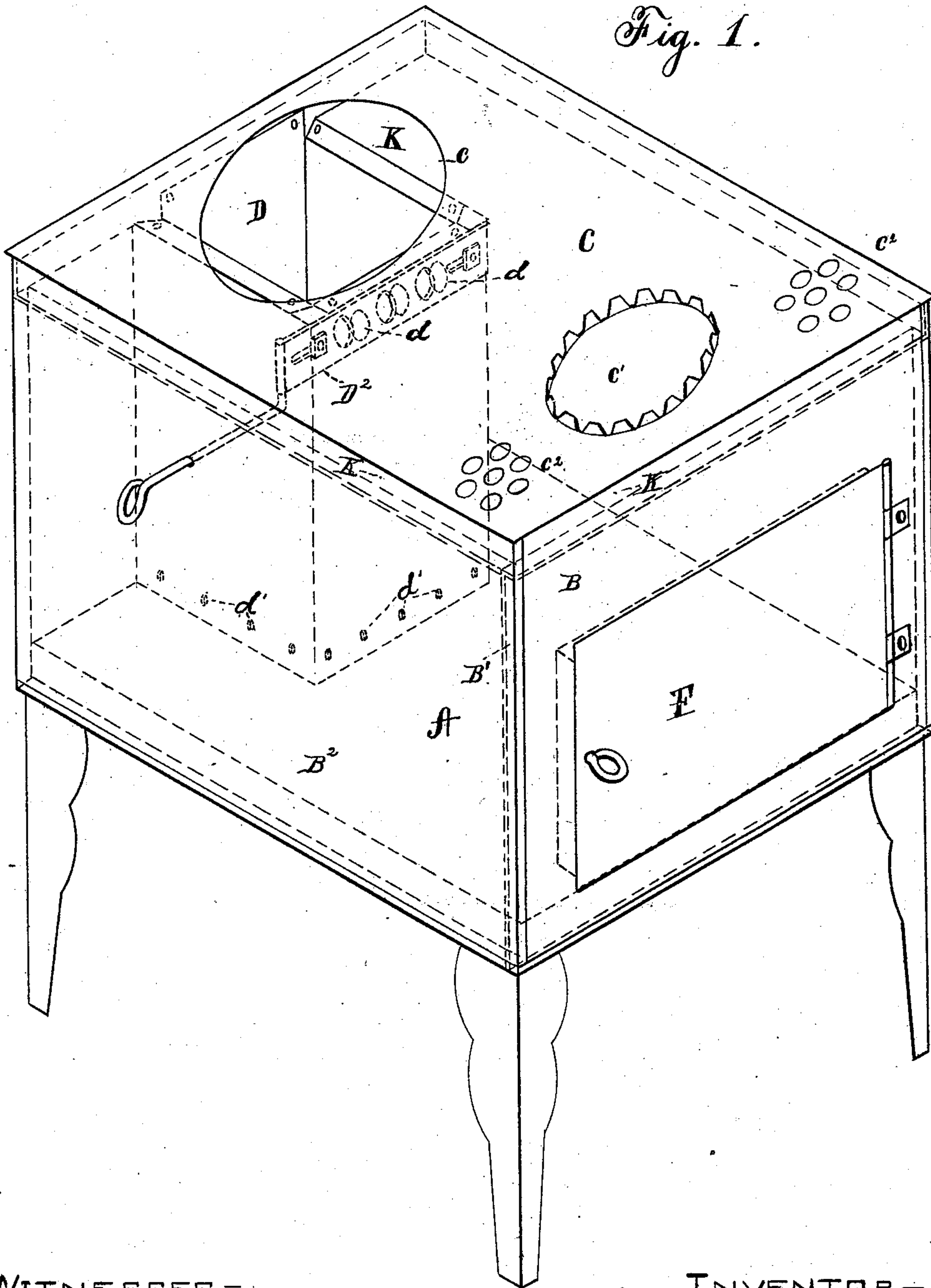
2 Sheets—Sheet 1.

J. JOHNSTONE.
OIL STOVE.

No. 281,515.

Patented July 17, 1883.

Fig. 1.



WITNESSES =

Phil. W. Hale
Thos. J. Godwin

INVENTOR =

John Johnstone
W. B. Hale
Assn. Atty

2 Sheets—Sheet 2.

OIL STOVE.

Patented July 17, 1883.



Phil. W. Hale.
Thos. J. Godwin

John Johnstone
W. B. Hale
Asso. Atty

UNITED STATES PATENT OFFICE.

JOHN JOHNSTONE, OF DETROIT, MICHIGAN.

OIL-STOVE.

SPECIFICATION forming part of Letters Patent No. 281,515, dated July 17, 1883.

Application filed November 21, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN JOHNSTONE, of Detroit city, county of Wayne, State of Michigan, have invented a new and useful Improvement in Oil-Stoves; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to that class of oil-stoves in which the lamp-chimney passes through a compartment separated from the oven by a wall in which are formed openings to permit the air heated in said compartment by contact with the chimney to pass into the oven, and in which, also, the hot air and products of combustion are discharged from the chimney into a flue-space separated by a metal wall from the oven.

The object of my invention is to utilize the heat of the stove-lamp for baking within the oven without materially decreasing the adaptability of the stove for cooking at the same time at the top.

Another object of the invention is to maintain a steady and efficient flame from the lamp without danger of heating the oil in the oil-chamber.

In the accomplishment of these objects the invention consists in certain novel combinations of devices, which will be hereinafter particularly described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the stove, showing a portion of the interior construction in dotted lines. Fig. 2 is a vertical longitudinal section on the line *xx* of Fig. 3. Fig. 3 is a cross-section on line *yy* of Fig. 2.

The letter C indicates the body or outer casing of the stove, and A is the oven therein, bounded at the sides and bottom by a dead-air space, B', between the oven-walls and the casing.

D is the chimney, and E E are the cones secured to its bottom plate. The chimney is provided with double walls, inclosing between them a flue, D', the exterior wall of which is provided near its foot with openings *d*', and

near its top with openings *d*, governed by a damper or register, D².

Between the top wall of the oven and the top plate of the stove-casing is a flue, K, extending over the entire top of the oven, and into this flue the upper end of the chimney opens. The chimney is arranged at one end of the oven, and is provided with a damper-door, F', and at the other end of the oven is door F, fitted to a doorway formed through the wall B of the casing and the adjacent wall of the oven. The top plate of the stove-casing is provided with the usual pot-holes, *c* and *c'*, and draft-holes *c*².

From the construction as now described and shown it will be seen that the heating of the oven A mainly results from a circulation therein of hot air, which, being first heated in the flue D' by contact with the inner wall of the chimney, rises in said flue and passes through the openings *d* to the oven, its flow into the oven being regulated by the damper D², from which a suitable operating-rod extends outside of the casing. The air passing to the oven through the openings *d* loses a portion of its heat as it leaves the heating-surface of the chimney-wall, and so has a tendency to fall toward the bottom B² of the oven. The air at the bottom at the same time, being drawn into the flue D' through the openings *d'*, is reheated, and ascends to the openings *d* and passes into the oven, thus keeping up a circulation of hot air therein as long as a suitable lamp is lighted at the bottom of the chimney. It will also be observed that the hot air and heated products of combustion from the chimney D are discharged into the flue K, and serve to heat such cooking-vessels as are placed on the top plate of the stove, the cooking at the top in no way detracting from the baking capacity of the oven.

The letter L designates the lamp, which is preferably provided with a hinged lid, F², for convenience in filling and supplying the wicks. I propose generally, also, to terminate the lower end of each of the wick-tubes with a perforated cage, so as to guard against the possibility of an explosion in case one of the wicks should be accidentally run down out of its tube while the other wick is burning. This construction will prevent the wick from being discharged into the interior, and the perfo-

rated cages will prevent the ignition of gases in the interior of the lamp from flame in said cages. I also prefer to provide either a dead-air space or a non-conducting material at *f* in the lid *F*², to prevent heating of the oil in the body of the lamp by downward radiation from the wicks.

G is a false top or shield located over the body of the lamp, and open about its edges, as shown, for securing a free circulation of cool air across the top of the oil-chamber.

H is a chamber surrounding the wick-tubes above the false top *G*, having its top and side walls perforated throughout for the purpose of securing an even distribution of air to the wicks, the upper portions of the tubes of which pass through the perforated top wall of said chamber.

I is an air-tube, which extends vertically through the oil-chamber of the lamp and terminates in the chamber *H*. A constant flow of cool air takes place through this tube while the wicks are burning, and serves to keep the oil cool in the oil-chamber. The stove-body is so supported that when the lamp is in its place its wick-tubes are at the proper points beneath the cones *E E* at the bottom of the chimney.

Having now fully described my invention and explained the operation thereof, I claim—

1. In an oil-stove, the combination, with the oven *A* and flue *K*, of the lamp-chimney *D*, inclosed by a flue, *D'*, partially surrounded by the oven, and separated therefrom by a wall having openings *d'* near its foot, and openings *d* near its top, the latter-named openings being governed by a damper, *D*², substantially as described.

2. In a lamp-stove, a lamp having a shield arranged above its top and below the tops of the wick-tubes, and separated from the top of the lamp by an air-space with outward openings, and an air-tube passing through the lamp-body and shield, for the purpose set forth.

3. The combination, with the lamp-body and its wick-tubes, of the shield arranged above the body and separated therefrom by an open air-space, the chamber arranged above said shield and having perforated walls, and the air-tube passing through the lamp-body and shield, and opening at its top in said chamber, below the tops of the wick-tubes, which pass through the said shield and chamber, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

JOHN JOHNSTONE.

Witnesses:

J. EDWARD WARREN,
SAMUEL E. THOMAS.