

(No Model.)

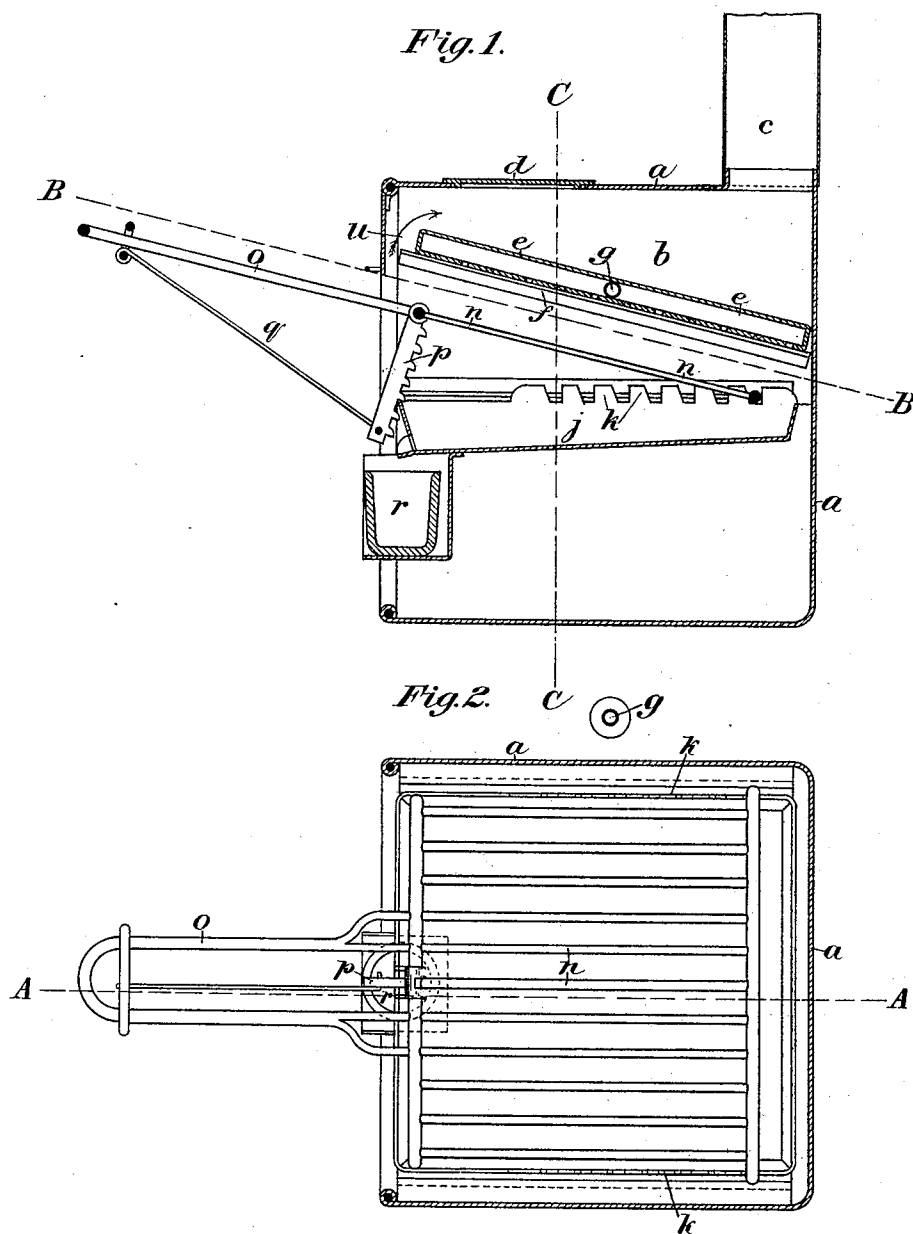
2 Sheets—Sheet 1.

W. SWINDELL.

GAS STOVE.

No. 366,701.

Patented July 19, 1887.



Witnesses.

W. D. Corwin
H. L. Gull

Inventor.

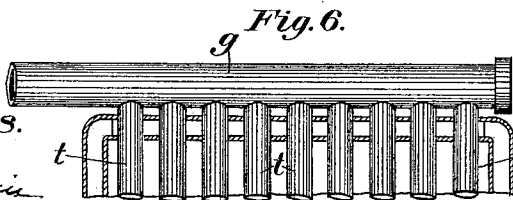
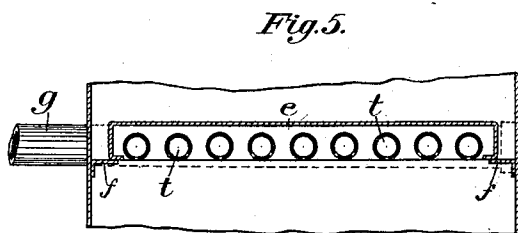
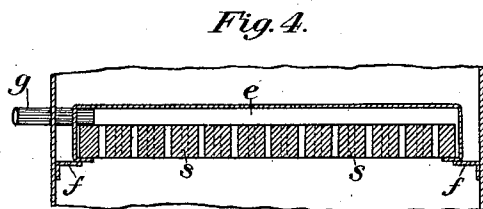
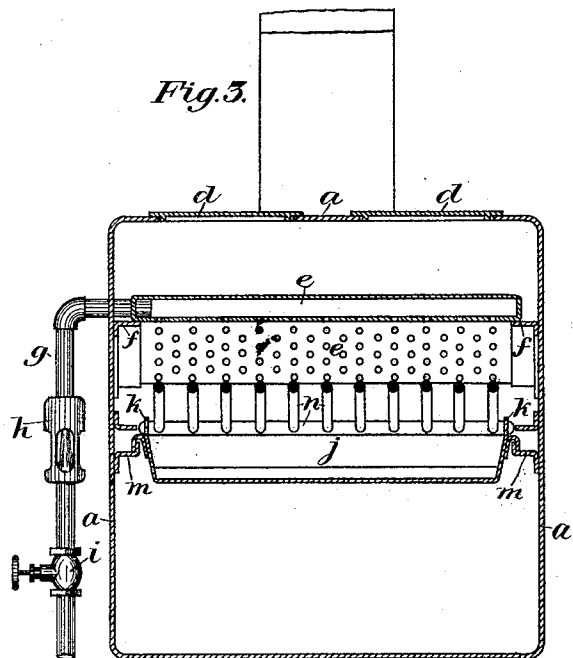
William Swindell
by his attys
Bakerwell & Kern

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Witnesses.

N. B. Convis

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UNITED STATES PATENT OFFICE.

WILLIAM SWINDELL, OF ALLEGHENY CITY, PENNSYLVANIA.

GAS-STOVE.

SPECIFICATION forming part of Letters Patent No. 366,701, dated July 19, 1887.

Application filed June 19, 1886. Serial No. 205,596. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SWINDELL, of Allegheny City, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Gas-Stoves; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention is particularly designed for use with natural gas, but is also useful with other forms of gaseous fuel.

To enable others skilled in the art to make and use my invention, I will now describe it by reference to the accompanying two sheets of drawings, in which—

Figure 1 is a vertical section of a cook stove provided with a broiler attachment, taken on the line A A of Fig. 2. Fig. 2 is a plan section taken on the line B B of Fig. 1. Fig. 3 is a vertical cross section on the line C C of Fig. 1. Figs. 4, 5, and 6 are views of modified details.

Like letters of reference indicate like parts in each.

The stove *a* is of any suitable form, having a combustion-chamber, *b*, a flue or chimney, *c*, and cooking-holes, closed by lids *d*, on the top. Supported in the chamber *b*, preferably in an inclined position upon flanges *f*, secured to the sides of the stove, is a hollow plate, box, or casing, *e*, having its under side perforated, as plainly shown in the drawings, and connected with this plate is a gas-pipe, *g*, which extends through the side of the stove, as shown in Fig. 3. This gas-pipe is provided with an ordinary mixer, *h*, or other device for supplying air to support combustion, and a cock, *i*, for controlling the admission of the gas. The plate *e* is shorter than the depth of the stove *a*, so that the products of the combustion which takes place under the plate can escape either around the front edge of the plate, as at *u*, Fig. 1, or at a similar opening at the back of the same. These products then pass out of the chimney *c*. Supported on flanges *m*, below the flanges *f*, is a drip-pan, *j*, having notched or serrated edges *k*, the purpose of which is to receive the inner bar or edge of the gridiron *n*. This gridiron is removable, being inserted through the front opening or door of the stove when needed for use. It has a handle, *o*, and a rack, *p*, connected to its front bar, which is

held in place by a brace, *q*, extending from the end of the handle. This rack *p* is to afford means for supporting the gridiron in an inclined position by hooking one of its teeth over the edge of the drip pan *j*. The position of the gridiron *n* with relation to the adjacent surface of the plate *e* can be varied, as will be evident, by placing it in different notches of the edges *k* of the pan *j*, and supporting its front edge correspondingly by the rack *p*. The bottom of the drip pan *j* is suitably inclined, and empties by a spout into a receptacle, *r*, for receiving the drippings from the cooking article.

By this construction it is apparent that the broiler *n* can be used in such a manner as to perfectly utilize the heat from the gas-flames without having its contents exposed to contact with the gas or the products of the combustion thereof, so that its flavor will not be affected in any way thereby. The inclined position of the plate *e* causes it to act as a reflector of heat into the room, while the combustion of the gas on the under side of the plate prevents its direct escape into the chimney-flue, and so increases the chances of its more perfect mixture with the air, and consequently more complete combustion, while at the same time the flame and products of combustion pass upward to the flue, the distance between them and the gridiron being regulated at will.

The construction shown, whereby the heat and products of combustion pass around the front end of the plate *e*, causes the same to be brought directly under the cooking-holes *d*, and constitutes a very perfect application of the heat at that point where it is needed for general cooking purposes. This construction can be applied to cooking-stoves and ranges of all ordinary descriptions, in many of which the flue *c* would be arranged beyond the bake-ovens and water-reservoir attachments, as will be understood, so that the heat may be applied thereto on its passage from the combustion-chamber *b* to the flue *c*. These things constitute no part of my invention, and do not require to be illustrated or further explained.

I do not limit myself to any particular means for supplying the gas to the plate *e*, nor to any particular construction of the air-mixer

h, as any suitable device for supplying air for combustion may be adopted.

In Fig. 4 I show a modification in the construction of the plate *e*, which consists in having its perforated under side formed of a refractory tile or tiles, *s*; and in Fig. 5 I show the plate *e* open on its under side and provided with a series of perforated pipes, *t*, the perforations being made direct and inclined so as to spread the flame-jets on all sides. In this instance the supply-pipe *g* would run across the ends of the pipes *t*, the latter being connected thereto, as shown in Fig. 6.

The operation of my improvement is obvious. The gas passing from the pipe *g* into the plate *e* spreads out therein and escapes through the perforations on the under side, becoming ignited as soon as it escapes, and burns with short jets or flames over the whole under surface of the plate *e*. The heat from this combustion is radiated down upon the broiler *n*, and then passes, together with the products of combustion, around the front edge of the plate into the upper part of the combustion-chamber under the lids *d*, and passes thence to the escape-flue *c*.

I do not limit myself to any particular construction of the plate *e*, except that it should extend across or nearly across the combustion-chamber *b* in an inclined position, as shown in the drawings, and discharge the gas therein from the under side, so that the combustion takes place below the plate.

The burner-plate *e* is removable, it being only necessary to detach the pipe *g* therefrom as it rests loosely on the flanges *f*. The flanges *f* are preferred as a supporting device, because they cut off the passage at the sides of the burner-plate *e*, and thus render it unnecessary to fit the burner-plate *e* closely to the stove. As far as the supporting feature is concerned, lugs or other suitable supporting devices would do, and they are mentioned as the equivalents of the flanges *f*. The drip-pan *j* is also removable. It may be supported in any suitable way.

I am aware that a hollow burner-plate having perforations on its under side is not new in gas stoves, and I do not desire to claim the same, broadly.

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

1. In a gas-stove, a hollow burner-plate inclined upward from the back of the stove toward the front thereof and provided with perforations on its under side, and a flue situate between the burner-plate and the front of the stove, forming communication between the two portions of the stove above and below the burner-plate, so as to permit of the upward passage of the products of combustion toward the front of the stove to radiate the heat forward and downward, substantially as and for the purposes specified.

2. In a gas-stove, a hollow burner-plate, *e*, inclined upward from the back of the stove toward the front thereof and provided with perforations on its under side, in combination with a broiler, *n*, situate below the plate and pivoted at its rear end, and a rack for adjustably supporting the forward end of the broiler, so as to regulate the distance between it and the burner-plate, substantially as and for the purposes specified.

3. In a gas stove, the combination of the broiler *n*, rack *p*, and drip-pan *j*, having serrated edges, substantially as and for the purposes described.

4. In a gas-stove, a hollow burner-plate formed of tubes placed close together, inclined upward from the back to the front of the stove and provided with perforations on their underside, in combination with a broiler, *n*, pivoted at its rear end below the burner-plate, and a rack for adjustably supporting the forward end of the broiler so as to regulate the distance between it and the burner-plate, substantially as and for the purposes specified.

5. The combination of a drip-pan supported in a stove having notched edges, with a grid-iron supported upon the drip-pan, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 5th day of June, A. D. 1886.

WILLIAM SWINDELL.

Witnesses:

W. B. CORWIN,
JNO. K. SMITH.