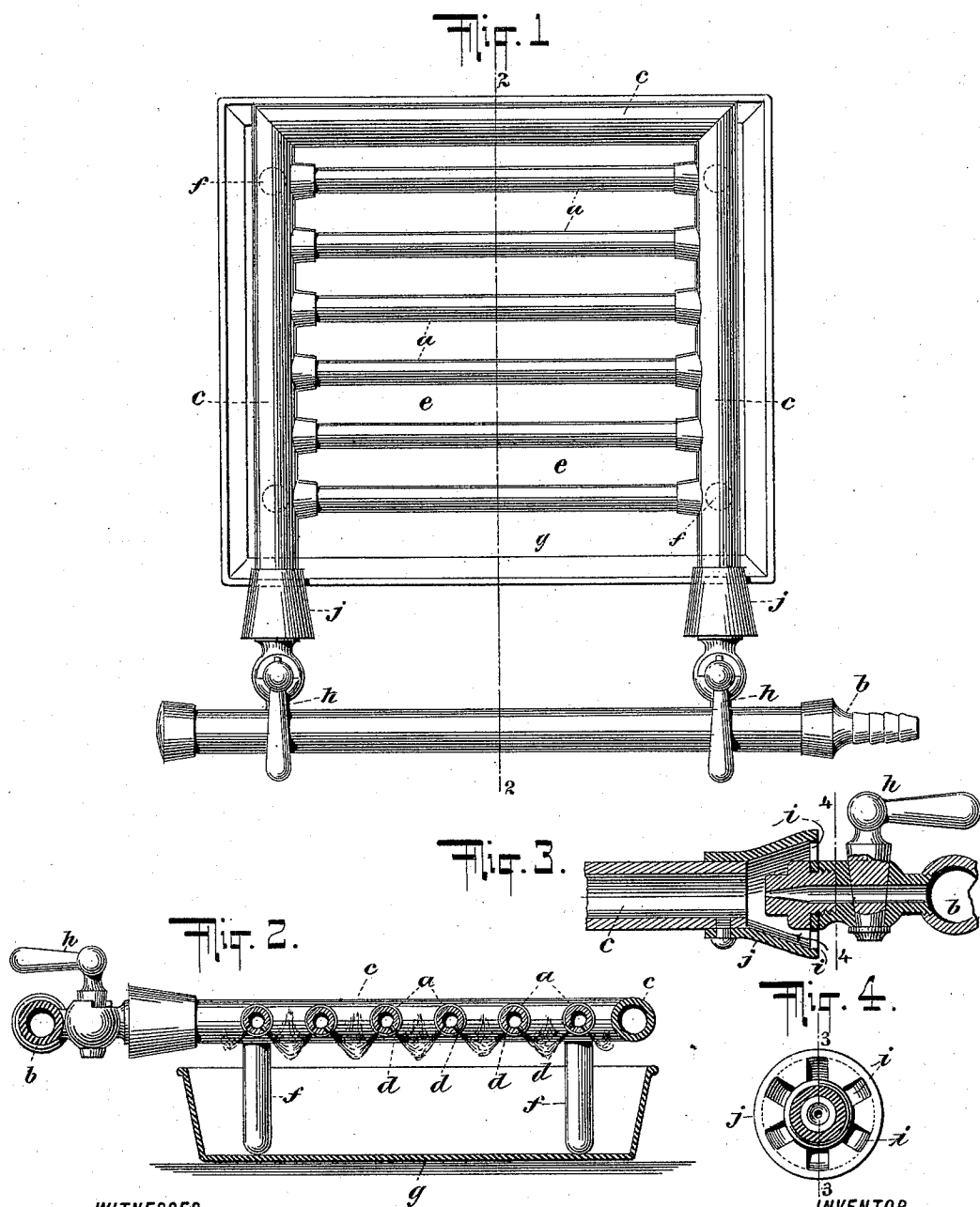


(No Model.)

F. A. LANGWITH.
GAS BROILER.

No. 585,631.

Patented June 29, 1897.



WITNESSES
Gustave Dietrich.
Wm. E. Smith

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UNITED STATES PATENT OFFICE.

FRANK A. LANGWITH, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO JOSEPH J. MYERS, OF SAME PLACE.

GAS-BROILER.

SPECIFICATION forming part of Letters Patent No. 585,631, dated June 29, 1897.

Application filed November 11, 1896. Serial No. 611,716. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. LANGWITH, a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Gas-Broilers, of which the following is a specification.

My invention relates to gas-broilers; and it consists in the novel arrangement and combination of parts hereinafter described and claimed.

The object of my invention is to produce a simple, cheap, and efficient gas-broiler wherein the material to be broiled will be free from contamination with unconsumed gases. To this end I provide a gas-broiler wherein the gas-outlet jets or openings are on the side opposite or nearly opposite the supporting-surface for the material to be broiled, and the preferred arrangement is that of a horizontal broiler wherein the supporting-surface for the material to be broiled constitutes conveying means for the gas and from which the flame is projected in a downward direction. By this means the flame not only acts directly against the material to be broiled, but likewise acts to heat the supporting-surface therefor, and should there be any unconsumed gases projected from the burners such gases will be ignited and consumed by the flame in their upward passage therethrough, so that the meat or other material being broiled will not be contaminated by unconsumed gases, as in broilers heretofore used.

In the accompanying drawings, wherein like letters indicate corresponding parts, Figure 1 is a plan view of a broiler embodying my invention. Fig. 2 is a longitudinal vertical section on the line 2 2 of Fig. 1. Fig. 3 is a fragmentary sectional detail of the air-and-gas-mixing device. Fig. 4 is a transverse sectional view of the same on the line 4 4 of Fig. 3.

In the drawings, *a* represents a series of broiler-tubes, which likewise form means for conveying gas therethrough from the nipple or source of supply *b* through the intermediate feeder-pipes *c c*. These broiler-tubes are perforated to form gas-outlet openings *d*. These gas-outlet openings are arranged on the side of each of the tubes opposite or sub-

stantially opposite to that which constitutes the broiling-surface thereof, and are preferably arranged at an angle to a horizontal plane, so that the flames are projected therefrom that the caloric therefrom will be transmitted directly to the material to be broiled through the spaces *e* between the broiler-tubes and directly to the broiler-tubes themselves. This broiler may be provided with feet *f* to support it within a drip-pan *g*, and is provided with a suitable valve or valves *h* to control the supply of gas thereto, openings *i* being provided for the admission of air to the mixer *j*.

In use gas is conveyed through the nipple *b*, through the valves *h*, where the force of the gas causes an induction of air through the openings *i* in the mixing device, the air and gas being conveyed in the ordinary manner through the supply-pipes *c* to the broiler-tubes and projected therefrom substantially in the manner illustrated in Fig. 2.

It will be observed that by my invention any unconsumed gas must first pass through the flame before it can contact with the material being broiled and that in its passage through the flame it must necessarily be ignited and consumed.

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

1. A gas-broiler having gas-outlet openings opposite the broiling-surface thereof.

2. A gas-broiler comprising broiler-tubes which constitute broiling-surfaces, means for conveying gas to said tubes and gas-outlet openings in the sides of the tubes opposite to the broiling-surfaces.

3. A gas-broiler comprising broiler-tubes, the upper sides of which constitute broiling-surfaces, means for conveying gas to said tubes and gas-outlet openings in the tubes directing the flame downward.

4. A gas-broiler consisting of fuel-tubes and adapted to hold a substance to be broiled upon the obverse side, and to confine the flames to the reverse side of said broiler.

FRANK A. LANGWITH.

Witnesses:

CHARLES E. SMITH,
HARRY M. TURK.