

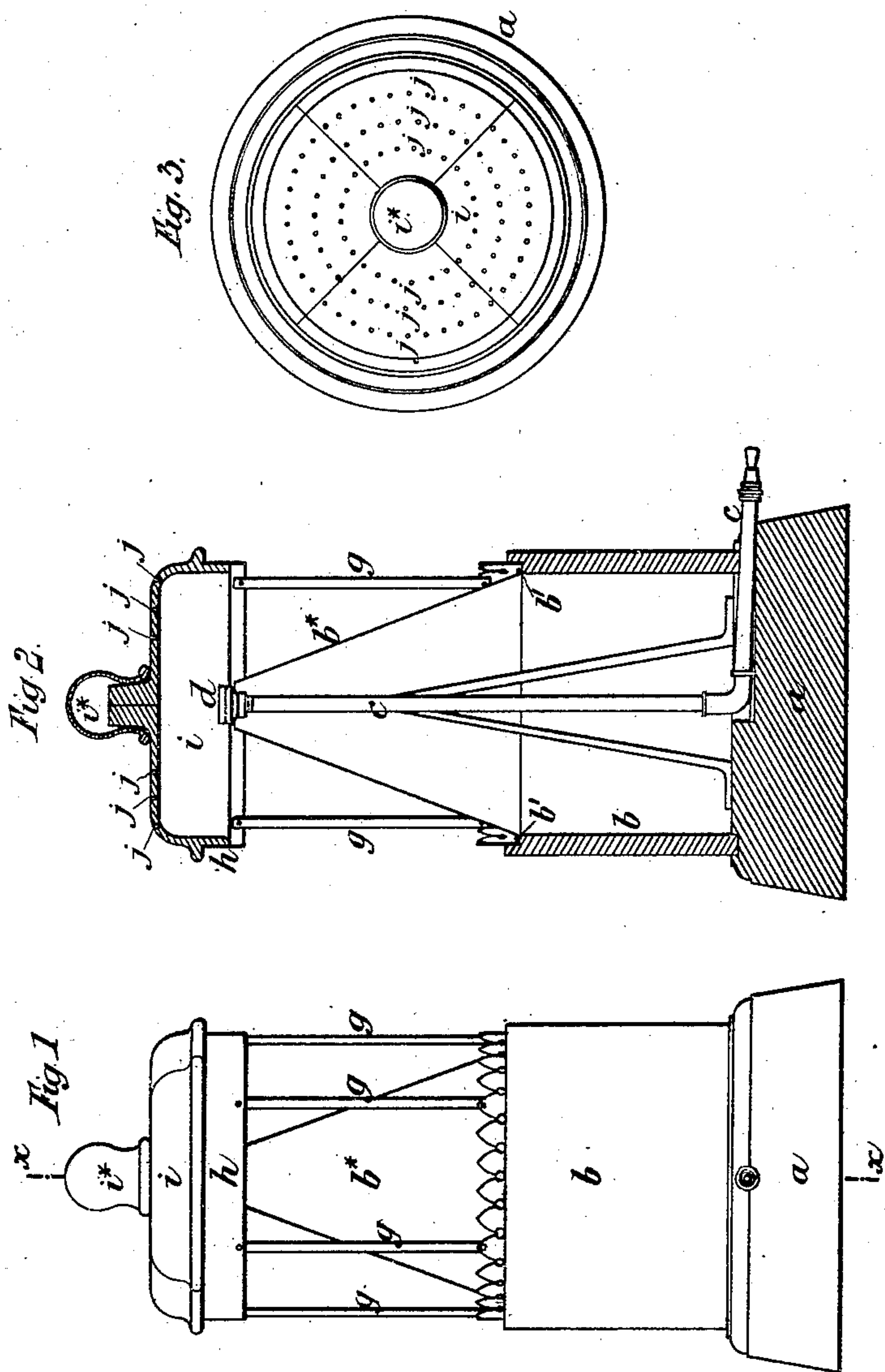
(No Model.)

C. A. BRODRIBB.

GAS STOVE.

No. 246,067.

Patented Aug. 23, 1881.



Witnesses.

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UNITED STATES PATENT OFFICE.

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GAS-STOVE.

SPECIFICATION forming part of Letters Patent No. 246,067, dated August 23, 1881.

Application filed June 28, 1881. (No model.) Patented in England October 27, 1880.

To all whom it may concern:

Be it known that I, CHARLES AIKIN BRODRIBB, of Hastings, England, surgeon, have invented new and useful Improvements in Gas-Stoves, (for which I have obtained a patent in Great Britain, No. 4,395, bearing date October 27, 1880,) of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in gas-stoves, and has for its object such a construction and combination of the various parts of the same that when in use they will be perfectly free from smell, while at the same time they will be bright and cheerful in appearance, and will diffuse a greater amount of heat than gas-stoves as heretofore constructed.

One of the greatest drawbacks or disadvantages connected with the use of gas-stoves heretofore in use is the smell which they produce, and which arises from the improper or imperfect combustion of the carbon and other products evolved from the burning jet or jets of gas. Moreover, in many cases the heat is concentrated around the burner or burners and is improperly diffused, or is given off or radiated in one direction only. By my invention, however, I obviate these disadvantages, and effect the proper consumption of the carbon and other products of combustion, while at the same time insuring the diffusion of the heat in all directions.

My invention is illustrated in the accompanying drawings, in which Figure 1 is an elevation of my improved gas-stove, and Fig. 2 is a central vertical section of the same on the line *x x*, Fig. 1. Fig. 3 is a plan or top view of the said stove.

Like letters indicate the same parts throughout the drawings.

In carrying this invention into practice I arrange upon a suitable base or support, *a*, formed of wood, metal, china, porcelain, or other suitable material, a casing or cylinder, *b*, which is preferably formed of porcelain or similar ware, and which may be decorated in any appropriate style or manner to give an ornamental and cheerful appearance to the stove, and to avoid the trouble and inconvenience of polishing or otherwise keeping in proper condition a metal cylinder, though, if desired,

this cylinder may be formed of metal or any other suitable material. Through this cylinder the gas-supply pipe *c* extends upward and terminates at the upper part of the stove in the burner *d*, which is preferably shaped as shown—that is to say, it is a flat cylindrical piece placed horizontally on the end of the pipe, and provided in its periphery with a series of holes from which the jets or flames of gas radiate. The said pipe *c* is supported centrally in the casing by a series of stays extending up from the base, or by stays on the casing itself, or in any other suitable manner. Upon the aforesaid casing or cylinder *b*, I form an interior seat or ledge at *b'*, (or, if the said cylinder is of metal, I provide projections or lugs thereon,) to support a conical reflector, *b**, which is preferably formed of copper, and which should be highly polished. This reflector surrounds the gas-supply pipe. Its base rests on the said cylinder, and its apex is nearly level with the lower edge of the burner. Extending upwardly from the said support or cylinder *b* are rods or standards *g*, which are connected at their upper end to a ring or rim, *h*. This ring or rim is level, or nearly so, with the burner *d*, and is adapted to support a cover or top, *i*.

The construction and arrangement of this cover, lid, or top constitute a very important feature of my invention, as will appear from the following description: It is formed of terracotta, fire-clay, or similar refractory porous material, and is preferably made arched, hollow, or concave, as shown, so as to cover or surround the burner and the jets or flames of the same; and it will be observed that the said cover is placed very near the burner. The said cover is preferably formed in four parts or divisions to avoid the danger of fracture, which, if the said cover were made in one piece, might in some cases be caused by the intense heat to which the said cover is subjected, and for appearance' sake I prefer to place over the central upwardly-extending portions of the said parts of the cover a hollow cap or knob, *i**. The said cover is perforated with small holes *j*, as shown. These holes or perforations are preferably arranged in one or more circles concentric with the periphery of the cover, and are of such a size and number that all carbon

and other products of the partial combustion of the gas will be thoroughly burned in passing through the cover. I have ascertained by a series of careful experiments that the number and size of these holes must be properly proportioned to the capacity of the gas jets or burners; otherwise the desired result will not be obtained.

As above stated, the cover *i* is placed in close proximity to the gas-jets, and therefore without the said perforations the jets would be partially smothered, and the only escape for the products of combustion would be at the exterior edge of the cover. On the other hand, if the holes are made sufficiently large or numerous to permit a very free upward draft, the carbon, sulphur, and other products of combustion would pass through the cover too quickly and escape in a partially-burned condition, with the usual results of disagreeable odor and smoke. Therefore the size of the said holes must be such as to permit the products of combustion to enter them and be consumed therein; but the combined area of these holes must not be sufficient to create a draft to such an extent that the smoke or products of combustion will pass through and escape without being thoroughly consumed. By this contrivance I render the stove perfectly free from the smell of partially-burned gas or of sulphur, or other of the elements therein, and as there are no metal parts in the stove which are liable to become heated I avoid the unpleasant odor of hot metal. Moreover, by arranging the conical reflector below the burner and cover, the heat thrown downward from the same will be diffused in all directions equally, and the stove will present a bright and cheerful appearance.

By the above-described construction and arrangement of the base *a*, cylinder *b*, conical reflector *b**, standards *g*, ring *h*, and the cover *i*, the stove is made very convenient for removal or transport, as it may be packed in small compass, and if one of these parts is broken it may be readily replaced. In some cases I provide the said stove with means for evaporating liquid for moistening the surrounding atmosphere. For this purpose I arrange within the aforesaid casing or cylinder a receptacle for the liquid, and in the interior of the aforesaid casing I provide a sheet or ring of felt, spongio-piline, or other absorbent material, which dips into the liquid in the receptacle and extends up beyond the bottom of the reflector, so that as the liquid rises in the absorbent material by capillary attraction it will

be evaporated or converted into steam or vapor by the heat given off or diffused by the said reflector. When the casing or cylinder and base are made of china or similar material, the liquid may be contained therein, so that there will be no necessity for providing a separate receptacle for this liquid.

Having thus fully described the said invention and shown how the same may be conveniently and advantageously carried into practice, I wish it understood that I am aware that gas-stoves have been already made with conical reflectors, and that other gas-stoves have been provided with terra-cotta or fire-clay covers placed over the burners.

I therefore do not claim, broadly, or irrespectively of the peculiar arrangement of the parts of my stove, as above described, the use of a reflector, or of a cover or top formed of refractory material, either with or without holes in the same; but

I claim—

1. A gas-stove which has the burner or burners *d* placed just above the apex or top of a conical reflector, *b**, and immediately below and within a cover or top, *i*, of refractory porous material, which is perforated with holes *j*, whose number and area are properly proportioned to the capacity of the burner, all substantially as and for the purposes specified.

2. The cover or top *i*, consisting of two or more parts or sections constructed of fire-clay or other refractory porous material, and so formed that when in place the sections will fit closely together and within the ring or rim *h*, or an equivalent part of a gas-stove, substantially as and for the purpose specified.

3. The base *a*, the cylinder *b*, with the interior seat or ledge, the conical reflector *b**, supported on the said seat or ledge and extending upward nearly to the top of the stove, the standards *g*, and rim *h*, the cover *i*, fitted in the said rim, and the burner *d*, arranged immediately above the top of the said reflector and below the said cover, all constructed and fitted together in the manner above specified, so that they may be readily and conveniently taken apart to allow the stove to be packed for transport, substantially as set forth.

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Witnesses:

HERB. YOUNG,

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*Clerks to Messrs. Young & Goodwin,
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