

T. SHAW.
Gas Stove.

No. 25,549.

Patented Sept. 20, 1859.

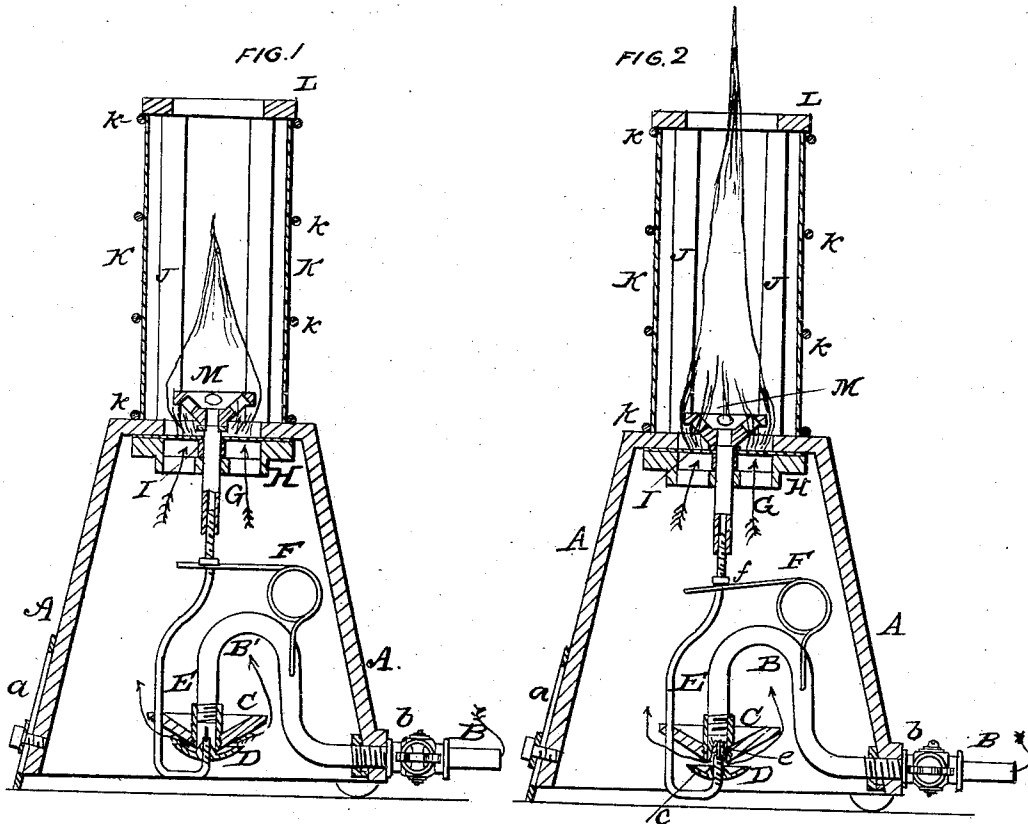


Fig. 3

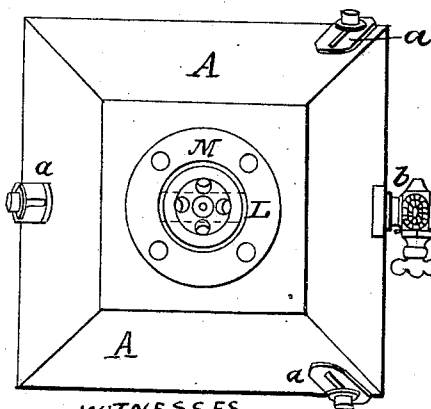
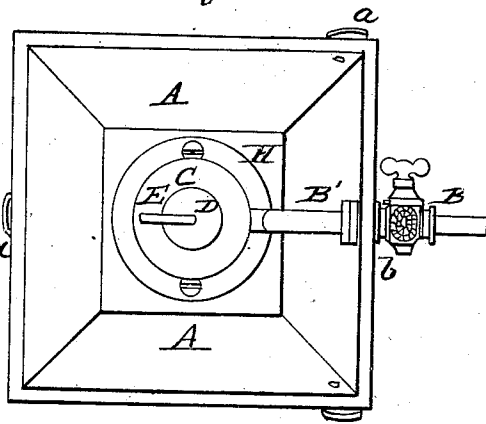


Fig. 4



WITNESSES
Henry Houston
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INVENTOR
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UNITED STATES PATENT OFFICE.

THOMAS SHAW, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND J. C. BAILEY, OF SAME PLACE.

STOVE.

Specification of Letters Patent No. 25,549, dated September 20, 1859.

To all whom it may concern:

Be it known that I, THOMAS SHAW, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and Improved Gas-Burning Stove for Artisans; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My invention relates to an apparatus for producing from a jet of gas no longer than that which escapes from an ordinary gas burner, a flame of such extent and of such intense heat, as to be well adapted for glass blowers, jewelers, tinsmiths, and other artisans; and my invention consists in certain adjustable legs combined with a casing for receiving the gas, and with a wire gauze cylinder which surrounds the flame and arranged in the manner described hereafter so as to serve the double purpose of regulating the admission of air to the casing and of tilting the whole more or less on one side thereby rendering the stove more convenient for the use of artisans in particular cases.

The valve for the admission of gas is regulated by the object submitted to the flame, in conjunction with certain devices described hereafter, or their equivalents, so that on removing the object, the flame is reduced and an unnecessary consumption of gas prevented.

In order to enable others to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawing which forms a part of this specification—Figure 1, is a sectional elevation of my improved stove for artisans, with the valve for regulating the flow of gas partly open. Fig. 2, the same as Fig. 1, with the valve full open. Fig. 3, a plan view of the stove, and Fig. 4, a plan of the stove inverted.

Similar letters refer to similar parts throughout the several views.

A, is a hollow cast-iron casing open on the under side and supported on adjustable legs *a, a*.

B, is a tube to be connected by means of a flexible or other suitable pipe to any ordinary gas burner, the tube B communicating with the bent tube B', in the interior of the casing when the communication is not inter-

cepted by the plug of an ordinary cock *b*. The bent pipe B', is furnished at the end with a plate C, of the form of an inverted cone on the apex of which is the seat for the valve, the latter consisting of a cone shaped projection secured to the middle of the circular plate D, which is concave on the upper side. The valve is screwed onto the bent end of the rod E, which has a strip *e*, arranged to strike against the end of the bent tube B', and thus regulate the upward movement of the valve D, which is effected by a spring F, secured to the bent tube B and bearing against a nut G, screwed onto the rod E, the end of the latter screwing into a rod G, which passes through and is guided by a bracket H, attached to the upper end and inside of the casing A. In the top of this casing is a circular or other suitably formed opening, and between the top of the casing and the bracket A, is screwed a disk I, of wire gauze.

Any convenient number of vertical rods J, are fastened to the top of the casing around the edge of the opening and to these rods is attached a cylinder K, of wire gauze by means of metal rings *k*, the top of the rods being secured to a ring L. It will be observed that the rod G, projects upward through the opening in the top of the casing, and that it is furnished at the top with a plate M, in which are openings to allow for the free passage of the gas.

When the cock *b*, is opened the gas will pass through the bent tube B', through the central opening of the plate C, and through the annular space between the valve D, and its seat, and thence into the interior of the casing A, passing upward through the wire gauze disk I, and into the interior of the wire gauze cylinder K, where it is ignited. As the gas passes through the interior of the casing A, it becomes thoroughly mixed with the air, which entering below the bottom of the casing causes a more perfect combustion of the gas. The wire gauze disk I, prevents the gas within the casing from becoming ignited and forms the base of the flame which from this point gradually becomes smaller until it terminates in a sharp point the height of the flame depending upon the amount of gas admitted to the casing A. A steady flame of intense heat at the top is thus produced, the steadiness and the intense heat being caused by the air passing

through the meshes of the wire gauze cylinder K, as well as by the air which passes through the casing with a rapidity corresponding to the heat generated.

5 By adjusting the valve D, on its rod E, so that a plentiful supply of gas may enter the casing, the flame will rise above the top of the wire gauze cylinder K, at which point its heat is so intense that it will serve all
10 the purposes of an ordinary blow pipe without the usual blast. The apparatus is thus well adapted to the use of glass blowers, jewelers, or other artisans who require a concentrated heat in practicing their trades.
15 The stove is especially well adapted to the heating of the soldering irons used by tin-smiths, the iron being placed within the gauze cylinder, and resting on the plate M, so that the weight of the iron will depress
20 the plate and rods E, and thereby move the valve D, away from its seat thus allowing sufficient gas to escape to cause a flame of the extent and heat desired.

When the iron is removed for use, the rod
25 E, being released from all pressure, will by the action of the spring F, rise and move the valve D, nearer to its seat, absolute contact of the valve with this seat being prevented by the strip e, on the bent end of
30 the rod E, striking against the end of the pipe B', so that sufficient gas may continue to escape to keep the gas ignited preparatory to the re-insertion of the soldering iron.

35 By allowing more or less air to be admitted below the casing A, the quantity of the flame may be regulated to suit the purpose

for which it may be required, hence the use of the adjustable legs a, which consist of slotted plates with a screw passing through the slot so that by adjusting the legs the casing A, may be brought near to or raised
40 farther from the slab or table on which the legs rest, the space for the admission of air being thus increased or diminished at pleasure.

45 By so adjusting the legs that one shall project more than the other the whole apparatus may be made to lean on one side thus rendering it more convenient for the artisan in some cases.

50 I lay no claim to the separate use of the gauze cylinder or the adjustable legs; but

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

1. The adjustable legs a, when combined
55 with the casing A, and its gauze cylinder and arranged as set forth so as to serve the double purpose of tilting the stove more or less on one side, and regulating the admission of air into the casing.

60 2. Operating the valve D, for regulating the flow of gas into the casing by means of the object to be heated by the flame, in conjunction with the devices herein set forth,—
65 or their equivalents.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS SHAW.

Witnesses:

HENRY HOWSON,
CHARLES D. FREEMAN.