S. L. WIEGAND.

Gas Heating Apparatus.

No. 40,591. Patented Nov. 10, 1863.

Fig.

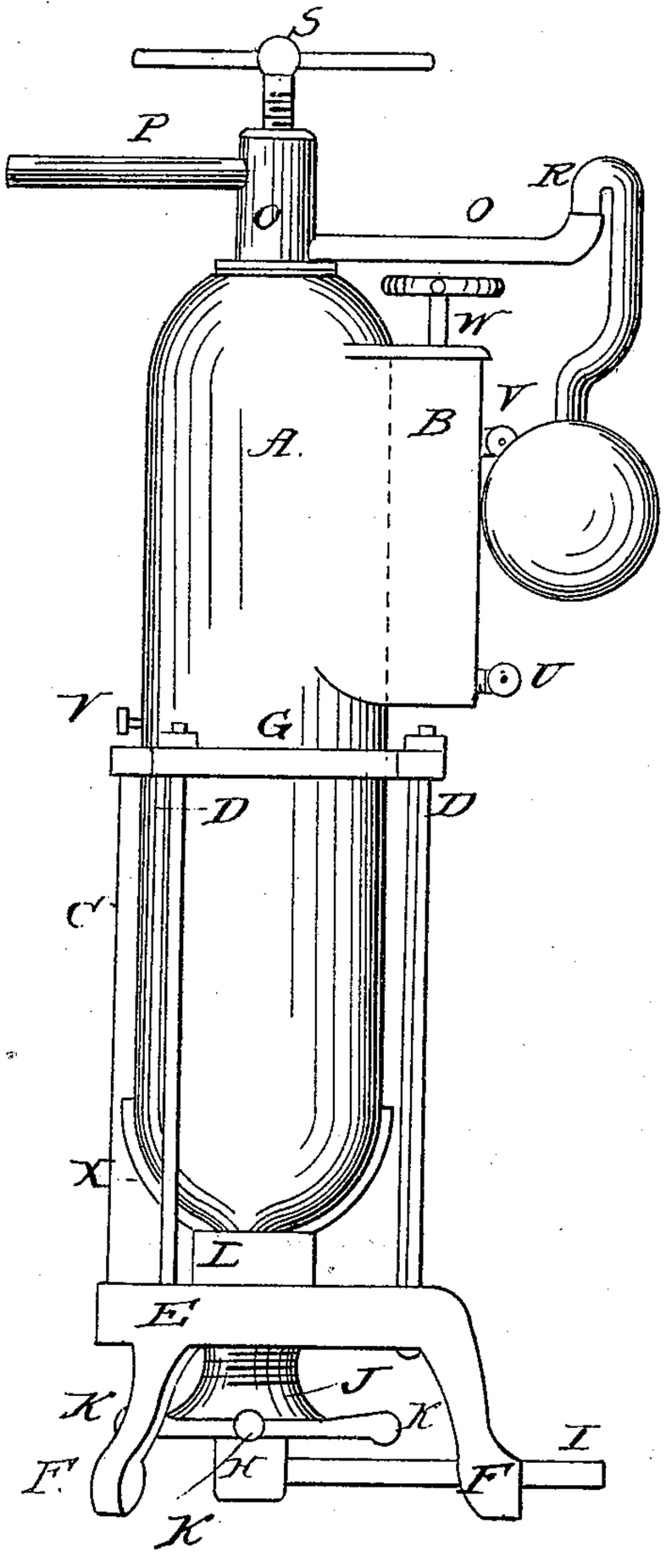


Fig.

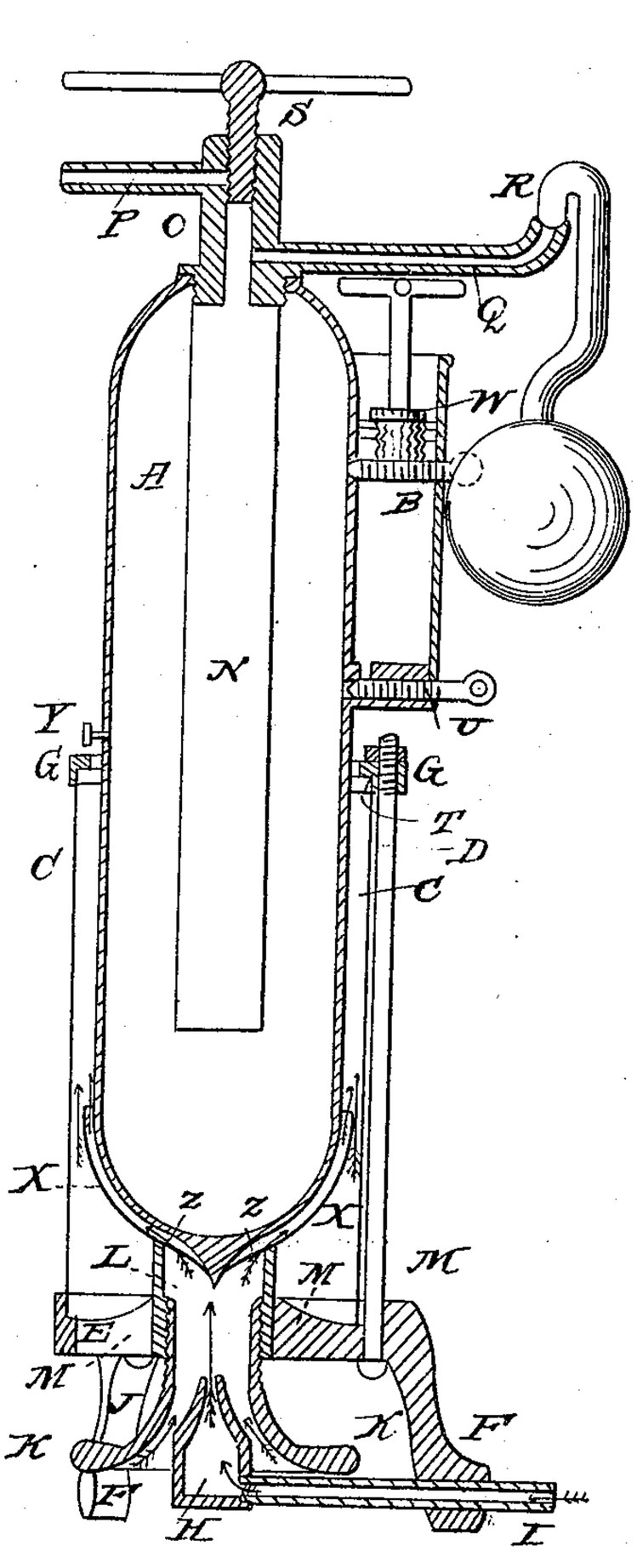
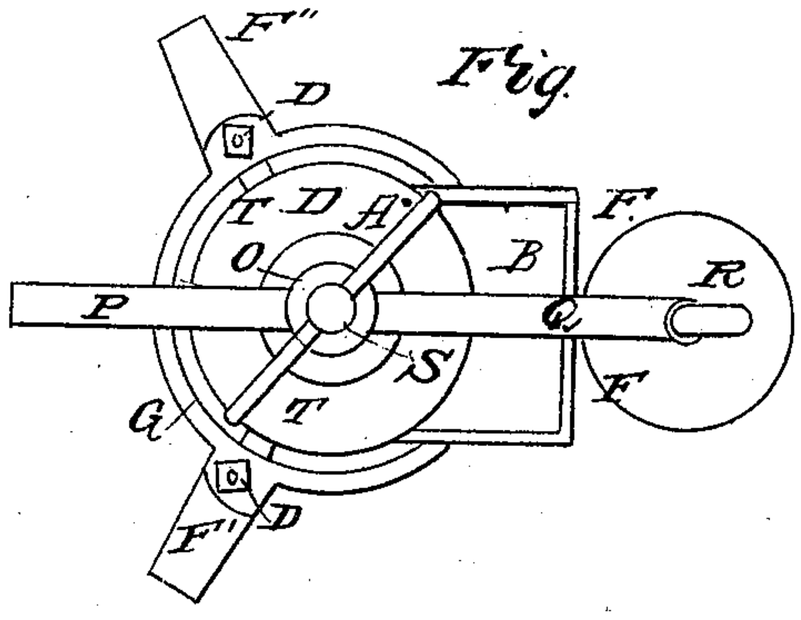


Fig.



Witnesses

John White

W. N. Dougherty

Inventor

S. Lloyd Wiegand

UNITED STATES PATENT OFFICE.

S. LLOYD WIEGAND, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO ABRAHAM HART.

IMPROVEMENT IN GAS-HEATING APPARATUS.

Specification forming part of Letters Patent No. **40,591**, dated November 10, 1863; antedated November 2, 1863.

To all whom it may concern:

Be it known that I, S. LLOYD WIEGAND, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and improved apparatus for burning gases and vapors, and utilizing the heat generated thereby; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is an elevation of this apparatus. Fig. 2 is a sectional elevation exhibiting the internal arrangements. Fig. 3 is a horizontal plan.

The same letters of reference refer to the same parts in several figures.

A represents a boiler secured to the base E by means of the bolts G and ring G bearing upon the three projections marked T, cast upon the sides of the boiler. To the side of the boiler A is attached a feeding apparatus, B, provided with a valve, W, for receiving water, and a valve, U, for discharging water into the boiler A, and a valve, V, for admitting steam from the boiler. The operation of this feeder is identical with the operation of the oil-globes in general use for lubricating steam-cylinders and steam-valves. A neck, O, is screwed into the top of the boiler, and contains the screw-valve S for opening and closing the connection, and regulating the flow of steam through the pipe P, from which the steam is conducted to be used. Upon the side of the neck O opposite to the pipe P is another pipe, Q, having at its extremity a safety-valve, R. Inside of the boiler A is a cylindric tube, N, made of wire-gauze, attached to the neck O, for the purpose of preventing the water from foaming up into and passing out of the pipes P and Q.

Y is a small screw, made slightly conical, screwed into the boiler A, by loosening which a deficiency of water in the boiler A can be ascertained.

I is a tube for receiving gas or vapor, and conducting it to the jet-pipe H, from which the gas issues and induces a current of air through the inverted funnel J.

L is a tube making in effect a continuation of the funnel J, and affording points of support to the boiler A, which rests upon the projections Z Z, which may be formed on the boiler A or on the tube L, or may be made a separate piece or pieces, as may be most convenient in constructing them.

X is a funnel made of wire-gauze or other perforated material of such form as to correspond with the shape of the boiler, and is an extension of the tube L.

C is a fender or chimney, of wire-gauze or plate metal, for the purpose of protecting the flame from cold drafts of air and confining it to the boiler.

M M are arms for supporting the tube L within the base-ring E, and F F′ F″ are feet for supporting the base E.

K K K are handles projecting from the funnel J for the purpese of rotating it, and thus screwing it up or down in the tube L, in the manner which will be understood by reference to the parts in Fig. 2, the space or annular opening between the funnel J and jet-tube H being thus regulated at the pleasure of the operator.

The operation of this apparatus is as follows: The flame of a lighted taper or match being introduced between H and J, a small amount of gas or combustible vapor introduced through the tube I is thus ignited at the aperture of the jet-pipe H. Upon increasing the flow of gas in I, the flame is driven up through the funnel J and tube L, and induces an upward current of air in the direction of the arrows in J and L, which, mingling with the gas, burns in the funnel X, and if more gas passes into the funnel X than can burn there, it escapes through the apertures in the guaze, and mingling with the air passes up inside of the fender or chimney C, and is there consumed, an upward current of air being induced and maintained by the heat through the spaces between the arms M and tube I and base-ring E, which current, passing between the funnel X and fender or chimney C in the direction of the arrows in Fig. 2, supplies any deficiency of air for the complete combustion of the gas. The supply of air through J is regulated by screwing it up or down.

I do not claim, broadly, the use of a jet-burner, H, and an inverted funnel and chimney for introducing a supply of air to the jet, the same being old and well known as the

Bunsen burner, and I also disclaim the burning of mixtures of gas and air by admitting additional supplies of air through apertures of wire-gauze overhanging the burner, or any apparatus for so doing, the same having been done by Thomas Shaw, of Philadelphia, and patented by him; but

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

1. The combination of the burner H and adjustable cap J with the funnel X, when used in the manner and for the purpose set forth.

2. Combining the external fender or chimney, C, with the burner H, adjustable cap J, and a funnel, X, for the uses hereinbefore specified.

3. The manner of attaching the boiler and fender to the base-ring E by means of the lugs T T T and projections Z Z, ring G, and bolts D D D, when in combination with the adjustable screw-funnel, constructed and used in the manner set forth.

S. LLOYD WIEGAND.

Witnesses:
JOHN WHITE,
W. W. DOUGHERTY.