

C. E. BALL & S. L. WIEGAND.

Argand Gas-Burner.

No. 159,557.

Patented Feb. 9, 1875.

Fig. 1.

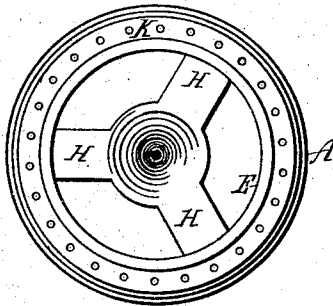


Fig. 2.

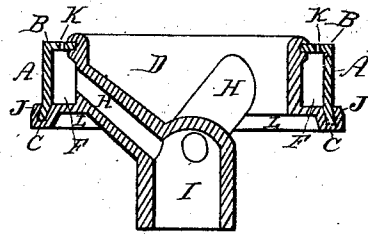


Fig. 3.

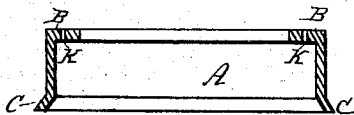
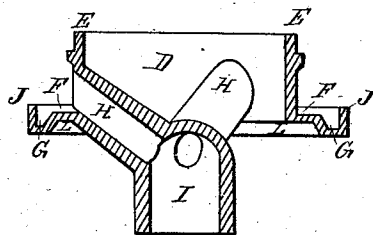


Fig. 4.



Witnesses.

James P. Petit
Edgar E. Petit

Inventors

C. E. Ball
S. L. Wiegand

UNITED STATES PATENT OFFICE.

CHARLES E. BALL AND S. LLOYD WIEGAND, OF PHILADELPHIA, PENN-
SYLVANIA, ASSIGNORS TO JAMES W. CARSON, OF SAME PLACE.

IMPROVEMENT IN ARGAND GAS-BURNERS.

Specification forming part of Letters Patent No. **159,557**, dated February 9, 1875; application filed
August 11, 1874.

To all whom it may concern:

Be it known that we, CHARLES E. BALL and S. LLOYD WIEGAND, both of the city and county of Philadelphia and State of Pennsylvania, have jointly invented a new and useful Improvement in Argand Burners; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, and letters of reference marked thereon.

This invention relates to the mode of forming the annular chamber of the burner, and combining it strongly with the forked or branch tubes without the use of any soldering process; and consists essentially in such a form of the several parts that they may be cheaply and accurately made in suitable dies by persons of slight mechanical skill, and locked together securely and rapidly by compressing dies or rollers.

Figure 1 shows a plan; Fig. 2, a vertical section of the completed burner; and Figs. 3 and 4, respectively, show vertical sections of the external and internal parts of which the burner is composed.

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

A represents the external portion or shell of the burner, made tapering or cylindric, with a flange, B, turned inward at the upper end, and having perforations K made in it, also a conical flange, C, projecting outward at the lower edge. D represents the body of the burner, consisting of a cylindric or tapering body, with a rim or flange, E, projecting upward, a flange, F, at the base projecting outward, and grooved near the outer edge, as shown at G. A series of tubular branches, H, unite the cylindric body to the pillar, by which it is attached to the gas-fixture. The body D is made preferably by casting, stamping in dies, drilling the arms H and pillar I, and

turning the flanges E and F and groove G. The proportions and dimensions of the several parts should be such that the internal edge of the flange B should fit closely around the rim E, and the rim E should project above the flange B; also, the flange C should fit closely to the bottom and inner side of the groove G, the outer rim, J, of the groove G projecting upward around the flange C. There should be an annular space between the shell A and body D sufficient to permit a free flow of gas to the apertures K, from which it issues and burns. The parts of the burner A and D are united by placing one on the other, and pressing the flange E outward and downward on the flange B, and pressing the rim J obliquely downward on the rim or flange C, the flange F being supported by a suitable die or swage in the cavity marked L.

The advantages of this burner are, that it may be made rapidly and accurately by dies and tools with very little skilled labor, and with but a small expenditure of material, and the material may retain greater hardness than is possible where the burner is exposed to the high temperature necessary in soldering other kinds of burners.

What we claim is—

In an Argand burner formed of an external wrought-metal shell, A, and a metal body, D, cast in one piece with the branched tubes H and pillar I, a lower conical flange, C, formed on the shell A, locked in the groove G, turned in the flange F by the flange J, compressed against the flange C.

CHAS. E. BALL.
S. LLOYD WIEGAND.

Witnesses:

JAMES P. PETIT,
EDGAR E. PETIT.