

(No Model.)

E. O. SCHARTAU.
REGENERATIVE GAS BURNER.

No. 329,087.

Patented Oct. 27, 1885.

Fig. 1.

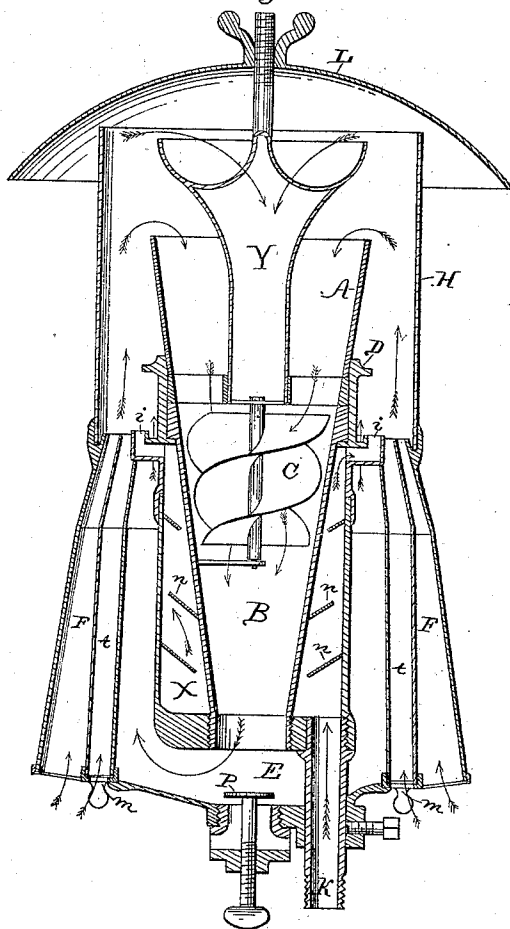


Fig. 2.

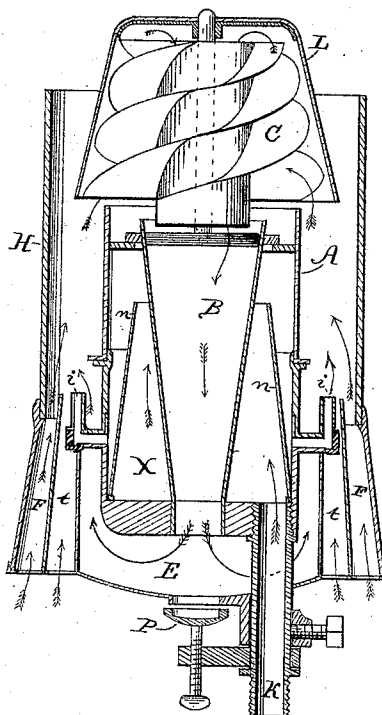
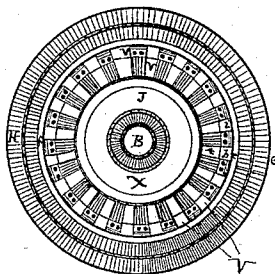


Fig. 3.



WITNESSES:

Thos Houghton.

W. H. Stevens.

INVENTOR:

E. O. Schartau

BY

Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

EILERT OTHON SCHARTAU, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR
OF ONE-HALF TO CLANMAR P. HOSKINS, OF SAME PLACE.

REGENERATIVE GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 329,087, dated October 27, 1885.

Application filed December 23, 1884. Serial No. 151,073. (No model.)

To all whom it may concern:

Be it known that I, EILERT OTHON SCHAR-
TAU, a citizen of the United States, residing
at No. 231 South Eighth street, in the city and
5 county of Philadelphia, and State of Pennsylv-
ania, have invented a new and useful Im-
provement in Regenerative Gas-Burners and
Lamps; and I do hereby declare that the fol-
lowing is a full, clear, and exact description
10 of the invention, reference being had to the ac-
companying drawings, forming a part there-
of.

Figures 1 and 2 are vertical sections of dif-
ferent forms of my improved regenerative gas
15 burner, and Fig. 3 a top view of the same.

A is a porcelain tube, around which the gas
issuing from various apertures, *i*, burns.

D is a metallic flange at the base of the tube
A, serving as a deflector to throw the blaze
20 across the path of the fresh air entering at the
annular passage F and *t*, to aid combustion.
At *m*, Fig. 1, is shown a valve by which the
passage *t* may be closed or opened at will to
regulate the inflow of fresh air.

25 C is a light cone-shaped screw with broad
blades, journaled on central vertical pivots to
revolve freely within the tube B, Fig. 1.

H is the glass chimney surrounding the
flame.

30 L is a hood, placed above the top of the
chimney and made concave below to concen-
trate the heated air and the products of com-
bustion into the trumpet-mouthed tube Y,
which leads to the top of the screw C, causing
35 the latter to revolve rapidly. This revolution
draws in a current over the top of the porce-
lain tube A, carrying with it the blaze, thus
causing an intense heat within the tube B,
through which the heat and refuse products
40 of combustion descend into the lower re-
ceiver, E.

X is an annular chamber surrounding the
tube B, and serving as gas chamber and re-
tort, receiving gas by the tube K and discharg-
45 ing it at the burner-tubes *i*. The tube K is
threaded at its lower end to engage common
gas-pipe, whereby the gas-tube serves as a
standard to support the burner, and whereby
gas is admitted thereto.

50 *n* represents a series of deflectors, by means

of which the progress of the current of gas up
through the retort is impeded, so as to hold
the gas for a longer time in contact with the
heated tube B. By this means the gas is ex-
panded and rendered more highly inflammable, 55
so that the waste products of combustion
may now be mingled therewith and be read-
ily consumed, producing an intensely lumi-
nous blaze.

The burner-tubes *i* radiate from the cham- 60
ber X across the annular top of the chamber
E, parting the same into a series of mouths
or openings, V, Fig. 3, whereby the waste
products of combustion find exit in juxtapo-
sition with the heated gas, thus insuring a 65
thorough intermingling of the said parts and
the complete utilization of the usual waste
products.

P is a valve or damper, by which fresh air
may be admitted to the chamber E, when it
70 is desired to cool the latter. The section at
Fig. 1 is through two arms of the trumpet-
tube Y, between which arms are free pas-
sages.

The modification in Fig. 2 shows the hood 75
L as within the chimney H, the screw C be-
ing centrally tubular to conduct the current
which it makes down through it into the
tube B.

The present application is for an improve- 80
ment upon the device shown in my applica-
tion No. 146,711, filed October 28, 1884, and
I limit myself herein to the screw C, in com-
bination with features of my former applica-
tion, with which it is related. 85

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

1. The combination, in a gas-burner, of the
porcelain tube A, the chimney, the gas-cham-
ber X, provided with an inlet, K, and with 90
a circular series of burners, *i*, the annular air-
inlet F, the circular flange D, located below
the tube A and in the path of gas issuing
from the burners *i*, the hood L, the trumpet-
mouthed tube Y, the vertically-pivoted screw 95
C, the tube B, below the screw, and the re-
ceiver E, below and surrounding the cham-
ber X and provided with outlets between the
burners *i*, substantially as shown and de-
scribed.

2. The combination of a circular series of gas-burners, *i*, a chimney, H, a tube, A, and air-inlet F, a down-tube, B, a receiving-chamber, E, having outlets between the gas-burners, and a vertically-journaled screw, C, within the circle of burners, substantially as shown and described. 10
- 5 3. The combination of a circular series of gas-burners and a down-tube within the circle, and a broad-leaved screw, C, journaled vertically within the circle of the burners, substantially as shown and described.

EILERT OTHON SCHARTAU.

Witnesses:

CARROLL R. WILLIAMS,
CHAS. KNITTEL.