

No. 620,409.

Patented Feb. 28, 1899.

R. BÖCKING.
GAS GENERATOR.

(Application filed June 2, 1898.)

(No Model.)

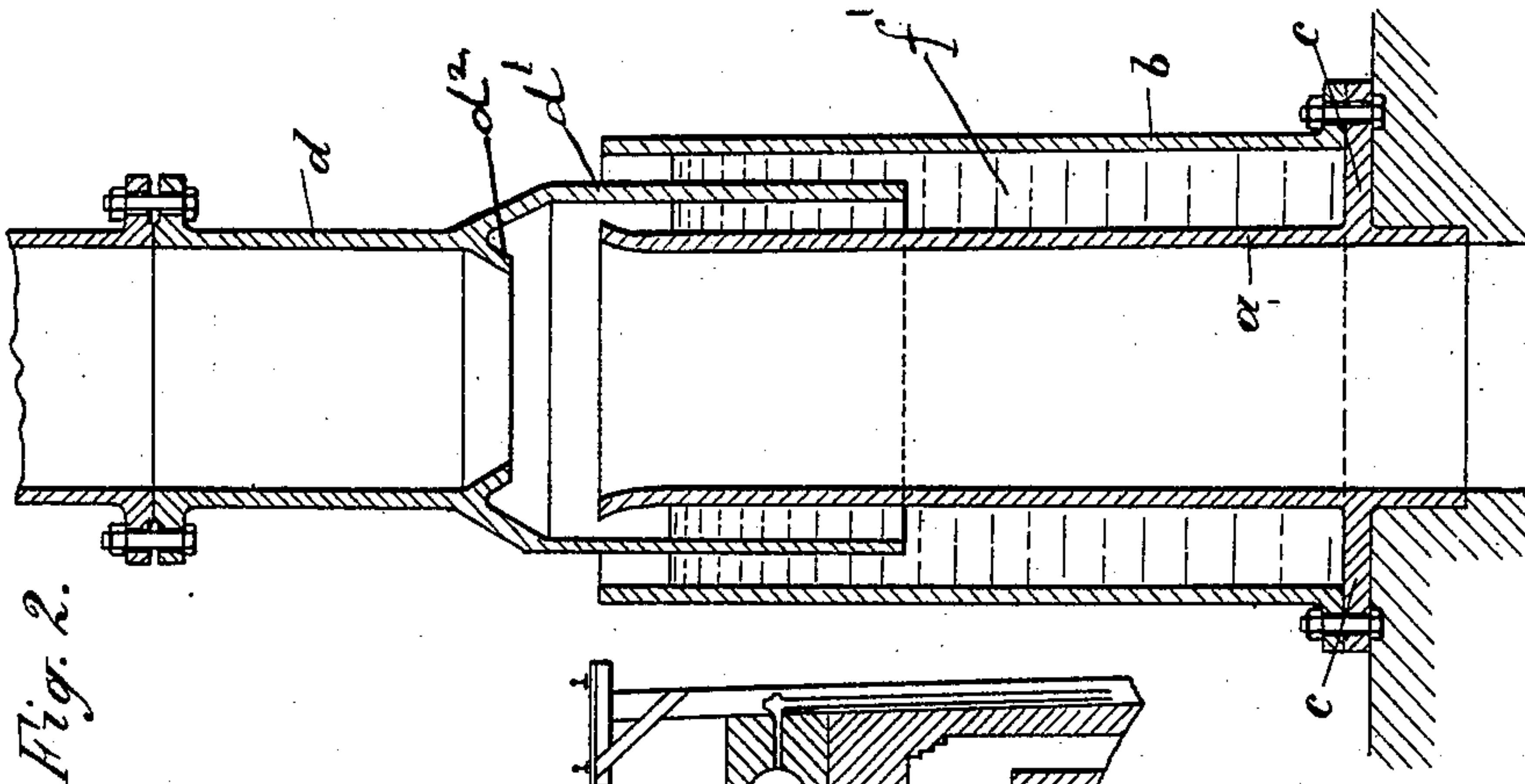


Fig. 2.

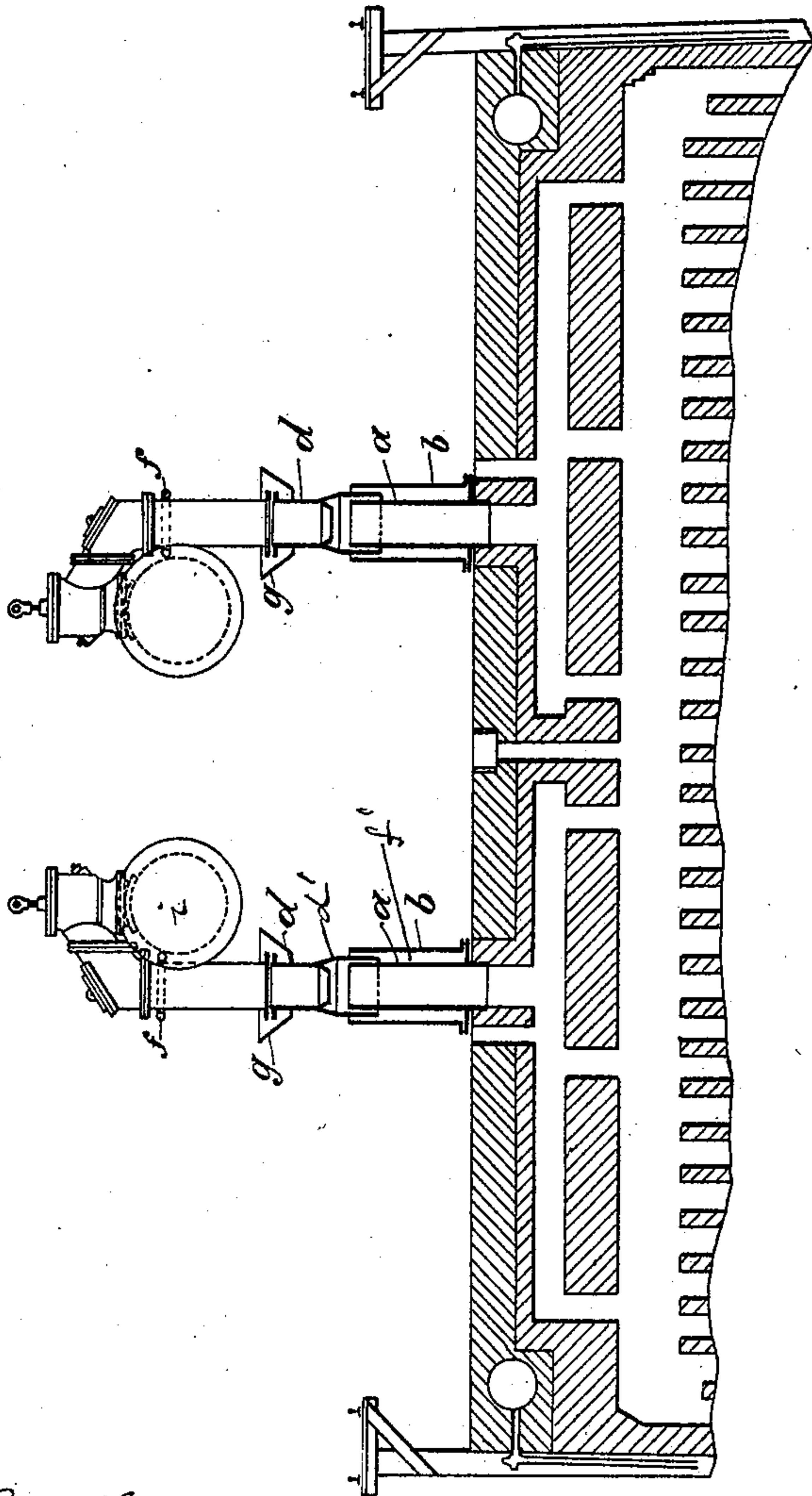


Fig. 1.

Witnesses:
William Miller.
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Inventor:
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by his attorneys
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UNITED STATES PATENT OFFICE.

RUDOLPH BÖCKING, OF HALBERGERHÜTTE, GERMANY.

GAS-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 620,409, dated February 28, 1899.

Application filed June 2, 1898. Serial No. 682,326. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH BÖCKING, a subject of the King of Prussia, German Emperor, residing at Halbergerhütte, near Brebach-on-the-Saar, Prussia, Germany, have invented certain new and useful Improvements in Gas-Generators, of which the following is a specification.

This invention relates to a gas-generator, such as a coke-oven, in which precipitates having a high boiling-point and carried along by the gases are converted by steam into a thin liquid condition and returned to the retort or oven.

In the accompanying drawings, Figure 1 is a vertical section of part of a coke-oven embodying my invention and having two gas-discharge pipes or rising mains. Fig. 2 is a vertical section of the rising main and its cooling device on a larger scale.

A lower gas-discharge pipe *a* is secured directly to the body of the oven or retort, so as to communicate with the gas-outlet thereof. This pipe is surrounded by a second concentric pipe or jacket *b*, between which and pipe *a* an annular chamber *f'* is formed, into which cold water may be introduced and from which the heated water may be withdrawn. Into the chamber *f'* dips the enlarged or funnel-shaped lower end *d'* of an upper pipe *d*, which is connected to the receiver *i* and divides the upper part of the chamber *f'* into an inner compartment and an outer compartment. In this way a portion of the water will be evaporated and will saturate the rising gases with steam.

Within the funnel-shaped lower end *d'* there depends from pipe *d* an inwardly-inclined flange *d''*, which serves to return the precipitates to the retort or oven. Thus no clogging by solid deposits will take place within the pipe *d*, the receiver *i*, or in the communicating parts of the apparatus. The water seal in chamber *f'* operates, furthermore, as a safety device during explosions in the gas generator or receiver or when the pipes, &c., become clogged by negligence. In that case the water in the seal will be blown out and

the gas can freely escape into the atmosphere, so as to prevent damage to the apparatus. 50

Owing to the changes of temperature, the masonry of the gas-generator or oven is in constant motion, which would cause a loosening and consequent leakage in the upper pipe were the latter connected rigidly to both the receiver and the generator or oven. This difficulty is entirely avoided by my construction, by which the pipe *d* can freely move in the chamber *f'* in a vertical as well as in a horizontal direction and without creating tension. 60

What I claim is—

1. In a gas-generator or oven, the combination of a lower gas-discharge pipe with a surrounding jacket forming an intervening water-chamber, and an upper pipe having an inwardly-inclined flange and a funnel-shaped lower end that dips into said water-chamber and divides it into an inner and an outer compartment, of which the inner compartment communicates directly with the lower and the upper pipe, substantially as specified. 65

2. In a gas-generator or oven, the combination of a lower gas-discharge pipe with a surrounding jacket forming an intervening water-chamber, and with an upper pipe having an inwardly-inclined flange and a funnel-shaped lower end that dips into said chamber and is vertically and horizontally movable therein, substantially as specified. 75

3. In a gas-generator or oven, the combination of a lower gas-discharge pipe with a surrounding jacket forming an intervening water-chamber, a receiver, and an upper pipe communicating with the receiver and having an inwardly-inclined flange and a funnel-shaped lower end that dips into the water-chamber, substantially as specified. 85

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses. 90

RUDOLPH BÖCKING.

Witnesses:

EDUARD PEITZ,
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