

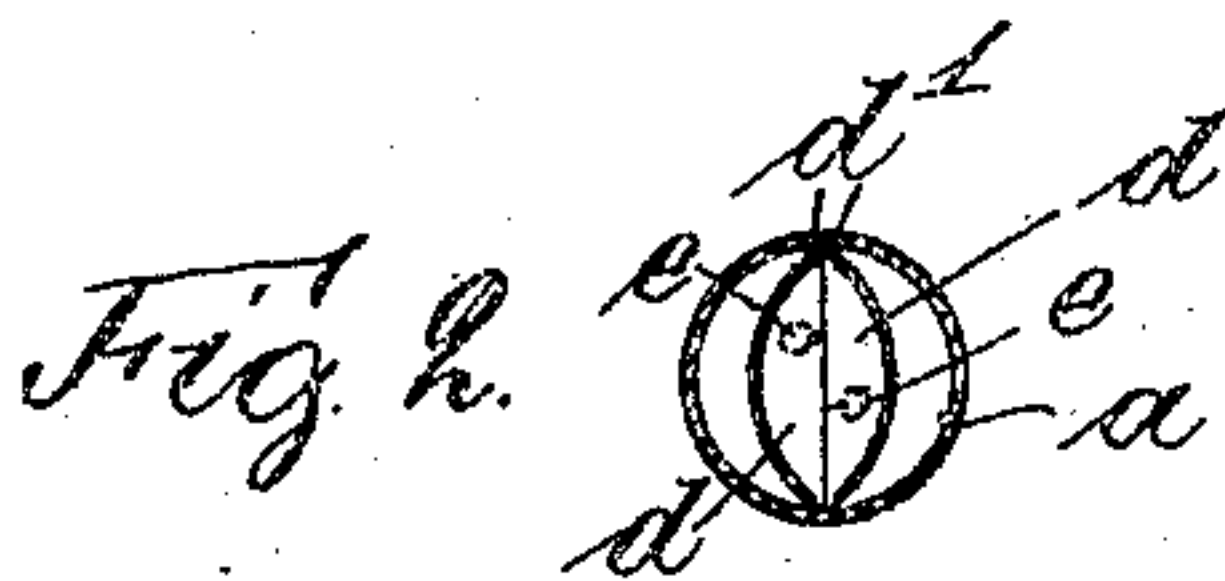
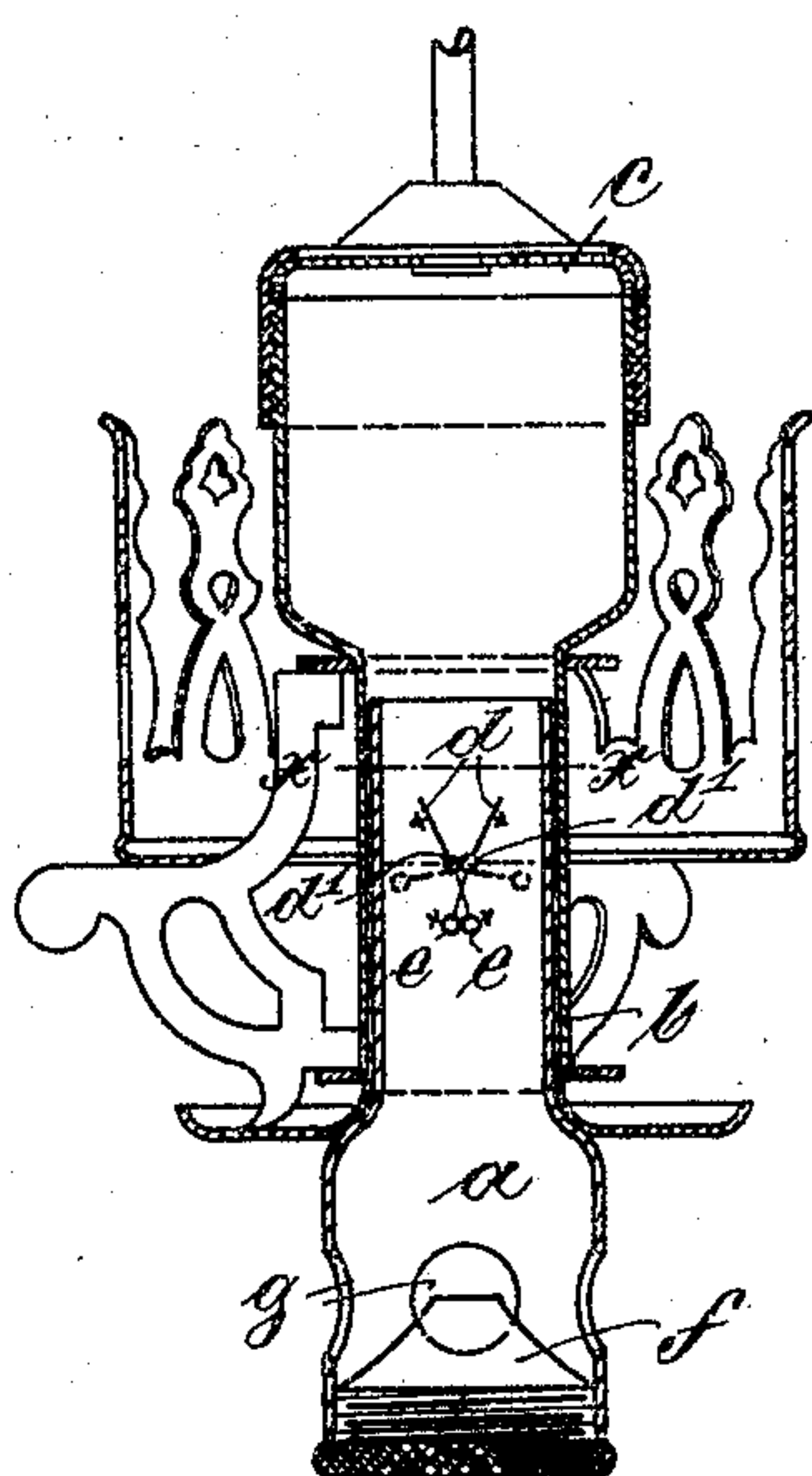
No. 775,470.

PATENTED NOV. 22, 1904.

F. GROSS.
ATMOSPHERIC GAS BURNER.
APPLICATION FILED OCT. 2, 1903.

NO MODEL.

Fig. 1.



Witnesses:
Emil Trause.
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UNITED STATES PATENT OFFICE.

FRITZ GROSS, OF SCHÖNEBERG, GERMANY.

ATMOSPHERIC GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 775,470, dated November 22, 1904.

Application filed October 2, 1903. Serial No. 175,483. (No model.)

To all whom it may concern:

Be it known that I, FRITZ GROSS, engineer, a subject of the King of Prussia, German Emperor, and a resident of 13 Sedanstrasse, Schöneberg, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Atmospheric Gas-Burners, of which the following is an exact specification.

My invention relates to improvements in atmospheric gas-burners especially applicable for incandescent light, and more especially it relates to a device for preventing back lighting or flashing of the flame at the air-inlet.

The purpose of my invention is to provide such means for preventing the back flashing as do not offer any resistance to the gas and air passing through the burner.

The constructions hitherto used for preventing back flashing mostly consisted of flaps arranged in front of the gas-pipe, which flaps were closed if no gas were supplied and were opened by the current of gas itself; but the great disadvantage was that these flaps offered a considerable resistance to the gas. Owing to this resistance it was impossible for a sufficient quantity of air to be carried along by the current of gas, as in case of a flap which is large enough to allow a sufficient quantity of gas and air to pass the relatively small quantity of gas impinging upon the flap was mostly not sufficient for opening the flap far enough to allow the necessary quantity of air to be taken along by the gas. In order to do away with this disadvantage, a flap or non-return valve is employed which is open in the normal position, so that the same does not offer any resistance to the gas and air. If, however, there should be a draft back, the said valve closes.

In order to make my invention more clear, I refer to the accompanying drawings, in which—

Figure 1 is a vertical section of my improved burner, and Fig. 2 is a section on line xx of Fig. 1.

It will be understood that the construction

shown on the drawings and described is only an example and that the invention may be modified in different ways.

In the drawings, c is the burner-cap fixed to the tube b . The latter is mounted on the pipe a , in the lower part of which the gas-nozzle f is fixed.

g represents the air-admission holes. A valve is arranged within the pipe a , which valve in the construction shown consists of two flaps d and each flap turns around a special spindle or shaft d' . The flaps are advantageously made of very thin and light plates of aluminium or the like. e represents counterweights fixed to the flaps d , which counterweights tend to hold the flaps in the position shown in full lines in the drawings.

It will be understood that instead of the counterweights springs or any other convenient means may be provided.

The burner works as follows: The gas flows through the nozzle f into the pipe a , in which it mixes with the air entering through the holes g , and the gas and air mixture flows to the burner-cap c , where it is lighted. As soon as the flame begins to flash back a pressure arises above the flaps d , by means of which pressure these flaps adopt the position shown in dotted lines in the drawings, thereby temporarily closing the pipe a and preventing the incoming gas being ignited at the nozzle f . By reason of the back flash quickly losing its force the flaps d will quickly be opened again on account of means being provided which tend to hold the same in the opened position, so that the mixture of gas and air can pass again to the burner proper.

It will be understood that the invention may be applied to any convenient construction of burners and may also be applied to burners burning downward.

Having thus fully described the nature of this invention, what I desire to secure by Letters Patent of the United States is—

1. In an atmospheric gas-burner the combination of the burner proper with flaps, situated in the burner-tube and adapted to close

the same in case of a draft back and mechanical means for holding these flaps open substantially as described and for the purpose set forth.

- 5 2. In an atmospheric gas-burner the combination of the burner proper with flaps, situated in the burner-tube and adapted to close the same in case of a draft back and counterweights for holding these flaps open, substan-

tially as described and for the purpose set forth.

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

FRITZ GROSS.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.