

B. THIEMICH.
 PROCESS OF MANUFACTURING GAS FROM COAL.
 APPLICATION FILED MAY 16, 1908.

912,509.

Patented Feb. 16, 1909.

Fig. 1

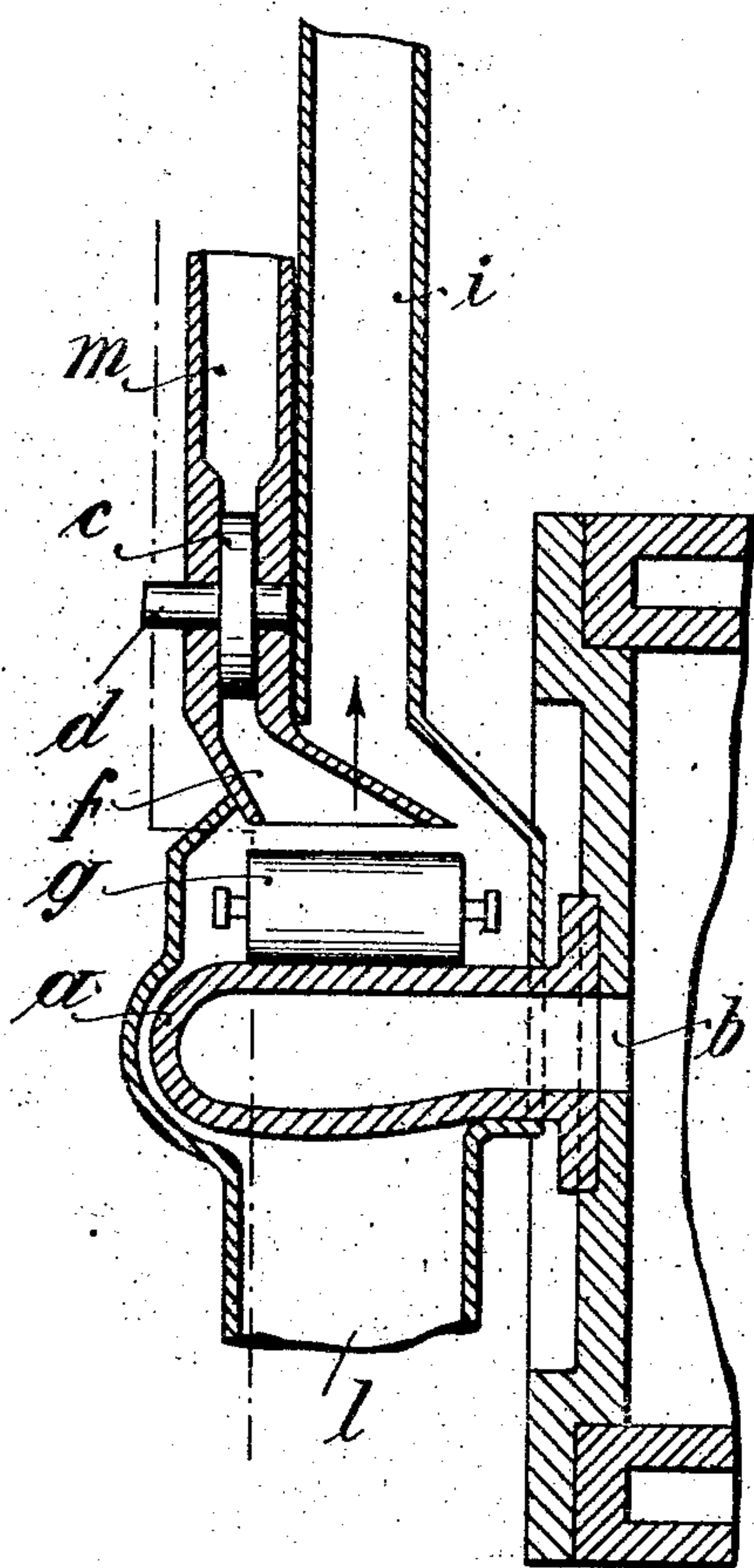
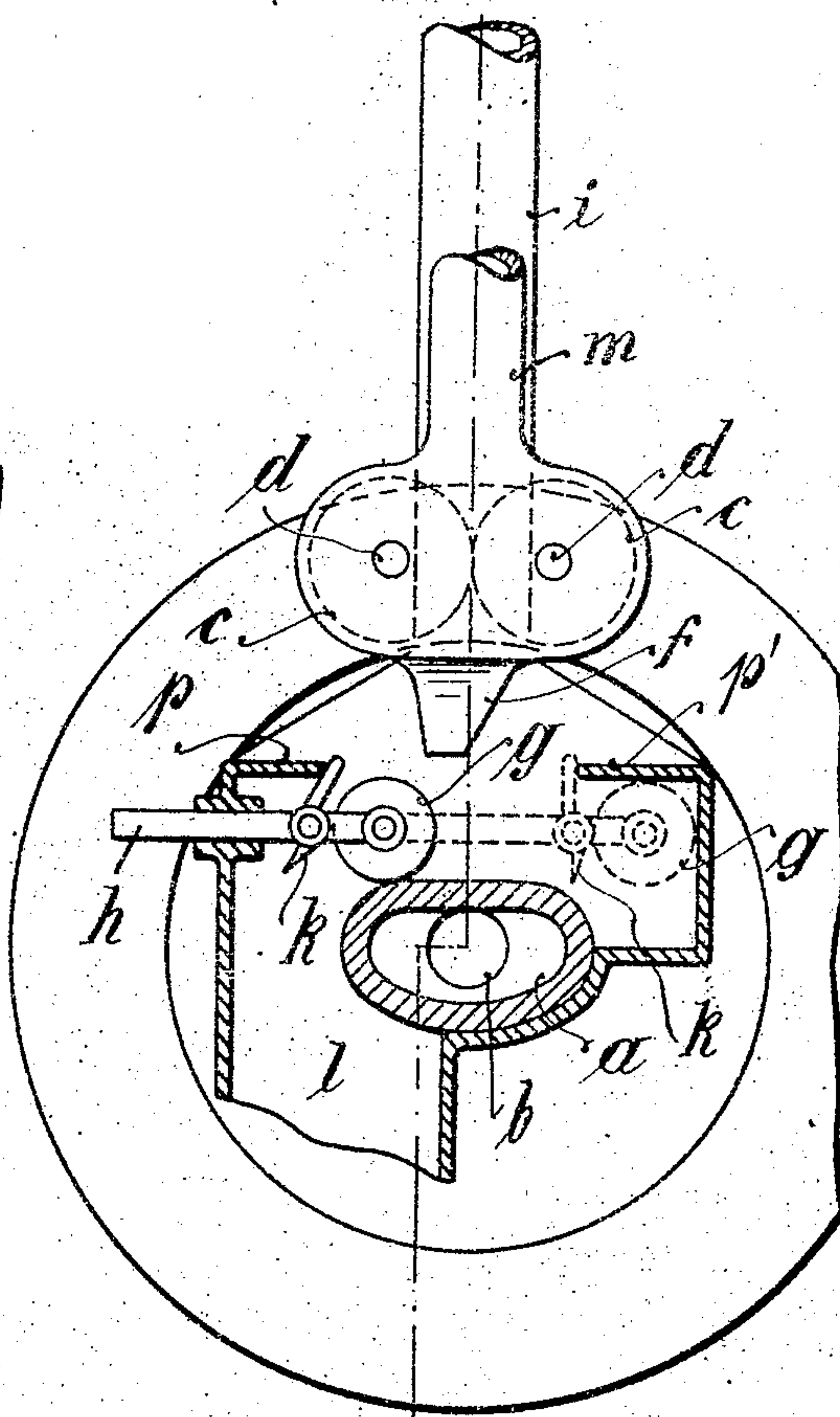


Fig. 2



Witnesses
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UNITED STATES PATENT OFFICE.

BERNHARD THIEMICH, OF DRESDEN-NAUSSLITZ, GERMANY.

PROCESS OF MANUFACTURING GAS FROM COAL.

No. 912,509.

Specification of Letters Patent.

Patented Feb. 16, 1909.

Application filed May 16, 1908. Serial No. 433,305.

To all whom it may concern:

Be it known that I, BERNHARD THIEMICH, a subject of the Emperor of Germany, residing at Dresden-Nausslitz, in Germany, have invented a certain new and useful Process of Manufacturing, from Coal, Gas Suitable for Actuating Internal-Combustion Engines, of which the following is a specification.

This invention relates to a process for manufacturing from coal, without the use of gas-generating plant, gas suitable for actuating internal combustion engines.

The annexed drawing serves merely to illustrate the manner in which the process is carried out; the construction of the apparatus may be varied in many ways.

Figures 1 and 2 show a simple form of apparatus joined to the cover of the engine-cylinder, Fig. 1 being a sectional side-view and Fig. 2 a front view partly in section.

The principle of the process lies therein that the heating of the pulverized coal, and the separation of the gas, takes place on a heated surface or surfaces in the absence of air, so that no combustion can take place, the coal being pressed against the heating surface to accelerate the process, and the feed being so regulated that before the supply of fresh coal, or at the time of the said supply, the coke is removed from the heating surface, so that the area of the latter may be as small as possible. Owing to this method of regulating the supply, and to the rapidity with which the gas is generated, the gas can be generated at the rate at which it is sucked into the engine by the piston, so that the engine can be stopped at any time without having a residual amount of gas unused. This is an advantage from the point of view of economy, and it also lessens the danger of explosion.

Referring to Figs. 1 and 2, *a* is the chamber on the wall-surface of which the heating of the coal and the generation of the gas take place. The interior of this chamber communicates by a port *b* with the interior of the power-cylinder. The chamber *a* is heated by the products of combustion. The engine may be started by means of benzene

or other fuel. When the chamber *a* is sufficiently hot the shafts *d* of two feed-rollers *c* are coupled to the engine, so that the rollers are rotated. Coal from the channel *m* is then intermittently fed by these rollers to the nozzle *f* and falls on to the red-hot wall of the chamber *a*. A roller *g* is then rolled over this wall from left to right by means of a rod *h*. The right-hand end position of the roller *g* is indicated in Fig. 2 by a dotted circle. The roller *g* spreads out the coal in a thin layer and presses it against the hot wall, so that gas is immediately generated. The gas passes upwards through a pipe *i* and is then led to the cylinder. The pipe *i* may also lead to a suitable collector and scrubber or other cleanser. During the return movement of the roller *g* a scraper *k* fixed to the rod *h* scrapes the coke from the heating surface and causes it to fall into a receptacle *l*. The action described is then repeated.

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. The process of producing gas from pulverized coal for actuating internal combustion engines consisting in causing the coal to fall intermittently in measured quantities on to a heated surface, heating said surface, pressing the coal against this surface, and removing the residue, after the separation of the gas, before a fresh charge of coal is supplied.

2. The process of producing gas from pulverized coal for actuating internal combustion engines consisting in causing the coal to fall intermittently in measured quantities on to a surface, heating said surface by the exploded gases of the engine, pressing it against this surface, and removing the residue after the separation of the gas, before a fresh charge of coal is supplied, and delivering the gas to the engine.

In witness whereof I have signed this specification in the presence of two witnesses.

BERNHARD THIEMICH.

Witnesses:

HERM. TACK,
RUDOLPH FRICKE.