

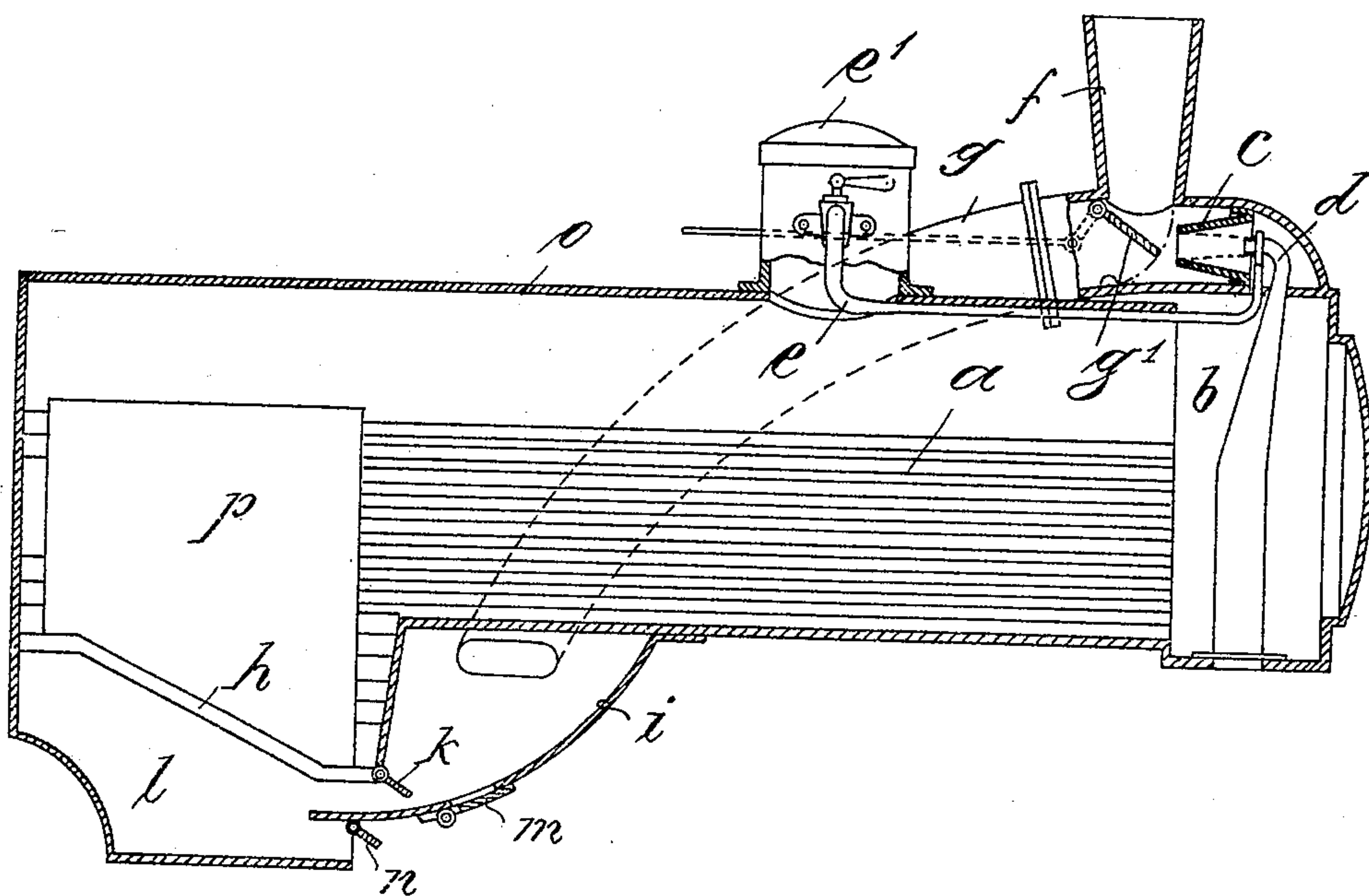
No. 814,331.

PATENTED MAR. 6, 1906.

R. SPOHD.

SMOKE CONSUMING APPARATUS FOR STEAM BOILERS.

APPLICATION FILED MAR. 10, 1905.



Witnesses:
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UNITED STATES PATENT OFFICE.

RUDOLPH SPOHD, OF KÖNIGSBERG, GERMANY.

SMOKE-CONSUMING APPARATUS FOR STEAM-BOILERS.

No. 814,331.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed March 10, 1905. Serial No. 249,472.

To all whom it may concern:

Be it known that I, RUDOLPH SPOHD, a subject of the King of Prussia, German Emperor, and a resident of 59 Steindamm, Königsberg, in the Province of Prussia, German Empire, have invented certain new and useful Improvements in Smoke-Consuming Apparatus for Steam-Boilers, of which the following is an exact specification.

My invention relates to improvements in smoke-consuming apparatus for steam-boilers, in which the smoke is driven from the smoke-box back to the fire-box by means of a steam-jet blower. For this purpose exhaust-steam, steam or at the same time both may be made use of.

In the accompanying drawing, which represents a locomotive-boiler in a vertical longitudinal section, a convenient form of my invention is shown.

o is the boiler proper.

p is the fire-box, and *b* is the smoke-box.

a represents smoke-tubes connecting both.

In the upper part of *b* a nozzle *c* is arranged, so as to form the only passage between the smoke-box and the funnel *f*.

g is a pipe connecting the nozzle-chamber *n'* with the collecting-chamber *i*.

g' is a flap for regulating the passage through *g*.

k is a flap for closing the collecting-chamber *i* from the ash-pan *l*.

h is the grate between *l* and the fire-box *p*.

m and *n* are two flaps for enabling a cleaning of the chamber *i* and for removing the ash from the ash-pan *l*.

e' is a steam-dome.

d is a pipe opening into the nozzle *c* and serving for discharging exhaust-steam into the nozzle *c*.

e is a pipe leading from the steam-dome to the nozzle *c* and enabling a discharging of steam into nozzle *c*.

The operation is as follows: If the steam-jet blower, formed by the nozzle *c* and the pipes *d* and *e*, is actuated by discharging steam into the nozzle *c*, the smoke is drawn from the smoke-box *b* through nozzle *c* and is blown through pipe *g* into the chamber *i*, and

then enters again the fire-box *p*, where the smoke can be consumed. At the same time air is drawn in through the funnel *f*, thereby improving the combustion of the smoke. Furthermore, the admixture of smoke and air can be altered by more or less opening the flaps *k* and *n*. The whole working can be regulated by operating the regulating-flap *g'*.

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

1. A smoke - consuming apparatus for steam-boilers comprising in combination a nozzle-chamber situated directly below the funnel of the boiler, a flap arranged within said nozzle-chamber for regulating the action of the smoke-consuming apparatus, a connecting-nozzle serving for the purpose of connecting the smoke-chamber with said nozzle-chamber, a steam-jet nozzle discharging into said connecting-nozzle, a connecting-tube starting from the nozzle-chamber, a collecting-chamber in communication with said connecting-tube and being in connection with the ash-pan of the fire-box, substantially as described and for the purpose set forth.

2. A smoke - consuming apparatus for steam-boilers comprising in combination a nozzle-chamber situated directly below the funnel of the boiler, a connecting-nozzle serving for the purpose of connecting the smoke-chamber with said nozzle-chamber, a steam-jet nozzle discharging into said connecting-nozzle, a ring-shaped steam-nozzle for carrying steam into said nozzle-chamber, a connecting-tube starting from the nozzle-chamber, a collecting-chamber in communication with the ash-pan and said connecting-tube, a flap for regulating the passage from the collecting-chamber to said ash-pan, substantially as described and for the purpose set forth.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

RUDOLPH SPOHD.

Witnesses:

AUGUST BIRKHOLZ,
THEODOR BLANKENSTEIN.