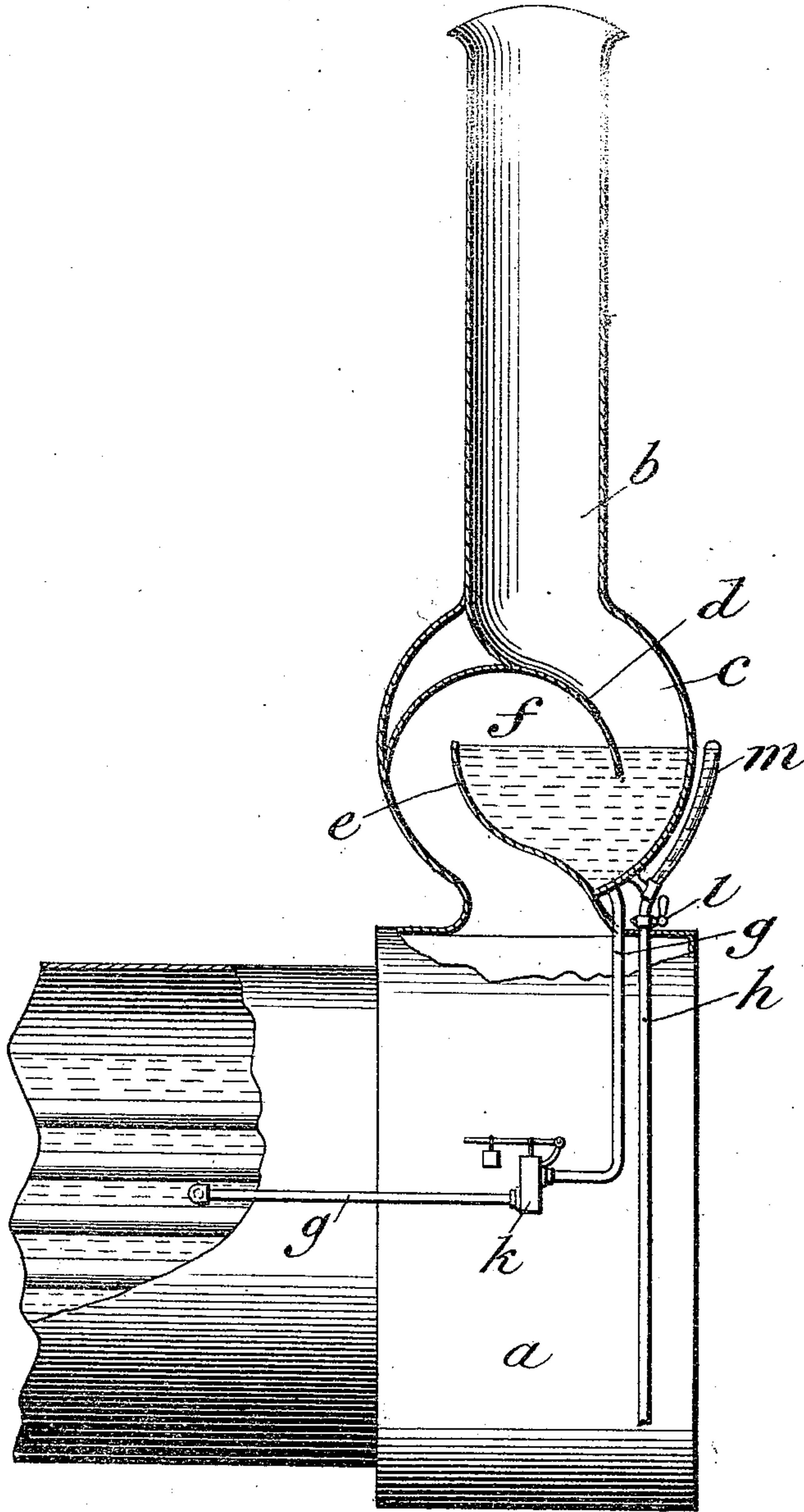


No. 627,614.

Patented June 27, 1899.

L. HAINZL.
DRAFT REGULATING DEVICE.
(Application filed May 12, 1896.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

LUDWIG HAINZL, OF EUGERTSHAM, GERMANY.

DRAFT-REGULATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 627,614, dated June 27, 1899.

Application filed May 12, 1896. Serial No. 591,249. (No model.)

To all whom it may concern:

Be it known that I, LUDWIG HAINZL, a citizen of Bavaria, residing at Eugertsham, Bavaria, Germany, have invented certain new and useful Improvements in Draft-Regulating Devices, (patented in Great Britain January 3, 1896, No. 230,) of which the following is a specification.

The present invention relates to draft reducing or regulating devices for traction and other engines; and its object is to produce such reduction or regulation of the draft when the steam in the boiler has attained a certain maximum of tension.

With this object in view my invention consists in means whereby such maximum tension causes the smoke-stack to be narrowed in cross-section or entirely closed by the water in the boiler, so that the draft is diminished thereby; and my invention, moreover, consists in such further means, features, and combinations of parts as will be hereinafter set forth, and particularly pointed out in the claims.

In the accompanying drawings I have shown, in vertical longitudinal section, so much of a traction-engine embodying my invention as is necessary to make the same understood by those skilled in the art to which it relates.

As will be noted by referring to said drawing, a chamber or enlargement *c* is interposed between the smoke-chest *a* and the smoke-stack *b*, the said chamber *c* being interiorly arranged in the form of a siphon or liquid seal by two diaphragms *d* and *e*, the escaping gases and products of combustion being thereby compelled to take a circuitous course. By these diaphragms or partitions a compartment *f* is formed, with whose bottom two pipes *g* and *h* communicate. The pipe *g* also communicates with the water-space *i* of the boiler, a safety or automatic valve *k* being arranged thereon within the smoke-chest *a*. The weight of the valve *k* is so adjusted that said valve remains closed up to a certain amount of steam tension in the boiler, whereby the connection between compartment *f* and water-space *i* is cut off. When, however, the highest admissible steam tension is exceeded, the excess of pressure causes the safety-valve *k* to open, thereby admitting water from the boiler to the compartment *f*.

The passage for the products of combustion is thereby reduced, or it may even be entirely closed, so that the fire is damped or even extinguished. When it becomes desirable to again increase the draft, the water in the compartment *f* may be entirely or partly drained through drain-pipe *h* by opening the let-off cock *l*. To ascertain the level of the water in the compartment or seal *f*, the pipe *h* is provided with a water-gage *m*. The drain-pipe *h* may open either into or to the outside of the boiler.

Though I have hereinbefore described an automatic draft-reducer, the device embodying my invention may be so modified that the valve or cock *k*, instead of opening automatically when the tension reaches a maximum, may be opened by hand at the proper time, whereby the water will be forced into the seal-compartment *f* whenever the steam tension exceeds the maximum, which generally occurs at times when the engine is in active operation.

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

1. The combination, with a smoke-stack of an engine-boiler, a liquid-seal compartment, and a pipe leading from the boiler to the said compartment, of a valve or cock arranged in the pipe, whereby, when the pressure in the boiler exceeds a certain maximum, the valve is opened and water is forced into the seal-compartment to check or stop the draft, substantially as described.

2. The combination, with a smoke-stack of an engine-boiler, a liquid-seal compartment, and a pipe leading from the boiler to the said compartment, of a valve or cock arranged in the pipe, whereby, when the pressure in the boiler exceeds a certain maximum, the valve is opened and water is forced into the seal-compartment to check or stop the draft, and a drain-pipe connected to said compartment, whereby the water collected in said compartment may be withdrawn to increase the draft, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

LUDWIG HAINZL.

Witnesses:

ALBERT WEICKMANN,
ROWE MAYER.