

(No Model.)

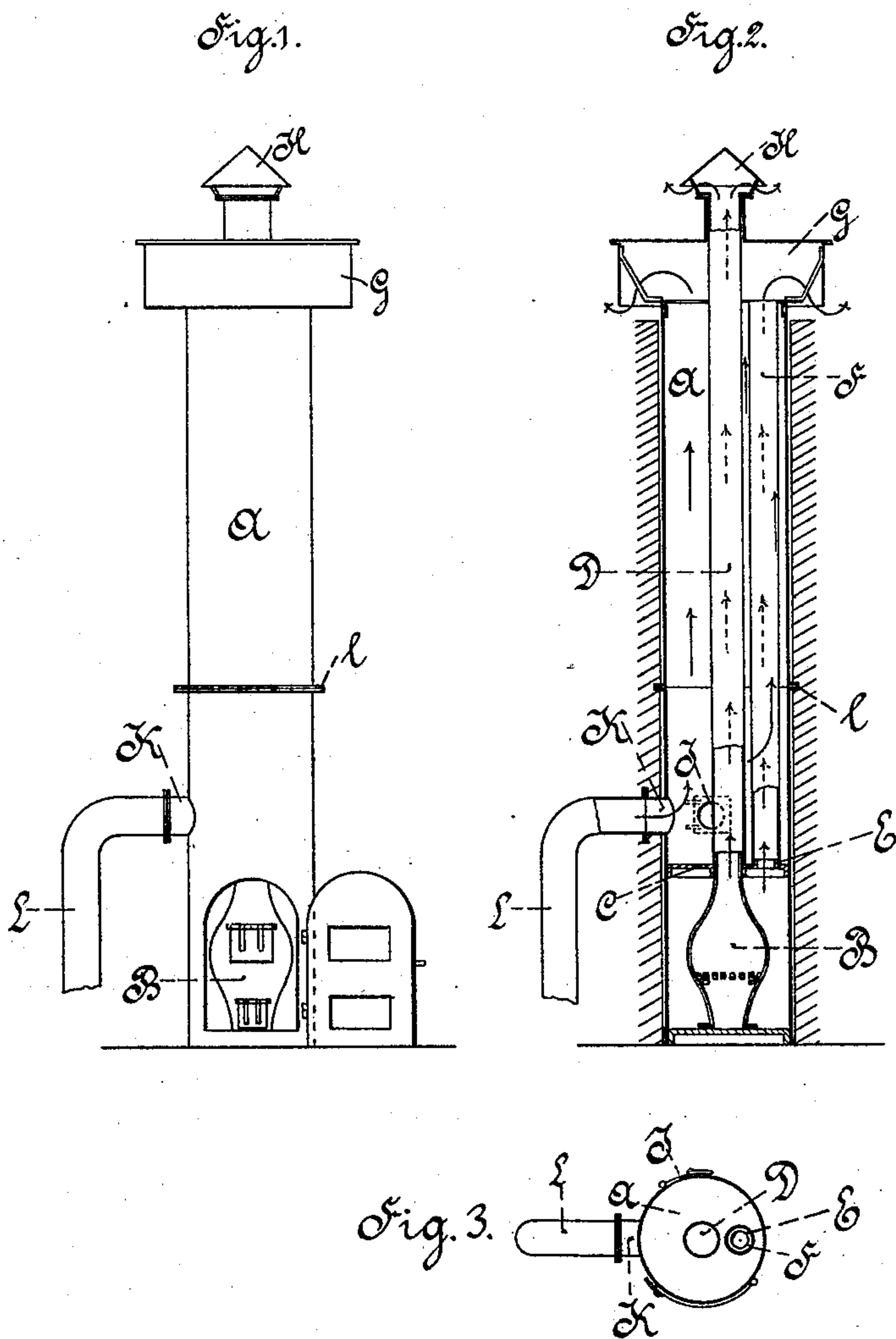
2 Sheets—Sheet 1.

E. & G. H. RITZENFELD.

EXHAUSTER.

No. 393,857.

Patented Dec. 4, 1888.



Witnesses:
Joseph Gurath,
Paul Fischer,

Inventor:
Emil Ritzgenfeld and Gustav Hermann,
Ritzgenfeld,
by
Knoevenagel
Att'ies.

(No Model.)

2 Sheets—Sheet 2.

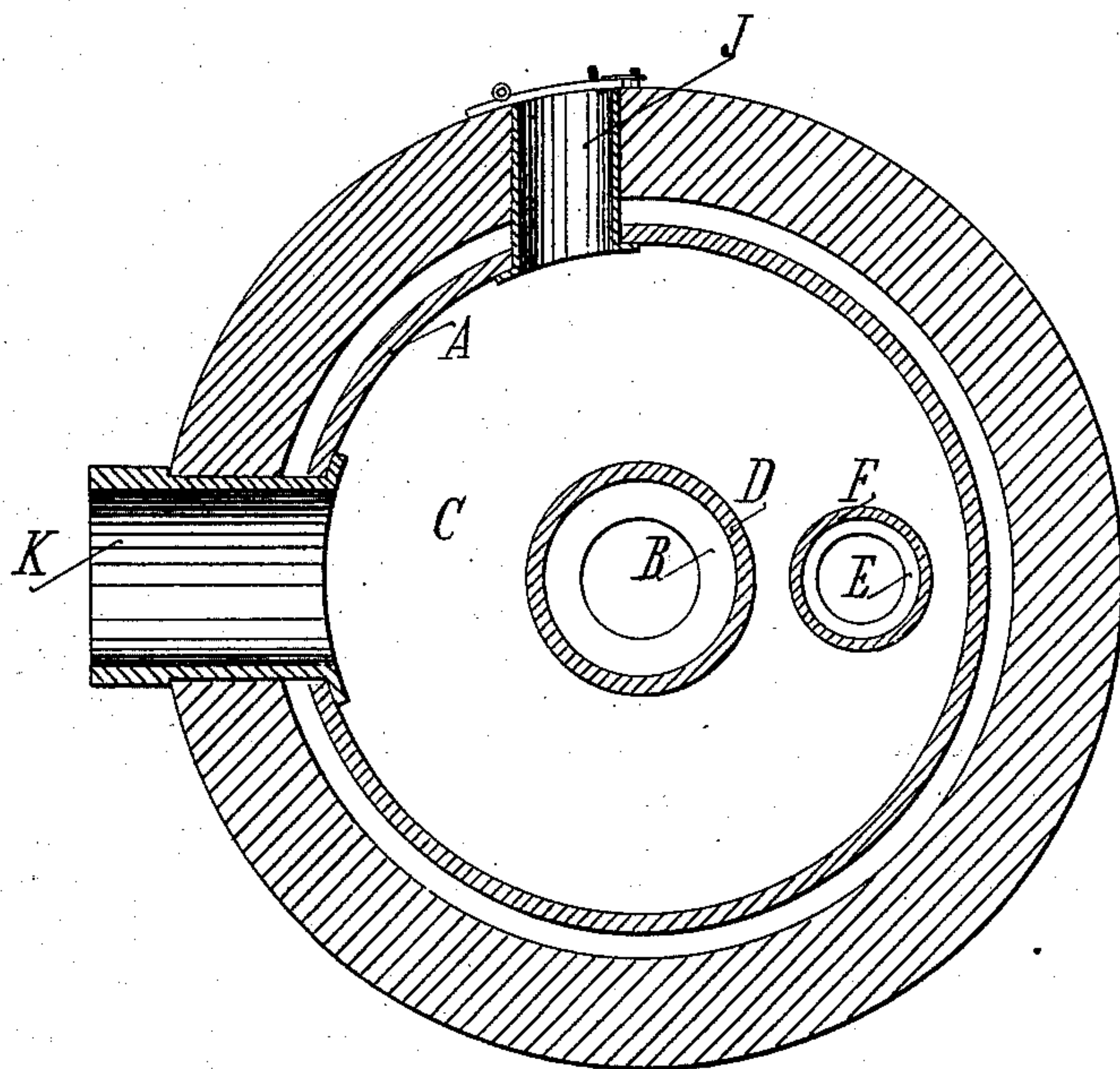
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Fig. 4.



Witnesses.

Gustav Fischer.
Paul Fischer.

Inventor.

Emil Ritzenfeld
and
Gustav Hermann Ritzenfeld
by H. W. C. C. C.
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UNITED STATES PATENT OFFICE.

EMIL RITZENFELD AND GUSTAV HERMANN RITZENFELD, OF BERLIN,
GERMANY.

EXHAUSTER.

SPECIFICATION forming part of Letters Patent No. 393,857, dated December 4, 1888.

Application filed October 15, 1885. Serial No. 179,985. (No model.) Patented in England September 7, 1885, No. 10,566.

To all whom it may concern:

Be it known that we, EMIL RITZENFELD and GUSTAV HERMANN RITZENFELD, of Berlin, in the Kingdom of Prussia and German Empire, have invented a new and useful Exhauster, of which the following is a specification, reference being had therein to the accompanying drawings, no patents being obtained by us anywhere for this invention until now, save in Great Britain, No. 10,566, dated September 7, 1885.

Our invention relates to improvements in aspirating apparatus for mines and the like, working in such a way as by heating the apparatus a vacuum will be produced in the same, whereby the explosive gases will be sucked out of the mine, &c., and, passing through the apparatus, expelled at the upper end of the exhauster into the atmosphere. We attain these objects by introducing a partition-wall, C, as shown in the drawings, which separates the exhausted gases from the fire.

In the annexed drawings, Figure 1 is a front elevation; Fig. 2, a vertical section, and Fig. 3 a horizontal cross-section through the cylinder; and Fig. 4 is also a horizontal cross-section through the cylinder and pipe K above the suction-pipe.

The cylinder A can be constructed in any desired height. In the lower part of it there is placed a pear-shaped furnace, B, for heating the air. The heating-space of the furnace B extends to the smoke-pipe or chimney D, utilizing directly the warmth produced whereon the effect of the new apparatus is principally based. To have an outlet for the expanded air in the space surrounding the fur-

nace B, the partition-wall C is furnished with the stud E, through which the air can escape into the pipe F and communicate to the outer air by the top at G. The top of the chimney D is provided with a soot-box, H, to prevent priming.

J is a door for removing the soot, and K is a stud by which the suction-pipe L enters the aspirating-cylinder A, thus acting directly on the air to be exhausted.

We are aware that prior to our invention exhausters and aspirating apparatus have been made with furnaces for heating the air, and thereby sucking the noxious gases from mines and the like.

What we claim, and desire to secure by Letters Patent of the United States, is—

In an aspirating apparatus or exhauster for mines, the cylinder A, connected on its lower side with the suction-pipe L, in combination with the pear-shaped furnace B, standing below the cylinder A and separated from the cylinder A by a partition-wall, C, the smoke-pipe D, joined to furnace B and provided with a soot-box, H, and the pipe F upon the partition-wall, which pipe F passes through the cylinder A parallel to the axis of the cylinder into the room below the cylinder, substantially as described.

In testimony that we claim the foregoing we have hereunto set our hands this 8th day of July, 1885.

EMIL RITZENFELD.

GUSTAV HERMANN RITZENFELD.

Witnesses:

JOSEPH PURATHEL,
PAUL FISCHER.