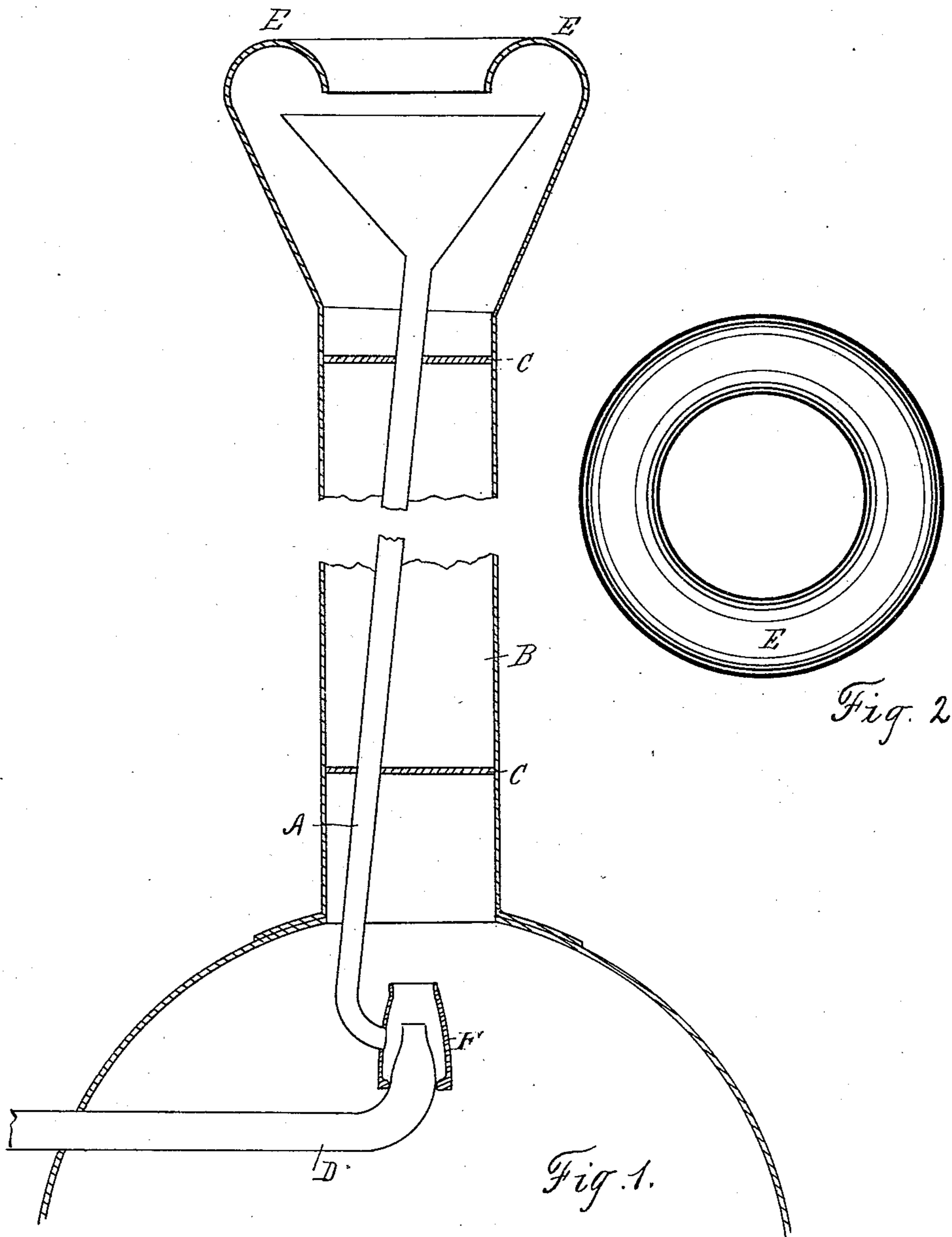


(No Model.)

A. M. KERR.
SPARK ARRESTER.

No. 256,005.

Patented Apr. 4, 1882.



Witnesses.
Carl Hayden
Paul Krone

Inventor.
Alexander Mills Kerr
By P. J. Edmunds
His Attorney

UNITED STATES PATENT OFFICE.

ALEXANDER M. KERR, OF WESTMINSTER, ONTARIO, CANADA.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 256,005, dated April 4, 1882.

Application filed August 15, 1881. (No model.) Patented in Canada September 17, 1881.

To all whom it may concern:

Be it known that I, ALEXANDER MILLS KERR, a subject of the Queen of Great Britain, residing at Westminster, in the county of Middlesex, in the Province of Ontario, Canada, have invented a new and useful Improvement in Spark-Arresters, of which the following is a specification.

My improved spark-arrester is constructed with a funnel-shaped pipe to receive sparks, &c., which are deflected downward by a downturned flange or ring at top of the stack, an eduction-chamber connected with the lower end of the said pipe to receive the said sparks, and a nozzle introducing a jet of steam or air, by which the said sparks are ejected into the stack while a forcible current is caused down the pipe.

The construction and operation will be more particularly explained with reference to the accompanying drawings, wherein—

Figure 1 is a sectional view of my invention shown in connection with a smoke-stack. Fig. 2 is a plan view of the semi-cylindrical ring which is connected to the top of the smoke-stack.

A is a tube with a conical end, which may be situated altogether or only partly within the smoke-stack B, and held in place by braces C C.

To the lower end of tube A an eduction-chamber, F, is attached, into which the nozzle of the exhaust-pipe D or the nozzle of an air or steam jet is inserted.

E is a semi-cylindrical ring connected to the top of the smoke-stack or furnace-top.

As the exhaust-steam from the engine or steam or air jet is forced out of the nozzle of the exhaust-pipe D and upward in the smoke-stack, in rushing up the smoke-stack it takes

up with it the smoke, sparks, cinders, &c., and carries them upward till they strike the semi-cylindrical ring E, which acts as a deflector and conducts the whole into the conical eduction-chamber F on the lower end of tube A, and the smoke being of a lighter specific gravity than the atmospheric air, the bulk of the smoke ascends up and out of the smoke-stack; but the sparks and cinders, being of a heavier specific gravity than the air, fall down the tube A; and to effectively and thoroughly guide and carry every spark down the tube A a current is formed downward in this tube at the same time as the current is formed upward in the smoke-stack by the exhaust-steam or steam or air jet rushing up the smoke-stack and taking up with it the air in the lower end of the tube A, and the air from the upper end of the tube A, rushing down to fill up this space, causes a current downward in the tube A, which carries the sparks down and out of the said tube and delivers them into the smoke-box, by which time the spark is dead, thereby preventing any accident whatever from fires caused by sparks from engines or furnaces.

It will readily be seen that a steam or air jet will answer the same purpose as the exhaust.

Having thus described my invention, I claim—

The combination of the funnel-topped tube A, eduction-chamber F, and jet-pipe D with the stack B, having an intumed marginal flange, E, substantially as and for the purposes set forth.

ALEXANDER MILLS KERR.

Witnesses:

P. J. EDMUNDS,
CARL HAYDEN.