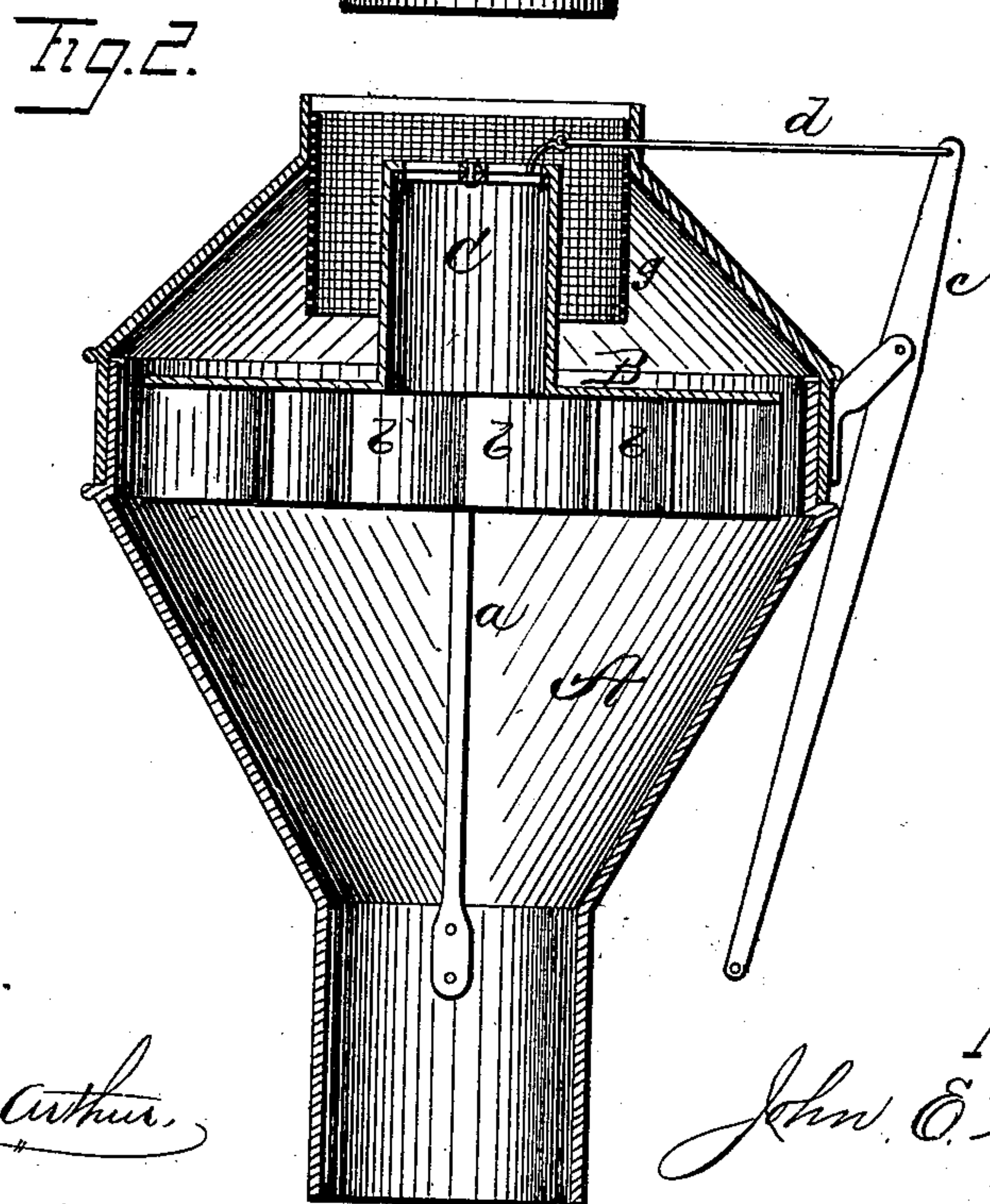
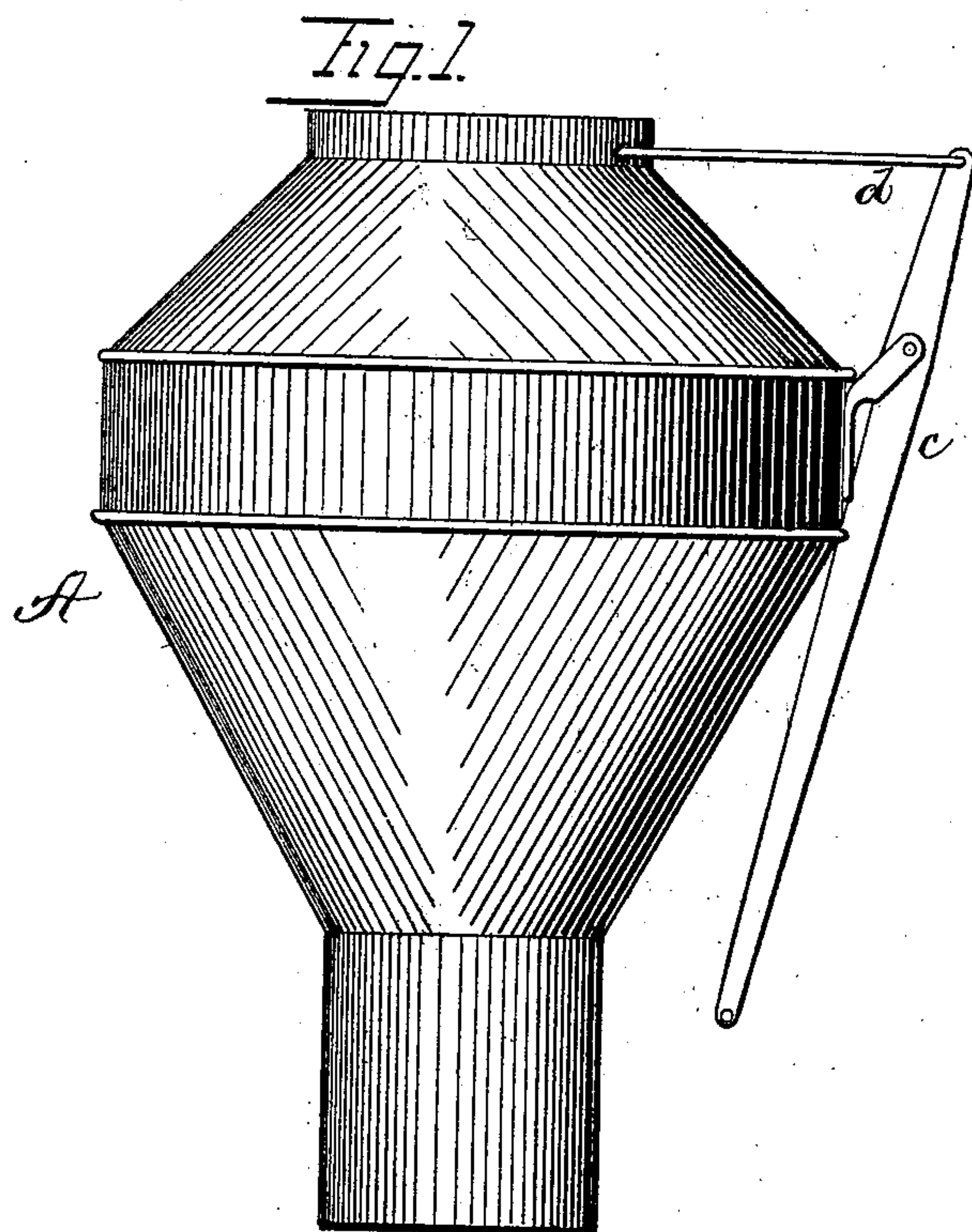


J. E. WIGGIN.
Spark-Arrester.

No. 226,378.

Patented April 6, 1880.



Witnesses:
H. Carlton McArthur.
John C. Rogers.

Inventor.
John E. Wiggin.

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Attorney.

UNITED STATES PATENT OFFICE.

JOHN E. WIGGIN, OF HOUSTON, TEXAS.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 226,378, dated April 6, 1880.

Application filed February 18, 1880.

To all whom it may concern:

Be it known that I, JOHN E. WIGGIN, of Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Spark-Arresters; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a side elevation; and Fig. 2 a central vertical section.

The objects I have in view are both an increase of draft and a more thorough breaking up and extinguishment of the sparks usually emitted from the smoke-stacks of locomotives; and to this end my invention consists in the employment of a vacuum-chamber near the top of the stack, and providing the same with a valve whereby the draft may be increased or diminished, as may be desired, and the sparks arrested, all as will be hereinafter more fully set forth.

In order that others skilled in the art may avail themselves of the benefits of my invention, I will now describe more specifically its construction and operation.

A represents an ordinary smoke-stack, provided at its greatest circumference with plate B, which is supported and held in position by means of rods *a a*, one of which is only seen in Fig. 2. The plate B should, of course, be smaller than the inner circumference of that part of stack in which it is located, thus leaving a suitable space around it for the escape of the products of combustion. The under side of this plate is provided with wings or flanges *b b*, such as are fully described in my Letters Patent of February 10, 1880, and which, therefore, need not again be particularly described.

C represents a tubular chamber, secured on top of plate B at its center and over a suitable hole therein, as fully shown in Fig. 2. The top of the chamber C has a fixed cover, which is provided with two or more suitable outlets, and on its under side it is furnished with a valve for opening or closing these out-

lets. This valve is operated by means of lever *e* and rod *d*.

I do not wish to be understood as confining myself to this exact method of construction, as obviously it may be modified without in the least departing from the essence of my invention. For instance, the valve may be differently located; but so long as there is a chamber between it and the plate the spirit of my invention will be maintained.

g represents a band of gauze wire, which extends from the mouth of the stack nearly to the bottom of chamber C or top of plate B, as shown in Fig. 2.

It will now be observed that when the valve is closed a vacuum-chamber is formed and an efficient spark-annihilator is obtained, as the sparks will be driven directly into the chamber, which is destitute of air or any auxiliary to sustain combustion, and there subjected to the action of damp carbureted hydrogen, which will effectually extinguish the sparks before they are subjected to the action of the spirals or wings on the under side of the plate.

The tubular chamber when opened will much accelerate the draft.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, in a smoke-stack, of plate B and chamber C, said chamber being provided with a suitable valve or slide whereby a direct draft may be obtained when desired, substantially as and for the purposes herein set forth.

2. The combination, in a spark-arrester, of plate B, provided with wings on its under side, with open chamber C, having valve for opening and closing said chamber, all constructed and arranged to operate substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN E. WIGGIN.

Witnesses:

A. K. TAYLOR,
JOHN A. KIRLICKS.