

(No Model.)

W. J. USSERY.
SPARK ARRESTER.

No. 406,488.

Patented July 9, 1889.

Fig. 1

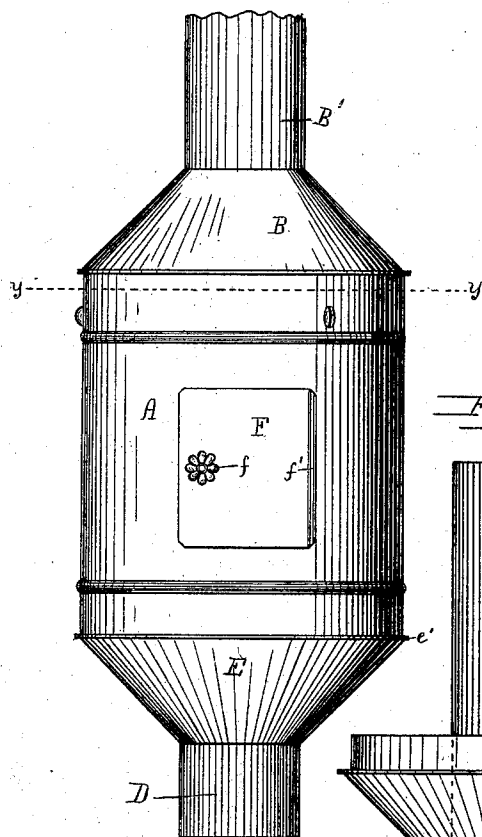


Fig. 2

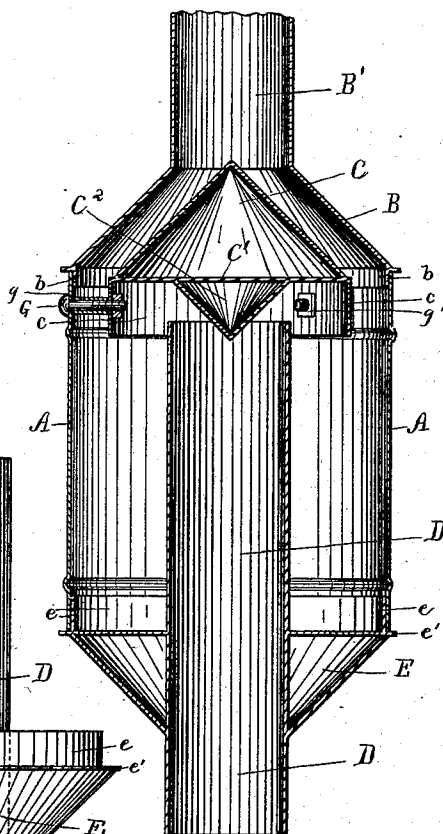


Fig. 3

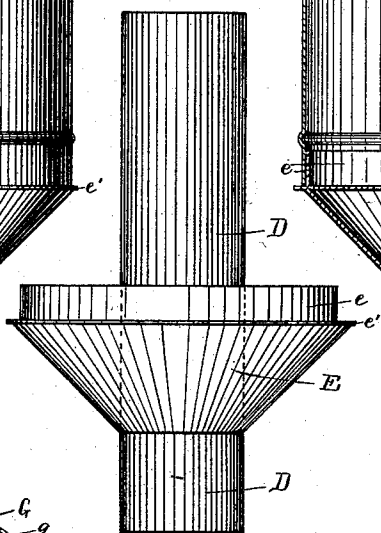


Fig. 4

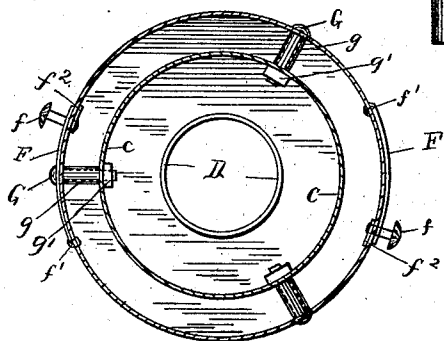
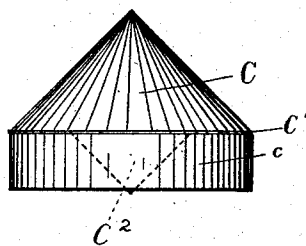


Fig. 5



WITNESSES

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WILLIAM JORDAN USSERY, OF NORWICH, ONTARIO, CANADA.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 406,488, dated July 9, 1889.

Application filed November 28, 1888. Serial No. 292,118. (No model.) Patented in Canada April 5, 1888, No. 28,819.

To all whom it may concern:

Be it known that I, WILLIAM JORDAN USSERY, a subject of the Queen of Great Britain, residing at Norwich, in the Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Spark-Arresters; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to spark-arresters intended especially for all kinds of smoke-stacks and stove-drums; and its objects are, first, to obstruct the passage of sparks effectively; second, to permit free egress of the smoke; third, to accumulate the solid and semi-solid substances carried with the smoke in an independent reservoir; fourth, to dispose the parts correlatively, so that they will durably co-operate to these ends, and, fifth, to attain these purposes with structural simplicity and economy. I accomplish these aims by the device illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of a spark-arrester constructed according to my invention. Fig. 2 is a central vertical section of the same. Fig. 3 is a side elevation of the bottom portion of the arrester. Fig. 4 is a horizontal section thereof on the line *yy* of Fig. 1, and Fig. 5 is a side elevation of a cap suspended therein concentrically with the smoke-educt.

The same designations indicate corresponding parts in all views.

It is a perpetual source of solicitude in the use of locomotive and stationary engines and furnaces that sparks therefrom may ignite adjacent combustible materials; but as we cannot dispense with these insignia of civilization it follows that the inventive faculty must be addressed to the obviation of this defect.

My arrester is formed of four segregable parts, being a base E, that serves as an accu-

mulating-reservoir for the sparks and wherein the smoke-education pipe D is rigidly secured concentrically, provided, moreover, with a flange *e'*, whereon the superincumbent drum A rests, encircling an annular wall *e*. The drum A has suspended within it (by the bolts *g*, having heads G and nuts *g'*) a cap C, which above the diaphragm C' is conical and below the same forms an annular wall *c*. From the base of this diaphragm a conical cap C² projects downwardly, whose apex concentrically meets the top portion of the pipe D.

The final component part of my arrester is the conical cover B, that terminates downwardly in a flange *b* and upwardly in a pipe B', which constitutes the smoke-exit. Doors F, hinged at *f'* and having knobs *f* provided with flanges *f'*², afford access interiorly.

It will be understood that the products of combustion are obstructed in their passage to the atmospheric exhaust by the cap C² and diaphragm C'. This results in a forcible separation by gravity of the gaseous from the solid constituents, causing the former to ascend and escape by pipe B' and the latter to descend and accumulate in the base E, thus preventing the sparks from injuriously affecting neighboring combustible objects.

Having thus fully described my invention, what I claim is—

In a spark-arrester, the combination, with the conical base E, having an outwardly-projecting flange *e'* and a vertical flange *e* on its upper edge, the pipe D, secured rigidly in the base and extending above the same, the drum A, fitted on the flange *e*, the conical cap C in the upper part of the drum above the pipe, the bolts *g*, for supporting the cap, the diaphragm C', the conical projection C², secured to the diaphragm and extending into the pipe, and the cover B, having flange *b* and pipe B', substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM JORDAN USSERY.

Witnesses:

S. ALLEN,
GEO. WOOD.