

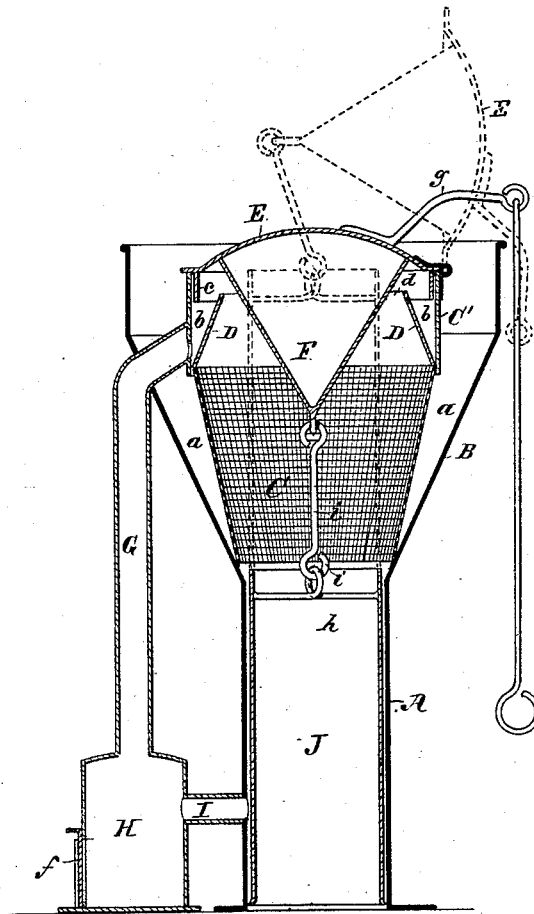
(No Model.)

D. WISER & J. W. MAXEY.

SPARK ARRESTER.

No. 302,369.

Patented July 22, 1884.



Witnesses:

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# UNITED STATES PATENT OFFICE.

DAVID WISER AND JAMES W. MAXEY, OF PLYMOUTH, INDIANA.

## SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 302,369, dated July 22, 1884.

Application filed March 28, 1884. (No model.)

### *To all whom it may concern:*

Be it known that we, DAVID WISER and JAMES W. MAXEY, both of Plymouth, in the county of Marshall and State of Indiana, have invented a new and useful Improvement in Spark-Arresters, of which the following is a specification, reference being had to the accompanying drawing, a single figure, which is a central vertical sectional view of a locomotive smoke-stack, with which is combined a spark-arrester embodying our invention.

The invention consists of the combination of devices herein described and claimed.

A is the body of the smoke-stack, having the usual flaring top, B.

C is a screen, made of wire-cloth, secured in the top B over the body A, leaving a space, *a*, as shown between it and the flaring top B of the stack. The screen is surmounted by the cylindrical rim C' and the conical rim D, that are united together at their lower edges and to the upper edge of the screen, leaving an annular space between them, as at *b*.

E is a cover hinged to the rim C', and provided, preferably, with a rim, *e*, which, when the cover is closed, shuts down inside of the rim C'. Both D and C' are imperforate.

F is an imperforate deflector in the form of an inverted cone secured to the under side of the cover E, with the apex preferably extending down somewhat into the screen when the cover is closed. The height of the rim D is proportioned, as shown, so that when the cover is closed there will be a little space, *d*, between the upper edge of D and the deflector F. From the annular chamber *b*, formed by D and C', a tube or conductor, G, leads to a receptacle, H, and a tube, I, leads from this receptacle into the body A of the stack near its lower end, and said receptacle is provided with a door, *f*, through which cinders may be removed therefrom.

The cover E is provided with a handle, *g*, by means of which it may be conveniently swung open on its hinge or hinges.

J is a supplementary smoke-pipe fitted to slide loosely in the body A of the stack. This pipe is connected to the deflector F, which may be done by means of a link, *i*, hooked at its upper end into an eye on the lower point of the deflector, and at its lower end into an eye on a cross bar or rod, *h*, secured to the upper end of J. The parts should be so proportioned that when the cover

E is closed the pipe J will drop to or below the bottom of the screen C, as shown in full lines in the drawing, and when the cover is swung open its said pipe will be raised to or above the upper end of the said screen.

The purpose of hinging the cover E is to secure an unimpeded draft while a fire is being started, and at other times when the draft is not being forced, which is accomplished by swinging open the cover E; but when this is done the smoke and cinders, as they pass through the screen, are liable to fill up and clog the same, as well as to wear it by abrasions. The office of the supplemental pipe is to obviate this clogging and abrasion.

In operation when the forced draft is on and the cover closed the smoke will pass through the screen into the chamber *a* and out of the stack, while the cinders will be thrown up out of the top of the screen against the inclined sides of the deflector F through the space *d*, and out of the chamber *b*, through the pipe G, into the receptacle H, from which they may be removed as occasion requires. The tube I conducts whatever steam passes down through the pipe G back to the body of the stack A, and thus avoids the inconvenience which would otherwise be caused by its escaping from the door *f*.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination, in the described smoke-stack, of the screen C, the rims C' and D, mounted thereon, the removable cover E, hinged to rim C', and the deflector F, attached to said cover, all as and for the purpose described.

2. The combination, in the described smoke-stack, of the screen C, rim C', removable cover E, hinged thereto, the deflector F, attached to said cover, and the supplementary smoke-pipe J, linked to said deflector and fitted to slide in the body A of the said smoke-stack, all as and for the purpose described.

3. The combination, in the described smoke-stack, of the screen C, the rims C' and D, the cover E, and deflector F, and the pipe G, and receptacle H, all as and for the purpose described.

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Witnesses:

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