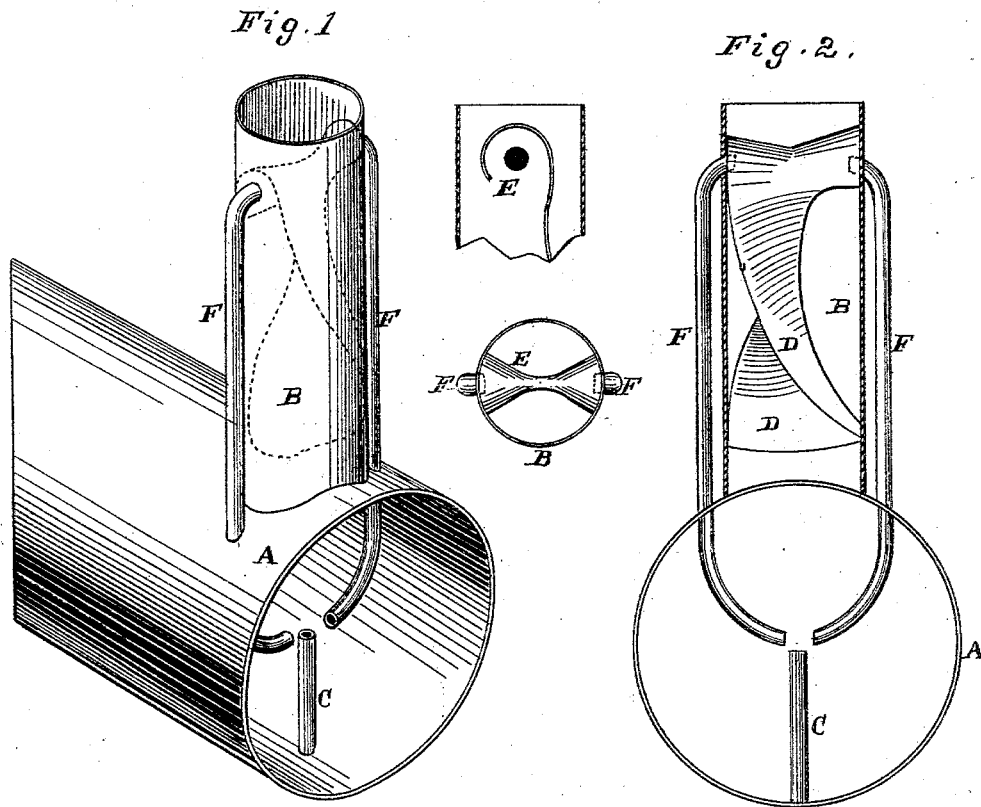


J. H. BARTLETT.  
Spark Extinguisher.

No. 210,656.

Patented Dec. 10, 1878.



Witnesses

*Geo. H. Strong*  
*Frank A. Brooks*

Inventor

*James H. Bartlett*  
by *Dewey & Co.*  
*Attys*

# UNITED STATES PATENT OFFICE.

JAMES H. BARTLETT, OF WOODLAND, ASSIGNOR OF ONE-HALF HIS RIGHT  
TO JOHN BATEMAN, OF OAKVILLE, CALIFORNIA.

## IMPROVEMENT IN SPARK-EXTINGUISHERS.

Specification forming part of Letters Patent No. **210,656**, dated December 10, 1878; application filed  
July 29, 1878.

*To all whom it may concern:*

Be it known that I, JAMES H. BARTLETT, of Woodland, county of Yolo, and State of California, have invented a Spark-Arrester; and I do hereby declare the following to be a full, clear and exact description thereof, reference being had to the accompanying drawings.

My invention relates to a novel apparatus to be applied to the smoke-stacks of boilers and engines, whereby I am enabled to arrest the sparks which would ordinarily be thrown out by the force of the exhaust-steam or draft, and which are dangerous when used in the harvest-field or among stubble, or in any place where there are combustibles which are liable to become ignited.

It consists in the employment of spiral or screw-shaped directing-wings, having their axis placed centrally in the stack, and these wings are bent over at the top, so as to form a sort of cup, into which the sparks, following the incline of the screw, will strike and be conveyed by pipes back into the smoke-box, as will be more fully described by reference to the accompanying drawings, in which—

Figure 1 is a view of the front part of the boiler, showing the smoke-box and the stack, with the return-pipe. Fig. 2 is a view of the arrester.

A is the front part of an engine-boiler or the smoke-box, and B is the stack, through which the products of combustion escape. The exhaust-steam from the engine is usually directed into the stack by a pipe or pipes, as represented at C, for the purpose of increasing the draft and causing a more perfect combustion. This violent draft is apt to cause a volume of sparks to escape, and this is especially dangerous in the harvest-fields, where the straw is as dry as tinder. In order to arrest these sparks and prevent them from escaping while they are alive, I employ a spiral flange or flanges, D, which extend up through the stack, their axis being longitudinally in the center of the stack, as shown. The sparks which are thrown up by the draft will impinge

against and follow up the lower sides of the screw-flanges until they reach the top, where they are arrested by means of a sort of cup, formed by turning the upper edges of the flanges over, as shown at E. These cups or receptacles are made conical in shape from the center outward, the apex of the cones being at the center, and the bases resting against the side of the stack. From this point in the stack pipes F lead downward into the smoke-box, and the side of the stack is perforated, so as to admit the sparks into these pipes, which thus convey them directly back into the smoke-box, where they either fall dead to the bottom and are removed from time to time, or they may be again carried up by the draft action and around through the pipes until entirely destroyed, when they will finally escape.

By this device I am enabled to entirely arrest the sparks and prevent any fire from passing out the chimney, while the draft is in no way impeded.

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

1. The spiral plate or plates D, standing longitudinally in the chimney, as shown, and having the integral curved cup-shaped receptacle E at the top, extending from side to side of the chimney, to arrest the upwardly-flying sparks, constructed and arranged substantially as herein described.

2. The spiral plate or plates D, standing longitudinally in the chimney B, as shown, and having the curved or cup-shaped receptacle E at the top, in combination with the return-tubes F, to carry the sparks back, substantially as herein described.

In witness whereof I hereunto set my hand and seal.

JAMES H. BARTLETT. [L. s.]

Witnesses:

GEO. H. STRONG,  
FRANK A. BROOKS.