(No Model.)

F. B. POPE.

SPARK ARRESTER.

No. 478,359. Patented July 5, 1892.

Fig. 1.

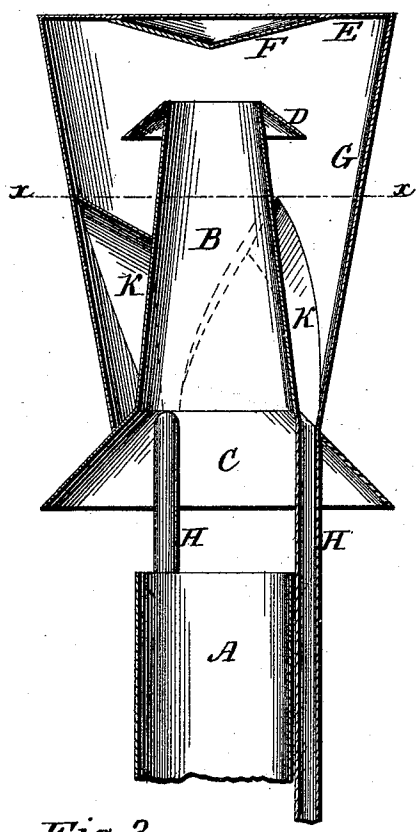
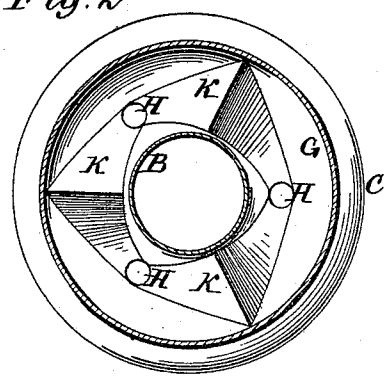


Fig. 2



Witnesses:
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UNITED STATES PATENT OFFICE

FREDERICK B. POPE, OF AUGUSTA, GEORGIA.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 478,359, dated July 5, 1892.

Application filed April 12, 1892. Serial No. 428,880. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK B. POPE, a citizen of the United States, residing at Augusta, in the county of Richmond, State of Georgia, have invented certain new and useful Improvements in Spark-Arresters, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to that class of spark-arresters in which the smoke is allowed to escape laterally from the top of the body of the stack, while the sparks and cinders are projected upward into a cap, which directs them downward and through tubes to the ground; and my invention consists in details of construction to direct and facilitate the ascension of the cinders into the cap and their deflection therein, as will be hereinafter described, and pointed out in the claim.

In the accompanying drawings, Figure 1 is a transverse vertical section of a spark-arrester constructed in accordance with my invention. Fig. 2 is a horizontal section of the same on line *x x* of Fig. 1.

In said drawings, A represents the body of the smoke-stack, that supports the improved cap a few inches above it. Said cap consists in part of a tapering pipe B, having its smallest diameter at the top. The diameter of the bottom of this pipe is substantially equal to that of the stack A; but it has attached to said bottom a conical funnel C, the base of which has a diameter more than double that of the stack A to prevent any sparks from escaping laterally with the smoke and insure their ascent into the cap. The tapering form of the pipe B causes an increase of the draft toward the top thereof. The upper end of the pipe B has encircling it and attached thereto a conical head or flange D to cause an eddy under said flange and prevent the sparks from again ascending above the upper edge of the pipe B after they have been deflected below its top.

To cause the sparks to be deflected down the sides of the pipe B and its conical head, said pipe B has a few inches above its upper end a closed disk E, fully twice the diameter of the widest end of the pipe B, and said disk has secured centrally to its under side a conical spark-deflector F, having its point downward. The disk E is supported in a horizontal position on the upper edge of the tapering pipe G, having its narrower lower end resting upon and secured to the conical funnel C.

A tapering form is given to the pipe G to properly direct the sparks to the bottom of the tapering chamber formed between the inner pipe B and the outer pipe G, and in the bottom of said chamber are the upper openings of three vertical pipes H to direct the sparks or cinders out of the cap to any desired point—for example, upon the ground or in a suitable receiver. The pipes H are preferably secured, also, to the sides of the stack and may be inclosed with said stack A in a suitable jacket. To help direct the cinders to the upper entrance of the pipes H, A-shaped inclined ways K, that extend from about halfway of the height of the spark-chamber to the bottom thereof, have their lower ends terminating close to the upper edges of the pipes H.

Having now fully described my invention, I claim—

In a spark-arrester, the combination of a smoke-stack having an open top and unobstructed lateral openings therefrom, a tapering pipe B, having its lower end of equal diameter as the smoke-stack, a wider conical funnel C at the lower end overhanging the smoke-stack, and an overhanging conical head D at the upper end, with an inclosing tapering pipe G, having a closed top E, and deflector F, secured to the under side of said top, pipes H, secured to the lower end of the tapering pipe G, and inclined ways K between the tapering pipes B and G, substantially as described.

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

FREDERICK B. POPE.

Witnesses:
W. J. O'DONOHOE,
B. L. FLEMING.