B. Briscoe.

Spark Arrester,

No. 1,037. Patented Dec. 15, 1838.

Fig: 1.

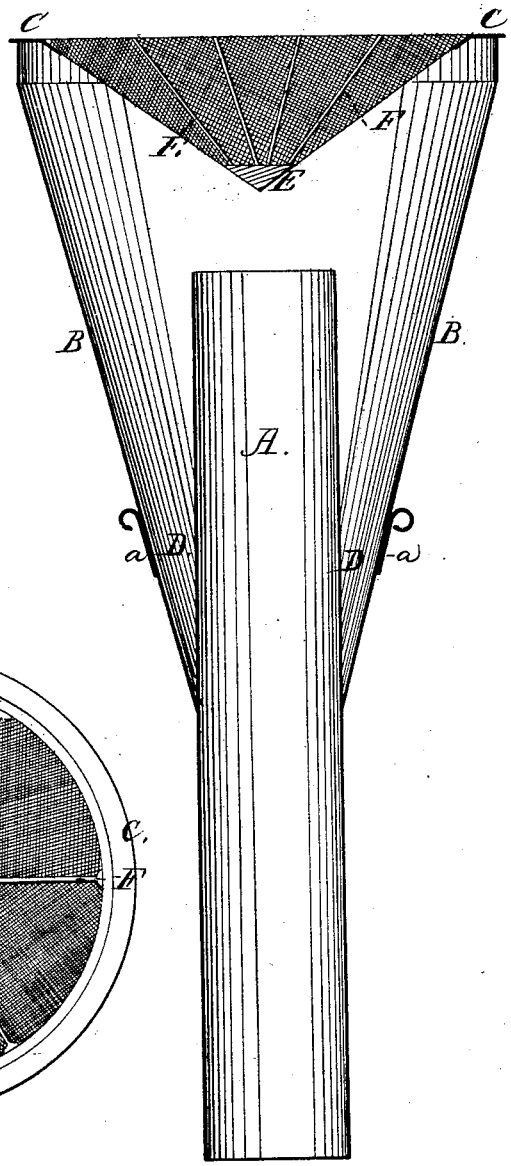
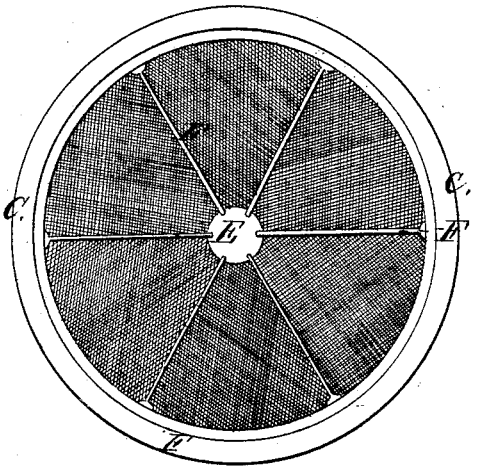


Fig: 2.



UNITED STATES PATENT OFFICE.

BENJAMIN BRISCOE, OF DETROIT, MICHIGAN.

IMPROVED SPARK-ARRESTER TO BE USED IN LOCOMOTIVE AND OTHER STEAM-ENGINES.

Specification forming part of Letters Patent No. **1,037**, dated December 15, 1838.

To all whom it may concern:

Be it known that I, BENJAMIN BRISCOE, of the city of Detroit, in the State of Michigan, have invented an Improved Spark-Arrester, to be used on the chimneys of locomotive and other steam-engines, for the purpose of preventing the escape of sparks; and I do hereby declare that the following is a full and exact description thereof.

I surround the chimney of the engine by an inverted cone of sheet-iron, the lower end of which embraces and is attached to the chimney at the distance of three feet (more or less) from the top of said chimney, its upper edge rising above the top of the chimney to the height of from twenty inches to two feet, where its diameter may be three times that of the chimney. To strengthen the upper edge of the inverted cone and to sustain an inverted cone of wire-gauze, I affix thereto a sheet-iron ring, which is so constructed as to answer another useful purpose, to be presently described.

In the accompanying drawings, Figure 1 is a vertical section of the chimney and its appendages; and Fig. 2, a top view of the ring with the ribs which are to support the wire-gauze.

A A is the chimney; B B, the inverted cone of sheet-iron surrounding it, the space between it and the chimney serving as a receptacle for the sparks and ashes, there being sliding or other doors *a a* provided for removing them when necessary.

c c is the sheet-iron ring which surrounds and is attached to the upper edge of the cone B B. This ring I usually make about three inches wide, its outer edge being attached to the cone, in consequence of which it projects inward, lessening the diameter of the opening about six inches. Its lower flat side then presents a space against which the sparks strike, which are conducted up to it by the inverted cone of wire-gauze, where not being subjected to any draft, they fall readily into the receptacle.

D D is the inverted cone of wire-gauze, which is attached at its upper edge to the hoop C C and at its lower edge to a disk or piece of sheet-iron E. This lower end may be about ten inches above the top of the chimney.

F F, Fig. 2, are ribs of iron to which to attach the wire-gauze.

The part which I have denominated the inverted cone of wire-gauze may be a segment of a sphere as well as of a cone, and may be made to produce the same mechanical effect.

The sparks as they rise from the chimney strike against the wire-gauze, and from its position they are carried by the draft up its inlined sides until they come into contact with the under side of the ring, whence they fall, as already stated. The inner edge of the ring may be made to incline downward in the direction of the wire-gauze.

The difference between the action of the draft upon a flat or a concave surface in detaining the sparks and the action upon such a one as I have described will be apparent, as its tendency in the former case is to cause them to adhere to and in the latter to slide up on the surface, thus perpetually freeing it from their obstructing influence.

What I claim as my invention, and desire to secure by Letters Patent, is—

The employment, for the purpose of arresting sparks, of an inverted cone or curved segment of wire-gauze, combined and connected with the surrounding ring and the other parts of the apparatus, substantially in the manner described.

BENJAMIN BRISCOE.

Witnesses:

AMOS T. HALL,

A. K. ADAMS.