D. HAWKESWORTH.

Spark-Arrester.

No. 166,870. Patented Aug. 17, 1875.

Fig. 1

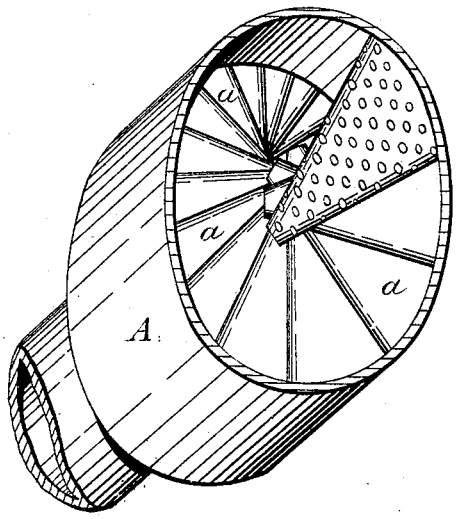
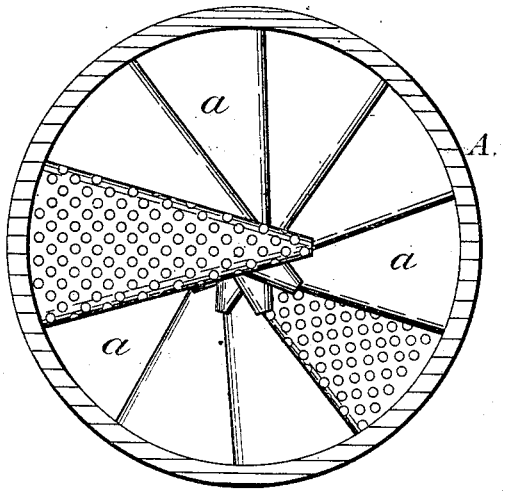


Fig 2



Attest:

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Inventor:

Daniel Hawkesworth,

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Atty.

UNITED STATES PATENT OFFICE.

DANIEL HAWKESWORTH, OF DIGBY, CANADA.

IMPROVEMENT IN SPARK-ARRESTERS.

Specification forming part of Letters Patent No. **166,870**, dated August 17, 1875; application filed July 26, 1875.

To all whom it may concern:

Be it known that I, DANIEL HAWKESWORTH, of Digby, in the county of Digby, Province of Nova Scotia and Dominion of Canada, have invented certain new and useful Improvements in Spark-Arresters; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a perspective view, and Fig. 2 is a top plan.

Similar letters of reference indicate corresponding parts.

The object of this invention is to produce a spark-arrester so arranged that it may be placed inside of a chimney, smoke-stack, or flue at any suitable point, without destroying the draft, while it may also be used upon the top of a chimney or smoke-stack in the usual manner.

A is a sheet-metal cylinder. Onto the inside circumference of this is riveted a series of triangular metallic plates, *a a*, arranged spirally, so as to overlap each other. Each of the plates *a* projects beyond the axis of the cylinder A, so that not only the sides, but also the points of the plates *a*, will overlap each other, in the manner shown in Fig. 2. When the plates *a* are arranged within the chimney or flue itself I prefer to perforate them; but when arranged within a drum or expanded part of a smoke-stack the plates may be made solid, care being taken that they shall be arranged at a suitable distance from each other, so as not to obstruct the draft. The series of plates should be continued for at least one "round," so that when seen from above the cylinder A will appear perfectly closed. The plates *a*, while not in the least obstructing the passage of the smoke, will intercept the flight of any sparks, which, being heavier than the smoke, will strike against the under side of the plates *a*, and be kept there in suspension until consumed, when the draft will carry them away as ashes. The points of the plates overlapping each other will prevent any of the sparks from escaping along the axis of the cylinder A.

The advantages of my improved spark-arrester will be easily understood from the foregoing description. The spiral or rotary motion imparted to the smoke by the circumferentially-arranged plates *a* will rather improve the draft than otherwise, while the said plates make it absolutely impossible for any sparks to escape until entirely burned out, when the danger of fire, which my improvement is designed to obviate, is entirely avoided.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

The spark-arrester herein described, consisting of a cylinder, A, having a series of internal triangular plates, *a a*, arranged circumferentially and spirally, overlapping each other sidewise and at the points, substantially in the manner and for the purpose herein shown and specified.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

DANIEL HAWKESWORTH. [L. S.]

Witnesses:
JOHN DALEY,
W. L. BAKIN.