

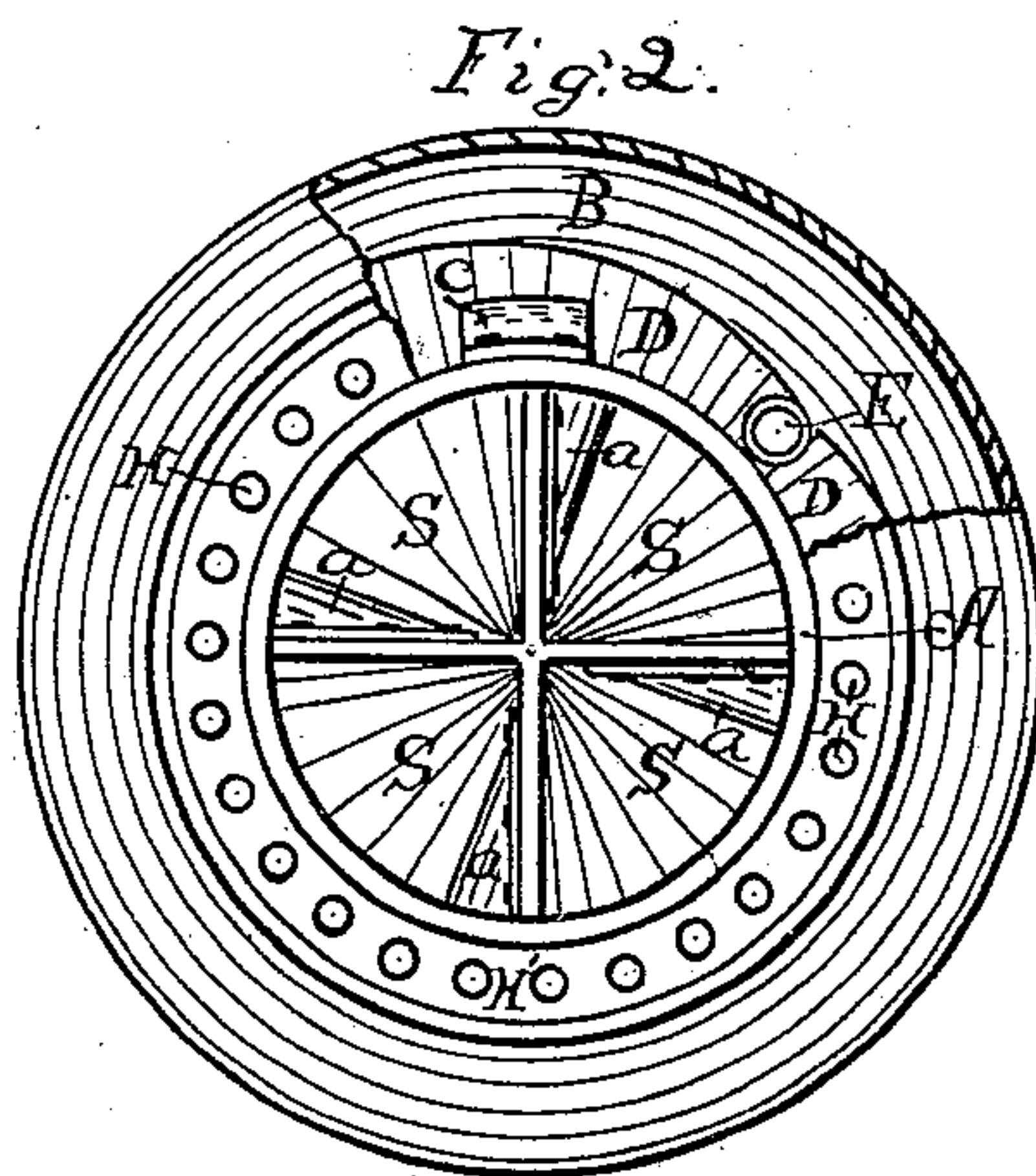
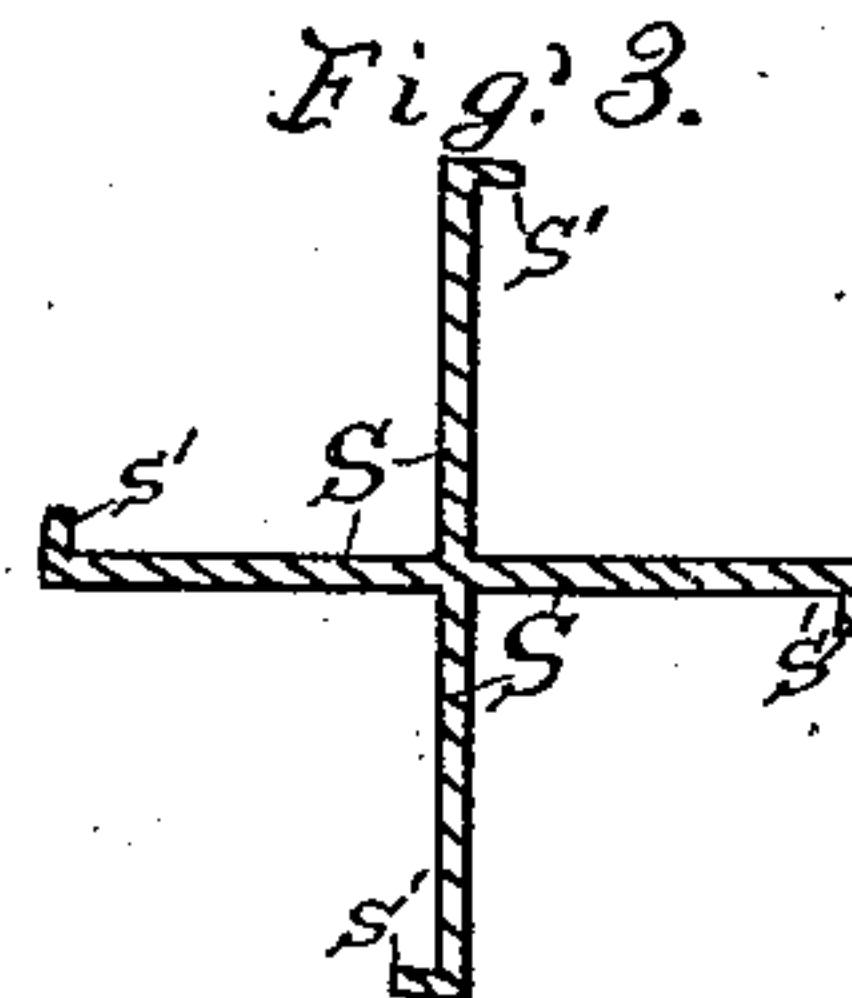
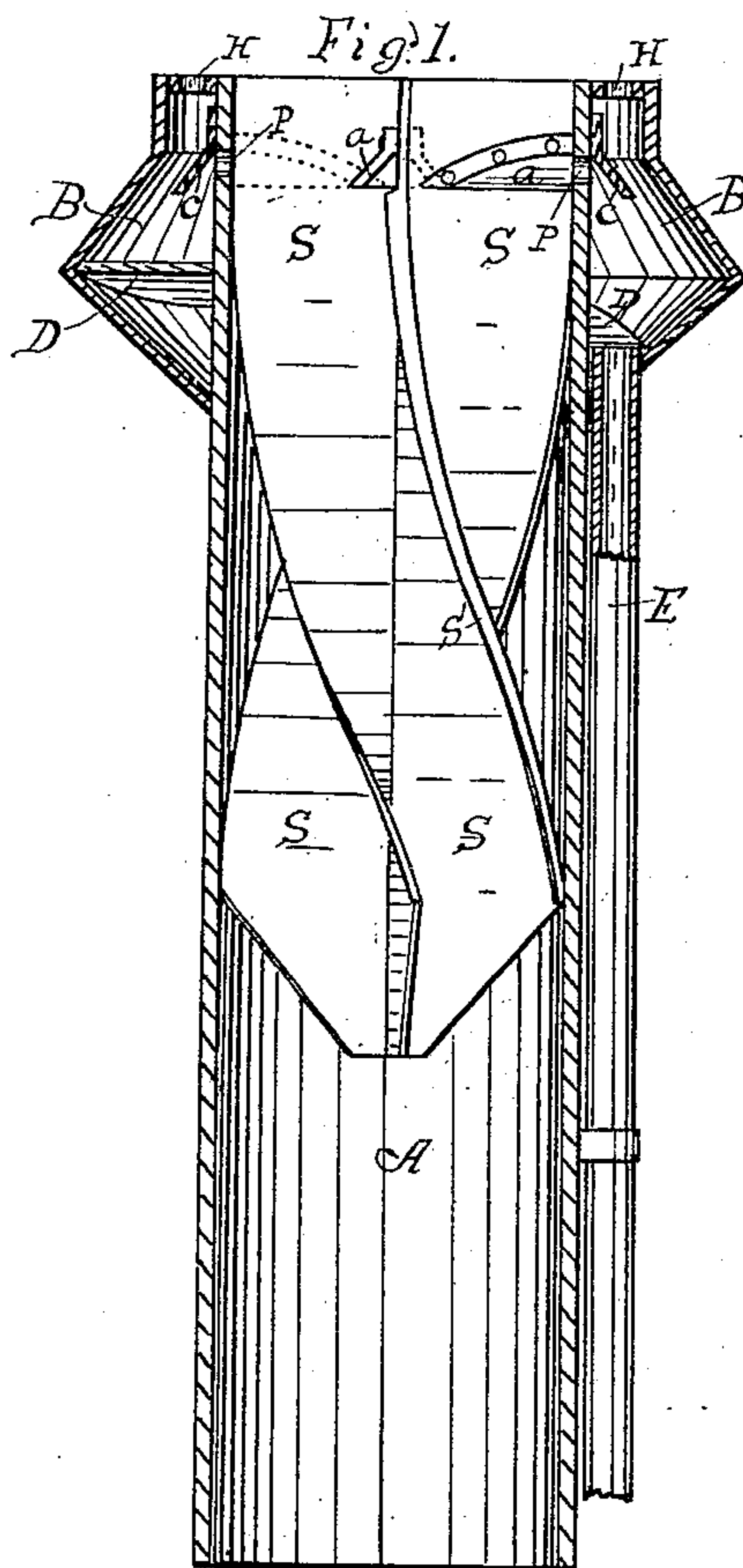
(No Model.)

H. R. WALKER.

SPARK ARRESTER.

No. 267,470.

Patented Nov. 14, 1882.



Witnesses.

Thos H. Hutchins.
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UNITED STATES PATENT OFFICE.

HUGH R. WALKER, OF JOLIET, ILLINOIS.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 267,470, dated November 14, 1882.

Application filed March 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, HUGH R. WALKER, of the city of Joliet, in Will county, and State of Illinois, have invented certain new and useful
5 Improvements in Spark-Arresters, the construction and operation of which I will proceed to explain, reference being had to the annexed drawings, making a part of this specification, in which—

10 Figure 1 is a vertical sectional view of the stack proper, containing the spiral partitions; Fig. 2, a plan view on the top of the chimney-stack, and Fig. 3 a cross-sectional view of the spiral partitions.

15 This invention is intended to be for certain improvements on the locomotive-engine chimney for which Letters Patent were granted to me February 18, 1879, No. 212,414, by the United States, and is for the purpose of preventing sparks from escaping from the top of the chimney, without the use of netting over the top or a cone within to intercept the passage upward of the smoke.

Referring to the drawings, A represents the
25 smoke-stack or chimney proper, provided in its interior with the radial spiral partitions S, extending from the top downward something more than half-way, and having a twist of about one-half way around, which may be varied, however, to suit any particular case.
30 These partitions S are provided at upper ends, on the side the sparks are driven up against, with an overhanging hood, *a*, set so its outer end is the highest, as shown in Fig. 1, and opposite to the aperture P in the side of the chimney, as shown in said figure. The exhaust from the engine drives the smoke and sparks upward, and the sparks are collected on the under face of the spiral partitions S,
35 and caught near the top by the overhanging hoods *a*, and driven out into the annular chamber B of the bonnet through the apertures P, while most of the smoke escapes from under the hoods *a* and passes out at the top, free
40 from sparks.

The apertures P are overhung on the outer side of the chimney A by the hoods *c*, for the purpose of preventing the sparks from being driven with great force against the outer walls
50 of the chamber B to wear it out, and also to direct their course downward onto the inclined floors D, which conduct them to the external

discharge-pipe, E, to convey them to the ground.

A space is left on the top of the chimney A, 55 between it and the bonnet, which space is filled by the annular perforated plate H', having the perforations H to permit any smoke that may enter the bonnet with any sparks through the apertures P to escape upward and
60 out.

The spiral partitions S are provided at their outer edge or extremity, next the chimney A, with a flange, S', for the purpose of lining so much of the inner wall of the chimney to prevent its being worn out at that place by the sparks as they are driven upward, as they have a tendency to be thrown outward against the chimney and wear it at that point. Any number of these spiral partitions may be used
70 that may be found the most practicable.

In this invention the new features are the flanges S' on the outer edge of the spiral partitions S, the overhanging hoods *c* to cover the apertures P, and the perforated annular
75 plate H' to allow the smoke to escape from the bonnet, and the use of more than one partition S, as shown.

Having thus described my invention, what I claim as new, and desire to secure by Letters
80 Patent, is as follows, to wit:

1. In the spark-arrester described, the radial spiral partitions S, having the flanges S', in combination with the chimney A, for the purpose set forth. 85

2. In the spark-arrester described, the overhanging hoods *c* to cover the apertures P in the chimney A, in combination with the arresting-hoods *a* on the spiral partitions S, for the purpose specified. 90

3. The chimney A, having the perforations P, in combination with the radial spiral partitions S, provided with the flanges S' and hoods *a*, hoods *c*, annular perforated plate H, connecting the top of the chimney A with the
95 bonnet, and the bonnet provided with the inclined floor D and discharge-pipe E, all arranged to operate as and for the purpose set forth.

HUGH R. WALKER.

Witnesses:

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