

Freeman & Payton,

Spark Arrester.

No. 103,731.

Patented May 31, 1870.

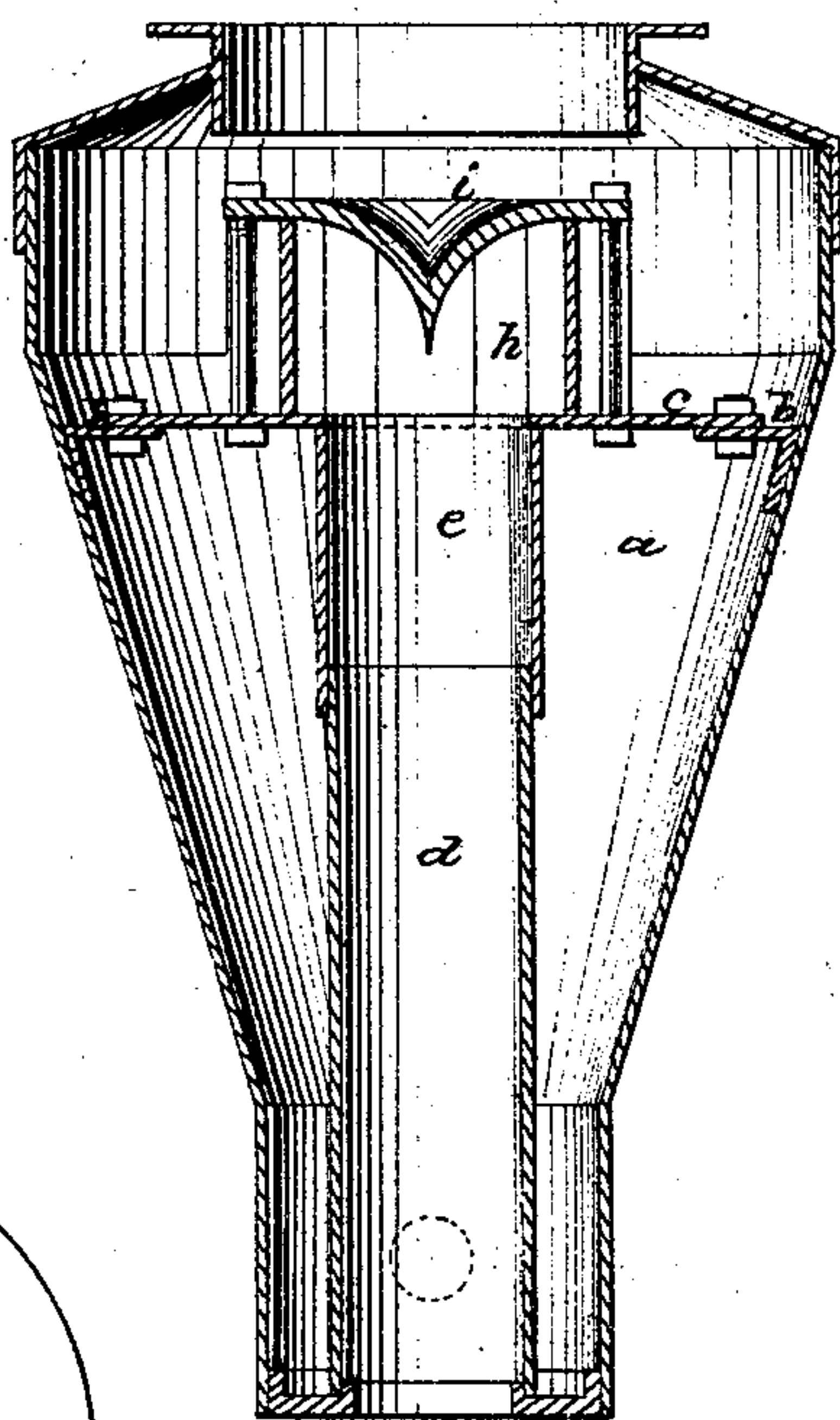


fig. 1.

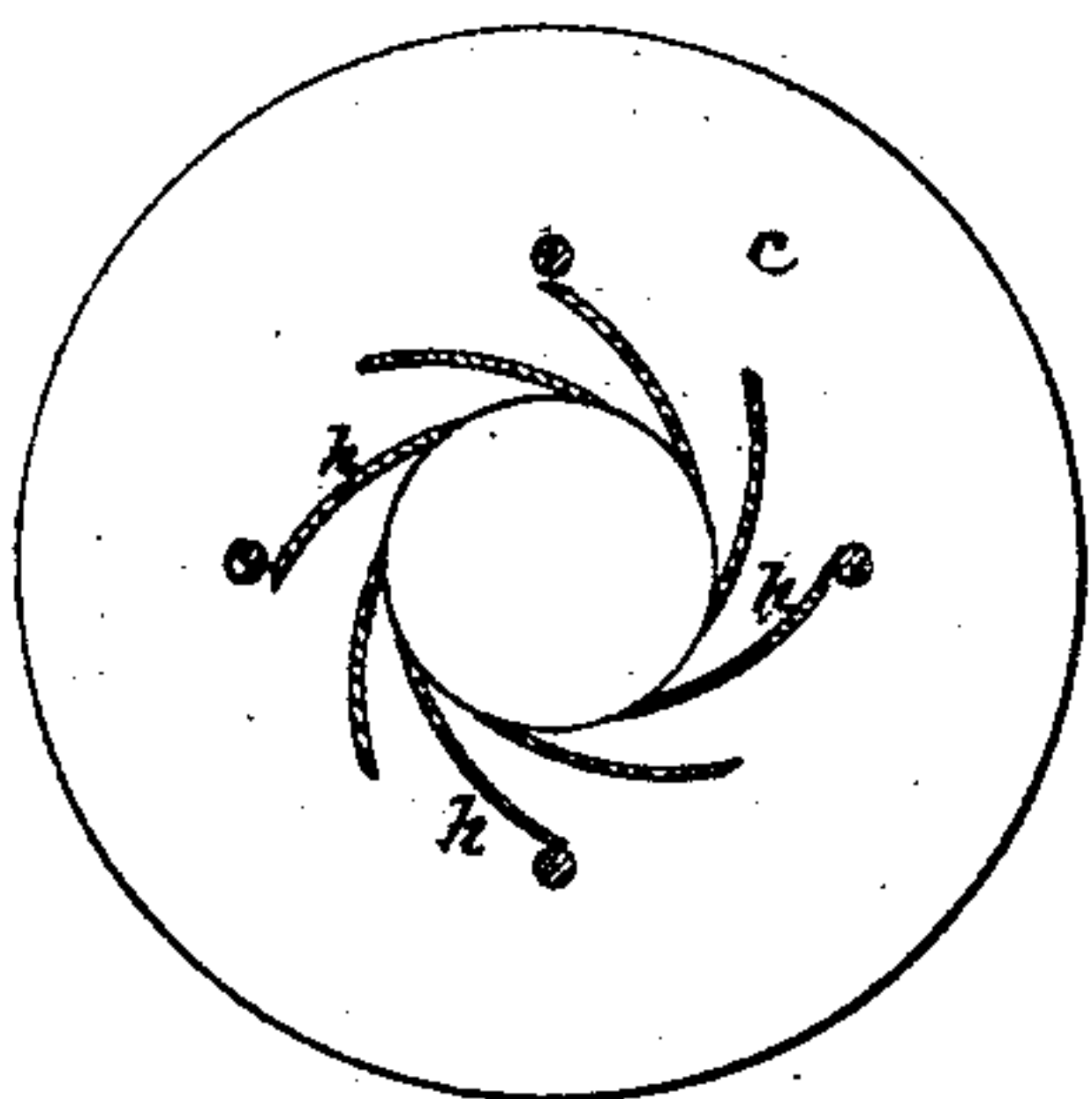
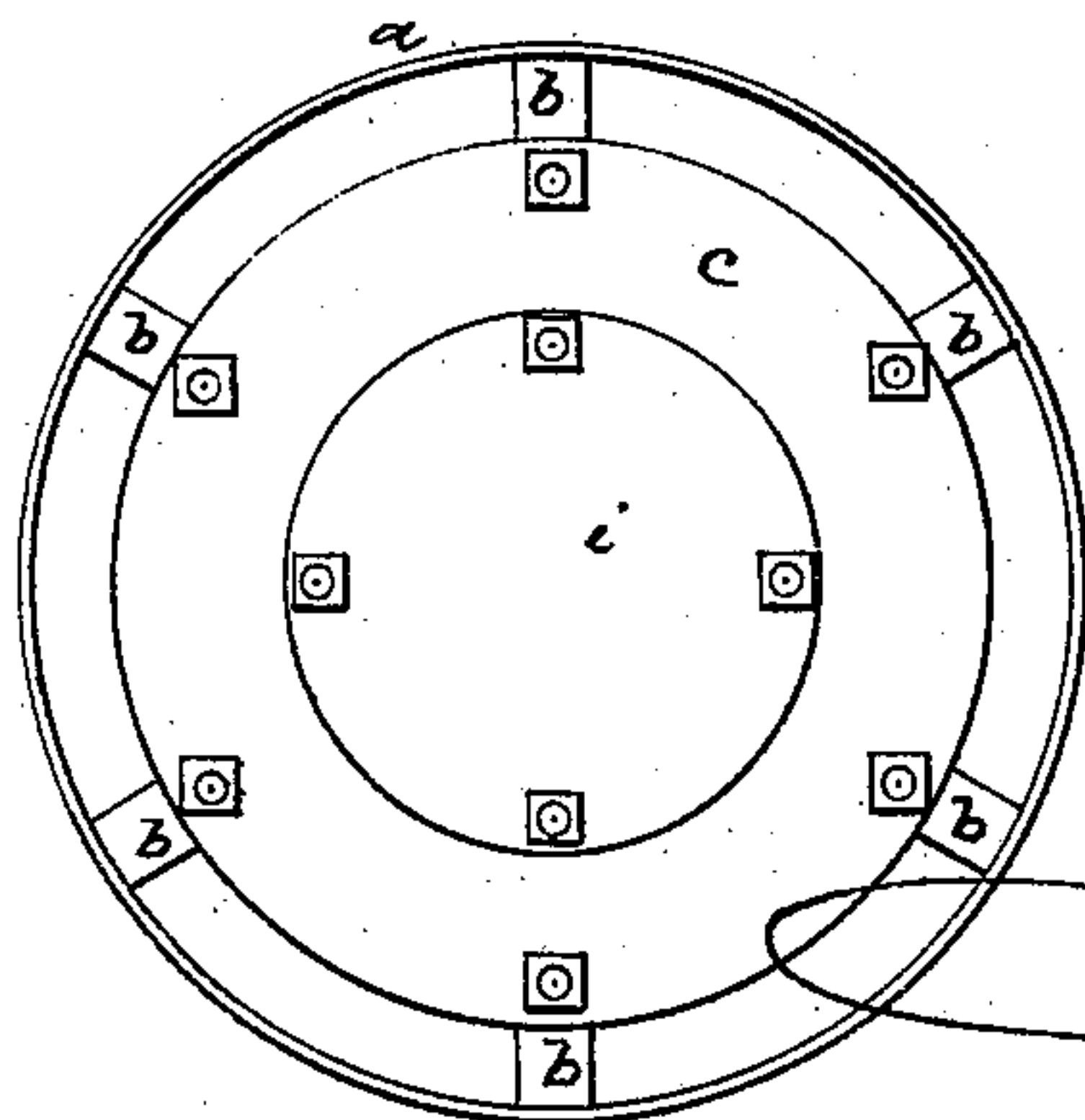


fig. 3.

fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

BENJAMIN P. FREEMAN AND PAT. PAYTON, OF MACON, GEORGIA.

LOCOMOTIVE SPARK-ARRESTER.

Specification forming part of Letters Patent No. **103,731**, dated May 31, 1870; antedated April 1, 1870.

To all whom it may concern:

Be it known that we, BENJAMIN P. FREEMAN and PAT. PAYTON, of Macon, in the county of Bibb and State of Georgia, have invented a new and useful Improvement in Locomotive Spark-Arresters; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a sectional elevation. Fig. 2 is a plan view of the arresting-plate and volute in position within the stack, the cover being removed; and Fig. 3 is a horizontal section through the volute.

This invention has for its object to arrest the sparks, cinders, or other ignited matter which is discharged into the smoke-stack of a locomotive-engine, and at the same time to allow the exhaust-steam and smoke which accompany the sparks to pass freely out of the stack.

The invention consists in a disk or arrester within the smoke-stack, on which stands a volute, and which extends nearly to the inner surface of the stack, and rests on and is secured by bolts to knees projecting horizontally inward from the stack, the effect of the exhaust being to throw sparks and cinders outward against the inside of the stack, where, striking, they fall below the arrester, and are by that prevented from rising again, while steam and smoke escape without obstruction out of the top of the stack.

In the drawing, *a* is the stack; *b*, the knees, projecting inwardly from the same; *c*, the arresting-disk, resting on the arms *b*; *d*, the pipe

by which products of combustion escape from the furnace; *e*, a pipe extending downward through the arrester *c*, and forming a continuation of the pipe *d*; *h*, the volute, supported on the arrester; and *i*, the conical deflecting-cap of the volute.

It is necessary that the arrester should extend nearly to the inside of the stack, in order to prevent the reaction of sparks.

Heretofore volutes have been used for a similar purpose to that herein described; but they have been surrounded by a box having orifices in its sides for the escape of sparks, and a cover provided with a single central opening for the passage of smoke and steam. This arrangement materially hinders the exit of these gases, and obstructs the draft of the furnace, rendering it difficult to generate a sufficiency of steam. By dispensing entirely with the box, and using the arrester-disk in its stead, we secure as strong a draft and as ample a vent for smoke and steam as can be had in the open stack, and at the same time arrest all ignited matter which falls to the bottom of the stack.

We disclaim the volute entirely.

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

The combination, with a locomotive-stack and its flue *d*, of the arrester-disk *c*, constructed and arranged to operate as described.

BENJAMIN P. FREEMAN.
PAT. PAYTON.

Witnesses:

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