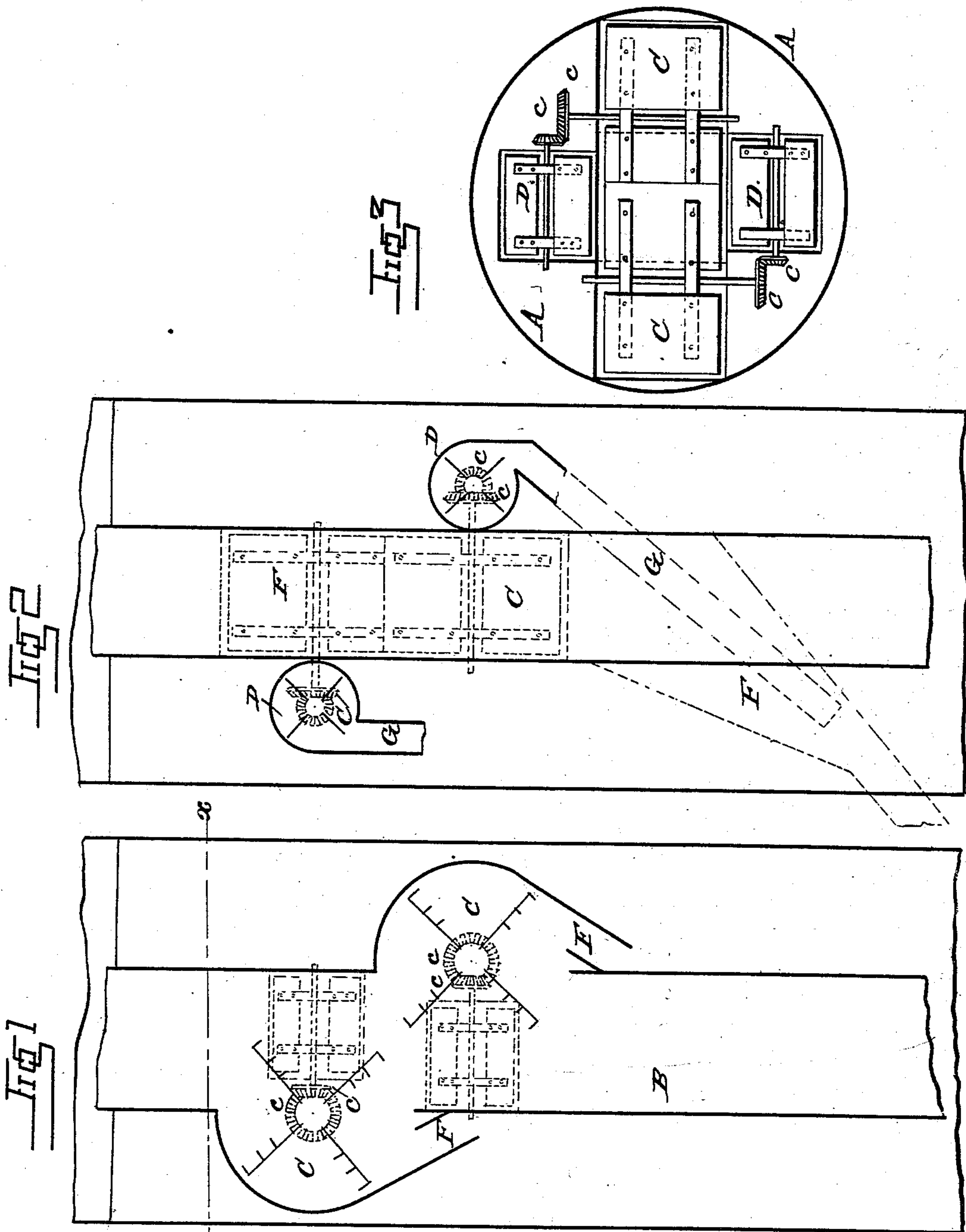


(No Model.)

G. SALTSMAN.
SPARK ARRESTER.

No. 279,021.

Patented June 5, 1883.



WITNESSES:

Wm. L. Dieterich
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UNITED STATES PATENT OFFICE.

GEORGE SALTSMAN, OF BLOOMINGTON, ILLINOIS, ASSIGNOR OF ONE-HALF
TO WILLIAM A. GERKEN, OF SAME PLACE.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 279,021, dated June 5, 1883.

Application filed March 30, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE SALTSMAN, of Bloomington, in the county of McLean, and in the State of Illinois, 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification, and in which—

Figure 1 is a vertical section through a smoke-stack. Fig. 2 is a vertical section at right angles to Fig. 1; Fig. 3, a horizontal section through the line *x x* of Fig. 1.

The object of my invention is to supply a device that will arrest the sparks, &c., and utilize a large per cent. of what are now the waste products of combustion; and to this end the invention consists in novel features of construction and combination and arrangement of parts, all as will be hereinafter fully described, and set forth in the claims hereto annexed.

In the drawings, A is the outer cylinder, and B the inner cylinder or smoke-stack, through which the products of combustion—smoke, gases, and sparks—pass upward, and within which project the spark-arresting fans C C, and partially revolve one above the other, and in such close proximity as to slightly lap each other, and thereby arrest the sparks, &c., in their upward course, and deliver them into the discharge-spouts connected with the usual fire-box of an engine.

D D represent fans located in the space between the inner and outer cylinders, and at right angles to the fans C C, to which they are connected by bevel-gearing *c c*, mounted upon their respective shafts. The shafts of the fans C C are connected and operated from motive power derived from the engine, and form the power for retarding the momentum of fans D. These fans D D force the air down tubes G G into the conduits F F, and assist in driving the sparks, &c., received into the latter con-

duits from the fans C C into the fire-box. The fans C C are apt to revolve too rapidly, and getting under too great momentum the sparks are liable to go by the fans C C, and thus escape upward through the stack B. This is somewhat overcome by the fans D D, retarding their momentum. It will therefore be seen that the fans D D have a twofold function—to check somewhat the otherwise, perhaps, too-rapid motion of the fans C C, and, secondly, to furnish an exhaust for sparks, smoke, &c., passing into the conduits F F, and thence forced into the fire-box, and furnishing a draft for the fire. The space between the inner and outer cylinders or stacks, B and A, should be closed near the top to prevent the upward passage and escape of the products of combustion through said space.

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

1. The combination, with the inner and outer cylinders or stacks, B and A, of the fans C C, arranged in the space between the same, one above the other, and projecting into the cylinder B, so as to slightly overlap each other, substantially as herein shown and described.

2. The combination, with the inner and outer cylinders or stacks, B and A, of the fans C C and D D, connected and arranged relatively to each other in said stacks, cylinders, or shafts, substantially as herein shown and described.

3. The combination, with the inner and outer cylinders or stacks, B and A, of the fans, C C and D D, connected and arranged relatively to each other in said stacks, and the conduits F F and tubes G G, connected to each other, substantially as herein shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 5th day of March, 1883.

GEORGE SALTSMAN.

Witnesses:

THOS. SLADE,
S. R. GRIFFITH.