

(No Model.)

H. HENNIG.
SPARK ARRESTER.

No. 335,923.

Patented Feb. 9, 1886.

Fig. 1.

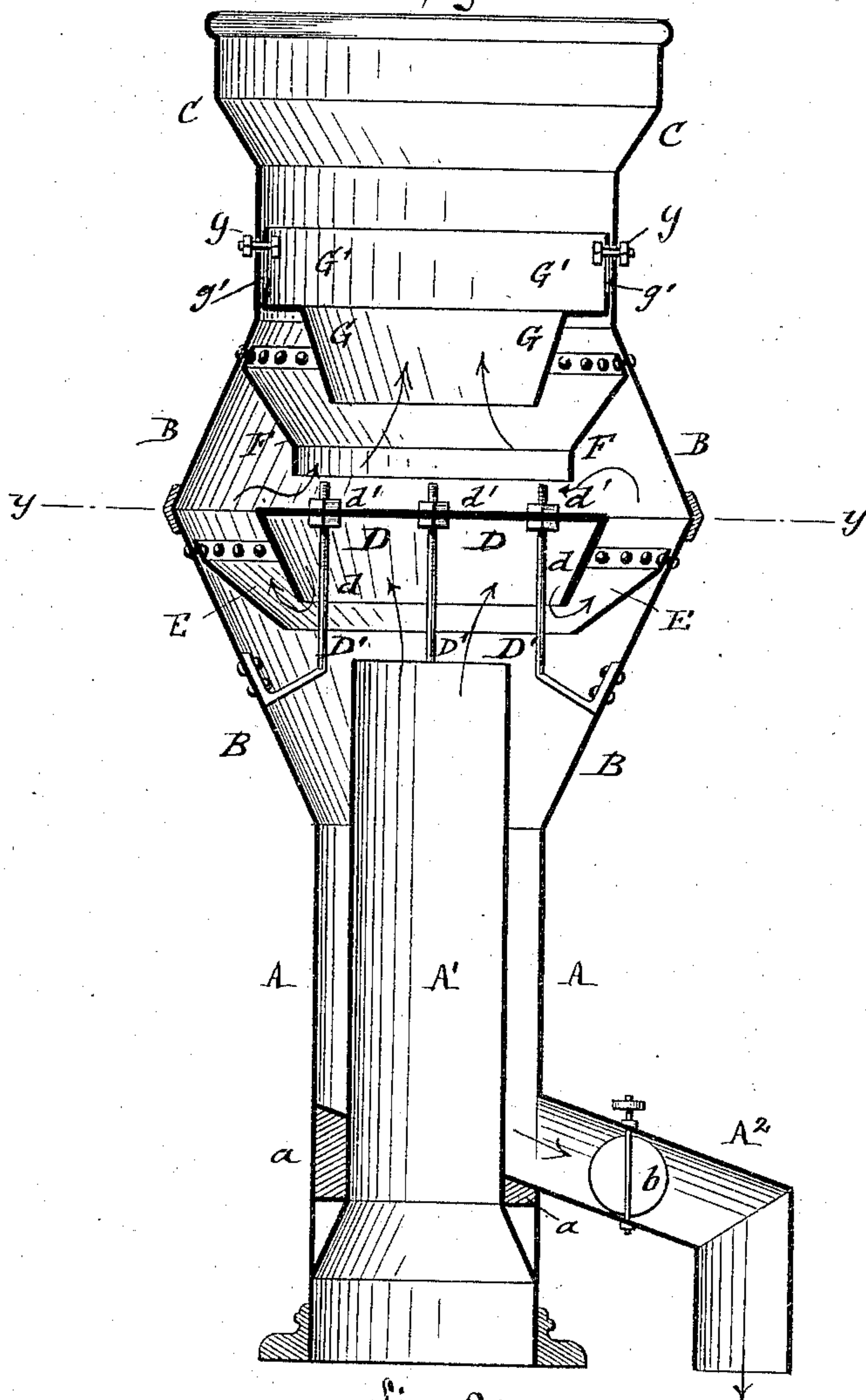
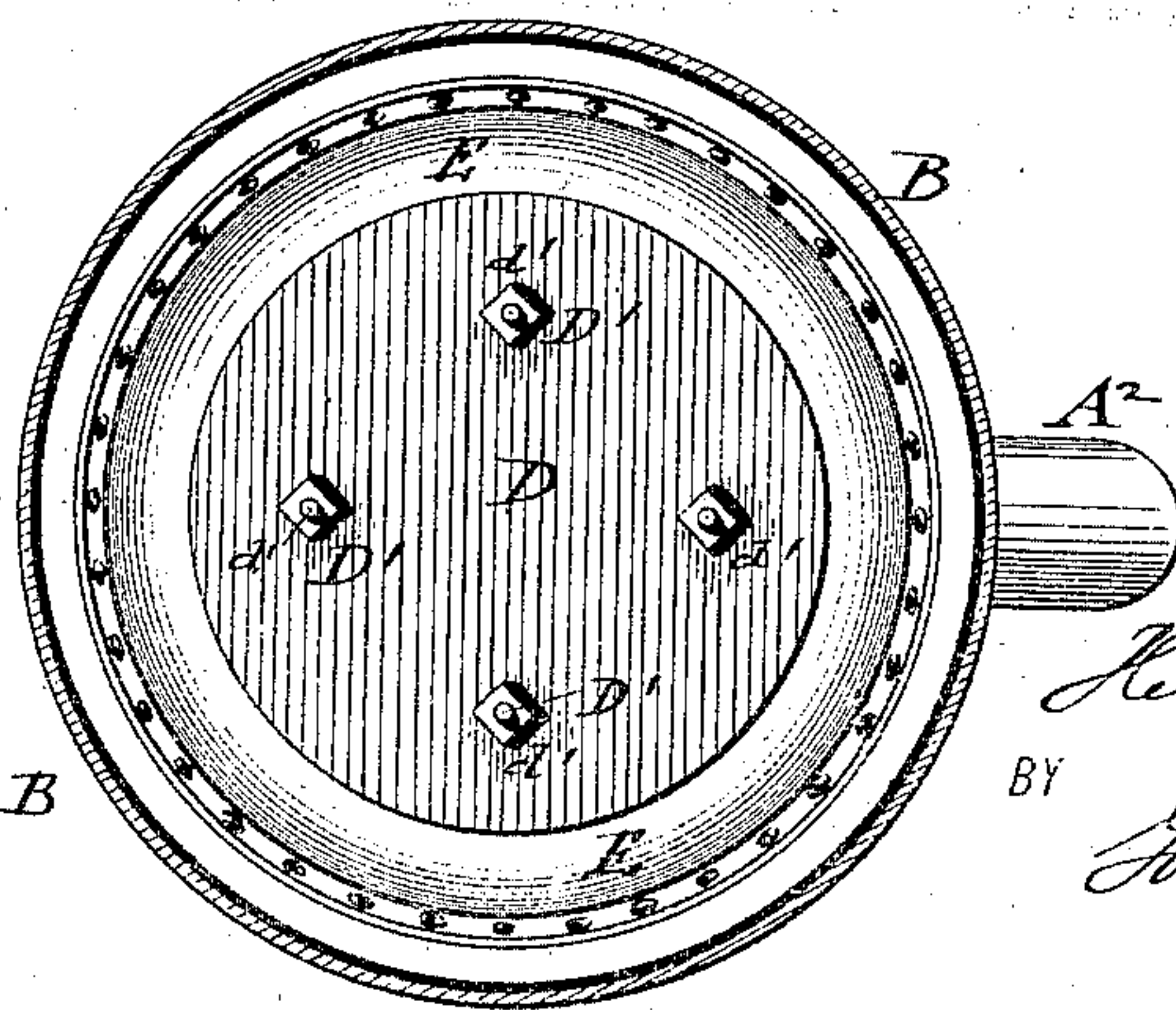


Fig. 2.



WITNESSES:

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HENRY HENNIG, OF PATERSON, NEW JERSEY.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 335,923, dated February 9, 1886.

Application filed November 20, 1885. Serial No. 183,384. (No model.)

To all whom it may concern:

Be it known that I, HENRY HENNIG, of Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Spark-Arresters for Smoke-Stacks, of which the following is a specification.

This invention relates to an improved spark-arrester for locomotive and other smoke-stacks; and the invention consists of a smoke-stack made with an enlarged double-truncated portion, within which is arranged a diaphragm having a downwardly-inclined flange, an inclined annular flange below the diaphragm, a fixed conical flange at some distance above the same, and an adjustable conical flange of smaller diameter above the fixed flange.

In the accompanying drawings, Figure 1 represents a vertical central section of my improved spark-arrester for smoke-stacks, taken on line *x x*, Fig. 2; and Fig. 2 is a horizontal section on line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

A in the drawings represents a smoke stack, which is provided with a double-conical portion, B, and above the same with an enlarged head, C. At the interior of the double-conical portion B is arranged a horizontal diaphragm, D, that is provided with a downwardly-flaring flange, *d*. The diaphragm D is preferably made of cast-iron, and supported by bracket-arms D', that are attached at their lower ends to the lower part of the enlarged portion B, and at their upper threaded ends by screw-nuts *d'* to the diaphragm D. The smoke and steam is conducted through an interior pipe, A', of smaller diameter than the smoke-stack A, said pipe terminating in the enlarged portion B below the diaphragm D. The smoke impinges against the diaphragm D, and passes around the flange *d* of the same, and between it and an annular collar or flange, E, attached to the enlarged portion B, intermediately between it and the diaphragm D, in upward direction, as indicated by arrows in Fig. 1. The cinders that impinge against the diaphragm D, and the cinders that are forced into the annular space between the flange E and the enlarged portion B, are dropped into the annu-

lar space between the interior pipe, A', and the smoke-stack A, and conveyed along an inclined collar, *a*, at the base of the interior pipe, A', to a discharge-spout, A², having a valve, *b*, that is opened from time to time, so as to discharge the accumulated cinders. A second conical flange, F, is riveted to the upper section of the enlarged portion B, above the diaphragm D, and a third conical flange, G, of smaller diameter, arranged above the flange F and adjusted by means of a cylindrical extension, G', having fastening screw-bolts *g* in slots *g'* of the cylindrical lower part of the head C of the smoke-stack. By adjusting the flange G' higher or lower the draft can be increased or decreased as required. The cinders that pass above the diaphragm D are lodged in the angular spaces between the conical flanges F and G and the enlarged portion B, and dropped on the horizontal part of the diaphragm D. The cinders are swept away from the top surface of the diaphragm D by the force of the smoke and steam passing over the same, so as to be dropped along the flange E into the annular space between the interior pipe, A', and the smoke-stack A, and thence to the discharge-tube A². The escape of cinders at the head C is entirely prevented, and the same collected and discharged at the lower part of the smoke-stack.

As the diaphragm D and flanges E F G are preferably made of cast-iron, the spark-arrester is very strong and durable, especially as no screens or other parts, which are liable to be quickly worn out by the action of the steam and smoke, are employed.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A spark-arrester for smoke-stacks, consisting of a smoke-stack having an enlarged portion, an interior diaphragm having a downwardly-inclined flange, bracket-arms for supporting the diaphragm, a conical flange below the diaphragm, a fixed and an adjustable conical flange above the same, and an enlarged head, substantially as set forth.

2. A spark-arrester for smoke-stacks, consisting of a smoke-stack having an enlarged portion, an interior smoke and steam pipe, an inclined discharge-pipe, a diaphragm having

a downwardly-inclined flange in the enlarged
portion, bracket-arms for supporting the dia-
phragm, a conical flange below the diaphragm,
a fixed conical flange above the same, and an
5 adjustable conical flange of smaller diameter
above the fixed flange, and an enlarged head,
substantially as set forth.

In testimony that I claim the foregoing as
my invention I have signed my name in pres-
ence of two subscribing witnesses.

HENRY HENNIG.

Witnesses:

CARL KARP,
MARTIN PETRY.