

J. HUGHES.
Spark-Arresters.

No. 144,275.

Patented Nov. 4, 1873.

Fig. 1.

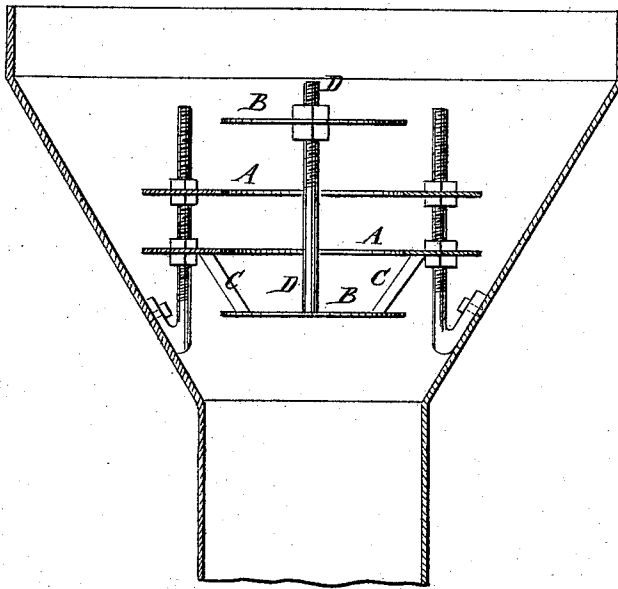


Fig. 2.

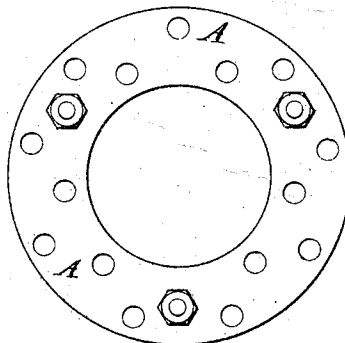
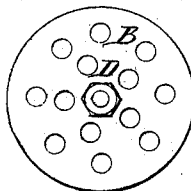


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES HUGHES, OF SCRANTON, PENNSYLVANIA:

IMPROVEMENT IN SPARK-ARRESTERS.

Specification forming part of Letters Patent No. **144,275**, dated November 4, 1873; application filed October 11, 1873.

To all whom it may concern:

Be it known that I, JAMES HUGHES, of Scranton, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Improvement in Spark-Arresters, of which the following is a specification:

Figure 1 is a detail vertical section of my improved device. Fig. 2 is a plan view of the rings, and Fig. 3 is a plan view of one of the plates.

My invention has for its object to furnish an improved spark-arrester for attachment to the smoke-stack of locomotive-engines, which shall be so constructed as not to obstruct the draft, while preventing the passage of the sparks, and preventing the exhaust from cutting the wire-netting. The invention consists in the combination of the two equal-sized perforated rings and the two equal-sized perforated circular plates with each other adjustably, as hereinafter fully described.

A are two ring-plates, of exactly the same form and size, and which are perforated with numerous holes, as seen in Fig. 2, which holes should be so arranged that the holes of one ring may be directly over the spaces between the holes in the other ring, so that the draft cannot pass directly through the holes to the netting. B are two circular plates, of the same form and size, and of about the size of, or a little larger than, the center openings of the rings A. The plates B are perforated with numerous holes, which should be so arranged that the holes of one plate may be opposite the spaces between the holes of the other plate, so that the draft cannot pass directly through to the netting. One of the circular plates B is rigidly connected with one of the ring-plates A by rigid arms C, as shown in Fig. 1, so that the said circular plate may be supported from the said ring-plate. To the center of the cir-

cular plate B is attached a standard, the upper part of which has a screw-thread cut upon it, and passes up through a hole in the center of the other circular plate B, which is secured adjustably to the said standard by two nuts placed, the one above the other, below the said plate B. In the ring-plates A are formed three or more holes, to receive the rods by which the device is supported, and to which said rings are secured by nuts screwed upon the said rods above and below the said rings.

By this construction the rings and plates may be conveniently adjusted at any desired distance apart.

This construction allows the four plates A A B B to be differently arranged with respect to each other—as, for instance, the upper circular plate B may be placed between the rings A; or the lower ring and lower circular plate may be inverted, bringing the lower circular plate between the rings; or the upper circular plate B may be placed below the lower circular plate B; or the lower circular plate and the lower ring may be inverted, and the upper ring placed below the other ring—thus enabling the rings and plates to be adjusted as may be best adapted to the particular smoke-stack to which the device is to be attached.

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

The combination of the two equal-sized perforated rings A and the two equal-sized perforated circular plates B with each other adjustably, substantially as herein shown and described.

JAMES HUGHES.

Witnesses:

EDWARD BALDWIN,
PETER B. BACKUS.