L. Cherrier,

Spark Arrester.

No 2,461. Patented Feb. 21, 1842.

Fig: 5.

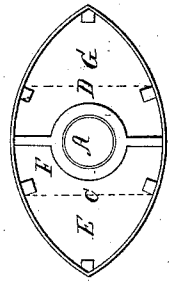


Fig: 7.

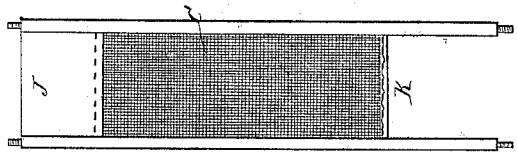


Fig: 6.

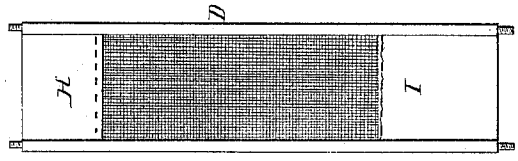


Fig: 1.

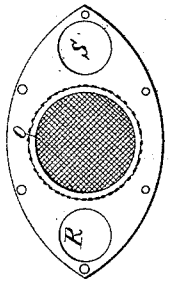


Fig: 3.

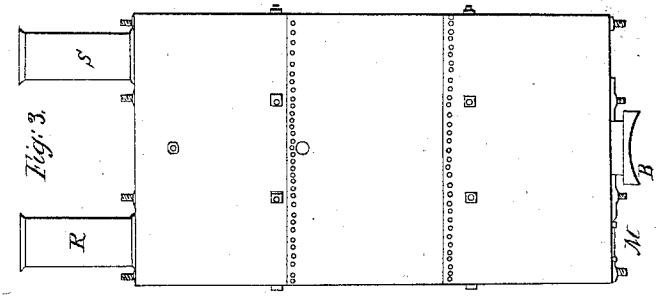


Fig: 2.

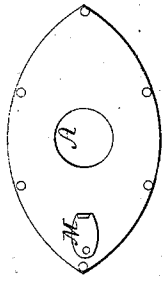
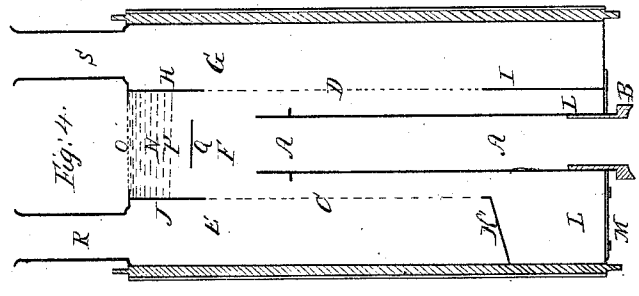


Fig: 4.



N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LOUIS CHEVRIER, OF BROOKLYN, NEW YORK.

SPARK-ARRESTER.

Specification of Letters Patent No. 2,461, dated February 21, 1842.

To all whom it may concern:

Be it known that I, LOUIS CHEVRIER, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in the Manner of Constructing a Spark-Arrester or Apparatus for Preventing the Escape of Sparks from Locomotives and other Steam-Engines; and I do hereby declare that the following is a full and exact description thereof.

Instead of giving to the exterior of my spark arrester the form of a vertical cylinder or cone as has been most commonly done, I construct it in such manner as that a horizontal section through it shall present an outline like that shown in Figures 1 and 2 of the accompanying drawing, which represents the top and bottom plates of the instrument; or instead of this form I give to it that of a long oval, or other shape analogous thereto. By thus forming it I render its interior sufficiently capacious for the management of the draft while it experiences much less resistance in passing through the air than when made with its section circular, its longest diameter, when in use, being in the direction of the length of the locomotive or other engine. Fig. 3 is a side elevation of the instrument. Fig. 4 a vertical section thereof from top to bottom in its longest diameter. Fig. 5 a horizontal section through the middle of the apparatus; and Figs. 6 and 7, are two partition pieces by which it is divided into three chambers.

A, A, is the chimney, which is to be fixed upon the fire box in the usual manner, by means of a flange or base piece B. The partitions C and D, Figs. 6 and 7, are formed principally of wire gauze, or of perforated sheet metal. These partitions extend across the interior of the instrument as shown in Fig. 5, dividing it into three chambers E, F and G. The parts H and I of the partition D consist of imperforated sheet metal; this partition extends from top to bottom of the interior of the instrument as shown in Fig. 4.

The partition C, Fig. 7, is composed in part of an imperforated plate, or wire cloth J, at its upper end; but it does not like D, extend to the bottom of the instrument, but terminates at K, and is inclosed by a bottom plate K′, Fig. 4, made of wire cloth, or of perforated metal; leaving the spaces L, L, as a chamber, or receptacle, for the deposition of sparks and ashes, which, as they accumulate, may be removed through an opening M, in the bottom plate. An additional box, or receptacle, for sparks may be attached to this opening by means of a tube, if preferred, as in many other spark arresters.

The chimney A, A, may rise within the chamber F, to about three fourths of the height of the external case. The upper part of this chamber is partially open, so as to admit a portion of the draft to escape through it. It is covered with strong wire gauze, or with perforated sheet metal, at O, and there is stretched across it, at P, a similar sheet of perforated metal, or of wire gauze, the space N between these plates, or sheets, being filled with tangled wire, or with shreds of wire gauze, or some similar article, so as to obstruct the passage through this part to any extent that may be found most proper. As the direct draft carried up by the force of the exhaust steam would impinge with great force upon the wire gauze, covering, were it unprotected, I place a disk or cone of metal Q, between it and the top of the chimney, which aids also in turning the sparks downward. Each of the outward chambers E and G, is surmounted by a chimney, or escape pipe, as shown at R and S.

From the foregoing description, the operation of this apparatus will be readily understood. A portion of the draft will escape through the space N, directly above the chimney, but the larger portion will pass through the wire gauze, or perforated metal partitions C, and D, into the chambers E and G, whence it will escape through the pipes R and S, while the sparks, cinders, and ashes, will be deposited in the space L, L, at the lower part of the interior of the arrester, whence they may readily be removed through the opening M. For the purpose of cleaning out any ashes or other matter which may accumulate in the lower part of the chambers E and G, openings may be made, and provided, with suitable shutters to close them.

Having thus fully described the manner in which I construct my spark arrester, and shown the operation thereof, what I claim as new therein, and desire to secure by Letters Patent, is—

1. The manner of combining with the center chamber, the space N, to admit and regulate the direct escape of a portion of the draft, as herein fully made known; the

amount of the escape through the said space being regulated by the quantity of tangled or pressed up wire, or of sheets of woven wire contained between the perforated plates O and P.

2. I claim also the manner of combining said case or space N, with the main flues in the center with the two chimneys, or escape pipes, at the upper ends of the two outer chambers.

L. CHEVRIER.

Witnesses:
THOS. P. JONES,
WASHN. PEALE.