A. McCLEARY.

SPARK ARRESTER.

No. 5,541. Patented May 2, 1848.

Fig. 1.

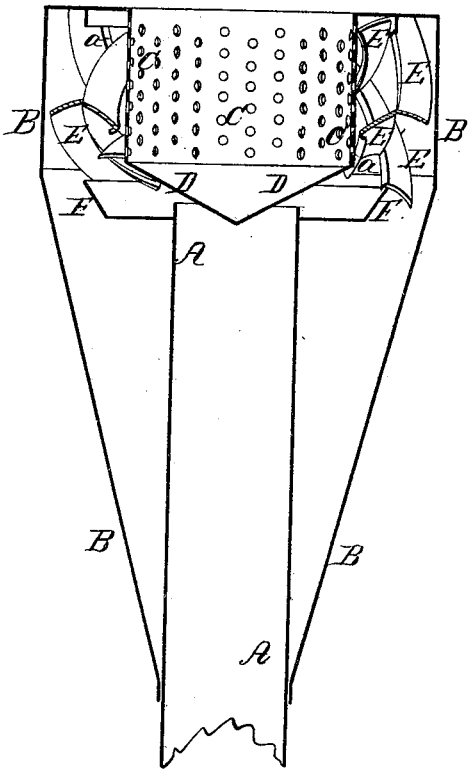
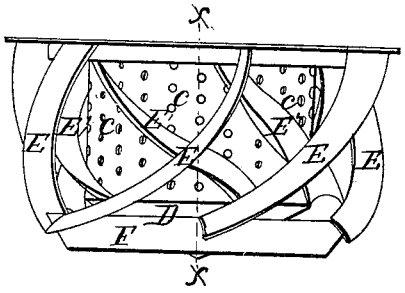


Fig. 3. E a

Fig. 2.



UNITED STATES PATENT OFFICE.

ANDW. McCLEARY, OF PHILADELPHIA, PENNSYLVANIA.

SPARK-ARRESTER.

Specification of Letters Patent No. 5,541, dated May 2, 1848.

To all whom it may concern:

Be it known that I, ANDREW McCLEARY, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and Improved Manner of Constructing Spark-Arresters for Preventing the Escape of Sparks from Locomotive and other Steam Engines; and I do hereby declare that the following is a full and exact description thereof.

In the accompanying drawings Figure 1, is a vertical section of the arrester through its center; and Fig. 2, is a perspective representation of the head thereof, or that part which is above the top of the chimney, the outer case being removed for the purpose of exhibiting the interior arrangement of this part.

A, A, is the chimney, which is of the ordinary construction, and B, B, the outer case, or shell, which surrounds it and the cap, or head; the sparks being intended to fall down in the space between the chimney and outer case, as in other spark arresters.

C, C, is a cylinder of wire gauze, or of perforated sheet metal to allow of the escape of the volatile products of combustion; the bottom D, D, of this cylinder is in the form of an obtuse inverted cone, which is imperforated and serves to conduct the draft, with the sparks, upward, and to bring them into contact with a double row of oblique flanches, or plates E, E′. The lower ends of these oblique plates may be attached to a conical hoop, or rim F, for the purpose of holding them in place. The flanches E, and E′, cross each other, they being inclined in reverse directions, and their interior edges are turned down so as to obstruct the sparks in their tendency to approach the center; these turned down edges are shown at *a*, *a′*; and more distinctly in a cross section of one of the plates, shown in Fig. 3. The inner series of oblique flanches E′, may have their inner edges within a short distance of the cylinder C, C, and the inner edges of the outer series E should be in contact with the outer edges of the flanches E′, their outer edges being in contact, or nearly so, with the shell, or case B. Under this arrangement of the respective parts of the spark arrester, there will be counter currents of the draft produced in the head, by the agency of the double series of the flanches E, and E′, which will have the affect of greatly diminishing the force with which the draft would otherwise carry the sparks against the cylinder C, C, the consequence of which will be that they will be made to fall by their own gravity into their intended receptacle, consisting of the space between the chimney and the outer case B, B′, while the smoke and heated air will escape through the meshes of the wire gauze, or the perforations in the metallic plate constituting the cylinder C C and pass off freely at its upper end which is open.

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

The manner of arranging of the double series of oblique plates or flanches E and E′ which are made to cross each other between the perforated cylinder C and the external case B within the head or cap in the manner and for the purpose herein before described and made known.

ANDREW McCLEARY.

Witnesses:

O. A. NORRIS,

M. C. DIETZ.