

S. SIVERSON.
SPARKER ARRESTER.
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1,283,576.

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Fig. 1.

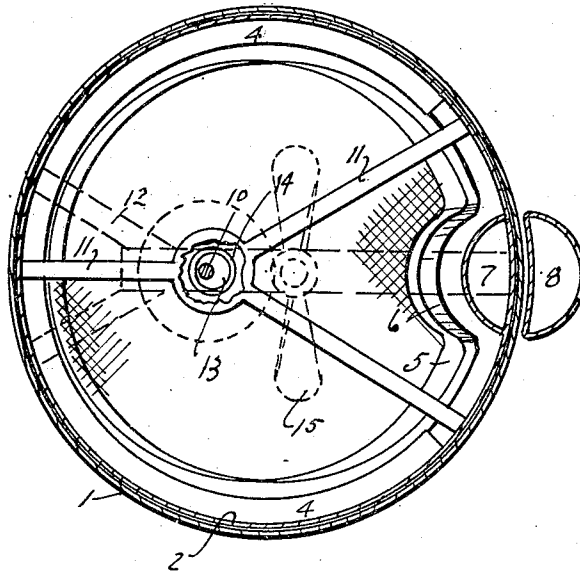
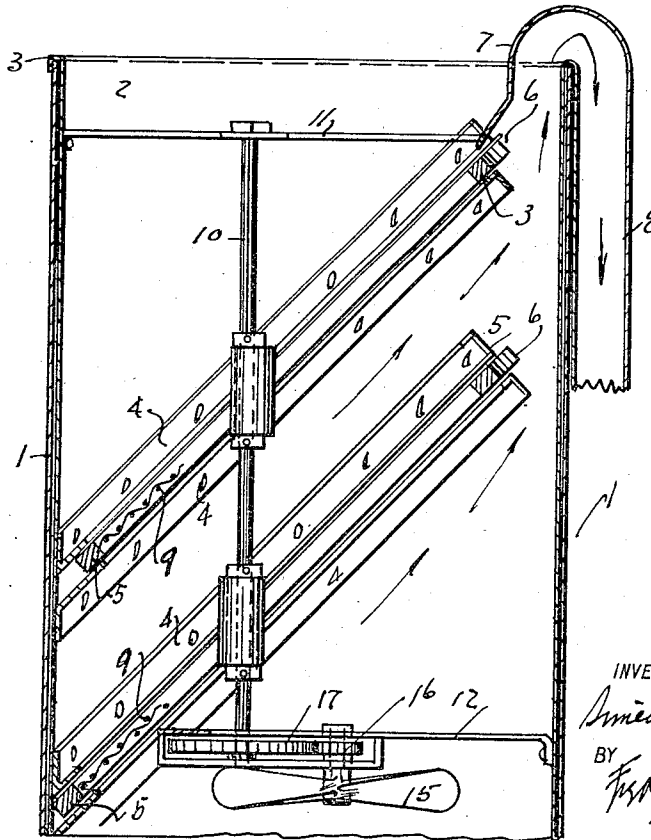


Fig. 2.



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SPARK-ARRESTER.

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To all whom it may concern:

Be it known that I, SIMEON SIVERSON, citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Spark-Arresters, of which the following is a specification.

This invention relates to improvements in spark arresters and has for its principal object to provide an improved and novel type of spark arrester for use with smoke stacks; to provide in a spark arrester, inclined and reciprocating screens together with means for automatically reciprocating the screens. Another object of my device is to provide means for carrying away the accumulated cinders from the screens, thus preventing clogging. In smoke stacks for locomotives, mills, factories and the like, it is common to employ some form of spark arrester, and one of the chief objections to many of such arresters is that they become clogged easily and seriously obstruct the draft. Applicant has devised a series of reciprocating and inclined screens which are self-cleaning and which, by nature of their construction and arrangement, permit the cinders to be carried away from the screens and out of the stack.

Other objects will appear as my invention is more fully explained in the following specification, illustrated in the accompanying drawing and pointed out in the appended claims.

In the drawings, Figure 1 is a plan view of my device with parts broken away. Fig. 2 is a central cross section elevation of the same.

Referring more particularly to the drawings, numeral 1 indicates the upper portion of a smoke stack adjacent the top of which it is common to place the various forms of spark arresters. Applicant's improved spark arrester includes a cylindrical shell 2 which is slightly less in diameter than the smoke stack and which fits removably within the top of the stack being held by flanges 3 which fits over the top edge of the stack. Within shell 2, elliptical guides 4 are secured around its inner periphery for the purpose of providing guide ways for elliptical screen frames 5. The screen frames are somewhat shorter than the guide ways in order to permit of their movement

transversely of and at an inclination with the axis of the stack. It will be understood that the screens are set at such an angle that the force of the draft will cause the sparks to travel along the under side of the screens and not to clog in the meshes of the screens. The uppermost edges of the screen frames are cut away as at 6 in order to permit the sparks to travel up along the edge of the stack after passing the screens. In order to catch the sparks after they pass the screens and to convey them to a safe place of deposit, applicant employs a hood 7 which overlaps the cut away portion 6 of the screens, and after passing over the upper edge of the shell 2 and the stack, passes downwardly as at 8. The screen frames are each provided with a screen 9, the lower one of which is of coarser mesh than the upper. In order to effect the reciprocation of the screens, a special mechanism is employed. This mechanism includes a vertical shaft 10 which is mounted on the top and bottom in cross frames 11 and 12 respectively. Eccentrics 13 are secured to the shaft 10 in the line of the screens 9 and eccentric straps 14 are mounted in the screens and cooperate with the eccentrics in such a way that as the shaft revolves, the screens will be given a reciprocating movement up and down the guide ways 4, thus keeping them in constant motion. The shaft 10 is driven by means of a propeller 15 which is revolvably suspended from the frame 12 and to the shaft of which is secured the pinion 16. Pinion 16 meshes with a spur gear 17 which is secured to the lower edge of shaft 10. As the gases rush up the stack, they encounter the propeller 15 and set it in motion, thereby causing the shaft 10 to revolve continuously. The rotation of the shaft causes the reciprocating motion of the screens as previously described.

It will be understood that by keeping the screens in motion, the sparks are prevented from accumulating against the underside of the screen by the movement of the screens, and further, the placing of the screens with an inclination toward the vertical, permitting of the sparks being carried along the under side of the screen and finally withdrawn from the stack through the hood 7.

While I have shown a particular form of embodiment of my invention, I am aware

that many minor changes therein will readily suggest themselves to others skilled in the art without departing from the spirit and scope of the invention, and I therefore
5 desire to avoid being limited to the exact form shown and described.

Having described my invention, what I claim as new and desire to protect by Letters Patent is—

- 10 1. In a spark arrester, the combination of a stack, upwardly inclined ways in the stack, screens mounted in the inclined ways, the screens being shorter than the ways to at
15 all times form a space between the upper ends of said screens and the stack, means for agitating the screens, and a hood disposed at the upper end of the stack and overhanging the upper end of the topmost screen and in alinement with the space.
- 20 2. In a spark arrester, the combination of a stack, upwardly inclined ways in the stack, screens mounted in the inclined ways, the screens being shorter than the ways to
25 at all times form a space between the upper ends of said screens and the stack, means for reciprocating the screens in the guide

ways, and means in alinement with the space for carrying off the cinders.

3. In a spark arrester, the combination of a stack provided with upwardly inclined
30 screens, the upper ends of the latter being at all times spaced from the wall of the stack to form a cinder passage, means for sealing the joint between the screens and the stack on opposite sides of the space,
35 means for reciprocating the screens, and means at the top of the stack adjacent the top of the uppermost screen and in alinement with the passage for conveying the
40 cinders away.

4. In a spark arrester, the combination of a stack, inclined ways mounted in the upper
45 portion of the stack, screens mounted in the inclined ways, said screens being shorter than the ways to provide a space between their upper ends and the wall of the stack to form a cinder passage; a shaft extending through the screens, eccentric connections between the shaft and the screens, and means for rotating the shaft.

In testimony whereof I affix my signature.
SIMEON SIVERSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."