(No Model.)

H. E. BULTMAN.

SPARK ARRESTER.

No. 527,661. Patented Oct. 16, 1894.

Fig. 2.

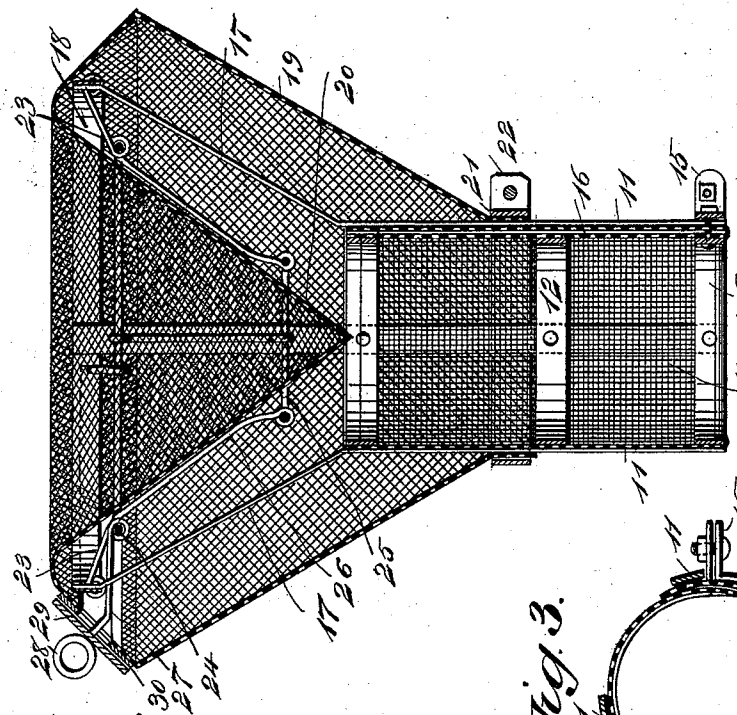


Fig. 3.

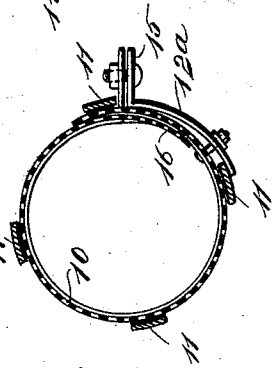


Fig. 1.

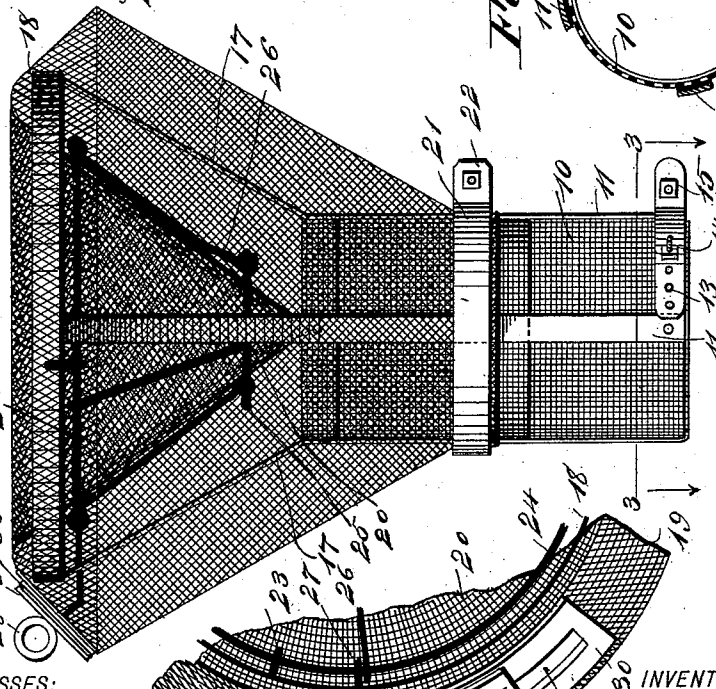
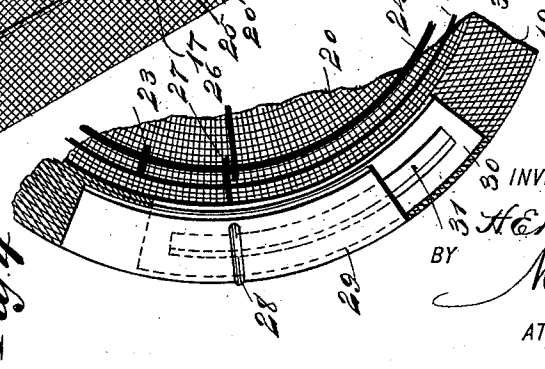


Fig. 4.



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HENRY E. BULTMAN, OF OAK PARK, MINNESOTA.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 527,661, dated October 16, 1894.

Application filed May 16, 1894. Serial No. 511,437. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. BULTMAN, of Oak Park, in the county of Benton and State of Minnesota, have invented a new and Improved Spark-Arrester, of which the following is a full, clear, and exact description.

My invention relates to improvements in spark arresters such as are used on the smoke stacks of locomotives to prevent them from throwing sparks; and the object of my invention is to produce a cheap and simple spark arrester, which may be conveniently fastened to the stack of a locomotive, which entirely closes the stack so far as the emission of sparks is concerned, but does not interfere with the draft.

My invention is particularly adapted for use on straw burning engines. Spark arresters which have been used with engines of this class have been made largely of gauze, somewhat after the manner of my invention, but these arresters have burned out quickly, owing to the fact that the sparks stick to the gauze, but my invention is provided with a gauze deflector for the sparks and also with a cleaning apparatus which may be easily actuated and which effectually removes the sparks and thus preserves the life of the arrester.

To these ends my invention consists of certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the spark arrester, representing my invention. Fig. 2 is a central vertical section of the same. Fig. 3 is a sectional plan on the line 3—3 of Fig. 1; and Fig. 4 is a broken plan view of the arrester.

The arrester is provided with a cylindrical base portion 10, made chiefly of gauze and adapted to be fastened to the cylindrical portion of a smoke stack, while the enlarged upper portion of the arrester, which will be hereinafter described, is adapted to lie or be contained in the upper or funnel shaped portion of the stack.

The cylindrical part 10 of the arrester has a gauze body, which is supported on the vertical side bars 11 and the circular cross bars 12 and 12^a, the latter being arranged at the bottom and provided with an overlapping end having perforations 13, see Fig. 1, to receive a fastening bolt 14 so that the bottom may be regulated. The bar or band 12^a has also meeting flanges 15, adapted to be bolted together so as to clamp the lower band or bar, and consequently the whole arrester to the smoke stack.

The gauze portion of the lower part 10 of the arrester has a split on one side, and at this point one edge overlaps the other, as shown at 16 in Fig. 3, so as to provide for its adjustment and adapt it to be readily fastened to the stack.

The side bars 11 of the arrester project above the cylindrical portion 10 and flare outwardly, as shown at 17 in Figs. 1 and 2, serving to support the top band 18 which is circular and carries the upper end of the exterior screen 19 which is funnel shape, as shown in the drawings, and is doubled over the band 18 and formed into a depending cone 20, the point of which comes directly over the center of the cylindrical portion 10 of the arrester, and thus the part 20 serves as a deflector to prevent the sparks from being thrown out of the stack.

The screen 19 is at its lower end provided with a fastening band 21 adapted to be clamped to the part 10 of the arrester, and the band 21 has meeting flanges 22 which are bolted together to hold the screen 19 in place. It will be observed that there is no clear open passage through the arrester, and consequently the sparks cannot escape, but the mesh of the screen is sufficiently coarse to permit a free passage of smoke.

The band 18 besides supporting the screen 19 serves as a support for the cleaner, and has inwardly and downwardly extending hangers 23 which carry the upper ring 24 of the cleaner, this ring encircling the upper part of the deflecting cone 20. The cleaner has also a ring 25 encircling the lower part of the cone, and the two rings 24 and 25 are connected by bars 26 which are held close to the deflecting cone.

The cleaner has an outwardly extending arm 27 which terminates in a ring handle 28

adapted to be readily engaged by a poker, or other implement which the fireman may have handy, and the arm 27 projects through and is held in a slide plate 29 which moves over a plate 30 on the screen 19, the plate 30 having a longitudinal slot 31 therein to provide for the lateral movement of the arm 27. It will be seen that by moving the arm back and forth, the cleaner will be oscillated, the ring 24 sliding in the hangers 23, and the bars 26 when thus moved, scrape the sparks from the cone deflector 20.

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

1. A spark arrester, comprising a cylindrical gauze covered base, and a funnel shaped screen having its lower end secured to the cylindrical base portion and its upper end formed into a depending cone, substantially as described.

2. A spark arrester, comprising a lower cylindrical gauze covered portion having means for attachment to a smoke stack and provided with upwardly projecting and outwardly inclining bars, a top band supported on the bars, and an exterior funnel shaped screen having its bottom adapted for attachment to the cylindrical part of the arrester and its upper part bent over the top band and formed into a depending deflecting cone, substantially as described.

3. A spark arrester, comprising a lower cylindrical gauze covered portion having means for attachment to a smoke stack, a spraying screen secured to the cylindrical portion and terminating at the top in a depending conical deflector, and a movable cleaner embracing the conical deflector, substantially as described.

4. The combination, with the gauze covered spark arrester having the depending conical deflector, of the oscillating cleaner embracing the deflector and comprising parallel rings and connecting bars, substantially as described.

5. The combination, with the screen covered deflector having the supporting band at the top and the depending conical deflector projecting through the band, of hangers secured to the band, a cleaner held to slide in the hangers and arranged to embrace the deflector, and an outwardly projecting and laterally movable arm secured to the cleaner, substantially as described.

6. The combination, with the gauze covered arrester having the central conical deflector, of the slotted plate on one side of the arrester, the cleaner embracing the deflector, the slide plate held to move over the slotted plate, and the handled arm secured to the cleaner and slide plate and extending through the slotted plate, substantially as described.

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Witnesses:
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