F. STAMEY.

SPARK ARRESTER.

APPLICATION FILED APR. 7, 1917.

1,288,729.

Patented Dec. 24, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

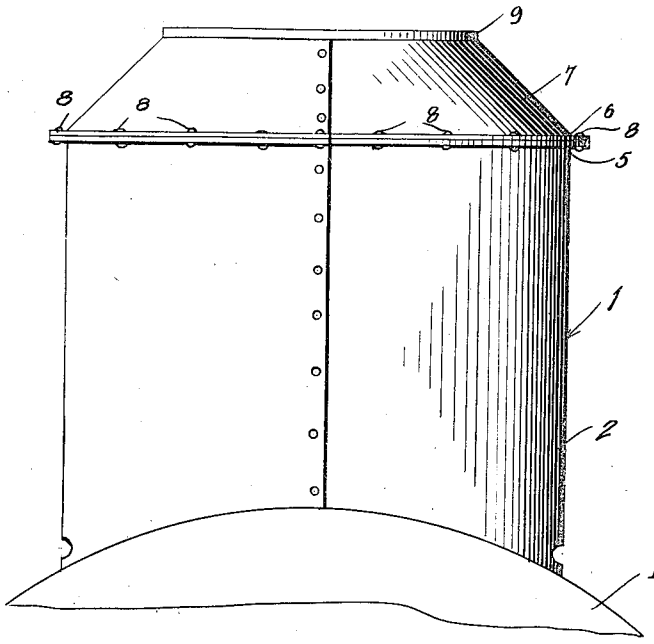


Fig. 3.

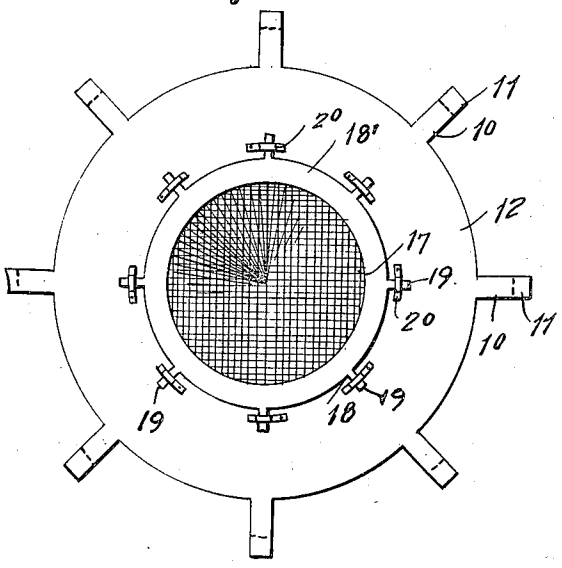
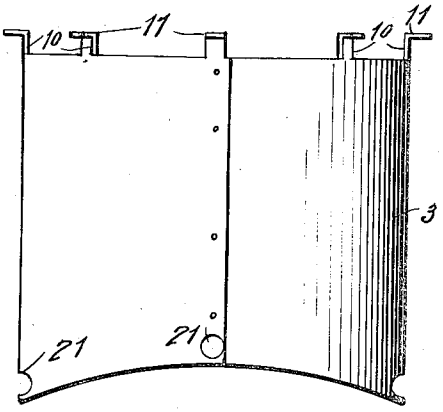


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

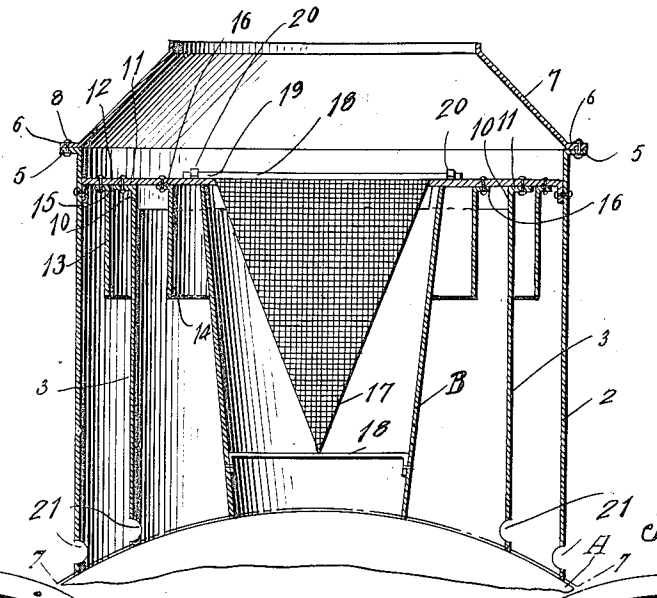


Fig. 5.

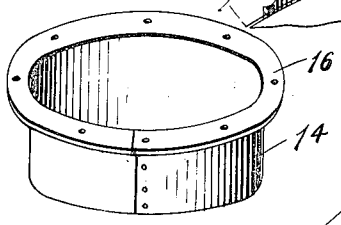


Fig. 6.

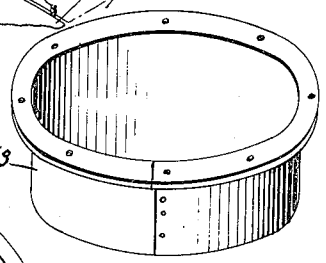
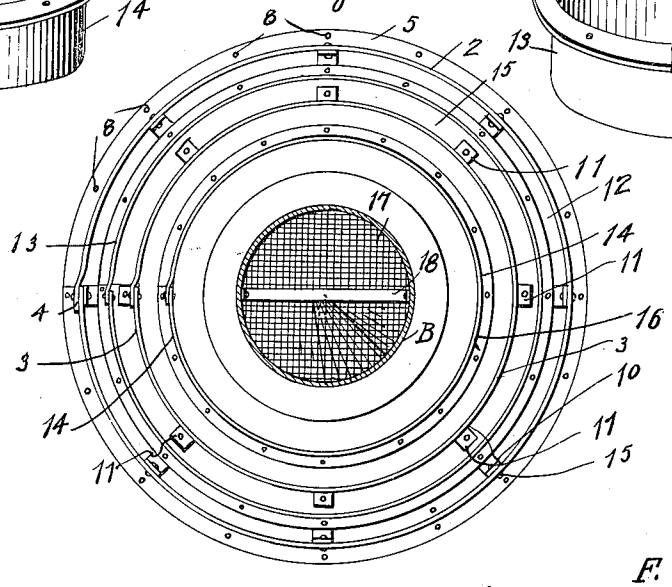


Fig. 7.



Witnesses

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SPARK-ARRESTER.

1,288,729. Specification of Letters Patent. Patented Dec. 24, 1918.

Application filed April 7, 1917. Serial No. 160,572.

To all whom it may concern:

Be it known that I, FORNIO STAMEY, a citizen of the United States, residing at Payette, in the county of Canyon and State of Idaho, have invented certain new and useful Improvements in Spark-Arresters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in spark arresters for the smoke stack of a locomotive, stationary boiler or similar devices, and an object of the invention is the provision of a simple, durable and highly efficient device of this character, the component parts of which are assembled in a novel and convenient manner so that any of the parts can be easily removed when desired to substitute new parts therefor.

Other objects will appear and be better understood from that embodiment of my invention of which the following is a specification, reference being had to the accompanying drawings forming a part thereof, in which:

Figure 1 is a vertical side elevation of the spark arrester in operative position on a stack,

Fig. 2 is a vertical elevation of the inner body of the spark arrester removed from position,

Fig. 3 is a top plan view of the deflector and supporting means therefor detached from operative position,

Fig. 4 is a vertical sectional view taken through Fig. 1,

Fig. 5 is a detail perspective view, on a reduced scale, of one end of the innermost baffle detached from operative position.

Fig. 6 is a detail perspective view on a reduced scale of one end of the outermost baffle detached from operative position, and

Fig. 7 is a bottom plan view of the spark arrester in operative position on a stack with the latter in section, taken on the line 7—7 of Fig. 4.

Referring to the drawings in detail, the letter A designates, for conventional purposes, the boiler of a locomotive engine and B the smoke stack thereof. The spark arrester is designated, as an entirety, by the numeral 1 and comprises an outer cylindrical body 2 and an inner cylindrical body 3 arranged in spaced relation to the inner side of the outer body 2. The outer body 2 is formed of a single blank of metal bent into cylindrical form and has the meeting ends overlapping, as shown at 4, and secured to each other by suitable fastening elements. The upper end of the body 2 is bent to provide a circular flange 5, upon which rests a circular flange 6 formed on the base portion of a substantially frusto-conical shaped dome 7, the said flanges 5 and 6 being secured to each other by fastening elements 8. The dome 7 is formed of a single blank of sheet metal, and the upper end of the dome is open and the terminal of the upper end of the wall of the dome is extended vertically, as shown at 9. The inner body 3 is likewise formed of a single blank of sheet metal, folded into cylindrical form and has the upper end thereof terminating below the upper end of the outer body 2 and provided with a plurality of spaced vertical fingers 10, the upper ends of which are bent outwardly, as shown at 11. A circular plate 12 rests on the flanges formed by the outwardly bent portions 11 of the fingers 10 and is secured to the flanges by suitable fastening elements, and the said plate is provided with a depending circumferential flange 13, which engages and has connection with the inner side of the outer body 2, in any suitable manner.

Located on opposite sides of the inner body 3 is a pair of cylindrical bodies, designated, respectively, by the numerals 13 and 14. These bodies 13 and 14 are arranged in spaced relation to the inner body 3 and have their upper ends provided with circumferential flanges, designated, respectively, 15 and 16, and which have connection with the under side of the plate 12 in any suitable manner. The cylindrical bodies 13 and 14 are considerably shorter in length than the inner and outer bodies and are adapted to serve as baffles. When the spark arrester is in operative position, the same is fitted over the stack B, the latter extending within the inner body 3 and has the upper end thereof extending within the innermost baffle 14 and terminally spaced below the plate 12. The interior of the stack B communicates with the opening in the plate 12, and an inverted conical shaped deflecting element 17, formed of foraminous material, is positioned within the stack B and has the lower end thereof secured to a brace rod 18, which extends diametrically of the stack B

and has the opposite ends thereof bent to provide flanges which are connected to the stack at diametrically opposite points in any suitable manner. The upper end of the deflecting element 17 projects through the opening in the plate 12 and is secured to a ring-shaped element 18', from the periphery of which extend a plurality of radial fingers 19, which overlie the upper side of the plate 12 and engage beneath clips 20 mounted on the upper side of the plate 12.

The lower ends of the outer and inner bodies 2 and 3 are each cut away on curved lines, on opposite sides, so as to agree with the curvature of the upper side of the boiler of the locomotive, and the said outer and inner bodies 2 and 3 are provided at opposite sides, and adjacent their lower ends, with communicating discharge openings 21.

The smoke and cinders and sparks carried thereby upon issuing from the stack B will contact with the deflector 17, a large portion of the smoke passing through the deflector and out through the opening in the plate 12 and thence through the open end of the dome 7. A portion of the cinders accompanying the smoke will be deflected downwardly, by the deflector 17, and the remainder of the cinders and the sparks will accompany the residue of the smoke, which has failed to escape through the deflector 17, and enter the space between the stack and the baffle 14 and thence downwardly and into the space between the baffle 14 and the inner body 3, the smoke then passing upwardly over the body 3 and thence downwardly beneath the baffle 13. This will effect a sufficient expansion of the residue of the smoke so as to effect release of the particles of cinders, and the sparks held in suspension by the smoke, and prevent the escape of the sparks long enough to admit of the same becoming extinguished, the cinders and other particles thence gravitating to the lower ends of the outer and inner bodies 2 and 3, and escaping through the openings 21 and into a suitable receptacle, not shown, and to be provided therefor.

It is evident that various changes might be resorted to in the form, construction and arrangement of the several parts without departing from the spirit and scope of the invention as claimed.

Having thus described my invention what I claim as new, is:

A spark arrester including a smoke stack, an outer casing surrounding the smoke stack in spaced relation and projecting beyond the upper end thereof, an inner casing in said outer casing and in spaced relation thereto and to the smoke stack and terminating at its upper end in a plane with the smoke stack, a plate secured to the top of said inner plate and outer casing and having a central opening, cylindrical baffles secured to said plate and depending downwardly between the inner and outer casings and the inner casing and smoke stack, a ring supported over the opening in said plate, a conical shaped perforated deflector carried by the rings and depending downwardly in the smoke stack, and a dome secured to the upper end of the outer casing and having an opening therein.

In testimony whereof I affix my signature in presence of two witnesses.

FORNIO STAMEY.

Witnesses:
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J. E. SHEPARD.