L. A. SWEM.

SPARK ARRESTER.

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1,100,035. Patented June 16, 1914.

Fig. 1.

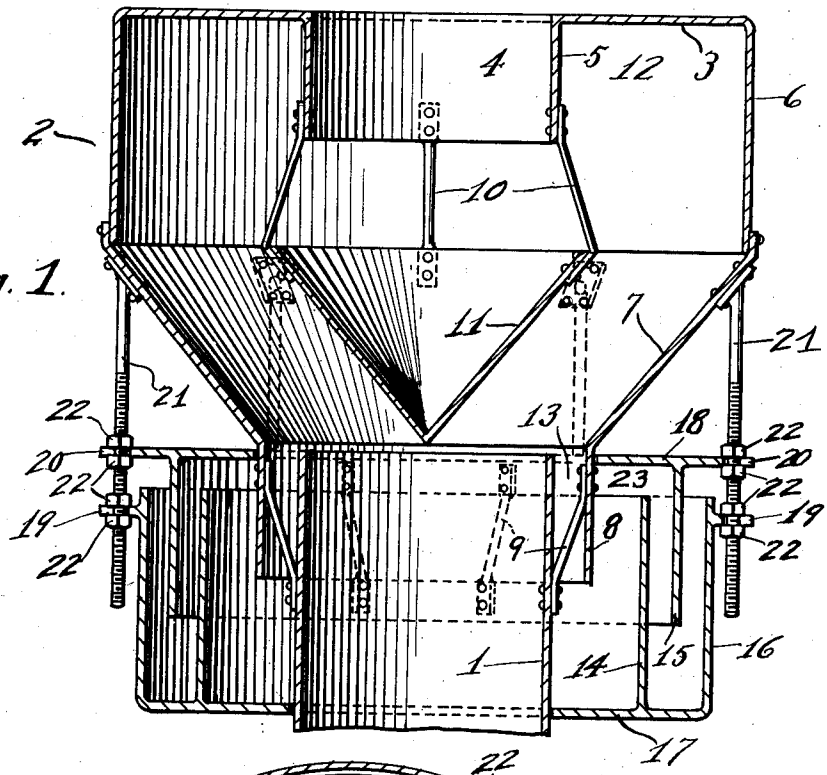
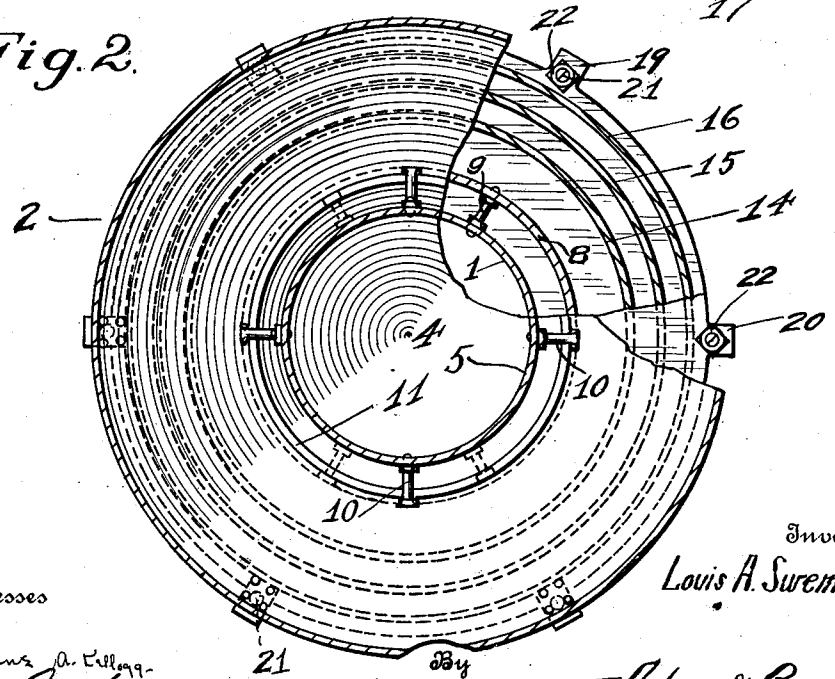


Fig. 2.



Witnesses

Virginia A. Tillery

H. M. Brooks

Inventor

Louis A. Swem

By Adams & Brooks

Attorneys

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LOUIS A. SWEM, OF BELLINGHAM, WASHINGTON.

SPARK-ARRESTER.

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To all whom it may concern:

Be it known that I, LOUIS A. SWEM, a citizen of the United States of America, and a resident of the city of Bellingham, in the county of Whatcom 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 a construction of the above type and it has for its primary aim to provide a spark arrester which will perform in an efficient manner to prevent the escape of live cinders without interfering with the draft in the stack to which the device is applied.

Other objects will appear as my description progresses and those features of construction, combinations and arrangements of parts on which protection is desired succinctly defined in the appended claims.

For a full understanding of my invention, reference is to be had to the following specification and the accompanying drawings wherein:

Figure 1 is a vertical sectional view of my spark arrester, and Fig. 2 is a horizontal section through the casing with portions broken away.

Referring in detail to the drawing wherein like characters of reference denote like parts throughout, 1 designates the stack of any engine to which my spark arrester is applied. The latter comprises a casing 2 having a top wall 3 centrally apertured, as at 4, about which aperture depends a circular wall 5, and a concentric depending outer wall 6, to which latter is secured a frusto-conical section 7. A cylindrical section 8 suspends from the smaller or lower end of section 7 and is fastened to the stack 1 in spaced relation by braces 9.

Suspended from wall 5, by bracket arms 10, is a conical deflector 11, which is inverted over the stack to deflect the products of combustion and exhaust steam into the steam chamber 12 formed between the walls 5 and 6. It is apparent that the draft courses from the stack into the casing 2 and through the space between the deflector and the wall 5 to the opening 4.

Opening 13, formed by the spacing of wall section 8 from the stack, serves to relieve the latter from the back pressure. The outlet 13 is controlled by companion deflector members 17 and 18, the former of which is provided with continuous, concentric walls 14 and 16 while the latter carries a depending continuous partition wall 15 receivable in a telescopic manner, between the walls of member 17 for dividing the chamber created by the last named walls. Deflector member 17 slidably engages stack 1 while deflector 18 similarly engages the depending wall section 8. The two members may conjointly serve in the capacity of a valve for controlling the flow of gaseous products through outlet 13. In passing out through opening 13, the products of combustion and exhaust steam take a circuitous path over wall 14, under wall 15 and thence out over wall 16. Projecting radially from wall 16 and plate 18 are apertured ears 19 and 20, respectively, which receive the threaded suspension supports 21, carried by casing 2, and are adjustable thereon by the nuts 22. The wall 15 projects below wall 8 and in conjunction therewith forms a steam chamber 23 in which accumulates the exhaust steam and products of combustion which extinguish the live sparks as they pass therethrough.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States of America, is:

1. A spark arrester comprising a casing adapted to be supported on a stack and spaced about the latter to provide an outlet opening, a deflector member supported on the casing and forming in conjunction with the latter a chamber for the collection of gases issuing from the outlet opening, said deflector member being adjustable on the casing to vary the size of the chamber formed, and other deflector means for directing the products of combustion to the chamber aforesaid.

2. A spark arrester comprising a casing adapted to be supported on a stack and spaced about the latter to provide an outlet opening, a deflector member supported on the casing and forming in conjunction with the latter a chamber for the collection of gases issuing from the outlet opening, said deflector member being adjustable on the casing to vary the size of the chamber formed, and other deflector means adjustably supported for directing the products of combustion to the chamber aforesaid.

3. A spark arrester comprising a casing adapted to be supported on a stack and having a wall depending in spaced relation

about the stack to provide an outlet opening, a deflector member supported by the casing about the depending wall and forming in conjunction with said wall a chamber for the collection of gases, said deflector member being adjustable relative to said depending wall to thereby vary the size of the chamber, and other deflector means for directing the products of combustion to the chamber aforesaid.

4. A spark arrester comprising a casing adapted to be supported on a stack and having a wall depending in spaced relation about the stack to provide an outlet opening, a deflector member supported by the casing about the depending wall and forming in conjunction with said wall a chamber for the collection of gases, said deflector being adjustable toward and from the lower edge of the depending wall to vary the height of the latter as a wall of the chamber and thereby vary the capacity of said chamber, and means to direct the products of combustion to the aforesaid chamber.

5. A spark arrester comprising a casing adapted to be supported on a stack and having a wall depending in spaced relation about the stack to provide an outlet opening, a deflector comprising an annular plate adjustable on the depending wall of the casing and a depending wall carried by the plate and forming with the latter and said casing depending wall a chamber for the collection of gases, the chamber being variable in size through adjusting the deflector member on the casing depending wall, and means to direct the products of combustion to the aforesaid chamber.

6. A spark arrester comprising a casing adapted to be supported on a stack and having a wall depending in spaced relation about the stack to provide an outlet opening, a deflector comprising an annular plate adjustable on the depending wall of the casing and a depending wall carried by the plate and forming with the latter and said casing depending wall a chamber for the collection of gases, the chamber being variable in size through adjusting the deflector member on the casing depending wall, and a second deflector means arranged across the outlet opening of the casing and having an upstanding wall extending into the chamber.

7. A spark arrester comprising a casing adapted to be supported on a stack and having a wall depending in spaced relation about the stack to provide an outlet opening, a deflector comprising an annular plate adjustable on the depending wall of the casing and a depending wall carried by the plate and forming with the latter and said casing depending wall a chamber for the collection of gases, the chamber being variable in size through adjusting the deflector member on the casing depending wall, and a second deflector means adjustably arranged across the outlet opening of the casing and having an upstanding wall extending into the chamber.

8. A spark arrester comprising a casing adapted to be supported on a stack and having a wall depending in spaced relation about the stack to provide an outlet opening, a deflector comprising an annular plate adjustable on the depending wall of the casing and a depending wall carried by the plate and forming with the latter and said casing depending wall a chamber for the collection of gases, the chamber being variable in size through adjusting the deflector member on the casing depending wall, said plate having an annular flange, and a second deflector comprising an annular body adjustably arranged across the outlet opening of the casing and having spaced circular walls extending upwardly and receiving the first deflector depending wall therebetween to divide the space into parallel passages, the flange of the first deflector extending across the outer of the parallel passages formed by the deflector walls.

Signed at Bellingham, Wash. this 21 day of July 1913.

LOUIS A. SWEM.

Witnesses:
C. J. CUNNINGHAM,
GEO. B. DENT.

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