

G. R. DUNLAP & F. E. SIMONS.
SPARK ARRESTER.

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955,504.

Patented Apr. 19, 1910.

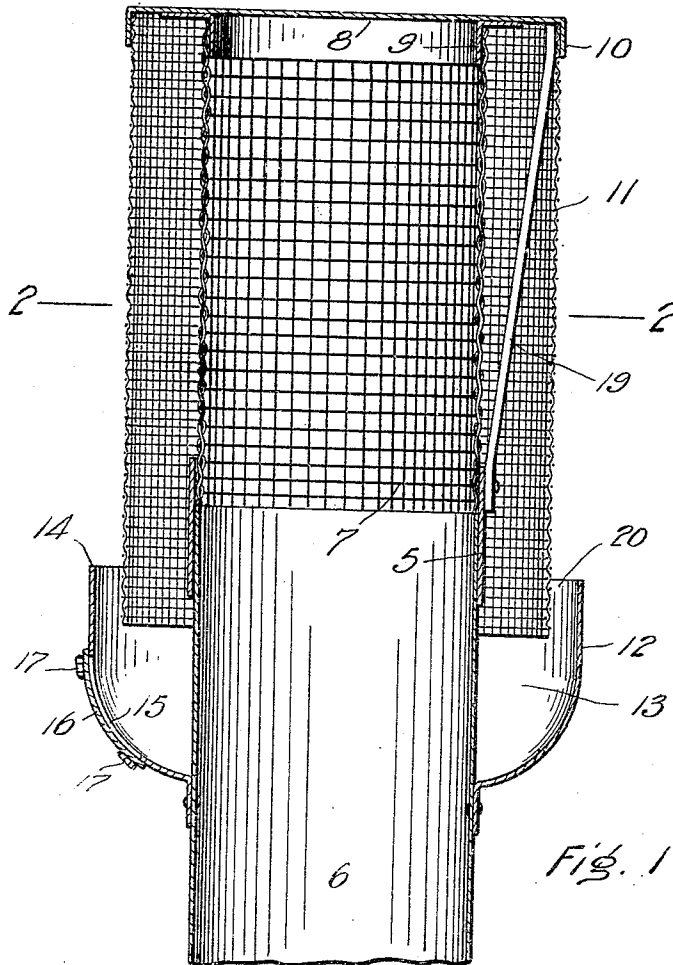


Fig. 1

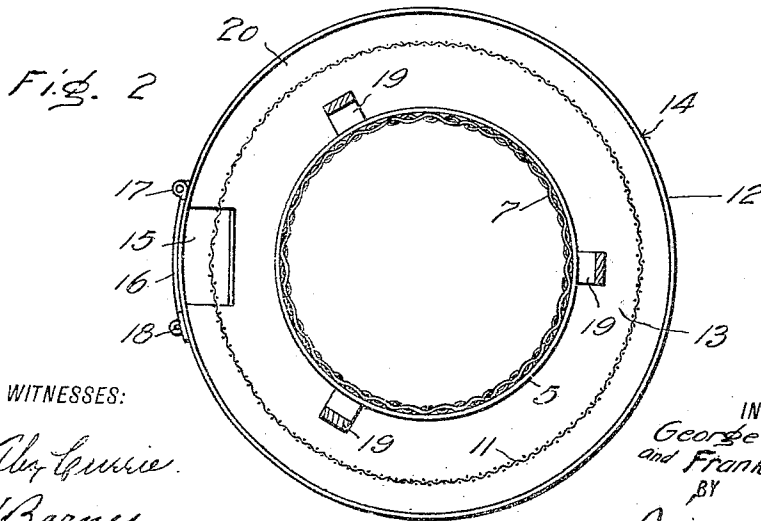


Fig. 2

WITNESSES:

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GEORGE R. DUNLAP AND FRANK E. SIMONS, OF STARTUP, WASHINGTON.

SPARK-ARRESTER.

955,504.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, GEORGE R. DUNLAP and FRANK E. SIMONS, citizens of the United States, residing at Startup, in the county of Snohomish 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 spark arresters, and is especially adapted to be used with stacks of boilers which operate under forced draft.

The object of the invention is to improve and render more efficient the class of devices to which the present invention pertains.

The invention consists in the provision of improved devices whereby the cinders and sparks emitted from a smokestack shall be entrapped and deflected into a receptacle provided for that purpose.

The invention further consists in the novel construction, adaptation, and combination of devices to the above named object, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of a spark arrester, embodying our invention. Fig. 2 is a section taken through 2—2 of Fig. 1.

The reference numeral 5 designates a ring of suitable diameter to be placed, as a collar, about a smokestack 6 and is connected thereto by frictional engagement, or otherwise. The collar projects above the end of the stack and has secured to the inner face thereof a tubular grating 7 extending to some distance above the top of the stack. An imperforate disk-shaped plate 8 of greater diameter than said grating is superposed thereupon and is connected therewith by the provision of a flange 9 of the plate being socketed within the grating-tube. A flange 10 is provided about the periphery of the plate and depending therefrom is another tubular grating, or screen, 11 of a length to have its lower edge extend somewhat below the top of the stack. The mesh, or sizes of the interstices, of the grating 7 is such as to allow relatively large particles of unconsumed fuel, or cinders passing therethrough, while the mesh of the screen 11 is sufficiently fine to obstruct the passage of everything but gaseous matter. Fitted about the stack is an annular shaped trough 12 which is po-

sitioned to afford a space 13 between the lower edge of the screen and the bottom of the trough receptacle. The diameter of the trough is somewhat greater than that of the screen 11 to provide a circular opening 14 therebetween and the upper rim 15 of the trough projects above the lower edge of said screen. An opening 16 is provided in the wall of the trough and is provided with an openable closure, such as a door 17, which is conveniently hung by hinges 18 and is provided with a suitable fastening, indicated by 19 in Fig. 2.

19 are braces rigidly secured at their respective ends to said collar 5 and the plate 8 and disposed to extend, slantingly across the space intermediate the grating and the screen, to retain the various members in their relative positions.

When in operative condition, as described, the larger sparks or cinders which are discharged from the stack are impinged against the grating 7 or the imperforate plate 8 and caused to fall back into the stack. The smaller sparks that can pass through the interstices of the grating but are unable to penetrate the screen fall into the trough. Accumulations of cinders may be readily removed from the trough through the means of the opening 16.

The device is simple and inexpensive to construct and its efficiency in preventing the escape of sparks and cinders without effecting any appreciable loss in draft render it extremely valuable for use on stationary boilers or locomotives where liability to starting fires is apprehended.

Having described our invention, what we claim, is—

A spark arrester comprising a collar adapted to be secured to and projecting above the end of a stack, an inner cylindrical grating having its lower end connected to the inner face of said collar and mounted upon the top of and of the same diameter as the stack, a trough adapted to be secured to the stack below the collar, an outer cylindrical screen concentric to said grating, depending below the collar and extending into the top of the trough and of smaller mesh than said grating, a flat imperforate plate mounted upon the top of said grating and screen, said plate provided

with a pair of depending flanges arranged concentric to each other, the outer of said flanges having the outer face of the upper end of the screen secured thereto, the inner
5 of said flanges having the inner face of the upper end of the grating secured thereto, and braces secured at their lower ends to the periphery of the collar and at their up-

per ends to the inner face of the screen and said outer flange.

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