May 12, 1942. H. WILL 2,282,595

SPARK ARRESTER

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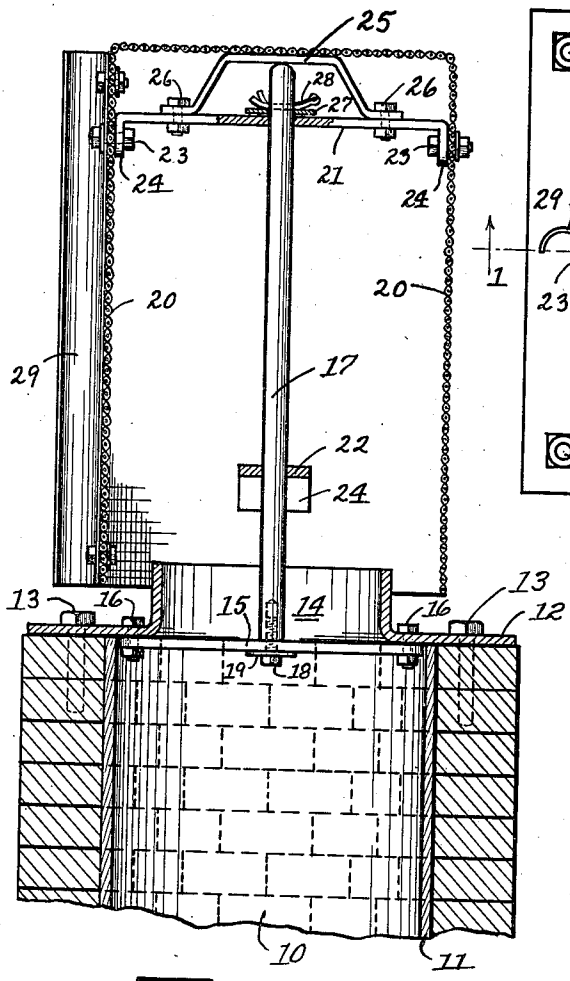


Fig. 1

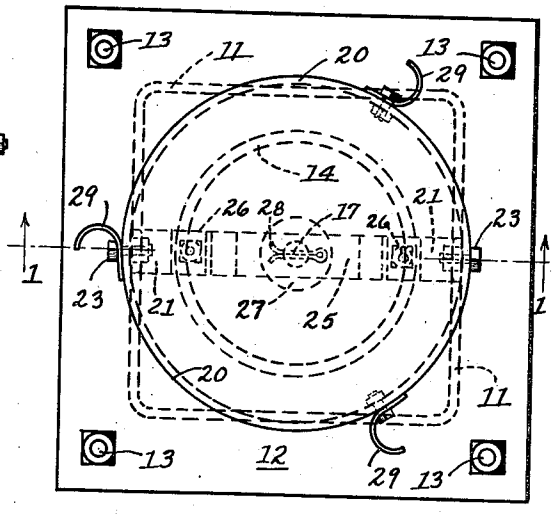


Fig. 2

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SPARK ARRESTER

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2 Claims. (Cl. 183—64)

The present invention relates to spark arresters and more particularly to a spark arrester adapted for attachment to the head of a smoke stack.

The primary objects of the instant invention are to provide a spark arrester of the character above indicated having a cylindrical wire mesh screen adapted to be continuously rotated by wind currents whereby the wire mesh is constantly cleansed of soot emanating from the stack; to provide such a spark arrester having a plurality of substantially equally spaced vertically disposed vanes secured thereto whereby even the slightest breeze will effect a rotation of the spark arrester; to provide such a spark arrester which may be readily and conveniently installed and secured to a stack; to provide such a spark arrester which is highly efficient in use; and, to provide such a spark arrester which is economical in manufacture.

An illustrative embodiment of the invention is shown in the accompanying drawing, wherein:

Figure 1 is a sectional view of a smoke stack and the spark arrester mounted on its head, all on line 1—1 of Figure 2; and

Figure 2 is a top plan view thereof.

Referring then to the drawing wherein like parts of the stack and its spark arrester are designated by the same numerals in the several views, the stack 10, here shown as constructed from a plurality of bricks and square in form, has a lining member 11 disposed within its walls, it being understood of course that the stack may be longitudinally cylindrically formed of sheet metal plates or of any other suitable material.

A head plate 12, preferably of sheet metal and here shown as in square form substantially equal in length and width to that of the outer dimensions of the upper end of the stack and secured thereto in any suitable manner as by bolts 13, is here shown as provided with a circular opening circumscribed by an upstanding flange 14 disposed somewhat inwardly of the diameter of the lining member 11 of the stack, all as best shown in Figure 1.

A flat bar 15, preferably of metal, is disposed below and between the opposite sides of the squared head plate 12 adjacent the under surface thereof to which it is secured as by bolts 16 and a post 17 in the form of a rod disposed medially of the bar 15 and extending upwardly therefrom is secured thereto as by the bolt 18 projected upwardly through the bar 15, washer 19 and in tapped threaded engagement with its lower end.

A cylindrical screen 20 of wire mesh, open at its bottom but closed at its top and spacedly overhanging the upstanding flange 14 of the head plate 12, has a pair of spaced struts 21, 22, transversely disposed with reference to each other, each strut being secured at its opposite ends between the opposite sides of the screen 20 as by bolts 23 which are projected through downwardly flanged outer end portions 24 of each strut and through the screen 20, all as best shown in Figure 1.

The post 17 projects upwardly through bearing apertures disposed medially of the length of each strut 21, 22 and the upper end of the post engages the under side of the bridge 25 whose opposite ends are secured to the upper surface of the upper strut 21 as by bolts 26. A washer 27 circumscribing the post 17 and lying on the upper surface of the upper strut 21 is maintained in place by the cotter key 28.

A plurality of elongated vanes 29, arcuately formed in cross section, are equi-distantly secured to the outer surface of the screen 20 longitudinally thereof and in a manner so that each of their concave surfaces will catch wind currents. A continuous rotation of the spark arrester thus rotatably mounted on the post 17 is thereby effected to cleanse the screen during even the slightest breeze. This wire mesh screen 20 is thus constantly cleansed of soot emanating from the stack 10 which would otherwise clog the screen and interfere with the stack draft.

It will thus be seen that the spark arrester may be readily and conveniently installed and secured to the stack, is highly efficient in use and is economical in manufacture and while but one specific embodiment of the invention has been herein shown and described, it will be understood that certain details of the construction shown may be altered or omitted without departing from the spirit of the invention as the same is defined by the following claims.

I claim:

1. A spark arrester comprising a head plate adapted to be secured to the head of a smoke stack and having a circular stack draft emitting opening therethrough circumscribed by an upstanding flange, a vertically disposed post supported by the head plate and extending upwardly therefrom medially of its opening, a cylindrical wire mesh screen spacedly overhanging said upstanding flange providing a draft opening between the flange and screen and rotatably supported on said post, and a plurality of equidistantly spaced vanes secured to the outer surface of said screen for effecting continuous rotation of the screen upon its supporting post whereby

the screen is cleansed by the wind during the rotation of the screen.

2. A spark arrester comprising a head plate adapted to be secured to the head of a smoke stack and having a circular stack draft emitting opening therethrough circumscribed by an upstanding flange, a bar traversing said opening and secured at its opposite ends to said head plate, a vertically disposed post supported on said bar and extending upwardly therefrom medially of said opening, a cylindrical wire mesh screen spacedly overhanging said upstanding flange providing a draft opening between the flange and screen and rotatably supported on said post, and a plurality of elongated vanes cross-sectionally arcuate in form vertically secured to the outer surface of said screen for affecting continuous rotation of the screen upon its supporting post whereby the screen is cleansed by the wind during the rotation of the screen.

HUGO WILL.