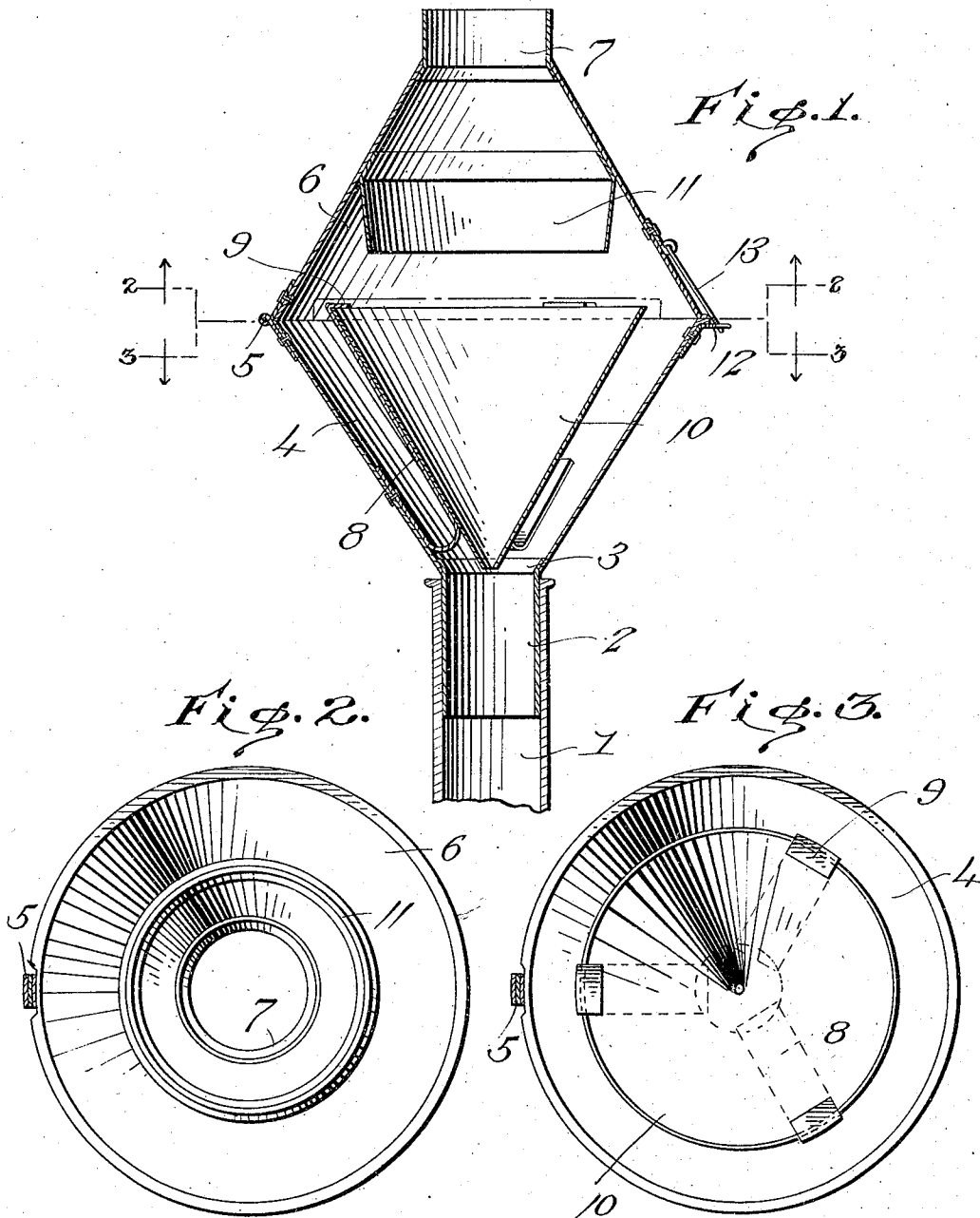


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SPARK ARRESTER.  
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1,237,130.

Patented Aug. 14, 1917.



WITNESSES

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# UNITED STATES PATENT OFFICE.

DELBERT WELCH, OF ZENDA, KANSAS.

SPARK-ARRESTER.

1,237,130.

Specification of Letters Patent.

Patented Aug. 14, 1917.

Application filed March 11, 1916. Serial No. 83,591.

*To all whom it may concern:*

Be it known that I, DELBERT WELCH, a citizen of the United States, residing at Zendia, in the county of Kingman and State of Kansas, have invented certain new and useful Improvements in Spark-Arresters, of which the following is a specification.

This invention relates to spark arresters for smoke stacks of various descriptions, and is especially adapted for use in connection with locomotives or tractors.

The principal object of the invention is to provide novel and efficient means to prevent sparks, cinders or flame from issuing from the stack.

The invention consists in the provision of means for deflecting and receiving all cinders issuing from the stack, and it is another object of the invention to so construct the device as to permit of ready removal of the cinders from the container.

A further object of the invention is to provide a device of this character which is extremely simple in construction, cheap and easy to manufacture and which is thoroughly reliable and efficient in operation.

With the foregoing and other objects in view, the invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings and claimed.

In the drawings:

Figure 1 is a vertical section of the spark arrester, showing the same applied to a smoke stack,

Fig. 2 is a transverse section on the line 2—2 of Fig. 1,

Fig. 3 is a similar view on the line 3—3 of Fig. 1.

Referring to the drawings by numerals, wherein is illustrated the preferred embodiment of my invention, 1 designates the smoke stack of a locomotive, tractor or the like, to which the improved spark arrester is adapted to be applied.

The arrester in detail consists of a tube 2 of a diameter to be snugly received within the stack 1, being adapted for frictional engagement therewith, to prevent its removal therefrom and hold the same against lateral movement. This tubular member is flared at its upper end, as at 3, to receive the lower open end of a substantially frusto-conically shaped inverted casing 4, rivets or

other suitable fastening means being provided for securing the casing to the tube.

The casing 4 is of any desired length and is adapted to have hingedly connected therewith, as at 5, a second casing of substantially the same size and shape as the first mentioned casing, the larger open ends of the casings being adapted for abutting relation so that a substantially inclosed housing is provided. The upper end of the second casing 6 is open and is provided with a relatively short tubular member which is secured therein in any suitable manner.

Secured to the inner face of the member 4 are a plurality of spaced yieldable strips 8 which extend in substantially parallel relation with the tapered walls of this casing and terminate at their upper ends in inwardly bent portions 9 which are disposed substantially in alignment with the upper open end of the casing. These members are adapted to support an inverted tubular cone shaped member or container 10, the side walls thereof being adapted for engagement with the body portion of the strips 8, while the upper edge thereof is adapted to be engaged by the inwardly extending portions 9 so that the same is held rigidly within the casing. Preferably, this container is provided with a small opening at its lower restricted end for a purpose which will presently appear.

Secured to the upper casing 6 and depending therefrom at an angle to the side walls of the same is a flange member 11, the flange being of any desired length and terminating short or in spaced relation to the upper open end of the container 10 and having its lower edge disposed within the plane of the outer edge of the upper open end of the container.

From the construction described, it will be noted that upon swinging of the upper casing 6 to an open position relatively to the casing 4 the strips 8 may be swung outwardly to disengage the portions 9 from the upper end of the container 10 to permit of its ready removal. When the upper casing is in a closed position it will be noted that sparks, cinders or the like issuing from the stack 1 will pass through the tube 2 between the walls of the container 10 and the casing 4, thence upwardly and between the adjacent walls of the casing 6 and flange 11. As soon as the force with which they

are driven from the stack by the exhaust from the engine cylinder is overcome they will be caused to fall by gravity to the container 10 where they will be received and  
 5 collected, the opening in the lower end thereof providing means to permit of the escape of any moisture which may be received thereby during running of the locomotive. Thus all cinders, sparks or the like will be  
 10 collected and prevented from issuing to the atmosphere, but a clear passage will be provided through the tube 7 for all gases, smoke or the like.

It is desirable to provide means to retain the casings 4 and 6 in a closed position. I accomplish this by providing upon the casing 4 a keeper 12 and by providing upon the casing 6 a pivoted hasp 13 for engagement therewith.

20 From the foregoing description taken in connection with the accompanying drawings it is thought that the construction and operation of the improved spark arrester will be clearly understood and while I have herein shown and described one specific embodiment of my invention I do not wish to be  
 25 limited thereto except for such limitations as the claims may import.

I claim:

30 1. A spark arrester comprising a casing formed of two conical members separably connected at their base, an inverted conical container within the lower member, a plu-

35 rality of resilient strips fastened to the lower member of the casing and extending upwardly and outwardly at an angle to serve as a support for said container, said strips each having a finger on its upper end to overlie the top of the container and hold  
 40 the same in place, said fingers adapted to be disconnected from the container by springing said strips outwardly.

2. A spark arrester comprising a casing formed of two inverted conical members separably joined at their bases, an inverted  
 45 conical container within the lower member spaced from the sides thereof, a plurality of U-shaped resilient strips between the container and the lower member, the arms of  
 50 which extend upwardly and outwardly, one arm of each strip being fastened to the lower member while the other arms are free and form a yielding support for the container, a finger on the upper end of each free  
 55 arm to engage over the top of the container and hold the same in place yet capable of disengagement therefrom for removal of the container, and a deflecting flange depending from the upper casing member  
 60 above said container.

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

DELBERT WELCH.

Witnesses:

W. E. PIERSON,  
 WILLIAM STECKER.

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