

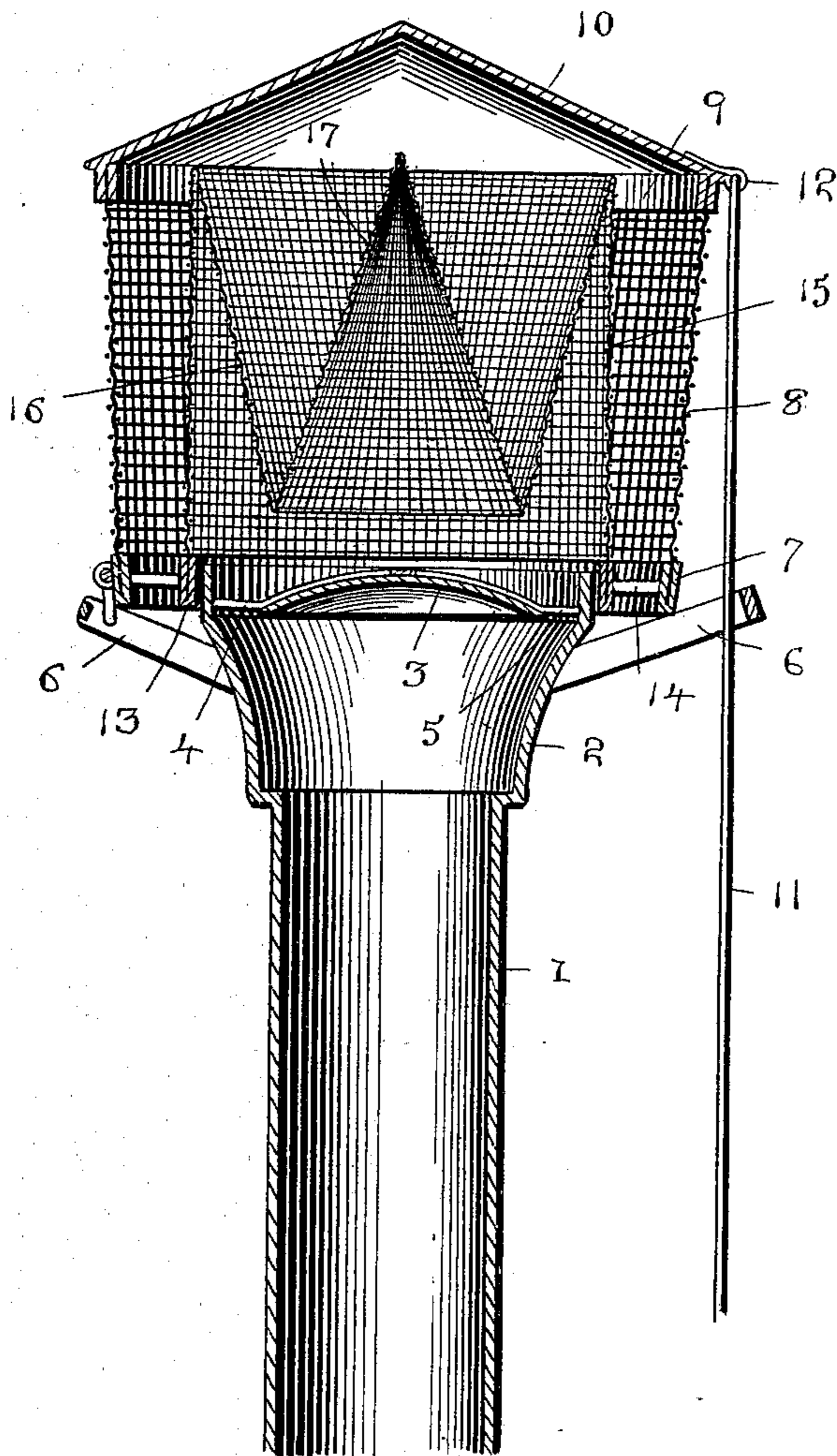
No. 731,898.

PATENTED JUNE 23, 1903.

T. J. HAWKINS.
SPARK ARRESTER.

APPLICATION FILED APR. 11, 1903.

NO MODEL.



Witnesses

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UNITED STATES PATENT OFFICE.

THEODORE J. HAWKINS, OF JAMESVILLE, MISSOURI.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 731,898, dated June 23, 1903.

Application filed April 11, 1903. Serial No. 152,231. (No model.)

To all whom it may concern:

Be it known that I, THEODORE J. HAWKINS, a citizen of the United States, residing at Jamesville, in the county of Stone and State of Missouri, have invented new and useful Improvements in Spark-Arresters, of which the following is a specification.

My invention relates to new and useful improvements in spark-arresters for the stacks of locomotives, &c.; and its object is to provide a novel arrangement of screens whereby the outward passage of sparks is retarded.

A further object is to provide means whereby incandescent particles which may escape through the screens are caught and held in such a position as to be thoroughly consumed prior to their discharge from the device.

With the above and other objects in view the invention consists in arranging a cap within the end of the smoke-stack, said cap being so supported therein as to permit the products of combustion to escape therearound, the passage between the cap and the sides of the stack being of such size that the cap will not interfere with the draft. Arranged above the cap is a cylindrical screen having an inverted frusto-conical screen extending thereinto and inclosing an integral conical screen. A screen-casing incloses the top of the stack and has a solid metal cap hinged thereto which is preferably conical in form and is adapted to direct any incandescent particles which may come into contact therewith downward into the frusto-conical screen before referred to.

The invention also consists in the further novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawing, which is a vertical section through a stack having my improved spark-arrester in position thereon.

Referring to said figure by numerals of reference, 1 is a stack having its upper end 2 enlarged, as shown, and within this end is a concavo-convex cap 3, which is supported in position at the center of the stack by means of arms 4, which are fastened in any suitable manner to the sides of the stack. A passage 5 is thus formed around cap 3, and this passage is of such size as to permit the products of combustion to flow freely there-

through. Brackets 6 extend from opposite sides of the stack, and to one of these is hinged a ring 7, from which extends a cylindrical screen-casing 8, secured at its upper end to a ring 9. A conical solid metal cap 10 is secured to the ring 9 and, together with the rings 7 and 9 and the casing 8, is adapted to be swung laterally upon the hinge of the link 7 by means of a rod 11, which is pivoted to an arm 12, extending from said cap. An inner concentric ring 13 is arranged within ring 7 and is connected thereto in any suitable manner, as by means of rods 14. Extending upward from this inner ring is a cylindrical screen-casing 15, having an inverted frusto-conical screen 16, extending downward from the upper end thereof, and within this frusto-conical screen is a conical screen 17, arranged directly over cap 3 and extending upward from the lower edge of screen 16.

It will be understood that when the products of combustion pass out of the stack through passage 5 the outward movement thereof will be retarded by screens 15 and 16 and the majority of the incandescent particles will be thoroughly consumed before escaping therethrough. Should any incandescent particles, however, pass through the screens 15 and 16, they would be brought so violently into contact with cap 10 as to be thrown downward into the bottom of the screen 16, where they would be held in the draft passing between rings 7 and 9 until thoroughly consumed.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing any of the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus fully described the invention, what is claimed as new is—

1. In a spark-arrester, the combination with a stack having a centrally-arranged cap in the mouth thereof; of concentric rings inclosing the stack and hinged at one side thereof, cylindrical screens extending from the rings, a conical cap upon the outer screen, an inwardly-extending frusto-conical screen in-

tegral with the inner screen, and a conical screen extending upward from the lower edge of the frusto-conical screen.

2. In a spark-arrester, the combination with
5 a stack having a cap centrally arranged in the outer end thereof; of concentric cylindrical screens inclosing said end and hinged to one side thereof, a conical cap secured to the outer cylindrical screen, a downwardly-extending
10 frusto-conical screen integral with the inner cylindrical screen and projecting to a point above the cap in the stack, and a conical screen projecting upward from the lower edge of the frusto-conical screen.

15 3. In a spark-arrester, the combination with a stack having a cap arranged in the outer end thereof and forming a passage there-

around; of concentric rings inclosing the stack and hinged at one side thereof, a cylindrical screen extending from the rings, a
20 cap secured upon the outer screen, a rod connected to said cap, a downwardly-extending frusto-conical screen arranged within and integral with the inner cylindrical screen, and a conical screen within and extending
25 upward from the lower edge of the frusto-conical screen.

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

THEODORE J. HAWKINS.

Witnesses:

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