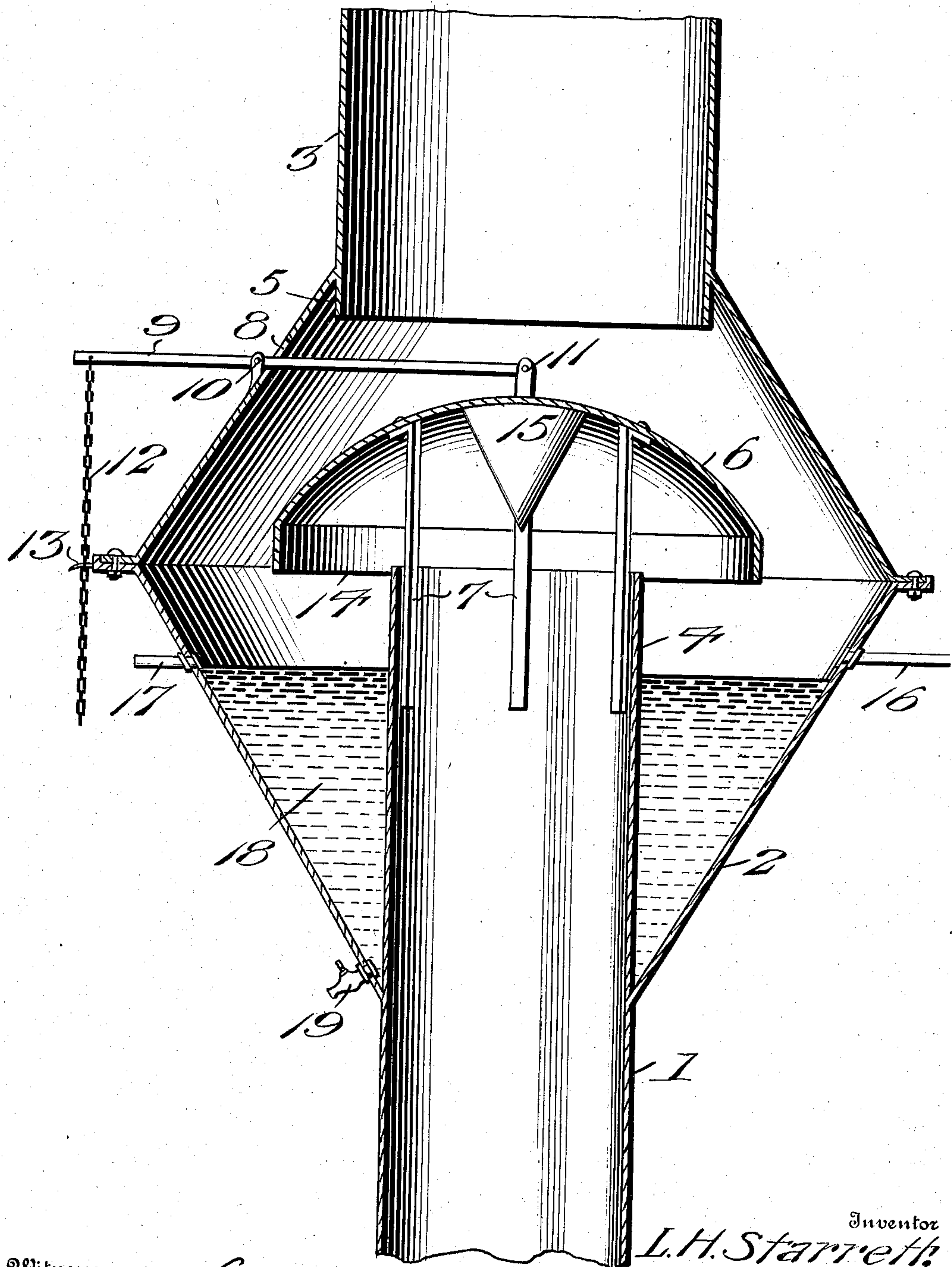


No. 881,735.

PATENTED MAR. 10, 1908.

L. H. STARRETT.
SPARK ARRESTER.

APPLICATION FILED MAY 23, 1906.



Witnesses
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UNITED STATES PATENT OFFICE.

LEWIS H. STARRETT, OF PORTLAND, OREGON, ASSIGNOR OF ONE-HALF TO DANIEL STARRETT, OF PORTLAND, OREGON.

SPARK-ARRESTER.

No. 881,735.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed May 23, 1906. Serial No. 318,378.

To all whom it may concern:

Be it known that I, LEWIS H. STARRETT, a native of the Dominion of Canada, residing at Portland, in the county of Multnomah and State of Oregon, have invented new and useful Improvements in Spark - Arresters, of which the following is a specification.

This invention relates to spark arresters, designed especially for use on the stacks of locomotive portable and stationary boilers, and has for its objects to produce a comparatively simple, inexpensive device of this character which may be inexpensively installed, one whereby the sparks will be effectually arrested and precipitated into the spark receptacle, one wherein the hood may be adjusted as circumstances require, and one in which the receptacle may be conveniently drained and cleaned.

With these and other objects in view, the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, there is shown a central vertical section taken longitudinally through the smoke stack equipped with a spark arrester embodying the invention.

Referring to the drawings, 1 designates a smoke stack or duct on which is fixed a hollow drum or receptacle 2 comprising preferably an inverted truncated cone secured to the duct and a truncated cone supported on the upper end of the other and having a tubular discharge mouth or duct 3 of greater diameter than and centered above the discharge end of the stack 1 which projects into the lower end of and extends substantially half the distance through the vessel 2 to form therein a central, tubular shell or core 4 forming a continuance of a stack, it being noted that the upper duct 3 projects at its lower end as at 5 into the receptacle 2 for a purpose which will hereinafter appear.

Arranged over the upper open end of the stack 1 within the drum 2 is an arched spark arresting member or hood 6 fixed upon the upper ends of a plurality of vertically depending engaging members or arms 7 which are yieldable laterally and slidably engage the internal surface of the stack for retaining the hood in position thereon; there being extended into the drum through an opening 8 in the upper cone an adjusting lever 9 pivoted between its ends in a suitable bearing

10 outside the cone and at its inner end as at 11 to the hood 6, said lever having engaged with its outer end a depending traction element or chain 12 extended through a suitable guide 13 and carried to a point for convenient operation by the engineer to effect a vertical adjustment of the hood 6, which is provided with a cylindrical, vertically depending flange or rim 14 and with a central, depending conical deflecting portion 15. The lever is adapted to strike the lower edge of the upper duct 3 for limiting the upward movement of the hood.

Entering one side wall of the drum 2 and in a plane beneath that of the upper end of the core 4 is a feed pipe 16 adapted for supplying water to the receptacle which is provided with an overflow pipe 17 entering the wall of the drum at a point slightly below the point of entrance of the pipe 16 and at the line of the desired level of the water 18 contained within the vessel which has at a point adjacent the juncture of its lower end with the stack a draw-off valve or cock 19.

In practice, the sparks passing upward through the stack 1 with the smoke will come in contact with the hood for precipitation into the liquid 18 within the receptacle, it being noted that in the action of arresting the sparks the central conical portion 15 of the hood serves to throw the sparks outward while the depending flange 14 with which they come in contact causes their positive precipitation into the underlying liquid. When desired, the hood may be lifted vertically in effecting its adjustment toward and from the upper portion of the stack by downward traction on the element 13, it being apparent that by slacking the element the weight of the hood 6 will carry the same automatically downward toward the mouth of the stack. It is apparent that any sparks which may escape from the hood will contact with the inwardly projecting portion 5 of the discharge tube and be arrested thereby for precipitation into the liquid.

Having thus described my invention, what I claim is:

In a spark arrester, the combination of a smoke duct, an inverted truncated cone secured around the upper portion of the duct to constitute with the latter a water containing receptacle, a truncated cone resting on and secured to the upper end of the first cone and provided with an opening in its wall, a

duct arranged in axial alinement with and of greater diameter than the smoke duct and extending at its lower end a suitable distance into the upper cone, a hood disposed in the
5 upper cone and provided with a depending cylindrical rim, flexible vertical members secured at their upper ends to the under side of the hood and slidably engaging the internal surface of the lower duct, a lever extending
0 into the upper cone through the opening thereof and hingedly connected with the top of the hood, a fulcrum for the lever located

outside the upper cone and arranged to permit the lever to strike the lower end of the upper duct for limiting the upward movement of the hood, and means connecting
15 with the lever for actuating the same.

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

LEWIS H. STARRETT.

Witnesses:

CHAS. N. SCOTT,
E. A. CLEM.