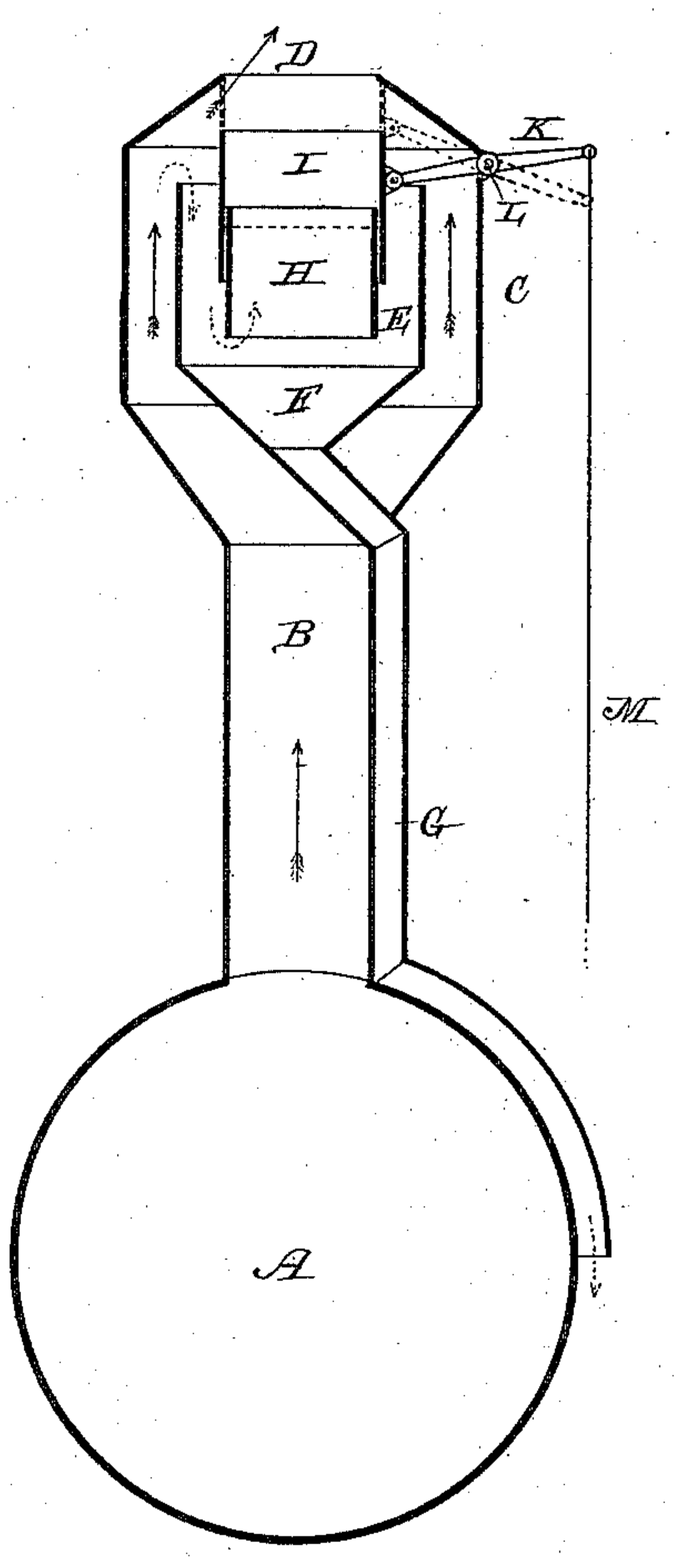
(No Model.)

J. S. PARK.

SPARK ARRESTER.

No. 312,889. Patented Feb. 24, 1885.



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UNITED STATES PATENT OFFICE.

JOHN S. PARK, OF ROCKPORT, INDIANA, ASSIGNOR OF ONE-HALF TO JOHN W. GRAHAM, TAYLOR C. BASYE, AND FERDINAND WEIL, ALL OF SAME PLACE.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 312,889, dated February 24, 1885.

Application filed September 11, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. PARK, of Rockport, in the county of Spencer and State of Indiana, have invented certain new and useful Improvements in Spark-Arresters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in spark-arresters; and it consists in the combination of a smoke-stack which is provided with a funnel which is located on the inner side of its upper end, and a discharge-pipe leading from the lower end of the funnel, a drum which is centrally located in the funnel, and a cylinder or drum which is secured to the lever that is pivoted in the upper end of the smoke-stack, by which means it may be raised or lowered with reference to the immovable drum which is located beneath it for the purpose of increasing or diminishing the draft, as will be more fully set forth hereinafter.

The object of my invention is to produce a spark-arrester and draft-regulator which will be efficient in its operation, and which may cause an increased draft to be given to the smoke-stack while the engine is standing still, and which will extinguish all the cinders and discharge them through a spout after they have been extinguished.

The accompanying drawing represents a central vertical section of my invention, showing the position of the regulating-drum when the engine is standing still in solid lines, and representing its elevated position, when the engine is in motion, in dotted lines.

A represents a smoke-box of the usual construction, from which arises the smoke-stack B. The upper end of this smoke-stack is enlarged, as at C, in the usual manner, and is provided at its top with an opening, D, which is considerably smaller than the enlargement C. In the upper end of the stack is located a drum, E, which is provided with a funnel-shaped bottom, F, and from the lower portion of this bottom extends a pipe, G, which extends down along the outer side of the smoke-stack. In the drum E, near the bottom thereof, is immovably secured a cylindrical drum, H, which is open at its upper and lower ends. Sliding upon this drum is a similar drum, I, which is pivoted to the inner end of the lever K, which lever has its fulcrum in the smoke-stack, as at L, and is provided at its inner end with a cord or rod, M, which should extend to the cab of the locomotive.

The operation of my invention is as follows: When the drum I is in its lowered position, (shown in solid lines,) the smoke and steam rise up through the stack and pass over the upper edge of the drum I without entering it, and are discharged through the opening D, as indicated by the feathered arrows. When in this position, it will be observed that the draft in the stack is not obstructed, and that the sparks, smoke, and steam pass freely out of the stack without any reference to the drum I. This is necessary in order to give an increased draft to the locomotive when it is standing still. When the engine is in motion, the cord M is pulled, and the lever K causes the drum I to rise up until its upper end comes in contact with the under side of the top of the smoke-stack, and the current of the steam, smoke, and products of combustion will be obstructed at the upper edge of the drum E, and will strike against the outer side of the cylinder I and be directed downward under the cylinder H, and will rise therein and pass up through said cylinder and through the cylinder I at the opening D. This causes the steam, sparks, and smoke to be mingled together below and in the drums H and I, and extinguishes the sparks and cinders, which drop down into the funnel F, and are thence conveyed out of the stack by the pipe G and discharged harmlessly upon the ground.

A smoke-stack thus constructed will be found exceedingly efficient, is cheap and simple, and is not likely to get out of order.

Having thus described my invention, I claim—

The combination, with a smoke-stack, of the

drum E, which is located therein, and provided with the discharge-pipe G, a cylinder or drum, H, which is located in the drum E, and a cylinder or drum, I, which slides vertically on the drum H, for the purpose of opening or closing the opening D, and thereby causing the smoke and steam to pass either directly out of said opening or to be deflected downward and caused to pass upward through the drums H I, and means for raising and lowering said drum I, substantially as described.

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

JOHN S. PARK.

Witnesses:
JOHN W. GRAHAM,
TAYLOR C. BASYE.