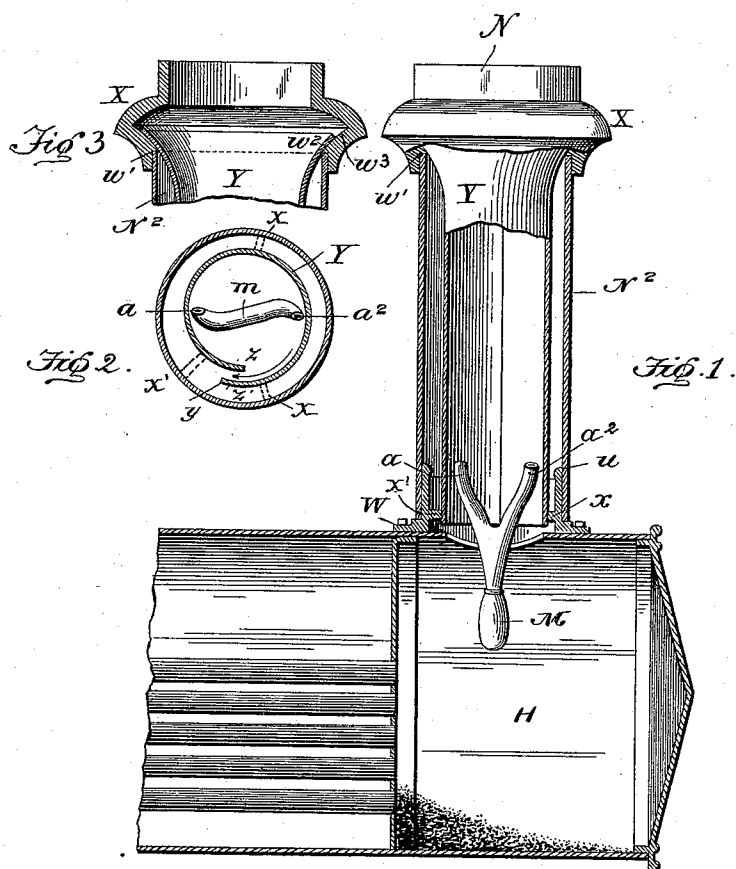


(No Model.)

C. O. HEGGEM.
SPARK ARRESTER.

No. 540,789.

Patented June 11, 1895.



Witnesses:
Wm C Dashieng
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UNITED STATES PATENT OFFICE.

CHARLES O. HEGGEM, OF MASSILLON, OHIO.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 540,789, dated June 11, 1895.

Application filed November 9, 1894. Serial No. 528,276. (No model.)

To all whom it may concern:

Be it known that I, CHARLES O. HEGGEM, a citizen of the United States, and a resident of Massillon, county of Stark, State of Ohio, have invented new and useful Improvements in Spark-Arresters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to an improvement in spark arresters, and consists of certain features of construction and combination of parts, as will be hereinafter described and claimed.

Figure 1 of the accompanying drawings is a side elevation, partly sectional, of the front end of the boiler, smoke-box, smoke-stack, spark-arrester, and exhaust-pipe. Fig. 2 is a section of the top of the smoke-stack, and Fig. 3 a cross-section of smoke-pipe and plan view of exhaust-pipe.

N represents the smoke stack and spark arrester, the outer shell N², of which is secured to the boiler extension or smoke box, by a cast metal ring W, having an upwardly projected sleeve portion *u*, over which the outside shell N² is placed. On the top of this shell is placed a cast metal cap X, having a shoulder *w'*, that rests on the shell N².

Inside of the shell N², is provided a tubular lining Y, that is supported in position and spaced apart from the outer shell N², by the flanged out upper portion *w*², resting on the beveled inner face *w*³, of the cap X, and the stud pins *x*, cast on the inside of the sleeve *u*. The tubular lining Y, in conjunction with the outer shell, forms the spark arrester, and to serve that purpose, is provided with an open side, formed by the overlapping edges *y* and *z*, leaving an open space *z*². The tube Y is formed larger than the shell N², is pressed together and passed down through the cap X and shell N², and when in position, the pressure is removed. The spring or resiliency of the metal will throw the flanged portion *w'* on the beveled portion *w*³, of the cap X, and the

lower portion against the pins *x*, the edges *y* and *z*, of the tube, overlapping and spaced apart by the graded pins *x* and *x'*, as shown by the broken lines in Fig. 2.

The exhaust pipe M is bifurcated. The prongs *a'* and *a*², entering the lower portion of the stack, are disposed or bent in opposite directions, and slightly elevated, the object of which is to give the exhaust steam and smoke, an upward and at the same time, a spiral movement in the stack, by which the sparks or cinders are driven from the central portion of the stack, through the side opening *z'*, in the lining Y. The upper end of the space being closed, to prevent escape, the sparks or cinders are dashed against the shell N², and extinguished, after which they fall to the smoke box.

Having thus fully described the nature and object of my invention, what I claim is—

1. The combination with a boiler, of a smoke stack comprising an outer shell and a slotted inner shell or lining, the two spaced apart, a collar secured to the boiler and supporting the outer shell, the said inner shell having a flared upper end, a cap fitting over the upper end of the two shells and closing the space at that point, and a steam-pipe located in the inner shell, substantially as described.

2. The combination with a boiler, of a smoke stack comprising an outer shell and an inner slotted shell or lining, a collar bolted to the boiler, and provided with a flange which extends upward and is secured to the inner side of the outer shell and is provided with lugs to space the shells apart, a cap embracing the upper end of the two shells and closing the space between the two, and a steam-pipe located in the inner shell, substantially as described.

In testimony whereof I have hereunto set my hand this 23d day of October, A. D. 1894.

CHARLES O. HEGGEM.

Witnesses:

W. K. MILLER,
V. S. RUSSELL.