

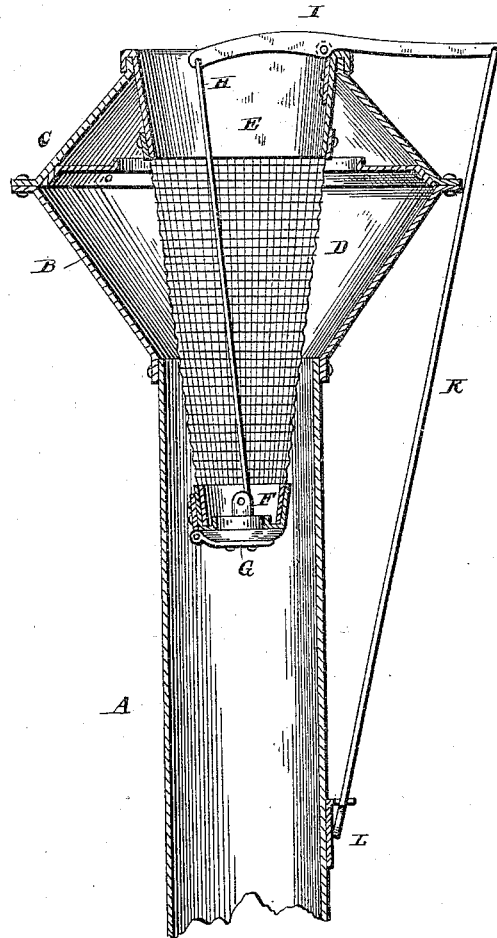
(No Model.)

J. HULS & T. J. CHISM.

SPARK ARRESTER.

No. 306,336.

Patented Oct. 7, 1884.



WITNESSES

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# UNITED STATES PATENT OFFICE.

JOSEPH HULS AND THOMAS J. CHISM, OF ALBION, ILLINOIS.

## SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 306,336, dated October 7, 1884.

Application filed March 4, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, JOSEPH HULS and THOMAS J. CHISM, citizens of the United States, residing at Albion, in the county of Edwards and State of Illinois, have invented certain new and useful Improvements in Spark-Arresters, of which the following is a specification, reference being had therein to the accompanying drawing.

Our invention relates to improvements in spark-arresters, and has for its object the preventing of the escape of sparks from the smoke-stack of an engine or locomotive, and also provide a means whereby the screen may be opened when it is necessary to drive the "sweat" or damp from the flues of the boiler.

The figure in the drawing represents a vertical section through a smoke-stack containing our improvements.

A represents a smoke-stack of usual construction surmounted by the flaring hood B, which carries a narrow pan or check, C, located about centrally on the inside of the hood. This pan is circular in form, to correspond to the shape of the hood, and has its inner edge turned up, for the purpose hereinafter set forth.

D represents a wire-gauze screen in the form of a long truncated cone and forming the spark-arrester proper. The upper part of the screen is securely fastened to a collar, E, which may or may not have a greater "flare" than the screen, and has its upper edge turned outward and downward, and adapted to fit over the upward-projecting edge of the hood B. The collar may be fastened to the hood by rivets or other convenient means, and it thus forms a support for the downwardly-projecting screen. The bottom of the gauze screen is fastened to a collar, F, the lower edge of which is bent inward and upward, to form a valve-seat for the valve G, which is hinged to one side of the collar F. This valve has hinged to its center the rod H projecting upward, and being connected to one end of the lever I, which is pivoted to a suitable fulcrum on one side of the collar E. From the other end of the lever depends the rod K, the lower end of which is adapted to engage with a catch, L, fastened to the outside of the stack.

It is evident that when sparks are forced into the stack by the blast that as they cannot escape through the gauze screen they ascend till, reaching the collar E, they are rebounded into the pan C, where they are retained.

As was heretofore referred to, when it is desired in "starting up," and before putting on the blast, to drive out the "sweat" in the flues, a clear opening is wanted in the stack, and then the valve is opened by means of the lever attachment. Afterward, when the blast is put on, it is necessary to close the valve, in order to prevent the escape of the sparks.

Having thus fully described the device, what we claim, and desire to secure by Letters Patent, is—

1. A detachable spark-arrester of the shape shown and described, being provided at its lower end with a valve operated by suitable mechanism, and being adapted to be inserted in a smoke-stack and fastened thereto, substantially as described.

2. The combination, with a spark-arrester, of the valve hinged to its lower end and operated by a lever and its connections, all being secured to and carried by the said spark-arrester, substantially as described.

3. The combination, with a smoke-stack, of a detachable spark-arrester, shaped as described and shown, and consisting of a wire-gauze screen secured at its upper end to a supporting-collar and at its lower end carrying a collar which forms a valve-seat, substantially as described.

4. The combination, with the smoke-stack, of the wire-gauze spark-arrester, having a supporting-collar at one end and at the other a collar carrying a valve operated by suitable mechanism, and the circular flanged pan fastened to the inside of the hood of the smoke-stack, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

JOSEPH HULS.  
THOMAS J. CHISM.

Witnesses:

GEORGE HARRIS,  
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