

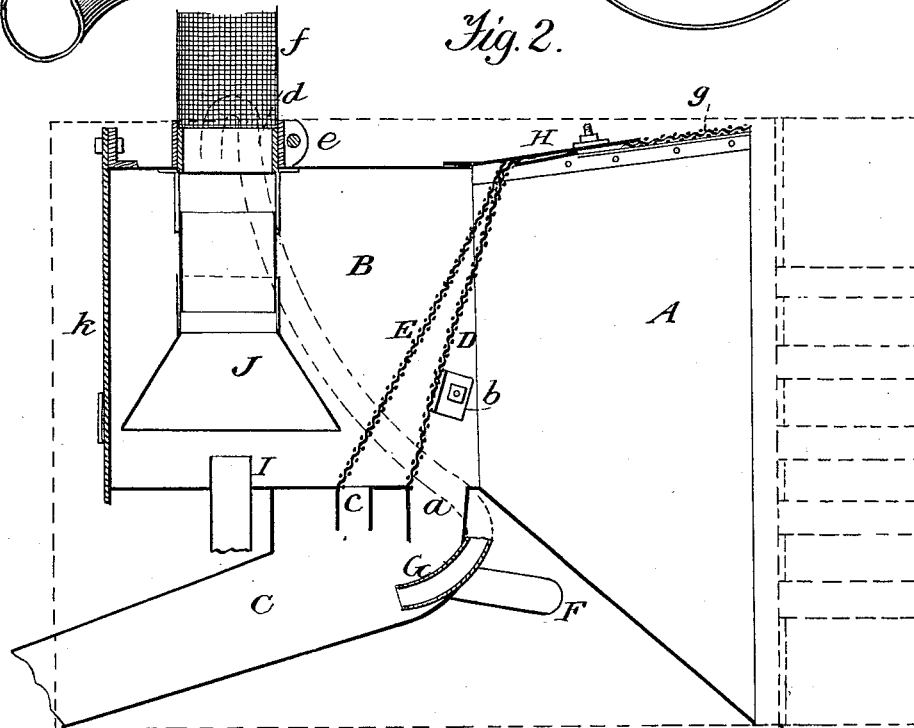
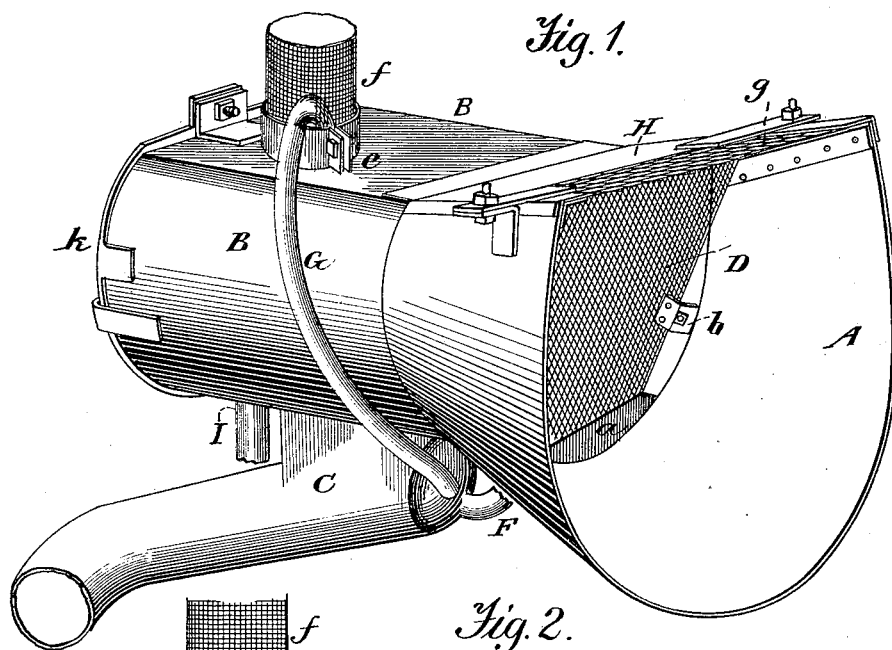
(No Model.)

F. M. HUDLER.

SPARK ARRESTER.

No. 386,470.

Patented July 24, 1888.



*Witnesses.*  
*A. Ruspert.*  
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# UNITED STATES PATENT OFFICE.

FRANKLIN MASTERS HUDLER, OF TRENTON, MISSOURI.

## SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 386,470, dated July 24, 1888.

Application filed March 7, 1888. Serial No. 266,422. (No model.)

*To all whom it may concern:*

Be it known that I, FRANKLIN MASTERS HUDLER, a citizen of the United States, residing at Trenton, in the county of Grundy and State of Missouri, have invented certain new and useful Improvements in Spark-Arresters; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in spark-arresters; and it has for its object to improve upon previous devices of this character, to provide for extinguishing of all the sparks before they leave the smoke-stack, and to increase the efficiency and durability of the device as a whole.

The novelty resides in the peculiar combinations, and in the construction, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the accompanying drawings, and then particularly pointed out in the claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view illustrating my improvements, with parts broken away; and Fig. 2, a vertical longitudinal section of the same.

Referring now to the details of the drawings by letter, A designates the hood, designed to be secured in the front end of the engine against the flue sheet, covering the full circle of flues, so that all the cinders must pass into this hood, which is flaring inward, as shown. The extension B of the hood is either formed integral therewith or rigidly secured thereto, as may be preferred. At the bottom of the extension, at its point of junction with the hood, is the opening *a*, communicating with the discharge tube or trap C, through which the cinders are blown, as will be more fully hereinafter described.

D is an inclined screen or grating of wire-gauze or other suitable material, covering the

mouth of the extension, but at its lower end arranged in advance of the opening *a*, so that the cinders as they are forced against said screen will fall therefrom into said opening. This screen may be secured in place in any suitable way, preferably by means of detachable lugs *b*, so that it may be readily replaced by a new one when desired.

E is a second screen arranged as shown, and *e* is another opening located between the two screens and communicating with the discharge-tube C, whereby if any cinders find their way through the first screen they will be stopped by the second one, and will drop through the said opening *e* into the discharge-tube, which tube is arranged so as to discharge at one side of the track.

F is a pipe designed to be connected with the boiler and emptying into the discharge-spout at its inner end, right at the opening *a*, to quench the cinders as they fall into said trap or the discharge tube. The top of the extension near its outer end is provided with a collar, *d*, around which is secured, by means of the detachable clamping-collar *e*, the circular netting *f*, designed to enter the base of the smoke-stack.

G is a pipe connected with the exhaust and extended into the discharge-pipe C, and designed at each exhaust of the engine to blow out the cinders that have accumulated in the discharge-pipe.

Across the top of the hood is a removable cap, H, which can be readily removed to get at the nettings for the purpose of repairs, or to replace them by new ones. The end of this cap nearest the flues carries a strip of netting, *g*, for the purpose of giving the engine a free draft when first fired up. The outer end of the extension is provided with a removable cap, *k*.

I is the nozzle of the exhaust-pipe, arranged as shown, and J is the petticoat or draft pipe, the latter being made adjustable, as shown, for the purpose of regulating the draft of the furnace, as will be readily understood.

What I claim to be new, and desire to secure by Letters Patent, is—

1. The combination, with the hood and extension, of an outlet at the bottom of said extension, the discharge-tube communicating with said inlet, and the water-pipe connected

with the boiler and emptying into the discharge-tube, substantially as described.

2. The combination, with the hood and the extension, the latter provided with an opening, *a*, at its bottom, of the discharge-tube, and the water-pipe connected with the boiler and emptying into said tube, substantially as described.

3. The combination, with the hood and the extension, of the two screens in said extension, the latter provided in its bottom with the openings *a c*, and the discharge-tube communicating with said openings, substantially as described.

4. The combination, with the hood and the screens, arranged as described, of the nettings arranged at the inner end of the top of said hood, substantially as and for the purpose specified.

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

FRANKLIN MASTERS HUDLER.

Witnesses:

ANDREW L. MILLS,  
E. R. EVANS.