A. Hamann,

Spark Arrester.

No. 5,835. Patented Oct. 10, 1848.

Fig 3.

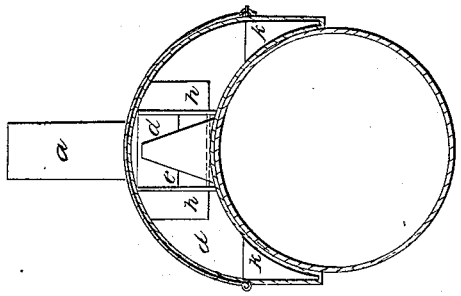


Fig 2.

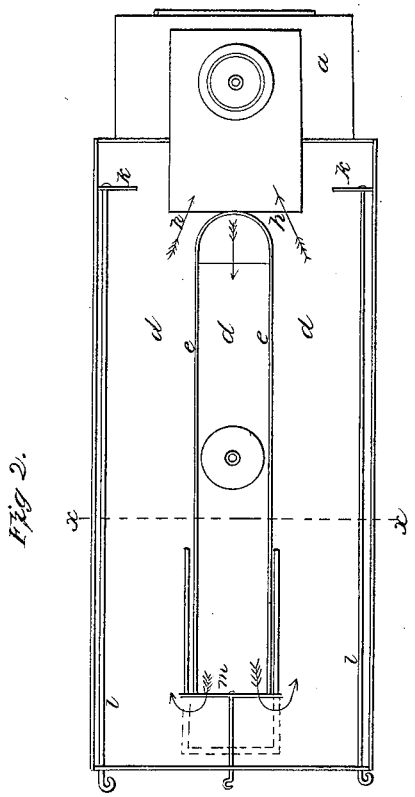
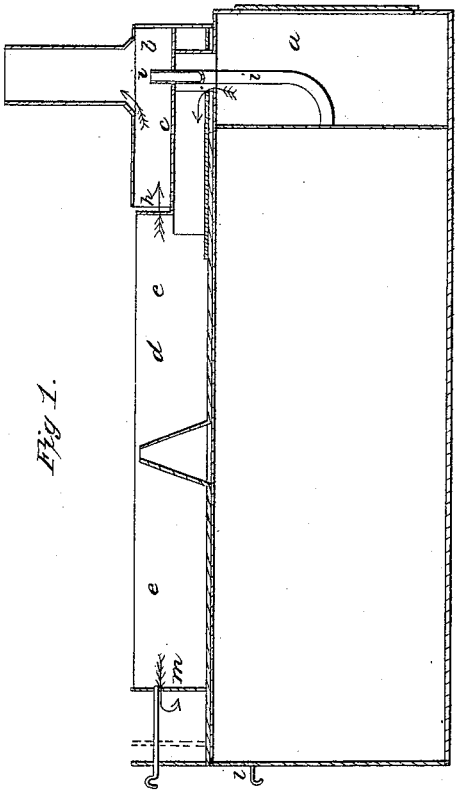


Fig 1.



UNITED STATES PATENT OFFICE.

AUGUSTUS HAMANN, OF WASHINGTON, DISTRICT OF COLUMBIA.

SPARK-ARRESTER.

Specification of Letters Patent No. 5,835, dated October 10, 1848.

To all whom it may concern:

Be it known that I, AUGUSTUS HAMANN, of Washington, in the county of Washington and District of Columbia, have invented certain new and useful Improvements in Spark-Arresters, and that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known and of the usual manner of making, modifying, and using the same, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figure 1 is a vertical longitudinal section; Fig. 2 is a horizontal section through the spark arrester, the top of which is removed to show the interior; Fig. 3 is a cross section on the line *x x* Fig. 2.

The nature of my invention consists in covering the top of the boiler with a metallic chamber, the bottom of which fits the top of the boiler, and extends down the sides thereof, as clearly shown in Fig. 3, which is so connected with the flue stack as to turn all the products of combustion into it, and cause them to circulate through it, and there deposit the sparks before the smoke escapes through the stack.

The construction is as follows: The base of the flue stack *a* has an enlargement *b* in it with a horizontal partition *c* across its center so as to prevent the smoke from ascending through it; this enlargement *b* opens into a large chamber *d*, which covers the top of the boiler, as above stated; this chamber is divided into three by means of two vertical partitions *e*, that extend longitudinally from the enlargement *b* of the stack nearly to the opposite end of the chamber, as clearly shown in Fig. 2, the center chamber or compartment opens into the enlargement and the two sides are connected with the exit at *h*, *h*, the exhaust pipes *i* extend up through the partition *c* into the stack above, where it terminates, and operates on the draft in the usual manner. The course of the smoke after ascending from the smoke stack is back through the center compartment of the chamber *d* to the rear end, thence it turns to the right and left, and returns on the sides to the stack through which it makes its exit (its course is indicated by arrows in the drawing) in the large chamber the current is permitted to expand, and consequently its velocity is retarded, which causes the sparks to fall in the sides of the chamber, where they can be raked out by two scrapers *k* that are attached to rods *l* that run the whole length of the chamber, a sliding valve *m* is so placed as to slide up against the ends of the partition *e*, and regulate or stop the draft at will.

The chamber thus constructed not only arrests the sparks, but it is a great economizer of fuel, preventing the radiation of heat from the boiler, and causing that in the smoke to be imparted thereto.

Having thus fully described my improved apparatus for arresting sparks, what I claim therein as new for which I desire to secure Letters Patent is—

The spark arrester, constructed substantially as herein set forth, covering the top of the boiler and forming a chamber in which the sparks are deposited, in horizontal passages or return flues which serve for a jacket to the boiler in the manner and for the purpose set forth.

AUGUSTUS HAMANN.

Witnesses:

J. J. GREENOUGH,

T. C. DUNN.