

No. 854,016.

PATENTED MAY 21, 1907.

A. BALLEWSKI & W. WESSEL.
SPARK ARRESTER.

APPLICATION FILED AUG. 11, 1905.

FIG. 2.

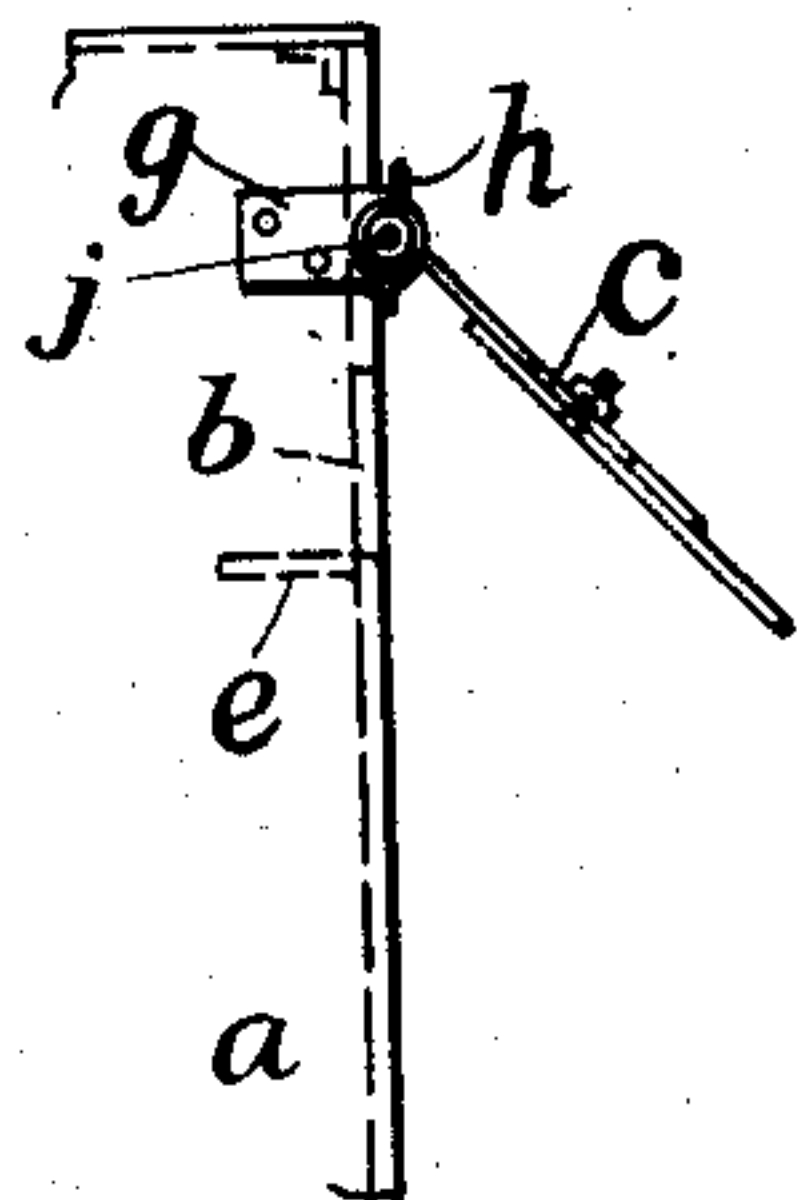


FIG. 3.

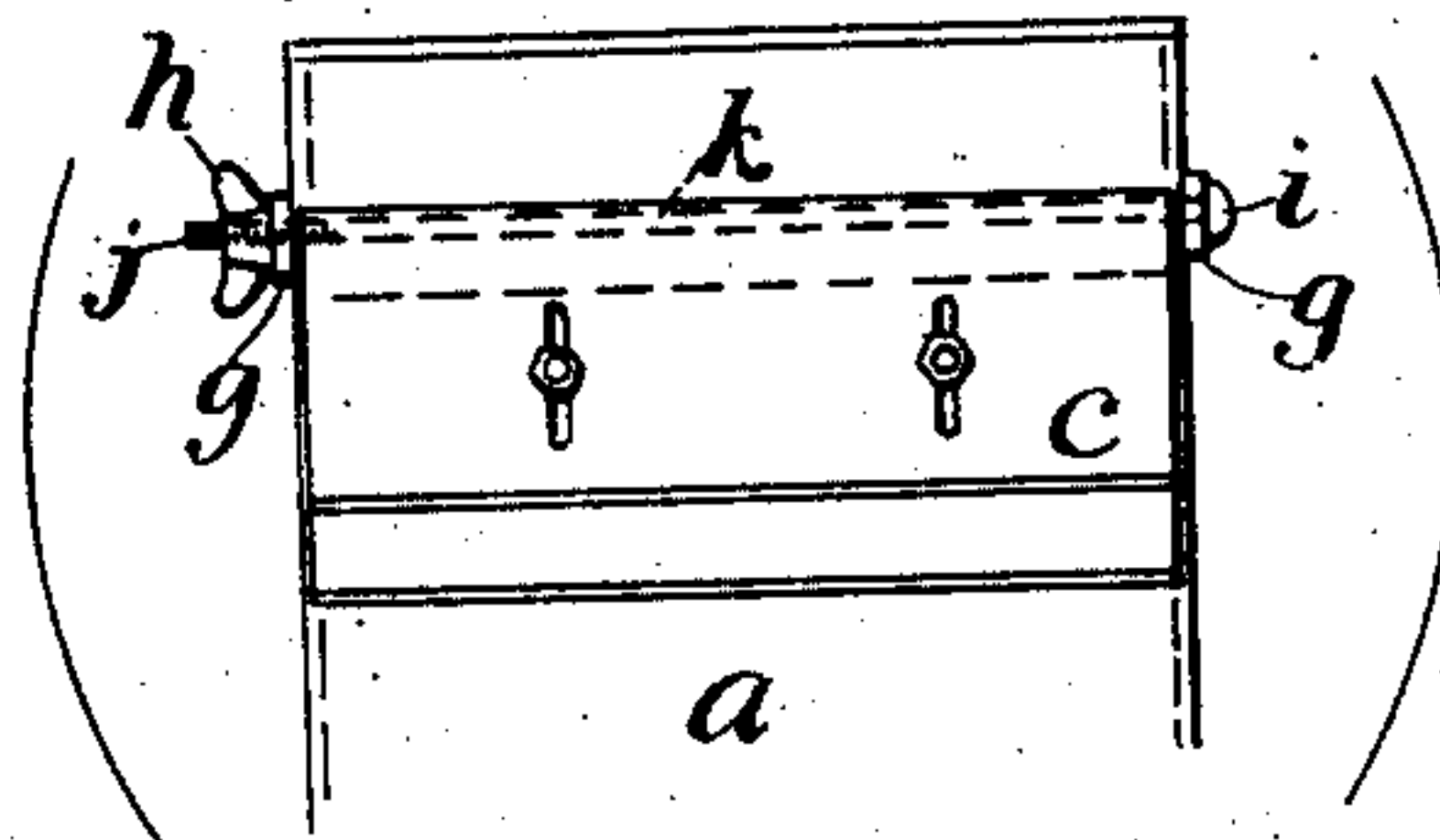
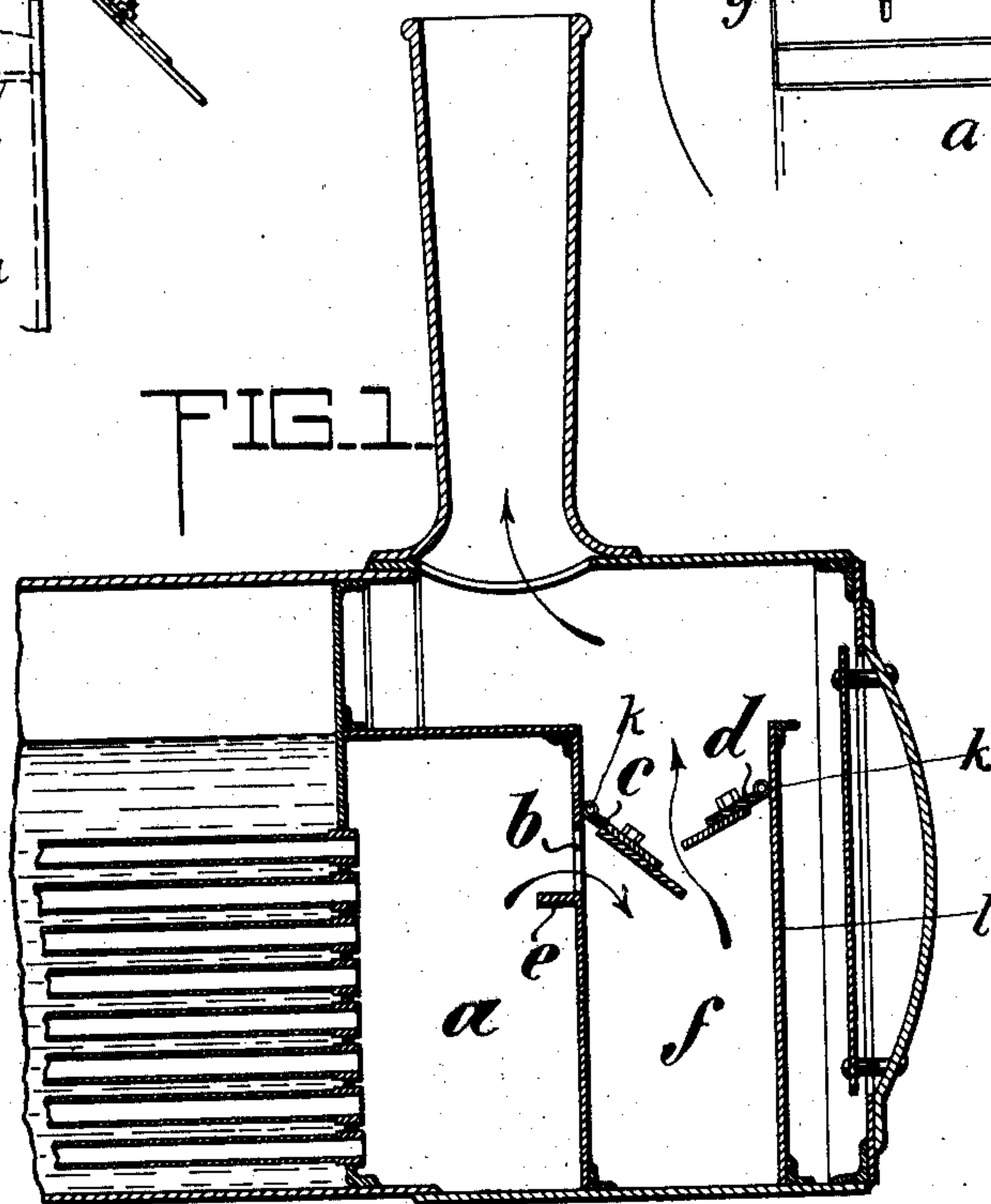


FIG. 1.



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UNITED STATES PATENT OFFICE.

ALBERT BALLEWSKI, OF MAGDEBURG, AND WILHELM WESSEL, OF BERLIN,
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SPARK-ARRESTER.

No. 854,016.

Specification of Letters Patent.

Patented May 21, 1907.

Application filed August 11, 1905. Serial No. 273,789.

To all whom it may concern:

Be it known that we, ALBERT BALLEWSKI, of Magdeburg, (whose post-office address is No. 3 Humboldtstrasse, Magdeburg,) Kingdom of Prussia, German Empire, and WILHELM WESSEL, of Berlin, (whose post-office address is No. 112 Lindenstrasse,) Berlin, in the same kingdom, both subjects of the King of Prussia, have invented a new and useful Spark-Arrester, of which the following is a specification.

Our invention relates to spark arresters and the like and has for its object to provide a simple construction which will effect the desired end in a satisfactory way.

Spark arresters are mainly required for use in steam generators of the locomotive and similar types, and it has previously been proposed to employ baffle plates of various types and constructions disposed within the smoke box so as to take the heavier particles of fuel carried by the draft and cause them to be precipitated in the smoke box. These constructions however have not satisfactorily fulfilled their object.

According to the present invention the spark arrester comprises a chamber into which the gases from the fire tubes enter, afterward passing into the smoke box where they are baffled and finally issue through the chimney. A preliminary deposition of the particles of fuel takes place in the first chamber and those particles which are carried on by the blast are thrown down by the baffle plates which are suitably disposed in the smoke box so as to cause the gases to pursue a devious path on their way to the baffle plates, these baffle plates being adjustable both as to angle and dimensions.

In the accompanying drawing Figure 1 illustrates in longitudinal and vertical section a portion of a locomotive boiler with the smoke box fitted with a spark arrester constructed in accordance with this invention. Figs. 2 and 3 are details of same, showing the baffle plates and the means for holding them in adjusted position.

The products of combustion issuing from the fire tubes enter the chamber *a* situated in the present construction within the smoke box. One or more openings *b* of suitable shape and dimensions are provided in one side of the chamber *a* and through these openings the gases escape into the smoke box,

being first deflected downward by a baffle plate *c*. The subsequent course of the gases is in an upward direction past the baffle *c* and another baffle plate *d* then escaping from the lower portion *f* of the smoke box to the upper part and so through the chimney. The lower portion of the smoke box practically constitutes a second chamber.

The baffle plates *c* and *d* are adjustably mounted by means of rods *k* fixed thereto and each having a head *i* and a screw threaded end *j* and extending through the eyes of a pair of brackets *g* and provided with a thumb nut *h*. The thumb nut and head of a rod being caused to bear upon the casing by the turning of the thumb nut inward the angle of the baffle plates may be adjusted the object being to enable the baffling to be adapted to the nature of the blast. Each baffle plate can have its width adjusted by moving relatively the two plates of which it is composed these plates being clamped or bolted together. The length of each plate may similarly be varied by sliding portions. The adjustable parts of each baffle plate may be arranged in various ways to enable the desired object to be attained. The edges of the baffles *c* and *d* preferably are arranged so as to overlap somewhat.

To further increase the baffling effect another plate such as *e* is preferably fixed or disposed within the chamber *a* and below the opening *b*. The particles of fuel precipitated in the chambers *a* and *f* may be removed through suitable openings at the bottom or sides and for the purpose of cleaning the fire tubes the chamber *a* may be removable, being secured in some manner which will allow of its being readily detached. Similarly where, as in the illustration, the baffle *d* is mounted upon a separate plate *l*, forming a wall of the chamber *f* this plate may be arranged so as to be readily removable. If desired the baffle *d* may be mounted directly upon the door of the smoke box.

What we claim as our invention, and desire to secure by Letters Patent is:—

1. In a spark arrester of the character described, the combination of a smoke box, smoke flues, a flue, a separate chamber situated within said smoke box and with which the smoke flues communicate, said chamber being formed with an opening in the upper part thereof communicating with said flue,

and oppositely arranged and adjustably mounted baffle plates above the opening, and exterior of the chamber, said baffle plates converging in a downward direction, substantially as described.

5 2. In a spark arrester of the character described, the combination of a smoke box, smoke flues, a flue, a separate chamber situated within said smoke box and with which
10 the smoke flues communicate, said chamber being formed with an opening in its upper part communicating with said flue, adjustable baffle plates arranged in a converged down-

ward direction above the opening and exterior of said chamber, and a baffle plate arranged at the lower inner edge of said opening, substantially as described. 15

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

ALBERT BALLEWSKI.
WILHELM WESSEL.

Witnesses:

HENRY HASPER,
ERASMUS PAUL.