

(No Model.)

J. F. CRISTAND.
SPARK CATCHER.

No. 519,886.

Patented May 15, 1894.

Fig. 2.

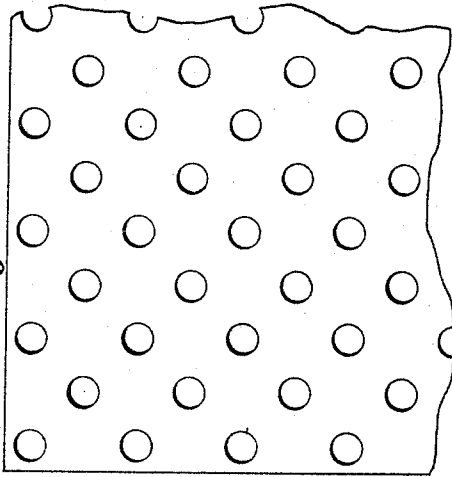


Fig. 1.

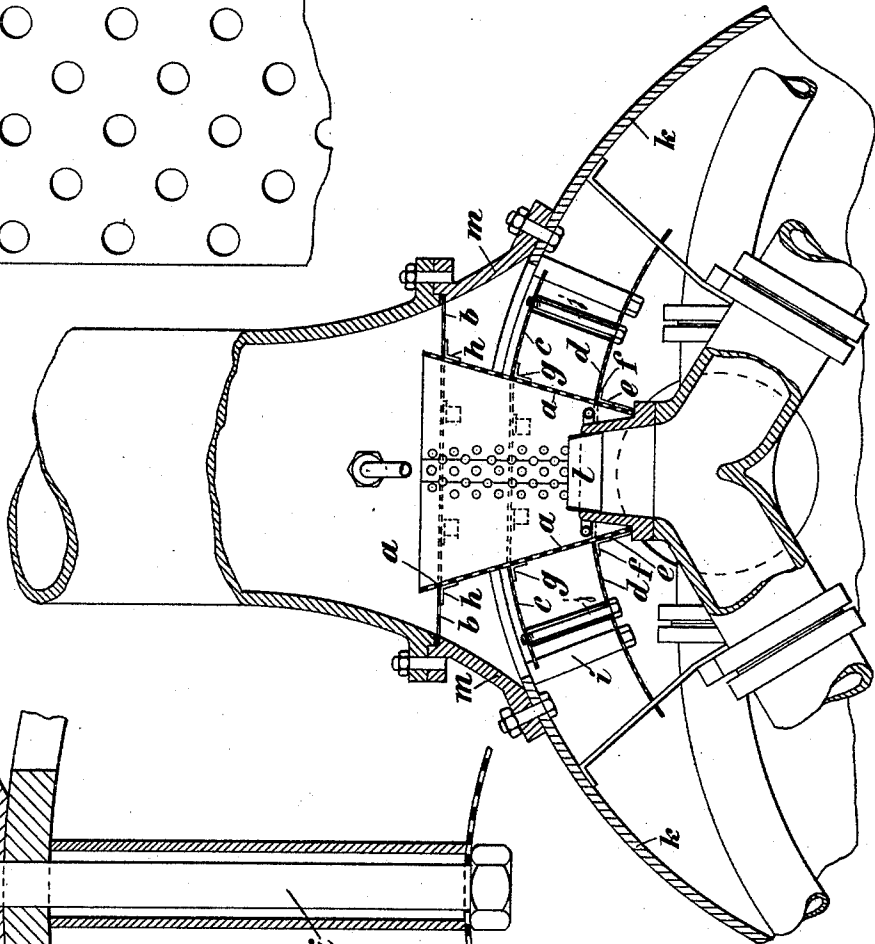
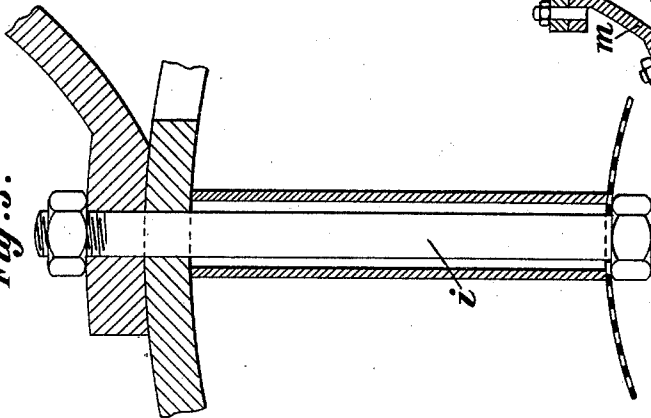


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHANN FRIEDRICH CRISTAND, OF AIX-LA-CHAPELLE, GERMANY.

SPARK-CATCHER.

SPECIFICATION forming part of Letters Patent No. 519,886, dated May 15, 1894.

Application filed October 3, 1893. Serial No. 487,104. (No model.)

To all whom it may concern:

Be it known that I, JOHANN FRIEDRICH CRISTAND, of the Royal Railway Rolling-Stock Works, of Aix-la-Chapelle, in the Kingdom of Prussia and German Empire, have invented a new and useful Spark-Catcher, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to spark catchers for use in locomotive, traction, and similar engines.

Aspark catcher constructed to embody these improvements consists essentially of a number of perforated plates combined with or arranged around a perforated hollow cone or funnel. The plates may be of any suitable shape either flat or curved or dished, and any convenient number may be employed but three will be found most generally useful.

20 The accompanying drawings illustrate the improved spark catcher applied to the smoke stack of a locomotive or similar engine.

Figure 1 illustrates a section of part of the smoke box and the lower part of the smoke stack cutting vertically through the catcher. Fig. 2 is a plan of part of one of the perforated plates. Fig. 3 shows how the perforated plates may be attached to the framing or casing of the smoke box.

30 As shown in the drawings the spark catcher consists of a perforated vertical tube or funnel *a*, and a series of radially extending perforated flat or curved plates *b*, *c* and *d*. The lower end of the funnel fits over the nozzle *l* of the exhaust pipe and rests upon a shoulder provided upon said nozzle. The upper plate *b*, which is preferably flat, is secured to the upper part of the funnel *a* by brackets *h h* and has its edges loosely held in a recess at the base of the smoke stack, thus steadying the funnel, and allowing for the expansion of the plate *b*. The plate *c* which is preferably curved downwardly is secured to the central part of the funnel *a* by brackets *g*, and the

plate *d* which is preferably also curved downwardly is secured to the funnel *a* by brackets *f* at a point below the plane of the discharge opening of the nozzle *l*, and the outer portions of this plate *d* are connected by bolts or stays *ii* with the casing *k* of the smoke box. The intermediate plate *c* is also stayed by bolts or stays *j j* which connect it to the bolt on plate *d*. These connections also serve to hold the funnel *a* rigidly in position. The bottom plate *d* must not be brought right up to the door of the smoke box nor to the tube plate but a space must be left sufficient to allow any cinders or ashes which fall on the upper side of said plate to escape.

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

1. In a locomotive smoke box the combination with the exhaust nozzle, of a perforated funnel supported on said nozzle, a plurality of perforated plates secured centrally to said nozzle and projecting from the same on all sides, a connection from one of said plates to a portion of the fire box, and a connection from said plate to the next adjacent plate, said connections being at a distance from the funnel, substantially as described.

2. In a locomotive fire box, the combination with the exhaust nozzle, of a perforated funnel supported on said nozzle, a bottom perforated plate secured to said funnel below the plane of the discharge opening of said nozzle, said bottom plate being also connected to the smoke box, a middle perforated plate secured to the funnel and to said bottom plate and a top perforated plate secured to said funnel and having a bearing in a recess formed at the base of the smoke stack, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two witnesses.

JOHANN FRIEDRICH CRISTAND.

Witnesses:

FRANZ SELL,
H. OHSE.