

T. A. Andrews, Jr.,

Spark Arrester.

No. 111,507.

Patented Feb. 17, 1871.

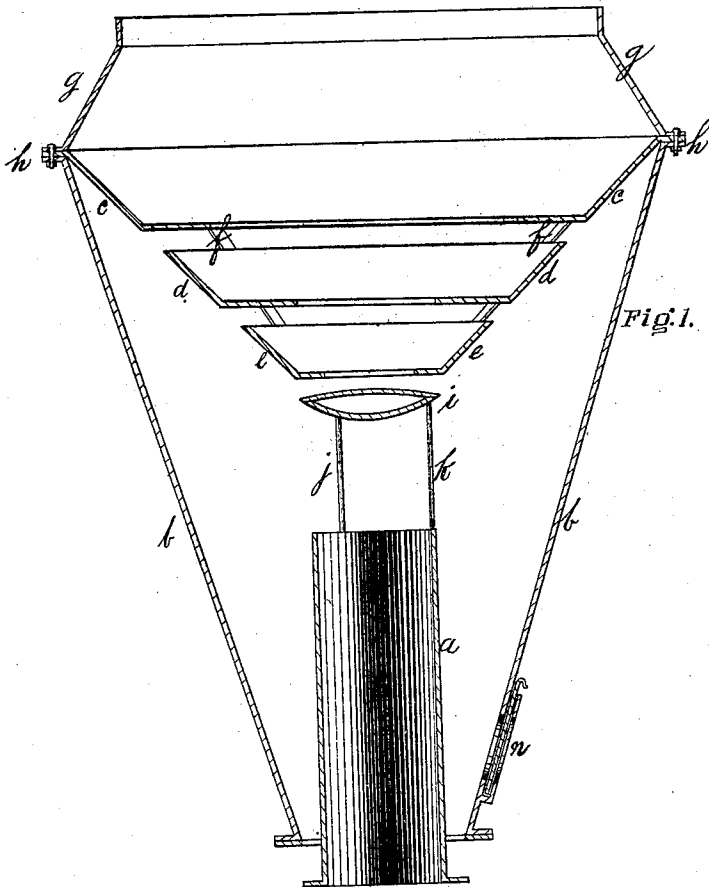


Fig. 1.

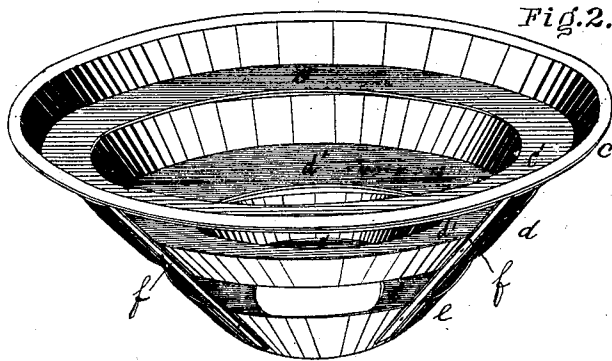


Fig. 2.

Witnesses.

Wm. G. Gilbert
George E. Buckley

Inventor.

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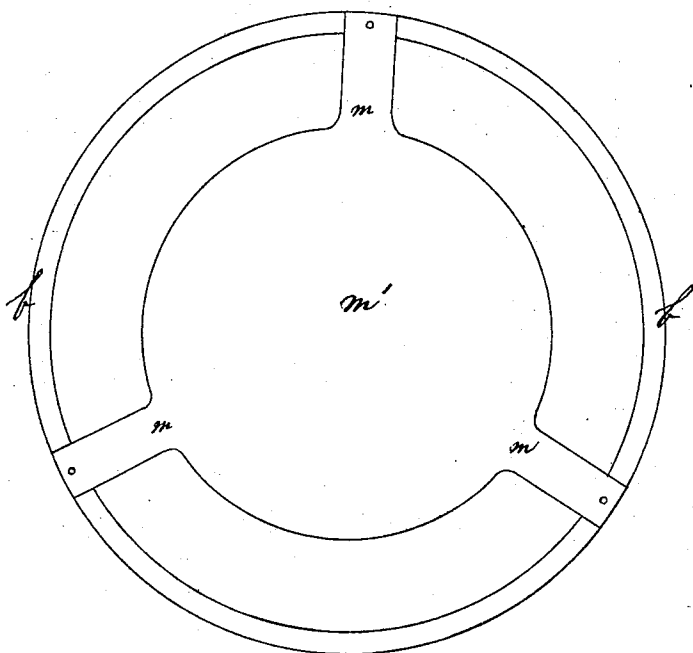
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Patented Feb. 7, 1871.

Fig. 3.



Witnesses
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THOMAS A. ANDREWS, JR., OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 111,507, dated February 7, 1871.

IMPROVEMENT IN SPARK-ARRESTERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, THOMAS A. ANDREWS, JR., of Philadelphia, Pennsylvania, have invented a new and useful Improved Spark-Arrester for the smoke-stacks of locomotive-engines.

The following is a specification of my invention:

In the drawing—

Figure 1 is a longitudinal vertical section of a smoke-stack and its exterior casing, and of my spark-arresting devices.

Figure 2, a perspective of the series of dish-shaped or flanged plates *c*, *d*, and *e*, detached.

Figure 3, a plan of the casing, (the top *g* being removed,) designed to show the shield or open cover *m*.

In fig. 1—

a represents a smoke-stack, and *b* the casing of the same, both of ordinary construction.

c, *d*, and *e*, figs. 1 and 2, represent dish-shaped or flanged plates, united together by several cross-braces *f*, so as to leave clear spaces between the plates for draft, as shown.

The plates are open in the middle. They have flaring or tapered sides, and they are set in the top of the casing *b*, as shown in fig. 1, and secured by bolts passed through flanges of the casing *b*, dish *c*, and removable top *g*, as at *h*, fig. 1.

i, fig. 1, is a casting, both faces of which are convex, the top face being almost flat.

It is supported by rods, two of which, *j* and *k*, are shown in fig. 1.

The casting *i* is designed to correspond in horizontal area with the bottom of the lowermost dish *c*, and is arranged directly below this dish, leaving a little space between the two.

m, fig. 3, is an open cover, a little larger in its middle part, *m'*, than the middle openings in dish *c* and top *g*.

The cover *m* is secured between the top *g* and the casing *b* by the bolts *h*, above mentioned.

The operation of the parts described is such that the sparks or cinders coming up through the smoke-stack *a* strike the lower face of the casting *i*, and are reflected, and striking the dishes *c*, *d*, and *e*, and their flanges *c'*, *d'*, and *e'* are arrested and caused to drop down between the casing *b* and the smoke-stack.

They are removed as often as desired through the covered opening *n*, fig. 1; I prefer to employ the open cover *m*, fig. 1, but it may be dispensed with without material disadvantage.

The flanges *c'*, *d'*, and *e'* of the dishes *c*, *d*, and *e* are a little more in breadth than the distances between the dishes.

The casting *i* presents the segment of a sphere to the ascending current of sparks, and this form is preferable to the conical form hitherto sometimes employed.

I claim—

The combination of the casting *i*, the series of dish-shaped or flanged plates *c*, *d*, and *e*, and the open cover *m*, with the casing *b*, smoke-stack *a*, and removable top *g*, in the manner and for the purpose substantially as set forth.

THOMAS A. ANDREWS, JR.

Witnesses:

J. WARREN CAILSTON,
GEORGE E. BUCKLEY.