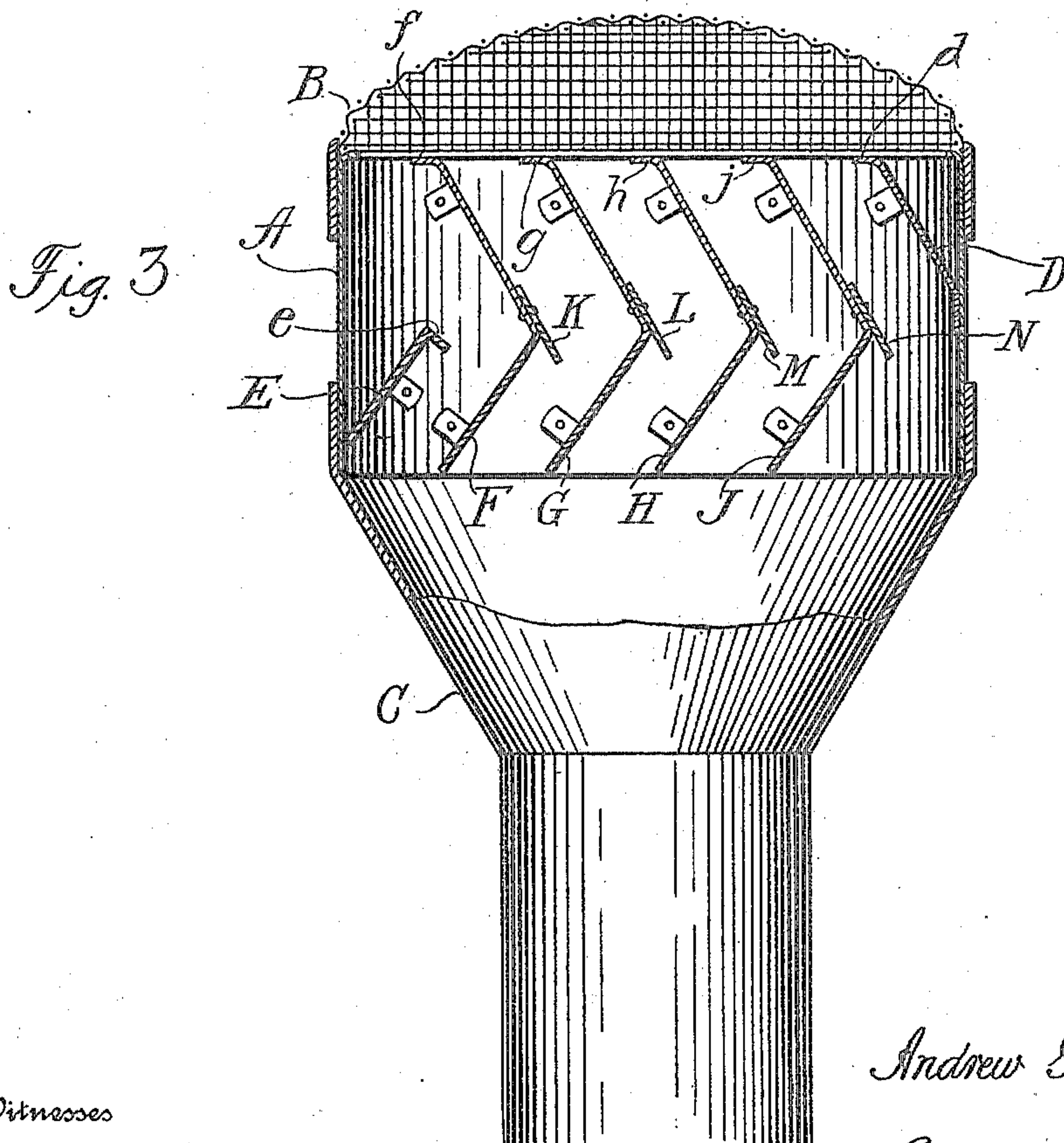
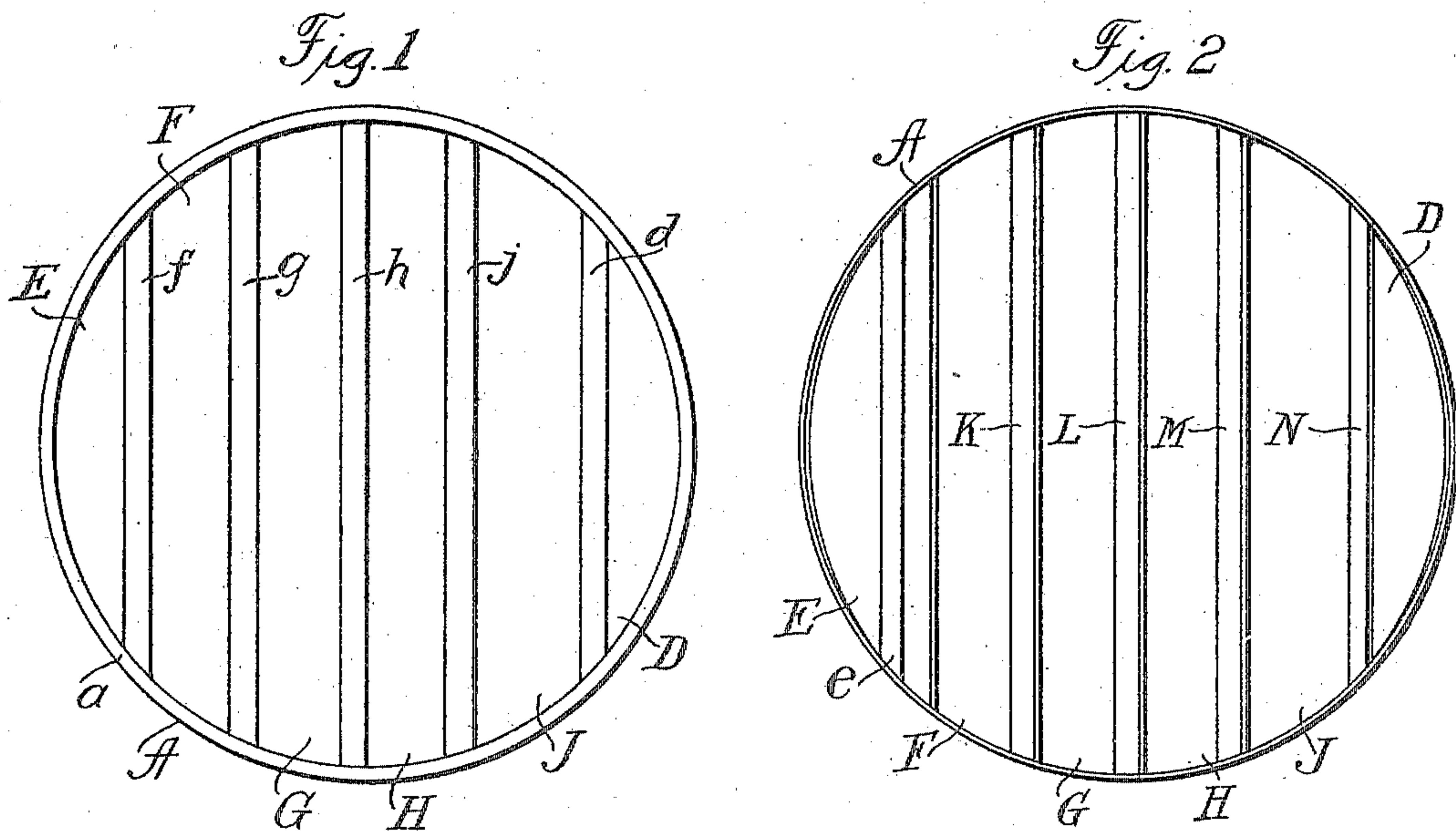


A. G. LEAVE.
SPARK ARRESTER.
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947,642.

Patented Jan. 25, 1910.



Witnesses
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By

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UNITED STATES PATENT OFFICE.

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SPARK-ARRESTER.

947,642.

Specification of Letters Patent.

Patented Jan. 25, 1910.

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To all whom it may concern:

Be it known that I, ANDREW G. LEAVE, citizen of the United States, residing at St. Francis, in the county of Anoka and State of Minnesota, have invented certain new and useful Improvements in Spark-Arresters, of which the following is a specification.

This invention relates to spark arresters for use chiefly upon the stacks of stationary or locomotive engines and steam boiler furnaces, to prevent the discharge of burning particles of fuel which might cause loss of surrounding material, woods or buildings by fire.

The object of this invention is the production of a spark arrester having parts of special construction and arrangement, and acting in a manner peculiar to itself to catch burning sparks passing upward through the stack, and, by reason of such special construction this invention is believed by me to be more effective for the purpose than any other device for the same purpose with which I am acquainted.

The object stated is accomplished by fashioning and associating parts as illustrated in the accompanying drawings, of which—

Figure 1 represents a top plan view, and Fig. 2 is a view of this invention looking at it from below. Fig. 3 is a side view of a stack provided with this invention, parts thereof being shown in vertical section.

The same letters are used to refer to the same parts throughout the description and drawings.

The cylindrical body A of this invention is provided with the inwardly-projecting flange *a*. The removable screen B may or may not be used. There are certain situations wherein to render the probability of fire from flying sparks absolutely nothing the cover screen is used. Ordinarily, the construction of this invention is effective for the purpose without the screen B.

The letter C designates any stack to which this invention may be applied.

Considering Fig. 3, at the upper right hand corner of the body A will be noted the first of the interior inclined baffle plates. It has a flange *d* extending across the body as shown in Fig. 1. At the lower left hand portion of the body A will be observed another baffle plate inclined in an opposite direction to that of plate D. This plate is

marked E, and has the flange *e* along its upper edge as shown also in Fig. 2 extending across the body A. The two plates D and E are relatively the narrower plates of the series within the body A. The remaining baffle plates F, G, H, and J, are relatively wider, and each is bent at an angle and arranged in such manner that the upper portion slants the same as plate D and the lower portion inclines substantially parallel to plate E. At their top edges the wider baffle plates F, G, H, and J, have the flanges *f*, *g*, *h*, and *j*, extending across the body as shown in Fig. 1.

In addition to the plates and flanges mentioned, there are provided the additional flange plates K, L, M, and N. As best illustrated in Fig. 3, the additional flange plates are attached to the plates F, G, H, and J where those plates bend, and the additional plates K, L, M, and N project over the bends at the same inclination as that possessed by the upper portion of the wider plates or of plate D.

All the baffle plates are secured within the body A.

The operation of this invention may be explained by stating that there is no straight path for a spark from the stack C upwardly through the baffle plates as constructed and arranged. Furthermore, let it be assumed that a spark passed from the stack C between the lower edges of plates F and G. If it is borne straight upwardly it is caught by the overhanging additional flange plate K. Should it avoid that plate its path will be along the upper portion of plate G at the top of which it will be caught by the flange *g*. There are always presented for the retardation of the sparks two flanges one a little below the middle of the body A, and one at the top thereof.

This invention is very largely used on threshing machine engines, and the baffle plates are subjected to intermittent blasts of mixed gases and steam due to the discharge of the exhaust upwardly within the stack to create the necessary draft. The strong blasts constantly repeated for a long time would shake the baffle plates loose, were it not for the inwardly-turned flange *a* at the top of the cylinder A. It will be noted that the flanges *f*, *g*, *h*, *j* and *d* of the baffle plates have their ends against and beneath the

flange *a*, and by reason of such contact, the blasts are ineffective in displacing the baffle plates upwardly and thus starting an up and down shaking and loosening movement.

5 It is found that practically all sparks are caught and arrested by the construction hereinabove set forth, and that too, regardless of the velocity with which the sparks ascend the stack.

10 Having now described my invention and explained the mode of its operation, what I claim is—

1. A spark arrester comprising a hollow body having an inwardly-projecting flange
15 extending around its upper edge, baffle plates extending across the said body interiorly and inclined to the axis of said hollow body, each baffle plate having a flange at its upper edge, the ends of said flanges being arranged
20 beneath and against the flange of the said

hollow body, and the said baffle plates being secured to the hollow body.

2. A spark arrester, comprising a hollow body having an inwardly-projecting flange extending around its upper edge, baffle plates 25 bent transversely and extending across the interior of the hollow body, portions of said baffle plates being inclined in different directions to the axis of said hollow body, each baffle plate having a flange at its upper edge, 30 the ends of said flanges being arranged beneath and against the said flange of the hollow body, and the said baffle plates being secured to the hollow body.

In testimony whereof I affix my signature 35 in presence of two witnesses.

ANDREW G. LEAVE.

Witnesses:

PETER JOHNSON,
L. E. TRUESDELL.