

W. J. Mehary,

Spark Arrester.

No. 105,107.

Patented July 5, 1870.

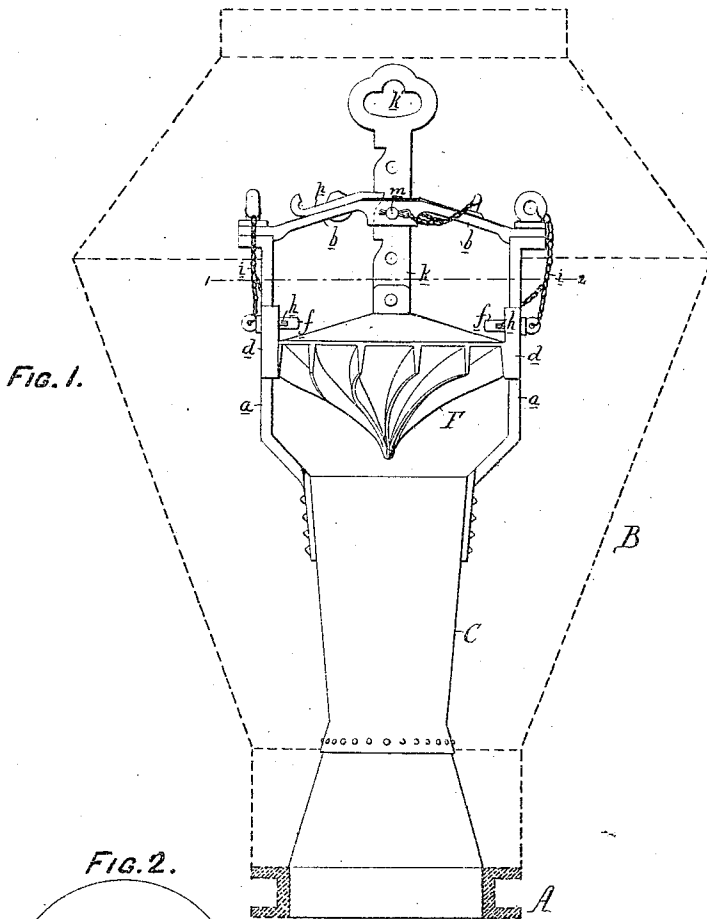


FIG. 1.

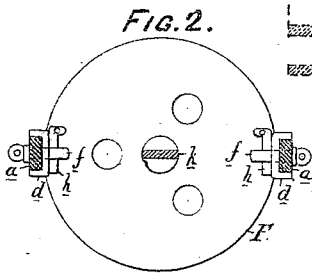


FIG. 2.

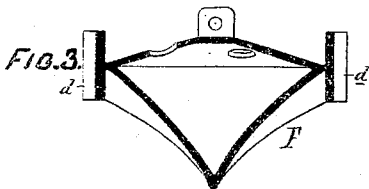


FIG. 3.

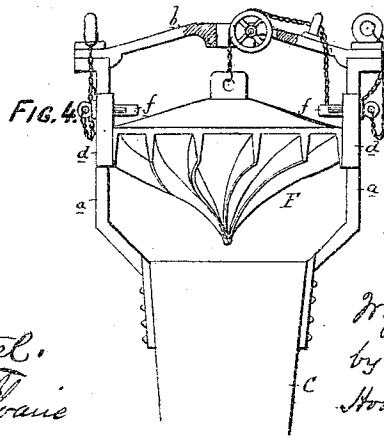


FIG. 4.

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WILLIAM JAMES MEHARY, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 105,107, dated July 5, 1870.

IMPROVEMENT IN LOCOMOTIVE SMOKE-STACKS.

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

I, WILLIAM JAMES MEHARY, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improvement in Locomotive Smoke-Stacks, of which the following is a specification.

Nature and Object of the Invention.

My invention relates to an improvement in the spark-arresters of locomotive smoke-stacks; and

It consists in rendering the usual conical deflector vertically adjustable upon rods or guides, and in retaining the said deflector in any position to which it may be adjusted, by means of pins or equivalent devices, instead of by the usual screws and nuts, which are apt to become jammed and almost immovable, after having been in use for a short time, thus rendering the adjusting of the deflector a matter of extreme difficulty.

Description of the Accompanying Drawing.

Figure 1 is a view of the interior of a locomotive smoke-stack with my improvements, the outer casing being shown in dotted lines;

Figure 2, a sectional plan view on the line 1 2, fig. 1;

Figure 3, a sectional view of the adjustable deflector; and

Figure 4, a view of a modification.

General Description.

The stack illustrated in the drawing is of the same general form as those in common use, it consisting mainly of a cast-iron base, A, to which are bolted or riveted an outer casing, B, and an inner casing or chimney, C, the latter supporting a conical deflector, F, which arrests the sparks as they emerge from the chimney, and directs them toward the gratings, &c., arranged in the casing B, the sparks, in an unignited state, dropping finally to the bottom of the space between the said casing and chimney, from which they may be withdrawn from time to time.

The deflector is generally supported in its position by means of bars or rods secured to the chimney C, it being in some cases permanently fastened to these rods. As the proper arresting and diverting of the course of the sparks depends, however, upon the height of the deflector above the chimney, and also upon the force with which the sparks are impelled against the said deflector, and, as this force varies in different locomotives, it is desirable that the deflector should be capable of vertical adjustment.

To effect this object the rods which support the deflector have, in some cases, been threaded at their upper ends, and provided with nuts between which to hold the deflector. This plan, however, has been found ineffectual, as the nuts, which are exposed to the heat and smoke of the stack, soon become im-

movably fixed upon the rods or bolts, requiring, in some cases, to be chipped or split from the same before the deflector can be moved.

The arrangement which I have devised fully overcomes this objection, and enables the deflector to be readily adjusted, as I will now proceed to describe.

Bars *a a* are secured to the chimney C, and are connected together at the top by a cross-piece, *b*, the whole forming a rigid frame for the support of the deflector.

The bars *a a* are, in the present instance, squared, as best observed in fig. 2, and serve as guides for plates *d* at either side of the deflector; these plates partially embracing the bars, and, consequently, enabling the deflector to be raised and lowered to any desired extent without risk of becoming detached.

A row of holes, adapted to receive a pin, *f*, is formed in each of the guiding bars *a*, and in each of the plates *d* there is also a hole, so that the deflector, when adjusted to the desired position, may be there retained by merely inserting the pins *f* through the holes in both guiding-rods and plates, as shown in fig. 1.

The pins are prevented from being accidentally withdrawn by split keys *h*, and both the pins and keys are connected to the guiding rods or their cross-bar *b* by light chains *i*, which prevent any mislaying of the same.

The deflector is provided with a lifting bar or handle, *k*, which passes through an opening in the cross-piece *b*, and has at its upper end an eye, *k'*, by means of which it can be raised or lowered when the deflector is to be adjusted.

This bar has also a row of holes, through which a pin, *m*, adapted to holes in the cross-piece, can be passed, in order to temporarily sustain the weight of the deflector, when the pins *f* have been withdrawn, or the pin *m* may be used instead of, or in connection with the pins *f*, in retaining the deflector in any position to which it is adjusted.

The weight of the deflector might also be sustained by means of a catch or lever, *p*, adapted to notches in the side of the bar *k*, as shown in fig. 1.

In some smoke-stacks, such as those, for instance, which are entirely covered at the top by wire-gauze, the use of the lifting bar *k* might be objectionable. In such case, a simple eye on the deflector and wheel and chain, or equivalent device attached to the cross-piece *b*, as shown in fig. 4, might be substituted for the said bar.

The cross-piece *b*, besides serving as a guide and support for the lifting bar, or other arrangement used in place of the same, serves also as a brace to stiffen and prevent the warping and twisting of the guide-bars *a*.

In carrying out my invention more than two of the

said guide-bars may, if desired, be used, and they can be round or of other sectional form, instead of square.

Claims.

1. A deflector for locomotive smoke-stack, rendered vertically adjustable upon guiding-rods *a*, and maintained in any position to which adjusted by means of pins or their equivalents, all substantially as herein described.

2. The within-described frame, for the support of the adjustable deflector, consisting of bars secured to the inner casing of the stack, and connected together at the top by a cross-piece, *b*.

3. The lifting bar *k*, or its equivalent, secured to the adjustable deflector, and adapted and arranged for attachment to the cross-piece *b*, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM JAMES MEHARY.

Witnesses:

L. J. SOMERS,

WM. A. STEEL.