D. WISER & H. S. SCHMIEDERS.

Spark-Arrester.

No. 165,907. Patented July 20, 1875.

Fig. 1.

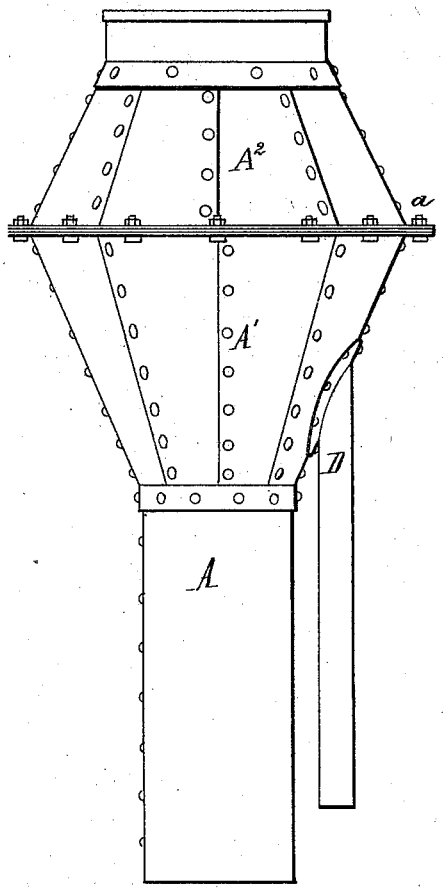
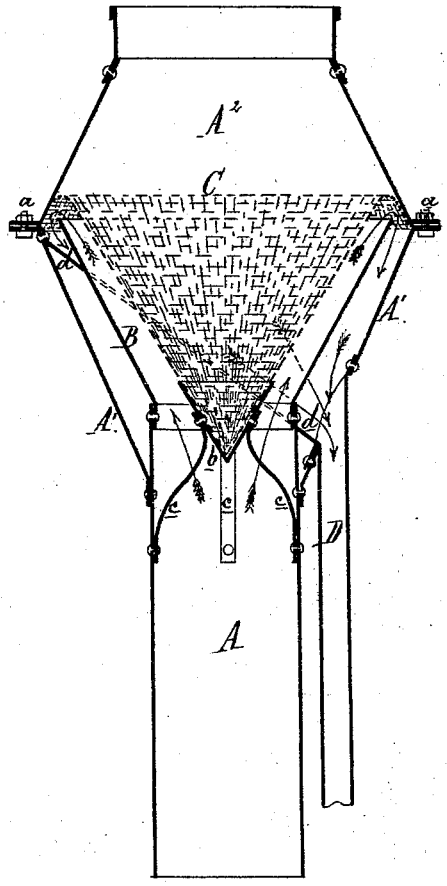


Fig. 2.



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UNITED STATES PATENT OFFICE.

DAVID WISER AND HENRY SCHMIEDERS, OF FORT WAYNE, INDIANA.

IMPROVEMENT IN SPARK-ARRESTERS.

Specification forming part of Letters Patent No. **165,907**, dated July 20, 1875; application filed April 6, 1875.

To all whom it may concern:

Be it known that we, DAVID WISER and HENRY SCHMIEDERS, of Fort Wayne, in the county of Allen and State of Indiana, have invented an Improved Spark-Arrester, of which the following is a specification:

The nature of our invention relates to the combination, with the smoke-stack of a locomotive, of certain devices for preventing the escape of sparks and cinders, which can either be discharged by a pipe near the ground or conducted into the ash-pan of the boiler.

The invention consists in the combination of a screen secured and supported in a peculiar manner, and a deflector with the shell of a smoke-stack, and, in connection therewith, a pipe for conveying the sparks to the ash-pan, the whole being arranged to operate as more fully hereinafter set forth.

Figure 1 is an elevation. Fig. 2 is a vertical section.

In the drawing, A represents the cylindrical body of the smoke-stack, having a flaring top, A^1, surmounted by a truncated cone or bonnet, A^2, the two being joined by bolts *a* through their flanges. The top of the stack A is carried up into the base of the top A^1, and receives the lower end of a funnel-shaped deflector, B, inside of which is supported a screen of wire-cloth, C, having the form of an inverted cone, whose upper edge or periphery is curved over and around the top of the deflector B before insertion between the flanges of the parts A^1 A^2, which secure it in position. The lower end of the conical screen is protected from abrasion by the impact of ascending cinders by a cone, *b*, at the apex, said cone being preferably of sheet steel or other hard metal, and to which the upper ends of the supporting-braces *c c c* are secured, their lower ends being riveted to the walls of the stack.

It will be noticed that a space is left between the conical screen and the deflector, and another between the latter and the top A^1. In this latter space an inclined annulus, *d*, is secured, forming a false bottom of steep pitch. At its lowest point the top A^1 is tapped by a pipe, D, which receives the cinders naturally flowing to that lowest point of the annulus, and conveys them down and back to within a few inches of the front of the ash-pan, into which they will be drawn by the draft of the furnace.

The large area of the screen allows the smoke to escape freely from the stack, while the cinders will be driven up its sides by the blast until arrested by the curve in the top, when they will fall outside the deflector to be carried off by the pipe D, as described.

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

The combination, with the stack A, deflector B, top A^1, and bonnet A^2, of the screen C, having its upper part curved over and around the top of said deflector, secured and supported between the flanges of said top and bonnet at their junction, and supported at its lower point by the cone *b*, which is in turn supported by the braces *c*, the inclined annulus *d*, and pipe D, the several parts being constructed and arranged substantially as described and shown.

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