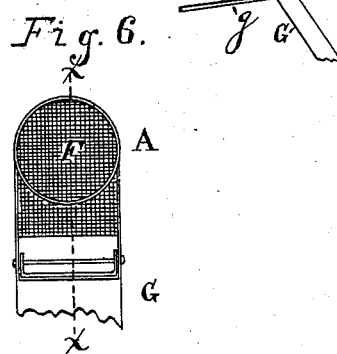
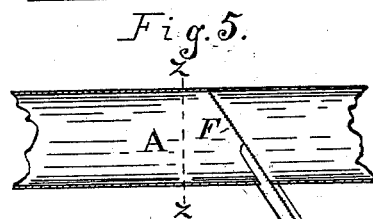
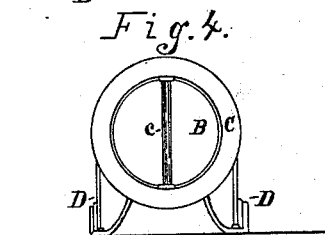
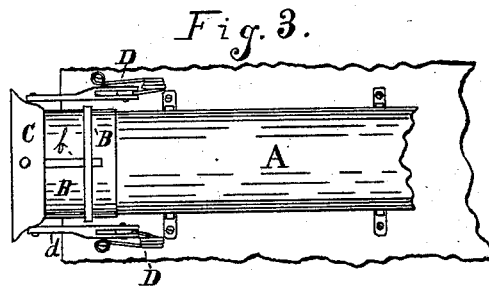
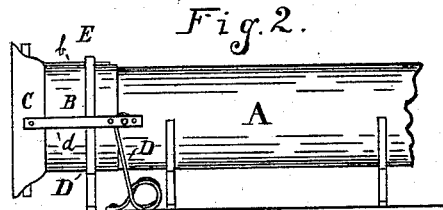
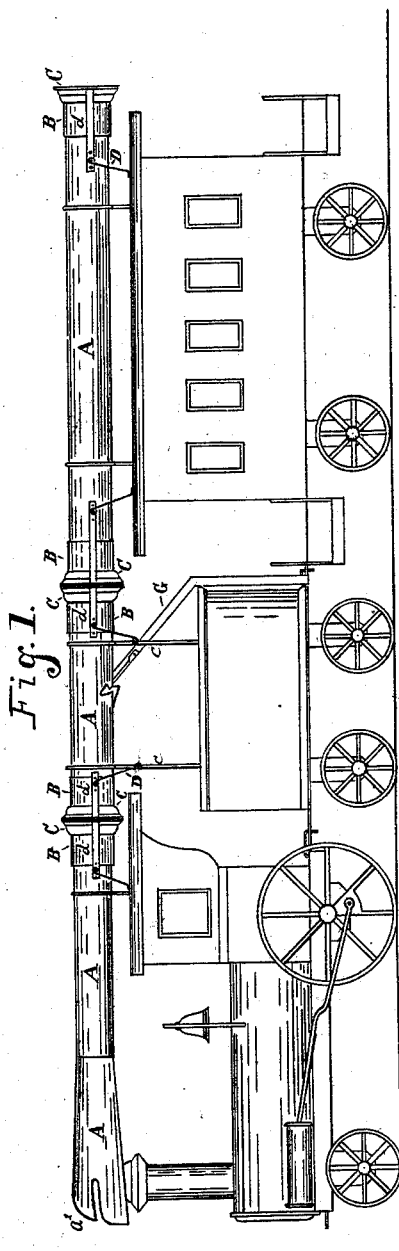


L. P. De TURK & C. W. OLDS.
Smoke and Spark Arrester.

No. 216,783.

Patented June 24, 1879.



WITNESSES.

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UNITED STATES PATENT OFFICE

LOUIS P. DE TURK AND CHARLES W. OLDS, OF MARTINSVILLE, INDIANA.

IMPROVEMENT IN SMOKE AND SPARK ARRESTERS.

Specification forming part of Letters Patent No. **216,783**, dated June 24, 1879; application filed October 21, 1878.

To all whom it may concern:

Be it known that we, LOUIS P. DE TURK and CHARLES W. OLDS, of the town of Martinsville, county of Morgan, and State of Indiana, have invented certain new and useful Improvements in Smoke and Spark Arresters and Conveyers for Locomotives, of which the following is a specification, reference being had to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts.

Figure 1 is a view of a railroad-train, consisting of locomotive, tender, and passenger-coach, upon which our improvement is used. Fig. 2 is a side elevation of an end of one of the tubes, showing the means by which they are self-adjustable and self-coupling. Fig. 3 is a top or plan view of the same parts shown in Fig. 2. Fig. 4 is an end view of the same. Fig. 5 is a longitudinal vertical section on the dotted line *x x* of the tube A at the point where the chute G is connected thereto, and also of the screen F and of a part of said chute. Fig. 6 is a transverse vertical section of the tube A on the dotted line *z z*, looking toward the screen and chute.

In said drawings, the portions marked A are the main tubes used in our device, which are mounted upon the cars, and through which the smoke and cinders pass to the rear of the train. B B are short tubes upon or within the ends of the tubes A, of such a size as to slide back and forth freely.

C C are flanges pivoted vertically to the tubes B B by the upright shaft *c*, or corresponding short pivots. The faces of these flanges, when the cars come together, form the connections between the tubes, which make them continuous. They are broad enough so that ordinary swaying of the cars will not part them sidewise, and, being otherwise self-adjusting and turned to fit each other, allow very little or none of the smoke to escape.

D D are springs which force the short tubes and flanges forward, and keep the latter always contiguous when the cars are coupled together. A bar, *d*, connects each spring to the corresponding side of the flange where it is pivoted. This bar has several holes in the end to which the spring is attached, so that the pin by which this connection is formed

may be adjusted to give the spring the required tension.

E is a ring mounted on the car, and surrounding the tube B. It has one or more grooves formed in its inner surface, through which the splines *b* on the tube B slide as said tubes move back and forth, and which prevent said tubes from turning.

In order to prevent the tubes upon the coaches from becoming loaded with cinders, where it would be difficult to remove them, a screen, F, may be set in the section that passes over the tender, preferably at somewhat of an angle, as shown, to catch the greater portion of them, whence they are conducted by means of a chute, G, over the rear of the tender and underneath the train, where they are discharged in a place where they can annoy nobody. A trap-door, *g*, is hung upon the chute, so that free access may be had to the screen, that it may be conveniently removed and replaced whenever desired.

The front end of the forward section, A', of the tube projects over the top of the locomotive smoke-stack, and the top part, *a'*, curves downward, so as to give the smoke a start rearward as it comes from the locomotive.

It will be readily seen that the pivots on which the flanges move, being vertical, will permit the faces of said flanges to remain together at any angle into which the tubes can be thrown by reason of curves in the track on which the cars run. The springs will always keep the flanged ends close together when the cars are coupled, and thus a practically smoke-proof tube is formed the whole length of the train, which will remain so through all its varying positions, and which will always be self-coupling when the cars come together.

Having thus fully described our said invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the tubes A A, of the spring-seated coupling-ends B B, having vertically-pivoted flanges C C, constructed and arranged substantially as herein shown and described, and for the purpose specified.

2. The combination, with an adjustable flange on the ends of tubes A, of two springs, D D, one on each side, each spring operating to keep its side of the flange at all times in

contact with the tube, or a similar flange thereon, on the adjoining car, constructed and arranged substantially as shown and specified.

3. The combination of the tube A, tube B, vertically-pivoted self-adjusting flange C, and springs D D, substantially as shown and specified.

4. The combination of the flange C, bars *d* *d*, and springs D D, constructed and arranged substantially as shown and specified.

5. The combination, with the sliding tube B, having spline *b*, of the ring E, having a recess for the reception of said spline, substantially as shown and specified.

6. The combination, with the tube A, of the adjustable and removable screen F and the

chute G, having door *g*, constructed and arranged substantially as herein shown and specified.

7. A smoke and cinder conveying tube for railway-trains, having the upper side of its forward end curved downward and overhanging the smoke-stack, in the manner shown, and as and for the purposes specified.

In witness whereof we have hereunto set our hands and seals at Martinsville, Indiana, this 14th day of October, A. D. 1878.

LOUIS P. DE TURK. [L. S.]

CHARLES W. OLDS. [L. S.]

In presence of—

C. S. CRARY,

G. W. EGBERT.