

W. G. GALE.
SPARK-CONVEYOR.

No. 187,001

Patented Feb. 6, 1877.

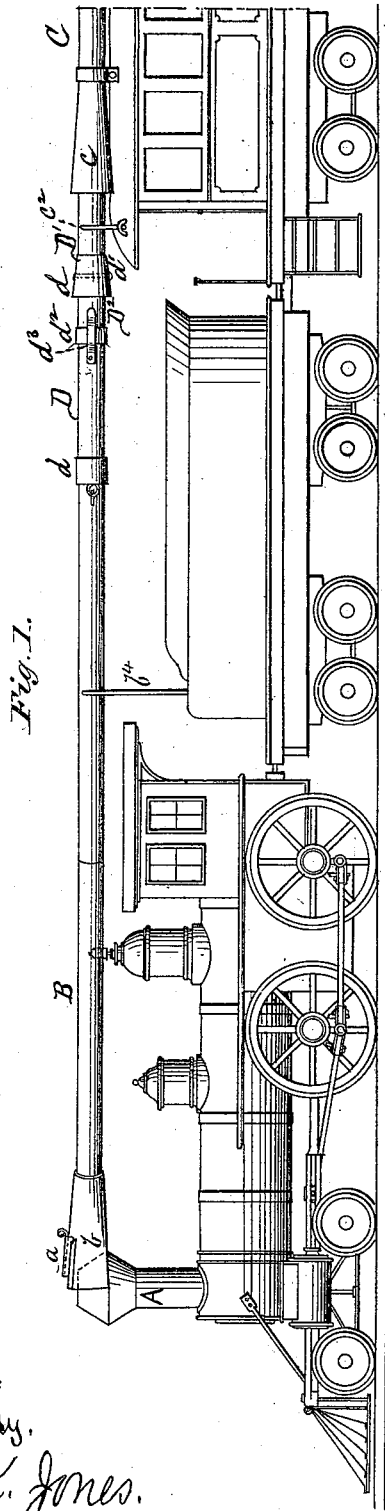


Fig. 1.

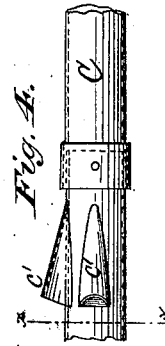


Fig. 4.

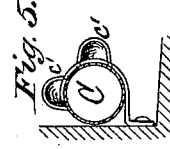


Fig. 5.

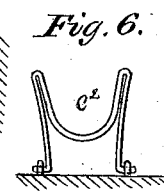


Fig. 6.

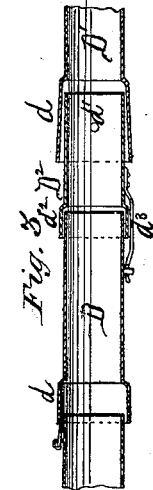


Fig. 7.



Fig. 8.

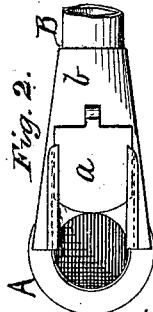


Fig. 9.

Witnesses:
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Inventor:

per William G. Gale.
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UNITED STATES PATENT OFFICE.

WILLIAM G. GALE, OF CINCINNATI, OHIO.

IMPROVEMENT IN SPARK-CONVEYERS.

Specification forming part of Letters Patent No. 187,001, dated February 6, 1877; application filed November 27, 1876.

To all whom it may concern:

Be it known that I, WILLIAM G. GALE, of Cincinnati, in the county of Hamilton and State of Ohio, have invented an Improved Locomotive Spark-Conveyer, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing and the letters of reference marked thereon, making part of this specification, in which—

Figure 1 is a side view of my invention applied. Fig. 2 is a top-plan view of the smoke-stack and part of one of the conveyer-tubes. Fig. 3 is a top-plan view of the coupling-tube and its connections. Fig. 4 is a top-plan view of the rear end of one of the conveyer-tubes. Fig. 5 is a vertical sectional view on the line $x x$, Fig. 4. Figs. 6 and 7 are front views of the rests for the conveyer-tube and couplings.

The nature of my invention consists in constructing a locomotive spark-conveyer, so that the coupling between the conveyer-tubes may move freely in the same, to enable curves to be easily turned and the oscillation of the cars when in motion accommodated, and also in providing the conveyer-tube at its rear with funnel-mouths or air-apertures, all as hereinafter more fully described.

The construction and operation of my invention are as follows: A is the smoke-stack, constructed in the usual manner. B is the conveyer-tube, which passes from the mouth of the smoke-stack A over the engine, and partly over the tender of the same. This tube B is held in position at its rear end by means of an upright, b^4 , attached to, and extending up from, the tender. To this upright is securely attached, at its upper section, two curved rests, $b^2 b^3$, as shown in Fig. 7. In the rest b^2 is placed the conveyer-tube B. Each car may be provided with these rests. The front b of this tube B is made flaring, and extends partly over the mouth of the smoke-stack A, being provided with a sliding cover, a , as shown in Fig. 2, that can be moved back and allow the free exit of smoke, &c., from the stack when the cars are not in motion. When the cars are in motion, this cover a extends over the entire mouth of the smoke-stack. C is another conveyer-tube, and extends horizontally across the entire top of the car. At its front end c it is made slightly flaring, and at its

rear end it is provided with one or more draft-openings, $c^1 c^1$, as shown in Figs. 4 and 5. Practical experience has shown that locating these draft-openings at the rear of the conveyer-tube renders the same very effective, as they create a vacuum in that portion of the tube which the smoke, sparks, &c., rush in to fill. To the top of the front and rear of each car is pivoted a rest, c^2 , of the form shown in Fig. 6, in which part of the couplings are placed when in use. These rests are sufficiently large as not to interfere with the free side movement of the coupling-tubes when turning curves. When the car is not in use, these rests are laid flat down on the top of the car. To the rear section of the tube B is hinged a short tube, D. The end d of this tube, which fits on the tube B, is enlarged so that the tube B may move freely therein in turning curves, and also may accommodate itself to the oscillation of the train when in motion. When the cars are not in use this tube D is thrown back, and occupies the curved rest b^3 . In the flaring mouth c of the conveyer-tube C is inserted a short tube, D^1 , having also a flaring mouth, d . This tube D^1 also moves freely in the tube C, to enable curves to be easily turned and also to accommodate itself to the oscillation of the cars. D^2 is the coupling-tube, pivoted at one end by pins d^1 to the flaring mouth d of the tube D, and having its other end d^2 enlarged so as to fit over the tube D. This coupling-tube is secured to the tube D by means of a latch, d^3 .

The operation is as follows: When the train is being made up, the tube D is removed from the rest b^3 , and its enlarged end d inserted over the end of the conveyer-tube B. The tube D^1 is inserted in the conveyer-tube C, the rest c^2 being raised so as to support the same. The tube D is then inserted in the coupling-tube D^2 , and the latch d^3 fastened. Before the train starts, the sliding cover a is pushed forward so as to cover the mouth of the smoke-stack, and through the forward motion of the train, aided by the suction caused by the draft-openings $c^1 c^1$ in the conveyer-tube C, the sparks, cinders, &c., are carried back and discharged at the rear of the train.

What I claim as new, and desire to secure by Letters Patent of United States, is—

1. In combination with the smoke-stack of a locomotive, a conveyer-tube, having a flaring mouth, *b*, and provided with a sliding cover, located over the mouth of the smoke-stack, as and for the purpose specified.

2. In a locomotive spark-conveyer, the combination of the conveyer-tube B, having a flaring mouth *b*, sliding cover *a*, hinged tube D, rests *b*² *b*³, and smoke-stack A, substantially as described.

3. In a locomotive spark-conveyer, the combination of the tube D¹, working loosely in the enlarged end of tube C, support *c*², coupling-tube D², pin *d*¹, and latch *d*³, substantially as and for the purpose specified.

4. In a locomotive spark-conveyer, the combination of the smoke-stack A, conveyer-tube B, having sliding cover *a*, rests *b*² *b*³, tubes D D¹, coupling-tube D², latch *d*³, and conveyer-tube C, having draft-openings *c*¹ *c*¹, substantially as described.

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

WM. G. GALE. [L. S.]

Witnesses:

H. B. TURRILL,
JEROME M. CLARKE.