W. STAMP.

Exhaust-Mechanism for Locomotives.

No. 165,130. Patented June 29, 1875.

Fig. 1.

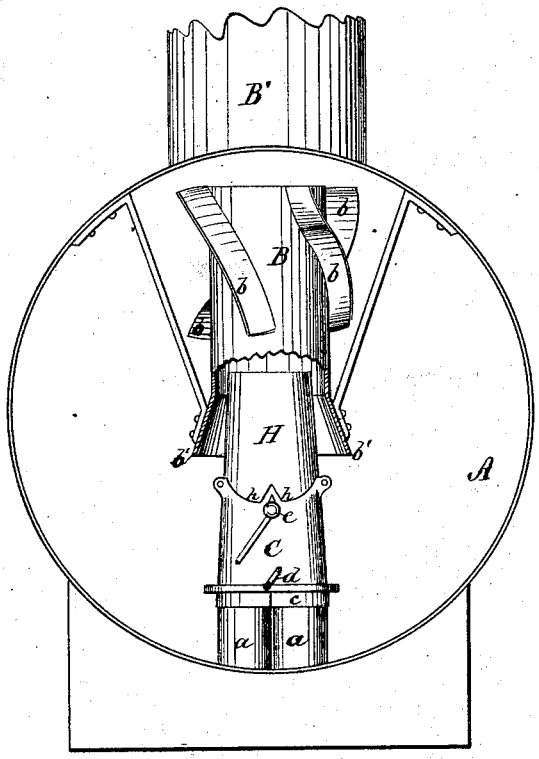


Fig. 3

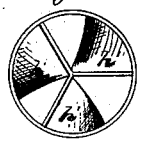


Fig. 2

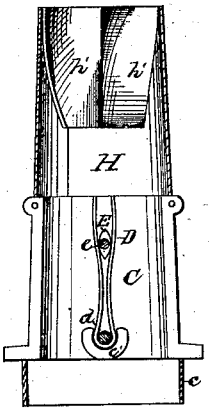
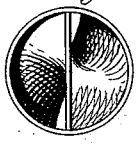


Fig. 4



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM STAMP, OF SUSQUEHANNA DEPOT, PENNSYLVANIA.

IMPROVEMENT IN EXHAUST MECHANISMS FOR LOCOMOTIVES.

Specification forming part of Letters Patent No. **165,130**, dated June 29, 1875; application filed June 14, 1875.

To all whom it may concern:

Be it known that I, WILLIAM STAMP, of Susquehanna Depot, in the county of Susquehanna and State of Pennsylvania, have invented a new and Improved Exhaust-Nozzle for Smoke-Stacks; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a front elevation, partly section. Figs. 2, 3, and 4 are detail views.

The invention relates to means whereby the exhaust steam may be more effectually utilized as an auxiliary to the smoke-stack in augmenting the up-draft to any degree desired.

The invention will first be described in connection with drawing, and then pointed out in the claims.

A represents the rear portion of boiler, through the bottom of which protrude the steam-exhaust pipes *a a*, that come directly under the pipe B, that enters the bottom of smoke-pipe B′, having external spiral flanges *b* and flaring bottom *b′*. On the pipes *a a* I support, by a horizontal flange, *c*, the tapering tube C, divided into two flues by the spring-plates D, made fast only at one end on a shaft or pin, *d*. Between these I secure a cam, E, on a small crank-shaft, *e*, whereby the spring-plates, or a single double plate, may be pushed outwardly from the middle in opposite directions, and to a greater or less extent be made to diminish the size of each flue, and thus increase the draft. The spring D is preferably doubled, while the tube C is made in two longitudinal sections, as well as provided with grooved cross-bars *c′*, so that the spring may be secured by bringing the sections together over the shaft *e* and pin *d*, being thus firmly held in place, while the parts are all readily detachable; or the spring may be removed by drawing out the pin *d* and shaft *e*, they being made detachable. Over the tube C I insert a nozzle, H, having the notched lips *h h*, and two or more spiral internal flues, *h′*, that give a whirl or centrifugal motion to the steam, thereby increasing its power as a draft-producer.

By means of the spiral flanges on the outside of pipe B, the smoke and products of combustion are caused to gyrate and take a tortuous course as they meet the exhaust steam in smoke-pipe.

Having thus described my invention, what I claim as new is—

1. The combination, with boiler and exhaust-pipes *a a*, of the tube C, provided with adjustable spring-plates D D, as and for the purpose described.

2. The combination, with plates D D in tubes C, of the intermediate cam-shaft, as and for the purpose set forth.

3. The described combination of doubled spring-plate D, grooved cross-bar F, and detachable pin G to hold the spring, in the manner specified.

4. A tube, C, provided with spring, cam-shaft, and pin *d*, made in two half-sections, as and for the purpose described.

5. The pipe B, having the external spiral flanges *b*, as and for the purpose set forth.

6. The nozzle H, having one or more internal spiral flanges, as and for the purpose specified.

WILLIAM STAMP.

Witnesses:
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