J. GREACEN, Jr.

SPARK ARRESTER.

No. 29,880. Patented Sept. 4, 1860.

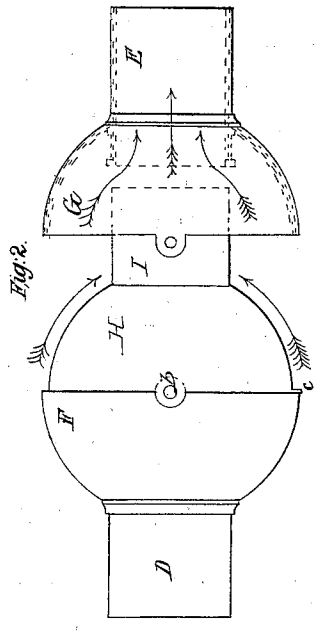


Fig. 2.

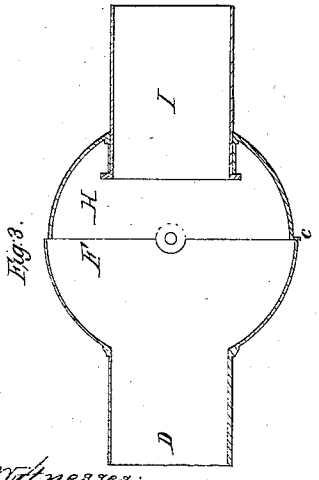


Fig. 3.

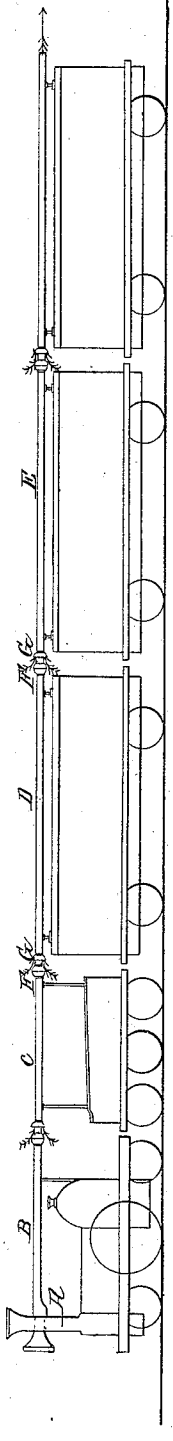


Fig. 1.

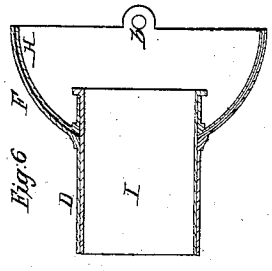


Fig. 6.

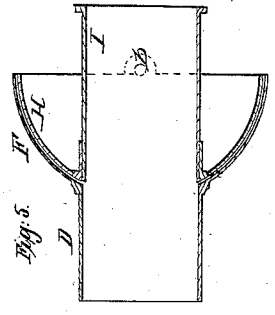


Fig. 5.

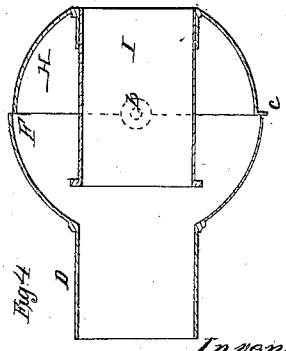


Fig. 4.

Witnesses:
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Octavius Knight

Inventor:
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A. Pollard Atty

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN GREACEN, JR., OF NEW YORK, N. Y.

DEVICE FOR DISCHARGING THE SMOKE, CINDERS, &c., FROM LOCOMOTIVE-ENGINES.

Specification of Letters Patent No. 29,880, dated September 4, 1860.

To all whom it may concern:

Be it known that I, JOHN GREACEN, Jr., of New York, in the county of New York and State of New York, have invented a new and useful device for facilitating the discharge of smoke from locomotive-engines in rear of them and the train or trains of cars to which they are coupled; and I do hereby declare that the following, together with the accompanying drawing, which forms part of this specification, is such a full and clear description as that engineers and others will be enabled therefrom to make and use my invention.

It is a very objectionable feature in the transportation of passengers on railroads, that the smoke from the locomotive engine is allowed to escape in front of the train of cars and at a low altitude as compared with the latter, the smoke stack being necessarily restricted in height to enable it to pass under bridges and so forth. Nor is it the smoke only, but the sparks and cinders which accompany it, that proves so annoying and troublesome to passengers, by being wafted through the windows and doors of the cars into the body of the latter and which the current produced by the train in motion superinduces. To obviate this, it has before been proposed to transmit the smoke and escaping parts and cinders from the locomotive to and in rear of the train of cars, but all means heretofore proposed have been impracticable or comparatively useless. This difficulty, however, my invention removes, by employing a means, substantially as hereinafter described, which admits of separate and detached lengths of smoke pipe over, under or along or through each car, with draft inlets for atmospheric air at each junction, does away with close couplings and choking by cinder and so forth, and which requires no fitting of the several lengths of pipe together when adding a car to a train or building up a train to run in a given direction, and is easily and readily reversible when the train is required to be run in a contrary course.

Referring to the accompanying drawing Figure 1 represents a side view or diagram of a locomotive and train of cars, with my invention applied thereto; and Figs. 2, 3, 4, 5 and 6 a longitudinal view and sections of my reversible funnel connection to the several pipes, detached, on a larger scale, and with its parts in different positions as hereinafter explained.

Supposing it be desired to convey the smoke over the train to the rear of it, the smoke stack (A) of the locomotive may have projecting into and through it a horizontal pipe (B) lying in direction of the length of the locomotive. This pipe (B) may be trumpet shaped at its forward end and form a funnel for the reception of air to create a backward draft through the pipe by the motion of the engine and its train when traveling forward to facilitate the passage of the smoke rearward, and yet be so surrounded by the smoke stack, with which it communicates by one or more openings, as that when the engine is not in motion the smoke will pass freely upward round the rear conveying pipe (B) and out through the stack at the top in the ordinary manner. This arrangement, however, may be varied and the smoke confined to a rear escape or passage under all circumstances. The tender and each car or vehicle in rear of the engine is also provided with a smoke conveying pipe (C, D or E) separate or detached from each other, yet forming a continuous passage from the front to the rear of the train. These several smoke conveying tubes or pipes to the several cars or vehicles in the train, carry, at each end, a reversible funnel connection (F or G) so arranged as that the funnel connection (F) at the rear end of the tube (D) of the one car projects into the receiving funnel (G) at the forward end of the succeeding tube (E) of the adjoining car, as illustrated in Fig. 2, of the drawing. To effect this, without forming a close connection of the adjoining funnels, and establishing at the junction of the tubes or their funnels a free inlet for the admission of atmospheric air without impairing but rather adding to, the draft, when the train is in motion, and to give to these funnels at opposite ends a reversible character so as to make the back or front funnel of either tube a receiving vessel for external air, according to the direction in which the car is made to run, I construct the funnel connections (F and G) as follows:

Either funnel or mouth piece is provided with an inner semi-globe or cup (H) pivoted on either side at (*b*) to the outer semi-globe or funnel, and carrying a central sliding collar or tube (I) flanged at its one end

and of diameter when slid on or shut inward to lie within the smoke pipe or tube to which the funnel, that carries it, belongs, as shown in Fig. 6 and at the right hand in Fig. 2. Thus constructed, each funnel may be readily adjusted either to form a mere extension of the smoke pipe or tube as in Fig. 3 and at the left hand at Fig. 2, or be made a mere receiving funnel for atmospheric air and means for establishing a forced current or draft by the motion of the train, as indicated by the arrows in Fig. 2. Thus, supposing it be desired to convert the funnel from its smoke tube extension character to that of an open or trumpet mouthed air receiving chamber, that is to vary the position of the parts from that shown in Fig. 3, to that shown in Fig. 6, to adapt the funnel connection to a reverse travel of the car, then all that is necessary is to slide inward the extension collar or tube (I) to the position shown in Fig. 4, then turn the inner cup (H) with said extension tube (I) to the position shown in Fig. 5, and afterward shut in the extension collar or tube to the position represented in Fig. 6. To change the character of the adjoining funnel connection, that is to convert it from the position its parts assume in Fig. 6, to that shown for them in Fig. 3, of course a reverse adjustment of the parts is necessary. Each inner semi-globe or cup (H) may be provided with a projecting lip (*c*) or a hook and catch that serves as a stop to it in its swing on the pivots (*b*) in both adjustments of said inner cup.

What I claim as new and useful is:

The combination with smoke pipes or tubes arranged to convey the smoke from the front to the rear of the train, of reversible funnel connections, constructed and operating substantially as and for the purposes herein set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

JOHN GREACEN, JR.

Witnesses:

JOHN MACKENZIE,

STANLEY GREACEN.