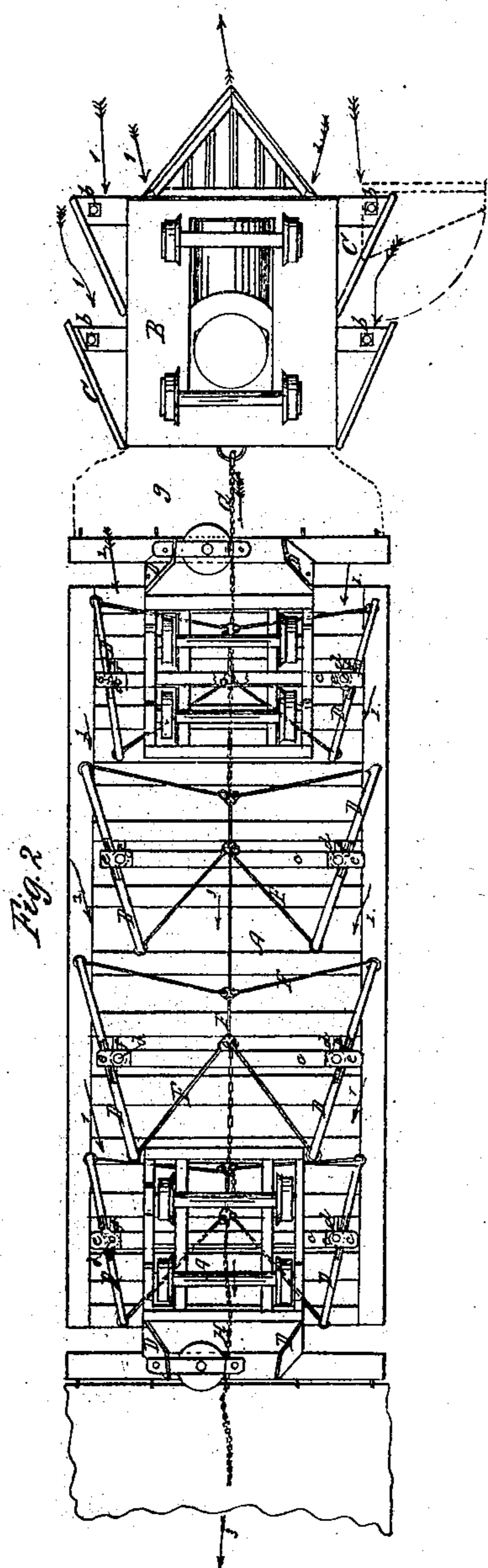
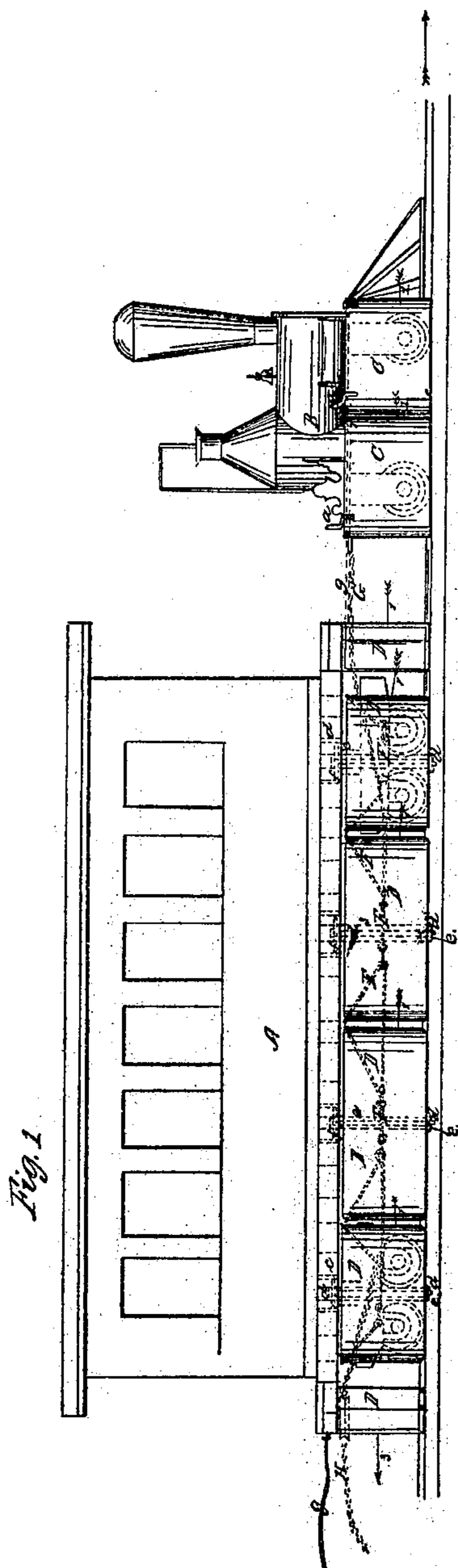


D. S. DARLING.  
 METHOD OF PREVENTING DUST RISING FROM WHEELS OF RAILROAD CARS.  
 No. 10,402. Patented Jan. 10, 1854.



# UNITED STATES PATENT OFFICE.

DANIEL S. DARLING, OF BROOKLYN, NEW YORK.

## PREVENTING DUST FROM ENTERING RAILROAD-CARS.

Specification of Letters Patent No. 10,402, dated January 10, 1854.

*To all whom it may concern:*

Be it known that I, DANIEL S. DARLING, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful improvement in the manner of applying or arranging reversible deflectors for concentrating the dust arising under railroad-cars from or by the motion of the wheels and for expelling it at the end of the train; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a side elevation of a car and locomotive, having my improved deflectors attached to them. Fig. 2, is an inverted plan of the locomotive and car, with deflectors.

Similar letters of reference in each of the several figures indicate corresponding parts.

The nature of my invention consists in arranging a series of deflectors along the sides of the locomotive, and entire train of cars, in such a manner that a series of funnel shaped chambers will be formed, which run into each other, and form a continuous channel for the dust and air under the car to be confined in while the funnel shaped mouths at the front of the locomotive receive a powerful outside pressure of air, which, by the position of the deflectors is forced into less than its ordinary space, and causes an extraordinary suction current under the train, which concentrates and carries the dust arising from the wheels with it into the artificial channel under the cars, and confines it until it escapes at the end of the train. The open mouths of the deflectors on the sides of the cars, also serving as channels for any side dust which may come in contact with them to be sucked through into the central channel.

My invention consists, 2d, in so arranging the deflectors, that they can be reversed, and be made to effect the same object while the cars are moving from, as they do when they are returning to, their stations.

To enable others skilled in the art, to make and use my invention, I will proceed to describe its construction and operation.

A, in the accompanying drawings, represents a rail car, and B, the locomotive, both of which may be made in the ordinary manner.

C, C, and D, D, are the deflectors which

are placed upon the locomotive and cars. The mouths of those, C, C, are made to stand out even with the sides of the cars, so as to present an extra resistance at the commencement, to the atmosphere, and give it a direction toward the center and back of the locomotive, and into the main channel. The deflectors, C, C, are fastened by set screws, *a*, to the locomotive, and can be moved around on the center, *b*, by loosening the set screws when it is desirable to get at the under portion of the engine, they being made stationary and independent of those, D, D, on the cars, because they do not require to be reversed—the engine being turned around instead. The position and funnel shape of the deflectors will be clearly seen in the drawing; and by examining Fig. 2, the manner in which they are presented to the dust and air under the locomotive and train of cars, and form the main channel, will be clearly seen. Thus it will be seen that the entering of dust into the cars, is in a great measure prevented. The deflectors, D, D, are susceptible of being reversed as the cars change their course, they being loosely hung on rods, *d*, *d*, at their center, as shown in the drawing; said rods being secured in a standard, *c*, attached to, and extending down from, the bottom of the cars, and having horizontal ends, or steps, *e*, *e*, for the lower ends of the rods, *d*, *d*, to rest in—the upper ends of said rods being secured in cross bars, *f*, *f*, attached to the framing of the bottom of the cars.

F, F, are rods, or flexible connections, by which all the deflectors of each car, are connected together—these connections, as will be evident from the drawing, by their arrangement, allow of the deflectors all being reversed at one time, from the position shown in the drawing, when the train changes its course.

G, H, are two chains, attached to the links, or flexible connections at each end of the cars, in the manner shown in the drawing—it is by these chains that the deflectors can be reversed, when desirable, for by simply drawing slightly upon the chain, G, which works in a friction pulley, the deflectors will occupy the position shown in Fig. 2, and by pulling, in a similar manner, upon the chain, H, they will occupy a position the reverse of that shown.

It should be understood that these de-

flectors cover the sides of the trucks entirely, and close up the space between them—they extending from the bottom of the car, down nearly even with the tracks, and along the entire length of the whole train of cars. The car connections being covered by a canvas apron, *g*, which makes the channel formed by the deflectors, continuous, and keeps the dust confined until it escapes at the extreme end of the train. The cross bars, *f*, *f*, turn on a journal to admit of the deflectors being easily removed, by taking out the key at the lower end of rod, *d*, *d*, and also to permit of access to the truck wheels.

What I claim as my invention, and desire to secure by Letters Patent, is:—

1. Arranging a series of deflectors along the sides of the locomotive, and entire train of cars, in such a manner that a series of funnel shaped chambers will be formed, which run into each other, and form a continuous channel for the dust and air under the car to be confined in, while the funnel

shaped mouths at the front of the locomotive, receive a powerful outside pressure of air, which by the position of the deflectors is forced into less than its ordinary space, and causes an extraordinary suction current under the train, which concentrates and carries the dust arising from the wheels, with it into the artificial channel under the cars, and confines it until it escapes at the end of the train. The open mouths of the deflectors on the sides of the cars also serving as channels for any side dust which may come in contact with them to be sucked through into the central channel, substantially as herein described.

2. I also claim the manner herein described, and shown in the drawing, of reversing the deflectors, so that they will effect the desired object in whatever direction the train is going, substantially as specified.

DANL. S. DARLING.

Witnesses:

JOSEPH WATKINS,  
FRANCIS TILLON.