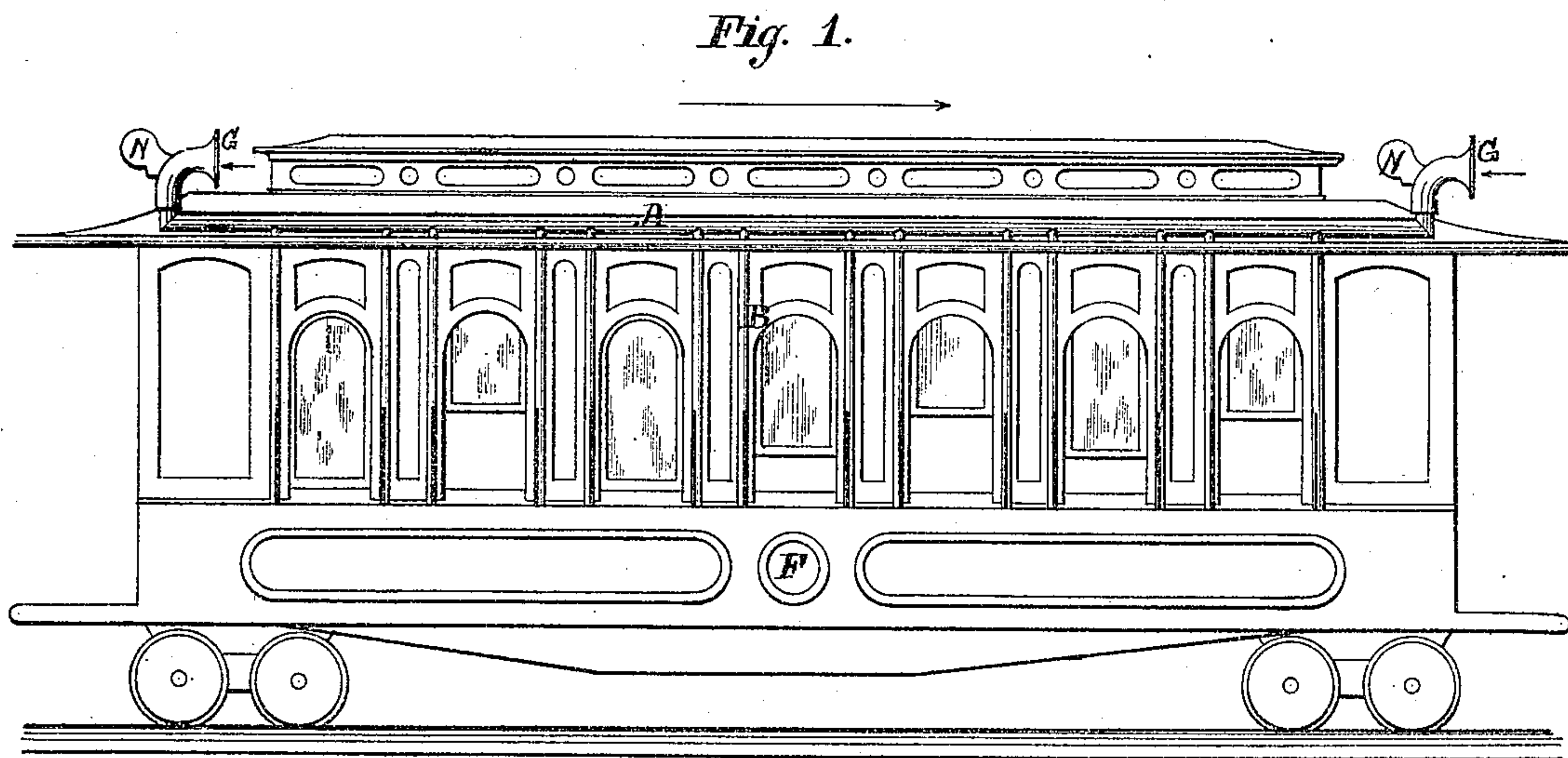
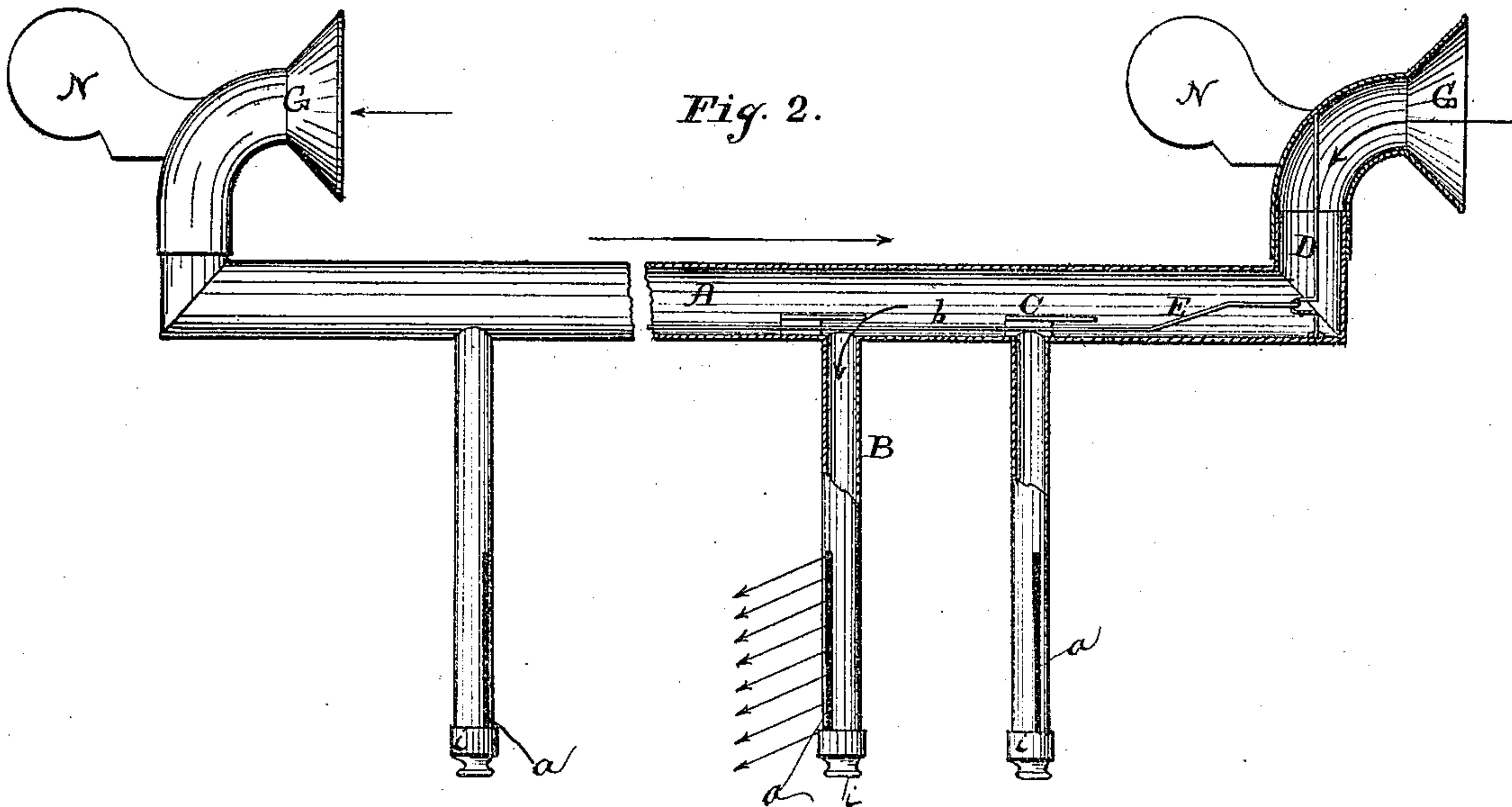


C. G. LEA.

SMOKE PREVENTIVE FOR RAILROAD CARS.

No. 175,569.

Patented April 4, 1876.



Witnesses:

Edward Goulding.  
Edmond Noonan.

Inventor:

Chas. C. Lea.

# UNITED STATES PATENT OFFICE.

CHARLES G. LEA, OF ALTON, ILLINOIS.

## IMPROVEMENT IN SMOKE-PREVENTIVES FOR RAILROAD-CARS.

Specification forming part of Letters Patent No. **175,569**, dated April 4, 1876; application filed January 28, 1876.

*To all whom it may concern:*

Be it known that I, CHARLES G. LEA, of Alton, in the county of Madison and State of Illinois, have invented certain Improvements in Dust and Smoke Preventives for Railroad-Cars while the same are in transit, of which the following is a specification:

Figure 1 is a side view of my devices applied to a car. Fig. 2 is a vertical cross-section of the same.

My invention relates to the protection of the interior of railroad-cars from dust and cinders, which are liable to pass in at open windows when the cars are in motion.

My invention consists in passing across the car-window on the outside a thin sheet of air, moving at a high velocity, and thrown through a plane slightly deflecting from the plane of the side of the car.

In order that those skilled in the art may make and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A is a large horizontal pipe, running the length of the roof of the car, and having at each end a reversible flaring funnel, G, controlled by vanes N, so that the open mouths of the funnels will always be in the line of the direction of the travel of the car. Descending from the pipe A on each side of each window are smaller pipes, B B, each pipe being provided with a vertical slot, *a*, on its side adjacent to the window. Within the horizontal pipe A are slide-valves C, to control the openings to the pipes B. These valves are connected together by a rod, *b*, and this rod, in turn, is attached by a pitman, E, to a crank, D, operated by the shifting of the funnel G, so that each alternate pipe B is opened as the

car changes direction. The lower ends of the pipes B are closed with a flanged cap, *i*, which is removable, so as to withdraw all dust and cinders that may collect in their bottoms.

The operation is as follows: The car moving in the direction indicated by the long arrow, the vane N throws the funnel G so as to have its open mouth toward the direction in which the car is traveling. The crank D, pitman E, and rod *b* throw the valve C so as to open each tube B on the front sides of the windows, and close the tubes B on the rear sides of the windows. A strong current of air enters G, and passes with great velocity out of the slot *a* across the window in a slightly-deflected plane, as shown by the arrows *x x*. This thin sheet of air, traveling at a high velocity, prevents dust or cinders from entering the windows, either by eddies or direct currents.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A thin sheet of air passed at a high velocity across a railroad-car window, to prevent the entrance of dust or cinders, substantially as set forth.

2. The alternately-operating pipes B, in combination with the pipe A, reversible hood or funnel G, and a railroad-car, F, substantially as described.

3. The pipe A, with its branch pipes B, in combination with the alternate slide-valves C, pitman E, crank D, and reversible funnel G, as and for the purpose set forth.

CHAS. G. LEA.

Witnesses:

CHARLES RADER,  
FRED. GASKINS.