

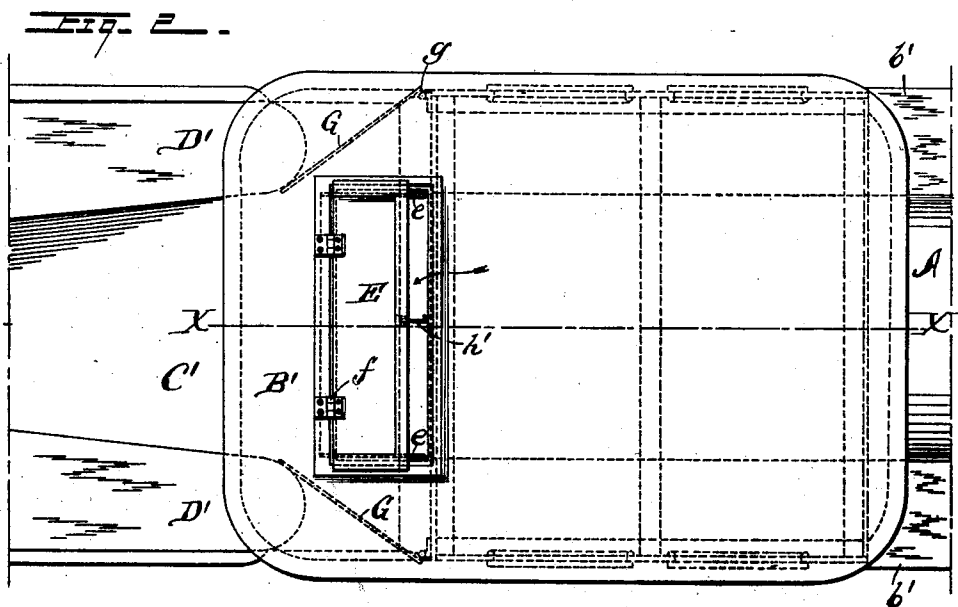
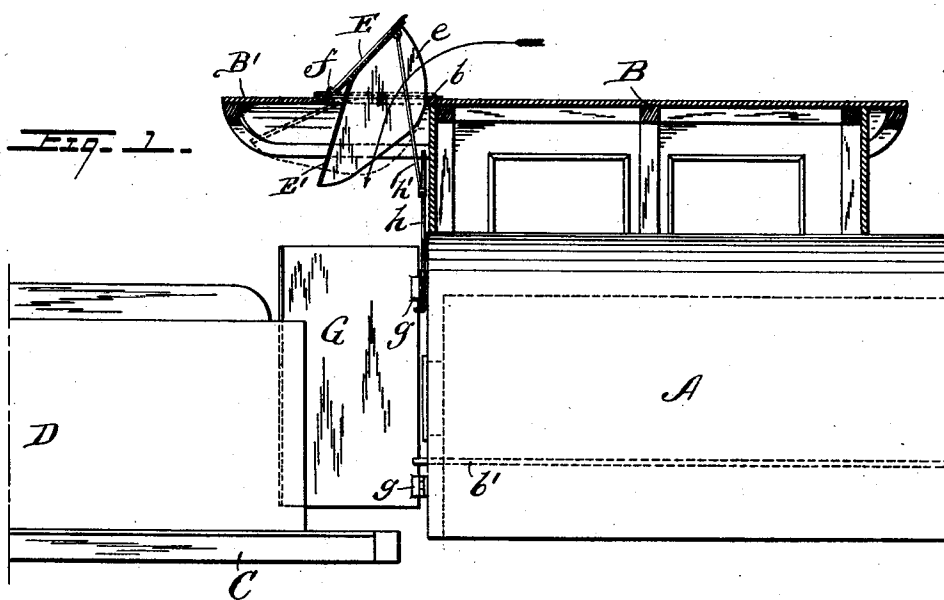
No. 697,493.

Patented Apr. 15, 1902.

N. KERSHNER.
VENTILATOR FOR LOCOMOTIVE ENGINES.

(Application filed Nov. 26, 1901.)

(No Model.)



Witnesses
David L. Luman
D. M. Skurrah

Nathan Kershner Inventor
by *[Signature]*
Attorney

UNITED STATES PATENT OFFICE.

NATHAN KERSHNER, OF READING, PENNSYLVANIA.

VENTILATOR FOR LOCOMOTIVE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 697,493, dated April 15, 1902.

Application filed November 26, 1901. Serial No. 83,885. (No model.)

To all whom it may concern:

Be it known that I, NATHAN KERSHNER, a citizen of the United States, residing in the city of Reading, county of Berks, State of Pennsylvania, have invented certain new and useful Improvements in Ventilator Mechanism for Locomotive Firemen, of which the following is a specification.

My invention relates to locomotive construction, and has for its object the providing of means at the fire-box end for making the position of the fireman at the rear thereof more comfortable under unfavorable weather conditions than heretofore. The main discomfort and hardship to the fireman, especially on the large-size locomotives now commonly built, results from the terrific heat to which the fireman is subjected while engaged in most arduous labor and the comparative lack of cool air which is furnished to counteract this heat. My invention provides for overcoming this difficulty, as well as otherwise increasing the comfort of the fireman, and is fully described in connection with the accompanying drawings and specifically pointed out in the claims.

Figure 1 is a side elevation showing the rear or fire-box end of a locomotive, with the cab thereon shown in cross-section on the line *xx* of Fig. 2 and provided with my improvements, the forward end of the separate tender commonly employed being also indicated. Fig. 2 is a plan view of the same.

A represents the fire-box of a locomotive; B, the cab thereon, having a rearwardly-overhanging roof *B'*, and C the tender, provided with a water-tank D, divided at its forward end, as usual, to form two separate legs *D' D'* and an intermediate place *C'* for coal storage and for the accommodation of the fireman while he is attending the fire.

In order to give the fireman the benefit of the rapid change of air made possible by the movement of the locomotive, notwithstanding that his duties locate him in protected position behind the fire-box, I, in the first place, provide an opening *b* in the cab-roof adjacent to the end of the fire-box and an air-conduit mechanism in connection therewith, whereby a regulated supply of fresh air may be forced down through said opening and utilized to carry off and mingle with the over-

heated air at the rear of the fire-box. This mechanism consists, as shown, of a trap-door E, which is hinged to the cab-roof at the rear of the opening *b*, as indicated at *f*, and provided with any suitable operating-rods *h h'*, whereby the front portion of said door may be raised to a greater or less extent above the level of the roof, and so serve to catch and deflect the air, as indicated by the arrow. To more effectually accomplish this, I provide a deflecting-plate *E'*, depending below the roof, and side plates *ee*, thereby forming what may be termed an "inverted scoop," which may be regulated by the fireman to deliver a greater or less downward flow of air, as desired, or may be entirely closed, if preferred, as indicated in dotted lines. In connection with this downward supply of air I find it highly advantageous to provide for a sidewise supply when desired, and for this purpose I employ lateral air-deflector plates *G G*, which are each removable, hinged at *g*, adjacent to one edge, and of sufficient width to extend from the outer edge of the cab to the inner wall of the adjacent tank-leg *D'*, so as to form rearwardly-converging side walls, partially closing what is ordinarily the open space between the end of the cab B and the tank. These plates, as shown, extend somewhat below the footboard or cab-floor *b'*, but terminate above the level of the tender-floor. The portion of these plates above the cab-floor *b'* is adapted to catch and direct rearwardly inward the currents of air which in mild weather, when the cab-doors are open, pass through the cab from front to rear, thus causing rearwardly-converging lateral currents of air, which, in connection with the downward current through the roof-opening *b*, serve to greatly lessen the heat in the space occupied by the fireman and correspondingly increase his comfort and capacity for work. In addition to serving this purpose these plates may be also utilized in stormy weather, when the cab-doors are closed, to protect the fireman to a considerable extent from the outside blow of snow or sleet. When desired, they may be either swung inward against the cab or entirely removed by merely lifting them off their hinged connections.

What I claim is—

1. The combination with the fire-box of a locomotive, of a cab thereon having its roof

extended rearwardly beyond the fire-box and provided with an air-inlet opening adjacent to the end of the fire-box, and an air-conduit comprising an adjustable air-scooping portion secured to the extended roof above said opening and a deflecting portion below said opening substantially as set forth.

2. The combination with the fire-box of a locomotive of a cab thereon having its rear face approximately in the plane of the rear face of the fire-box, of rearwardly-converging air-deflector plates located at opposite sides of said cab substantially as and for the purpose set forth.

3. The combination with the fire-box of a locomotive, of a cab thereon having its roof extended rearwardly beyond the fire-box and

provided with an air-inlet opening adjacent to the end of the fire-box, an air-conduit comprising an adjustable air-scooping portion secured to the extended roof above said opening and a deflecting portion below said opening, and lateral air-deflector plates arranged to coöperate with said roof-conduit to produce converging air-currents to rearward of the fire-box substantially as and for the purpose set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

NATHAN KERSHNER.

Witnesses:

D. M. STEWART,
W. G. STEWART.