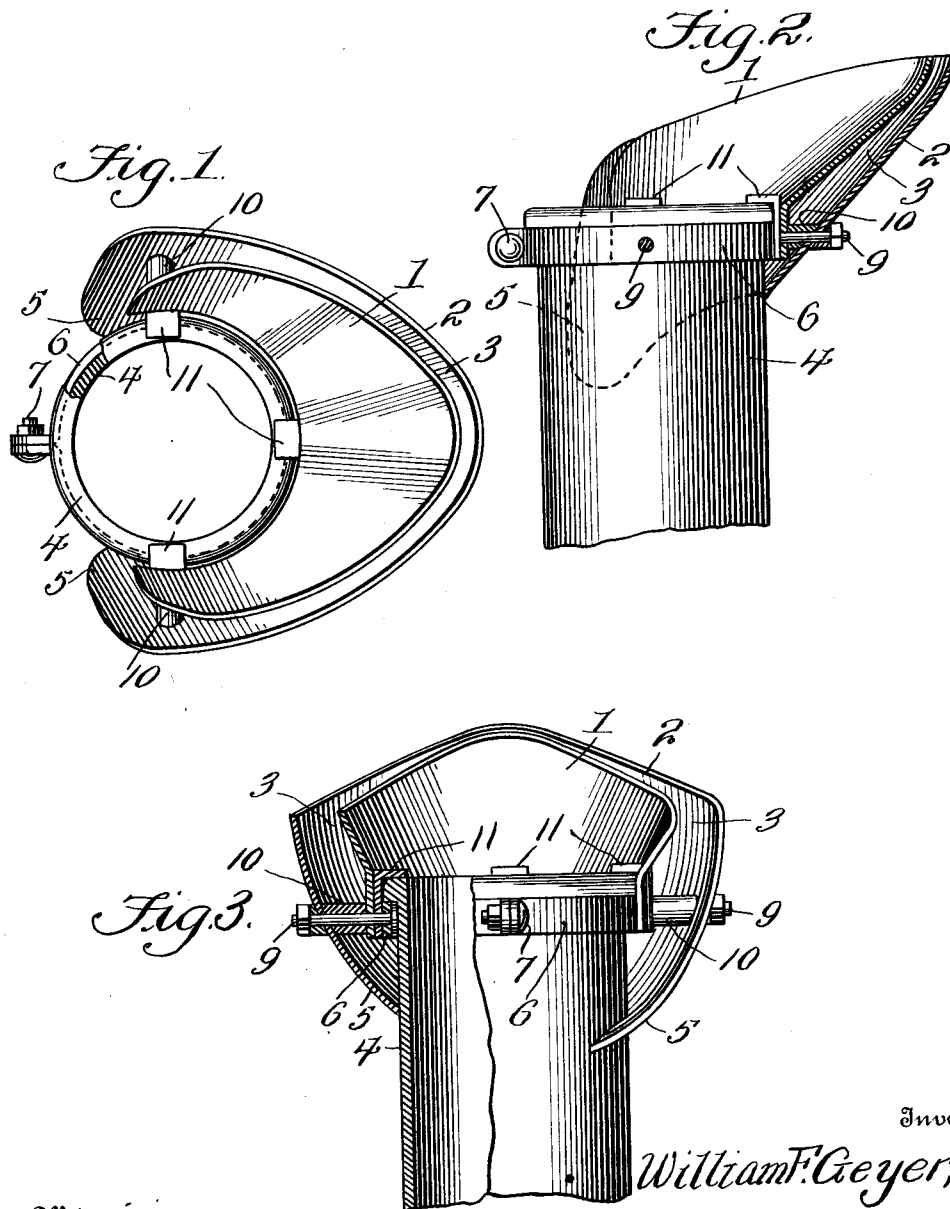


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SMOKE ELEVATOR AND CONCENTRATOR.
APPLICATION FILED JULY 26, 1911.

Patented June 11, 1912.

1,029,438.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM F. GEYER, OF GREAT FALLS, MONTANA.

SMOKE ELEVATOR AND CONCENTRATOR.

1,029,438.

Specification of Letters Patent.

Patented June 11, 1912.

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To all whom it may concern:

Be it known that I, WILLIAM F. GEYER, a citizen of the United States, residing at Great Falls, in the county of Cascade and State of Montana, have invented new and useful Improvements in Smoke Elevators and Concentrators, of which the following is a specification.

The primary purpose of this invention is to prevent the smoke from the stack of a locomotive from enveloping the cab and interfering with the vision of the engineer, said invention providing an attachment which may be fitted to the stack of any locomotive to elevate and to concentrate the smoke.

The invention consists of the novel features, details of construction and combination of parts, which hereinafter will be more particularly set forth, illustrated in the accompanying drawing, and pointed out in the appended claims.

Referring to the drawing, forming a part of the specification, Figure 1 is a top plan view of the smoke stack of a locomotive provided with a smoke lifter and concentrator embodying the invention. Fig. 2 is a side view, parts being broken away. Fig. 3 is a front view, parts being in section.

Corresponding and like parts are referred to in the following description, and indicated in all the views of the drawing, by the same reference characters.

The device comprises two shells 1 and 2 between which a space 3 is formed. Each of the shells flares and is of approximately scoop form and is arranged with its lower edge in contact with the sides of the smoke stack 4. The shells embrace opposite sides 40 and the rear of the stack, the shell 1 serving to lift and to concentrate the smoke as the same leaves the upper end of the stack. The lower shell 2 has wings 5 which extend downwardly along opposite sides of the stack and are outwardly flared from the ends of the upper shell 1 to form a wide space at opposite sides of the stack between the two shells 1 and 2 for the entrance of the air into the space 3, said air being directed upwardly and rearwardly by the forward movement of the locomotive, with the result that the smoke escaping from the upper rear portion of the shell 1 is further elevated by the current of air ascending upwardly through the space 3. The shell 1 is secured at its lower edge to a band 6, the

latter being in the nature of a clamp and adapted to be secured about the upper end of the stack by means of a bolt 7 passing through openings in extensions formed by bending end portions of the band. The shell 1 has a flange at its lower edge which is fitted against the band 6. Bolts 9 connect the shell 2 to the band 6, said bolts also passing through the shell 1. Sleeves 10 placed upon the bolts 9 and arranged between the two shells 1 and 2 serve to properly space the shells and to cooperate with the bolts 9 to secure the shells to the band 6. Retainers 11 are mounted upon the inner ends of the bolts 9 and serve to prevent downward displacement of the device. The retainers 11 consist of metal straps strung upon the bolts 9 and having their upper ends bent to overlap the upper end of the stack, thereby supporting the device in the manner stated.

Obviously the device may be constructed in any manner and secured to the stack 4 in any convenient and substantial way, but it is preferred to employ the band 6, since it admits of the device being quickly placed in position or removed and also provides means for positively securing the device when in position. The shells incline or flare upwardly and rearwardly the upper shell 1 serving both to elevate and to concentrate the smoke as the latter leaves the stack and the lower shell 2 acting as a gatherer and deflector to catch a quantity of air and to direct the same upwardly and rearwardly, thereby causing the smoke after it leaves the shell 1 to further rise and thereby prevent its dropping and collecting about the cab in a manner to obstruct the view of the engineer.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention what is claimed as new, is:—

1. In combination with the stack of a lo-

comotive or other moving vehicle, a deflector fitted to the upper end of the stack and flaring outwardly and rearwardly and serving to lift and to concentrate the smoke as the latter leaves the stack.

2. In combination with the stack of a locomotive or other moving vehicle, a deflector fitted to the upper end of the stack and flaring outwardly and rearwardly and serving to lift and to concentrate the smoke as the latter leaves the stack, and a second deflector spaced from and arranged below the first mentioned deflector and adapted to gather air upon the forward movement of the vehicle to direct said air upwardly and rearwardly to further elevate the smoke as it clears the first mentioned deflector.

3. In combination with the smoke stack of a locomotive or other moving vehicle, spaced shells fitted to the upper end of the stack, each of the shells being upwardly and rearwardly flared, the upper shell serving to elevate and to concentrate the smoke and the lower shell serving to gather in the air and to direct the same upwardly and rearwardly to further elevate the smoke as the latter clears the upper shell.

4. A smoke elevating and concentrating device comprising a band, and spaced shells secured to said band, each of said shells flaring upwardly and rearwardly.

5. A smoke elevating and concentrating device comprising a band, upper and lower spaced shells secured to said band, each of the shells flaring upwardly and rearwardly and the lower shell having wings at its lower forward ends.

6. A smoke elevating and concentrating device comprising a clamp band, spaced shells, each shell being approximately of scoop form, bolts connecting the shells with the band, spacing sleeves mounted upon the bolts between the shells, and retainers mounted upon the inner ends of the bolts, each retainer consisting of a metal strap having its upper end bent to engage over the upper end of the stack.

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

WILLIAM F. GEYER.

Witnesses:

ALFRED E. ROGERS,
ROBERT MCKENNA.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."