

C. H. FARLEY.

Locomotive Fire-Boxes.

No. 134,741.

Patented Jan. 14, 1873.

Fig. 1

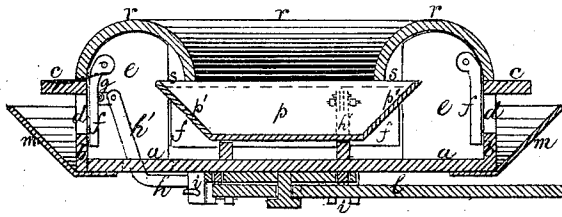
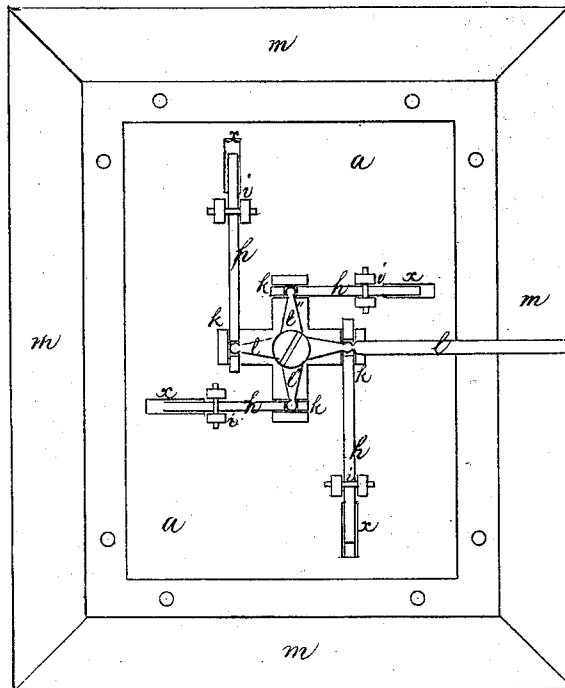


Fig. 2



Witnesses
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CYRUS H. FARLEY, OF PORTLAND, MAINE.

IMPROVEMENT IN LOCOMOTIVE FIRE-BOXES.

Specification forming part of Letters Patent No. 134,741, dated January 14, 1873.

To all whom it may concern:

Be it known that I, CYRUS H. FARLEY, of Portland, in the county of Cumberland and State of Maine, have invented certain Improvements in Locomotive Fire-Box, of which the following is a specification:

Figure 1 of the accompanying drawing is a central vertical transverse section, and Fig. 2 is a bottom view, of my improved locomotive fire-box.

The present invention relates to certain new and useful improvements in fire-boxes of locomotives, having for their principal objects the prevention of the objections heretofore occasioned by the drawing up of snow and by the disturbance of the dust on the road. My improvements consist mainly in a fire-box arranged and operated, as will be hereinafter more fully described, so as to admit the air and regulate the draft through the sides instead of, as heretofore, through the bottom, and of providing suitable guards, so arranged as to prevent the draft from entering on a line below the horizontal, and preclude the drawing up of the snow, or the disturbance of the dust.

In the drawing, *a* represents the bottom of a box or pan, having vertical sides *b* formed at the top with horizontal flanges or outer projecting frame *c*, below which, extending lengthwise a suitable distance, are apertures or flues *d*, that extend vertically to near the bottom of the interior of the box or pan. Connected with the bottom and sides of the box or pan at each corner are vertical right angled standards *e*, between which are hung, so as to swing back and forth, dampers *f*, each of which is operated by means of an arm, *g*, pivoted or hinged to the damper, and connected by a pivot with a vertical arm, *h*, passing through a slot, *x*, in the bottom *a*, and forming one end of a bent lever, *h*, that is operated back and forth in guides *i k*, by a pivoted lever, *l*, formed with forward and cross arms, *l' l''*, that engage with and operate similar bent levers *h*, connected with the other dampers *f*; or the dampers *f* may be provided with and operated by any other suitable mechanism that may be preferred to open and close them. Attached to the bottom of the exterior of the box or pan *a*, and sloping outward on each side and upward a sufficient distance to allow a passage for the air at the top between them and the flanges or frame *c*, are guards *m*, which serve to ward off the snow and pre-

vent a direct upward draft. Supported on the bottom of the box or pan *a* is a fire-pan, *p*, having inclined sides *p'*, and of the proper size to allow of the working of the dampers *f*, and to admit the passage of a sufficient quantity of air. Resting on the top of the frame *c*, and extending over the top of the sides of the fire-pan *p*, are curved plates or shields *r*, forming an air-space, *s*, through which air is admitted from the flues *d* into the top of the fire-pan *p*.

Heretofore in locomotive fire-boxes, of similar arrangement as the above described, much objection has been experienced by the deadening and quenching of the fire by the drawing up of snow, and by the whirling of the dust, caused by the direct upward draft created by the admission of the air through apertures or flues arranged under the bottom or horizontal line of the fire-pan.

In my improvements it will readily be observed, by referring to the drawing, that the flues *d*, through which the air is admitted are in the sides above the bottom of the horizontal line of the fire-pan *p*, and that they are, moreover, protected by the inclined guards *m*, so that a direct upward draft is prevented, the draft being directed downward over the top of the guards *m*, which are in a form to throw off and prevent the entrance of any snow through the flues, which are regulated so as to check or increase the draft by the operation of the dampers *f*.

Instead of the dampers *f* being arranged on the inside of the box, as herein shown and described, they may, if desired, be arranged to operate on the outside of, and form guards to, the flues *d*.

Having thus fully described my improvements, what I claim as my invention, and desire to have secured to me by Letters Patent, is—

1. A locomotive fire-box provided with inclined guards *m*, arranged substantially as and for the purpose specified.

2. The combination of the inclined guards *m*, and flues *d*, and dampers *f*, arranged in a locomotive fire-box, substantially as and for the purposes set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

Witnesses: CYRUS H. FARLEY.

JOHN E. DOW,
GEO. S. LESTER.