No. 610,443. Patented Sept. 6, 1898.

M. J. GRIFFIN & P. W. HOGAN.

OPENING OR CLOSING DEVICE FOR FIRE BOX DOORS.

(Application filed Apr. 25, 1898.)

(No Model.)

FIG 1

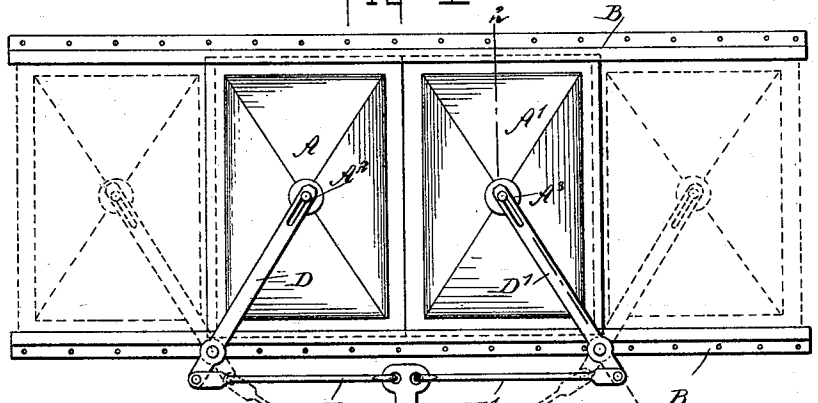
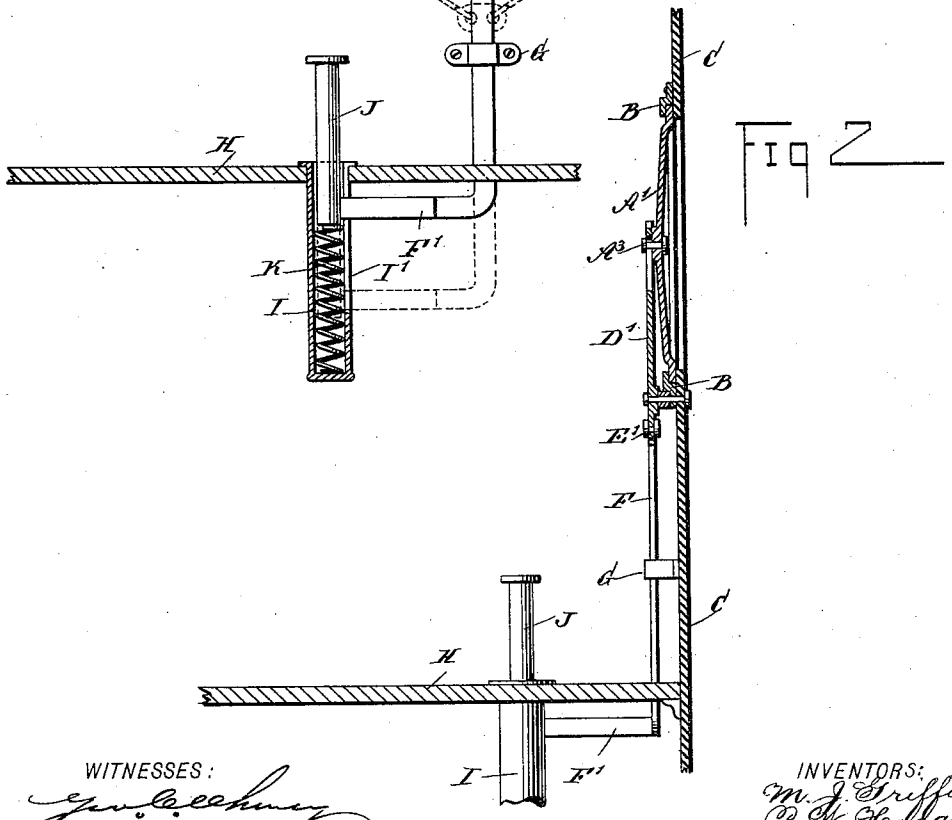


FIG 2



WITNESSES:

INVENTORS:
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BY

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UNITED STATES PATENT OFFICE.

MICHAEL J. GRIFFIN AND PETER W. HOGAN, OF ISLAND POND, VERMONT.

OPENING OR CLOSING DEVICE FOR FIRE-BOX DOORS.

SPECIFICATION forming part of Letters Patent No. 610,443, dated September 6, 1898.

Application filed April 25, 1898. Serial No. 678,744. (No model.)

To all whom it may concern:

Be it known that we, MICHAEL J. GRIFFIN and PETER W. HOGAN, of Island Pond, in the county of Essex and State of Vermont, have invented a new and Improved Opening or Closing Device for Fire-Box Doors, of which the following is a full, clear, and exact description.

The invention relates to locomotive and other furnaces; and its object is to provide a new and improved opening and closing device for the doors of the fire-box, arranged to enable the fireman to conveniently and quickly open the door for introducing a shovelful of fuel and then instantly close the door to prevent, as much as possible, the entrance of cold air to the fire-box and a reduction of temperature therein while firing up.

The invention consists of novel features and parts and combinations of the same, as will be described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both figures.

Figure 1 is a front elevation of the improvement as applied and with parts in section, and Fig. 2 is a transverse section of the same on the line 2 2 of Fig. 1.

As illustrated in Fig. 1, the fire-box is provided with two doors A A′, mounted to slide on suitable guideways B, secured to the front of the fire-box, as plainly indicated in Fig. 2. The doors A A′ are provided at their middle with projecting pins A^3 A^3, engaged by the slotted ends of levers D D′, fulcrumed on the lowermost guideway B and pivotally connected at their lower ends by links E E′ with the upper end of a bar F, fitted to slide vertically in a suitable guideway G, secured to the front of the fire-box C. The bar F extends through and below a platform H in front of the fire-box, and the extreme lower end of said bar F is provided with an angular offset F′, extending through a vertical slot I′ in a casing I, secured to the platform H and depending therefrom, as shown in the drawings. The inner end of the angular offset F′ is rigidly connected with the lower end of a foot-piece J, fitted to slide vertically in the casing I and extending normally above the top of the platform H, to be within convenient reach of the foot of the fireman for forcing the foot-piece downward against the tension of a spring K, held in the lower end of the casing I and pressing against the under side of said foot-piece.

Now it will be seen that by the arrangement described the spring K normally holds the foot-piece J and bar F in an uppermost position at the time the doors A A′ are closed. When it is desired to open the doors to enable the fireman to throw a shovelful of fuel into the fire-box, then the fireman places one foot on the foot-piece J and moves the latter and the bar F downward to cause the links E E′ to impart a swinging motion to the levers D D′, so that the doors A A′ are moved outward in the guideways B to an open position, as indicated in dotted lines in Fig. 1. The fireman is now enabled to throw the fuel through the open doors into the fire-box, and as soon as this has been done he releases the foot-piece J and the previously-compressed spring K returns the foot-piece and bar F to a normal position, the bar in moving into this position causing the links E E′ to impart a swinging motion to the levers D D′, but in a reverse direction from that previously given, so that the doors A A′ move back into a closed normal position. The foot-piece J is located in such position that when the operator returns from the tender with a shovelful of coal one foot engages the foot-piece J and presses the same down into the position it would naturally have if the doors were opened by hand, as heretofore practiced, so that the operator can conveniently throw the fuel into the fire-box while holding his foot on the foot-piece J, and consequently the doors in an open position.

From the foregoing it is evident that the doors are opened but a comparatively short time, so that cold air is prevented, as much as possible, from passing into the fire-box and reducing the temperature therein while firing up.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. A device for opening and closing doors, comprising a lever connected with the door, a bar mounted to slide toward and from the door, a foot-piece rigidly connected with said

bar and parallel to the main portion thereof, and separate guides for the said bar and foot-piece.

2. A device for opening and closing doors, comprising a lever connected with the door, a bar mounted to slide toward and from the door and provided with a transverse end or arm, a foot-piece rigidly connected with said bar and approximately parallel to the main portion thereof, and a spring for normally keeping the door closed.

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Witnesses:
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