

(No Model.)

2 Sheets—Sheet 1.

J. W. WETMORE.  
FUEL FEEDING DEVICE FOR FURNACES.

No. 524,518.

Patented Aug. 14, 1894.

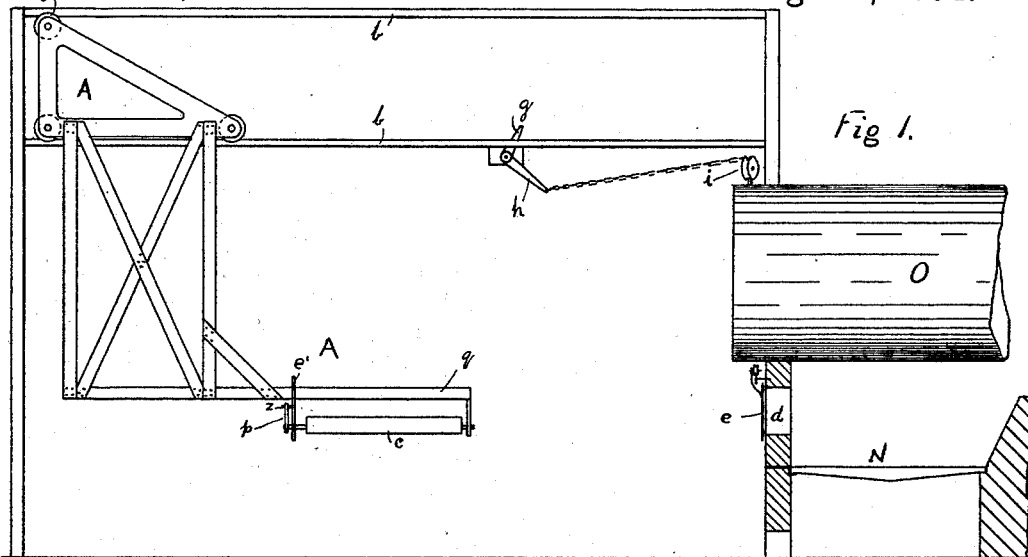


Fig. 3.

Fig. 2.

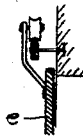
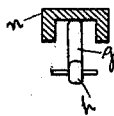
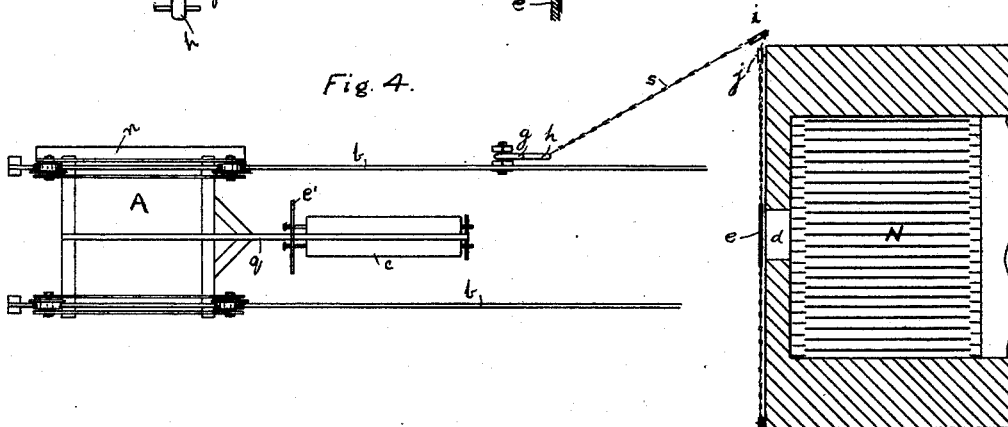


Fig. 4.



WITNESSES  
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*A. Faulkner*

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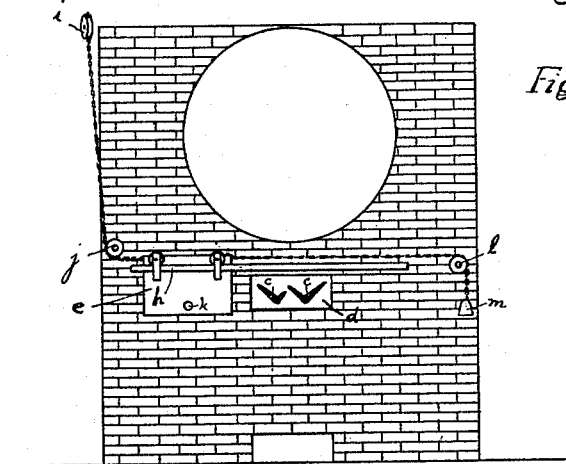


Fig. 5.

Fig. 6.

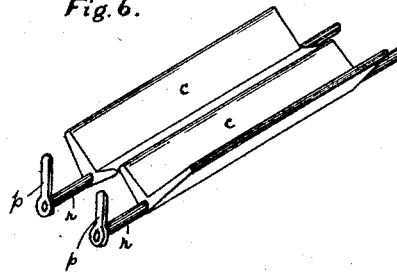


Fig. 7.

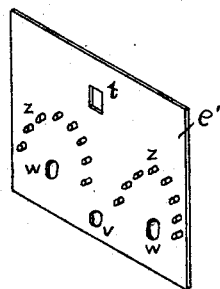


Fig. 8.

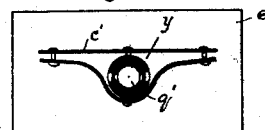
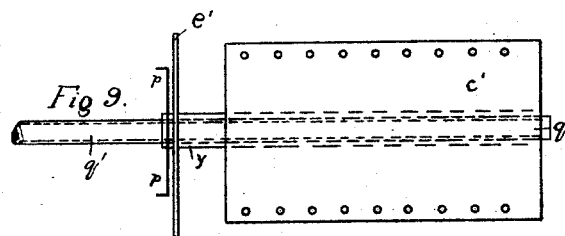


Fig. 9.



WITNESSES

C. A. Lightner  
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# UNITED STATES PATENT OFFICE.

JEROME W. WETMORE, OF ERIE, PENNSYLVANIA.

## FUEL-FEEDING DEVICE FOR FURNACES.

SPECIFICATION forming part of Letters Patent No. 524,518, dated August 14, 1894.

Application filed September 27, 1893. Serial No. 486,597. (No model.)

*To all whom it may concern:*

Be it known that I, JEROME W. WETMORE, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Fuel-Feeding Devices for Furnaces; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention consists in the improvements in fuel feeding devices for furnaces hereinafter set forth and explained, and illustrated in the accompanying drawings, in which—

Figure 1. shows a side view in elevation of my improved fuel feeding device, with a vertical sectional view of a boiler furnace. Fig. 2. is a transverse section of a guide hereinafter designated as *n* forming part of my device. Fig. 3. is an end view of the track and mechanism for carrying the furnace door. Fig. 4. is a top or plan view of my improved fuel feeding device with a horizontal sectional view of a boiler furnace. Fig. 5. is a front view of a boiler furnace showing the fire door open and the carrier of my fuel feeder in the furnace. Fig. 6. is a perspective view of the oscillating sections forming the bottom of the carrier of the fuel feeder, upon which the fuel is carried into the furnace. Fig. 7. is a perspective view of the plate in which the front ends of the oscillating carriers of the fuel feeder are journaled. Fig. 8. is a cross section of a modified construction of the oscillating carrier portion of my improved fuel feeder. Fig. 9. is a top or plan view of the same.

The principal objects of my invention are, to provide in a fuel feeding device for furnaces a carrier adapted to travel on a track and carry fuel into a furnace; to provide such carrier with a bed consisting of one or more sections adapted to be oscillated in a supporting frame, so that the fuel may be dumped at once upon the furnace grate, or gradually

a little at a time, as the fireman may desire, so as to allow the fuel to become partially heated upon the bed of the carrier, before it is finally distributed over the furnace grate.

The other features of my invention will appear hereinafter in the specification and claims.

In the construction of my improved fuel feeding device for furnaces, illustrated in the accompanying drawings, *O* is the front end of a steam boiler, *N* the furnace grates, *d* the opening in the front of the furnace, and *e* the furnace door. Extending outward above the front end of the boiler are three tracks *b, b, b*, two of which are on the same horizontal plane and the third centrally located some distance above the two first named; upon these tracks I place a car *A* having wheels at its lower corners, adapted to travel on the two lower of the tracks *b*, and a third wheel *f* at the rear of the upper part thereof, which travels on the under side of the third or central upper track *b*, a portion of the frame of this car *A* projects downward to a point a little below the top of the opening *d* in the furnace front, where it is provided with a horizontally projecting arm *q* at such height that as the car *A* travels toward the furnace front the arm *q* will pass freely through the opening *d* therein. Upon this arm *q*, I secure a plate *e* at such distance from the outer end thereof that it will contact with the outer face of the furnace, when the car *A* has made its full traverse in that direction, and on the outer end of the arm *q*, I secure a plate of such size that it will pass freely through the opening *d*, and in and between these plates I pivot *V* shaped sections *c c* which form the bottom of a fuel carrier, the journals *r r* on the inner ends of the *V* shaped sections *c c* pass through their bearings *W W* in the plate *e'* and are provided with operating handles *p* by means whereof the *V* shaped sections *c c* may be secured from oscillation, and in any desired position, by means of pins placed in the holes *s* in the plate *e'*, and on their removal the operator can oscillate or tip the *V* shaped sections forming the bottom of the carrier sideways to any angle desired, and thereby dis-

tribute the fuel conveyed into the furnace thereon, upon the furnace grates rapidly or slowly as desired. The furnace door *e* is provided with upward extending arms upon which are pivoted wheels which travel on a horizontal track *h'* extending across the front of the furnace above the opening *d* therein.

On one side of the frame of the car *A* there is a guide *n* adapted to contact with the arm *g* of a bell-crank lever *gh* pivoted to a downward projection on one of the tracks *b*, during the traverse of the car *A* toward the front of the furnace, and to the end of the arm *h* of said bell-crank lever is secured a chain *s* which passes over pulleys *i* and *j* to one of the arms supporting the fire door *e*, so that as the carrier travels toward the front of the furnace the guide *n* engages the arm *g* of the bellcrank lever *gh* and depresses it, thereby operating said lever so as to draw the door *e* back from the opening *d* and allow the fuel carrier to enter the furnace until the plate *e'* contacts with the furnace front and entirely closes the opening *d* therein, in which position it remains until the fuel is delivered therefrom upon the grates of the furnace, when the car *A* is again moved back withdrawing the carrier from the furnace to the position illustrated in Fig. 1. For automatically closing the furnace door when the guide *n* has passed off of the arm *g*, a chain is attached to the door *e* which passes over a pulley *l* on the furnace front, and is provided with a weight *m* which operates to move the door *e* to the right far enough to close the opening *d*.

The modifications of my device shown in Figs. 8 and 9 relate entirely to the construction of the fuel carrier of my device; one of these modifications being in constructing the horizontally projecting arm *q'* in the form of a hollow shaft, and another is the construction of the bottom of the carrier of a continuous upper section *c'* and a lower section which has a central curve therein passing around under a sleeve *y* which is secured therein and which rotates on the hollow shaft *q'*; these sections being secured to said sleeve and the edges thereof are also secured together some little distance apart by means of bolts or rivets, so that the air passing through the hollow shaft *q'* and out through openings in the sides thereof will pass on out between the edges of said plates; second, in that the inner end of the sleeve *y* passes through the plate *e'* and is provided with handles *P* by means whereof the bottom of the carrier can be oscillated or tipped sidewise as desired.

From the foregoing description of my invention, its operation is so obvious that further description thereof is believed to be unnecessary, therefore,

What I claim as new, and desire to secure by Letters Patent of the United States, is—

65 1. A fuel feeding device for furnaces con-

sisting substantially of a car operating on a track in front of the furnace, a fuel carrier supported by said car and adapted to carry fuel through the furnace doors into the furnace, and adapted to dump such fuel gradually or at once upon the grates of the furnace, substantially as set forth.

2. The combination in a fuel feeding device for furnaces, of an over head track in front of the furnace, a car on said track, adapted to move to and from the front of the furnace, a fuel carrier suspended from said car in front thereof so as to pass through the furnace doors into the furnace when the car is moved up to the furnace front, and a sectional bottom in said fuel carrier, the sections of which are adapted to be oscillated or tipped to one side or the other, substantially as and for the purpose set forth.

3. In a fuel feeding device for furnaces, a fuel carrier, consisting substantially of a frame adapted to pass through the furnace doors into the furnace, and a bottom in said frame consisting of sections pivoted in said frame, and adapted to be oscillated or tipped sidewise so as to discharge the fuel therefrom upon the furnace grates, substantially as set forth.

4. The combination of a car traveling on tracks to and from the front of a furnace, and carrying a fuel carrier adapted to pass through the furnace doors into the furnace, a furnace door traveling on a track across the front of the furnace, a chain connected with lever mechanism for opening said door, a guide on said car for automatically operating said lever mechanism as the car is moved toward the furnace, and chain and weight mechanism for automatically closing said furnace door when the car has been moved back until said lever mechanism is out of contact with the guide on the car, substantially as set forth.

5. In a fuel feeding device for furnaces, a fuel carrier consisting substantially of a frame adapted to pass through the furnace doors into the furnace, a plate forming the inner end of said frame, and adapted to cover the opening into the furnace when the carrier has passed therein, substantially as set forth.

6. In a fuel feeding device for furnaces, the combination, with the track and car in front of the furnace, of a forward projecting carrier frame adapted to pass through the furnace door into the furnace and having its bottom pivoted in the frame and adapted to be operated, for distributing the fuel onto the fire, by levers outside of the frame door when closed, substantially as described for the purpose specified.

7. The combination in a fuel feeding device for furnaces, of tracks *b b b* extending out horizontally in front of the furnace, a car *A* traveling on said tracks to and from the

front of the furnace, a fuel carrier supported  
by said car and projecting outward there-  
from toward and adapted to pass through the  
furnace doors into the furnace, a bottom in  
5 said fuel carrier consisting substantially of  
V shaped sections *c c* journaled in the ends  
of the frame of said fuel carrier, and handles  
on the rear journals *r r* of said V shaped sec-

tions, substantially as and for the purpose set  
forth.

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

JEROME W. WETMORE.

Witnesses:

C. A. LIGHTNER,

C. V. FAULKNER.