S. A. HOLCOMB.

FURNACE DOOR OPERATING MECHANISM.

APPLICATION FILED FEB. 15, 1909.

934,529. Patented Sept. 21, 1909.

Fig. 1.

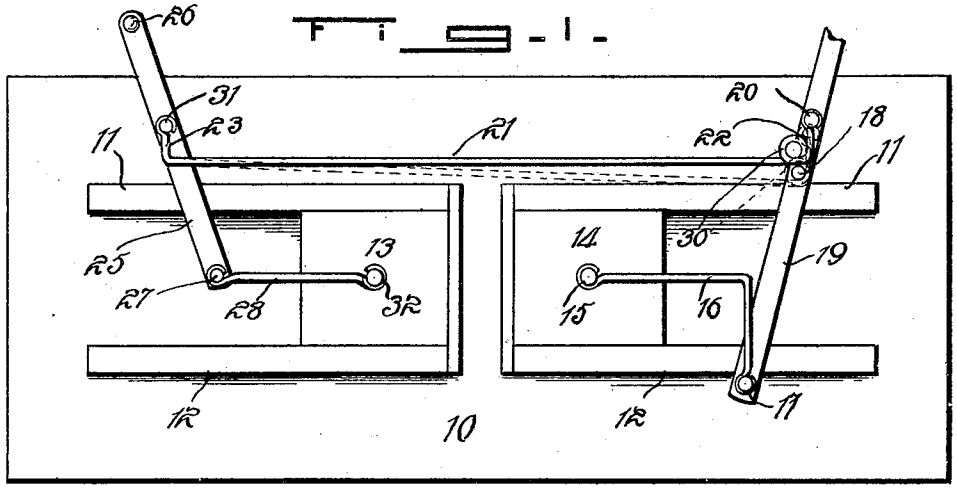
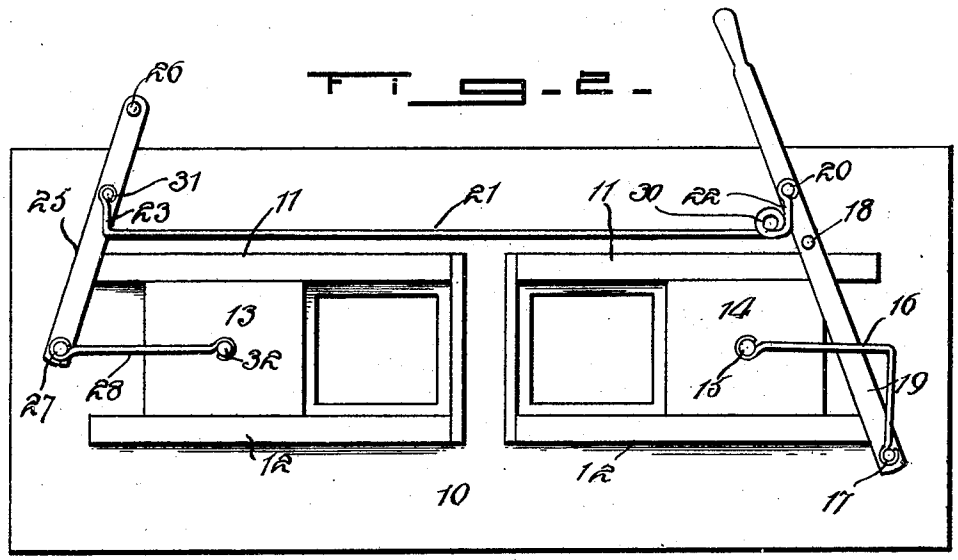


Fig. 2.



Inventor

SAMUEL A. HOLCOMB.

Witnesses

C. C. Chandlee.

E. L. Chandlee

By Woodward & Chandlee

Attorney

UNITED STATES PATENT OFFICE.

SAMUEL A. HOLCOMB, OF ESTHERVILLE, IOWA.

FURNACE-DOOR-OPERATING MECHANISM.

934,529. Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed February 15, 1909. Serial No. 477,931.

To all whom it may concern:

Be it known that I, SAMUEL A. HOLCOMB, a citizen of the United States, residing at Estherville, in the county of Emmet and State of Iowa, have invented certain new and useful Improvements in Furnace-Door-Operating Mechanism, of which the following is a specification.

This invention has relation to certain new and useful improvements in furnace door operating mechanisms.

The object of my invention is to provide an operating mechanism adapted to be used in connection with the sliding furnace doors of locomotives and other boiler furnaces.

The aim of my invention is more particularly to provide a mechanism by means of which two furnace doors may be simultaneously operated.

A further object of my invention is to provide a simple arrangement whereby one of the operating doors may be disconnected from the other, and my invention embodies certain other novel arrangements as will be described more fully hereinafter and finally pointed out in the claims, and it should be understood that changes in the specific structure shown and described may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a front elevation of a furnace equipped with my door operating mechanism disclosing the doors in a closed position showing the connecting rod in its inoperative position, while, Fig. 2 is a front elevation showing the doors as opened.

In the accompanying drawings, 10 represents the front portion of a furnace provided with the upper door guiding rail 11 and the lower door guiding rail 12. These rails slidably support the two similar fire doors 13 and 14. The door 14 is provided with the bolt 15 from which extends the crank link 16 which crank link is bent in the form of a right angle as clearly disclosed.

At a suitable point to one side and above the furnace door 14 is the supporting projecting pivot 18 which carries the operating lever 19 which lever at its lower end is provided with a pin 17 securing the crank link 16 to this operating lever 19.

The sliding door 13 is provided with the pin 32 which pivotally supports the connecting link 28 this link at its end being provided with a pin 27.

At a suitable point above and to one side of the furnace door 13 I secure a pivot 26 which supports the pendent operated lever 25 secured by means of the pin 27 to the link 28 as clearly disclosed.

The operating lever as well as the operated lever are both normally obliquely held, the lower ends of these levers inclining toward one another as disclosed.

Approximately mid length the operated lever 25 is provided with a supporting pin 31 while at a point above the pivot 18 the operating lever 19 is provided with the supporting pin 20. Connecting this operating lever to the operated lever, is a connecting rod 21 having both of its ends 22 and 23 bent in like direction and ending in terminal securing eyes one engaging the pin 20 and the other the pin 31 as disclosed. This connecting rod 21 near the crank end 22 is provided with the loop eye 30 as disclosed in the drawings.

When the instrumentalities have been properly constructed and arranged, the operation of my device is as follows: The operator desiring to open the furnace doors grasps the upper end of the operating lever 19 and shifts this lever which results in the crank link 16 sliding the fire door 14 outward while the link 28 will operate the door 13, this movement being accomplished through the means of the connecting rod 21. This arrangement enables the operator to open the doors simultaneously and they may be held at any desired point to provide suitable draft openings.

As it is quite likely that coal and ash particles will lodge upon the door guiding rails the doors may become momentarily jammed and a rigid connection between the operating levers is therefore not desirable owing to the fact that under such conditions the working effects might be broken. In the provision of the connecting rod 21 which has both of its ends bent at right angles a yielding connections is provided as this rod will permit the levers to spring and move within certain limits irrespective of any movement on the part of the connected furnace doors.

Should it be desired to operate but one of the furnace doors the operator could detach the bent end 22 from the pivot pin 20 and

hook the loop 30 upon the projecting pivot 18. The door 14 will then of course only be actuated by the operating lever.

Having thus described my said invention, what I claim as new and desire to secure by United States Letters Patent is:

1. The combination with a furnace having two sliding doors, of an obliquely held operating lever pivoted approximately midlength adjacent to one of said sliding doors, a pendent obliquely held pivotally supported operated lever secured above and terminating adjacent to said remaining sliding door, the lower end of said operating lever terminating below the lower edge of the adjacent furnace door, a crank link extending from the lower end of said operating lever and being secured to the adjacent furnace door, a connecting link extending from the lower end of said operated lever and being secured to the adjacent furnace door, and a connecting rod having both of its ends bent in like direction, one end of said connecting rod being secured below the pivot point of said operated lever, the other end being pivoted above the pivot point of said operating lever, substantially as and for the purpose set forth.

2. The combination with a furnace having two sliding doors, of a projecting pivot, an obliquely held operating lever pivoted approximately midlength adjacent to one of said sliding doors and upon said pivot, a pendent obliquely held pivotally supported operated lever secured above and terminating adjacent to said remaining sliding door, the lower end of said operating lever terminating below the lower edge of the adjacent furnace door, a crank link extending from the lower end of said operating lever and being secured to the adjacent furnace door, a connecting link extending from the lower end of said operated lever and being secured to the adjacent furnace door, a connecting rod having both of its ends bent in like direction and provided near one bent end with a loop held proximal to said pivot, one end of said connecting rod being secured below the pivot point of said operated lever, the other end being pivoted above the pivot point of said operating lever said loop being adapted to engage said pivot, as and for the purpose set forth.

3. The combination with a furnace provided with two sliding doors, of a pivotally held operating lever, a link connecting said operating lever to one of said doors, a pendent pivotally held operated lever, a link extending from said operated lever to said remaining furnace door, and a connection yieldingly uniting said levers, and secured to one of said levers above its pivotal point, and below the pivotal point of the other lever.

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

SAMUEL A. HOLCOMB.

Witnesses:

P. H. PAULSEN,

H. W. HOLCOMB.