

(No Model.)

2 Sheets—Sheet 1.

E. F. SAILOR.  
FUEL RAISING DEVICE.

No. 548,762.

Patented Oct. 29, 1895.

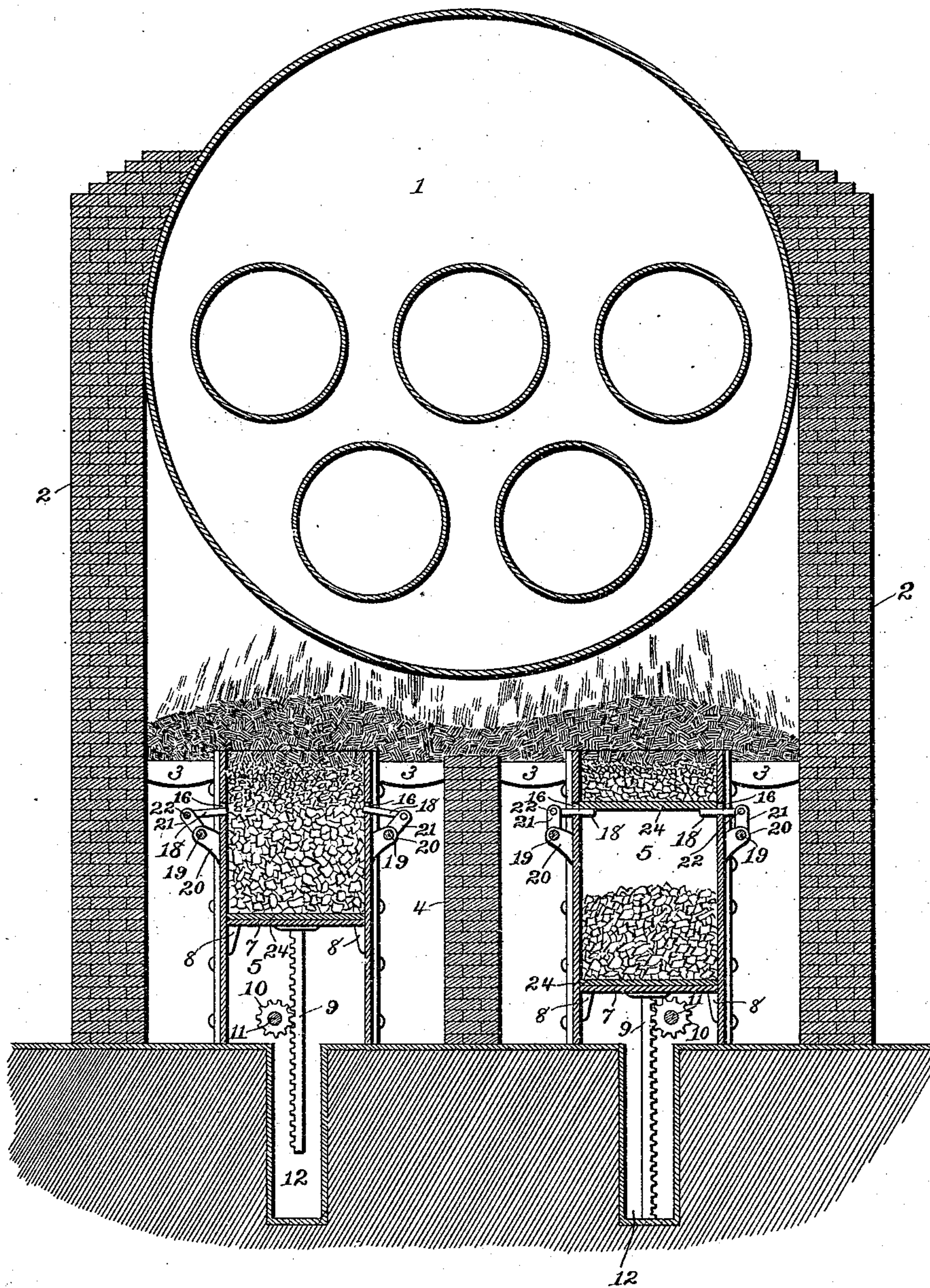


Fig. 1

Witnesses

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Inventor  
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*By Joseph L. Thomas*  
Attorney



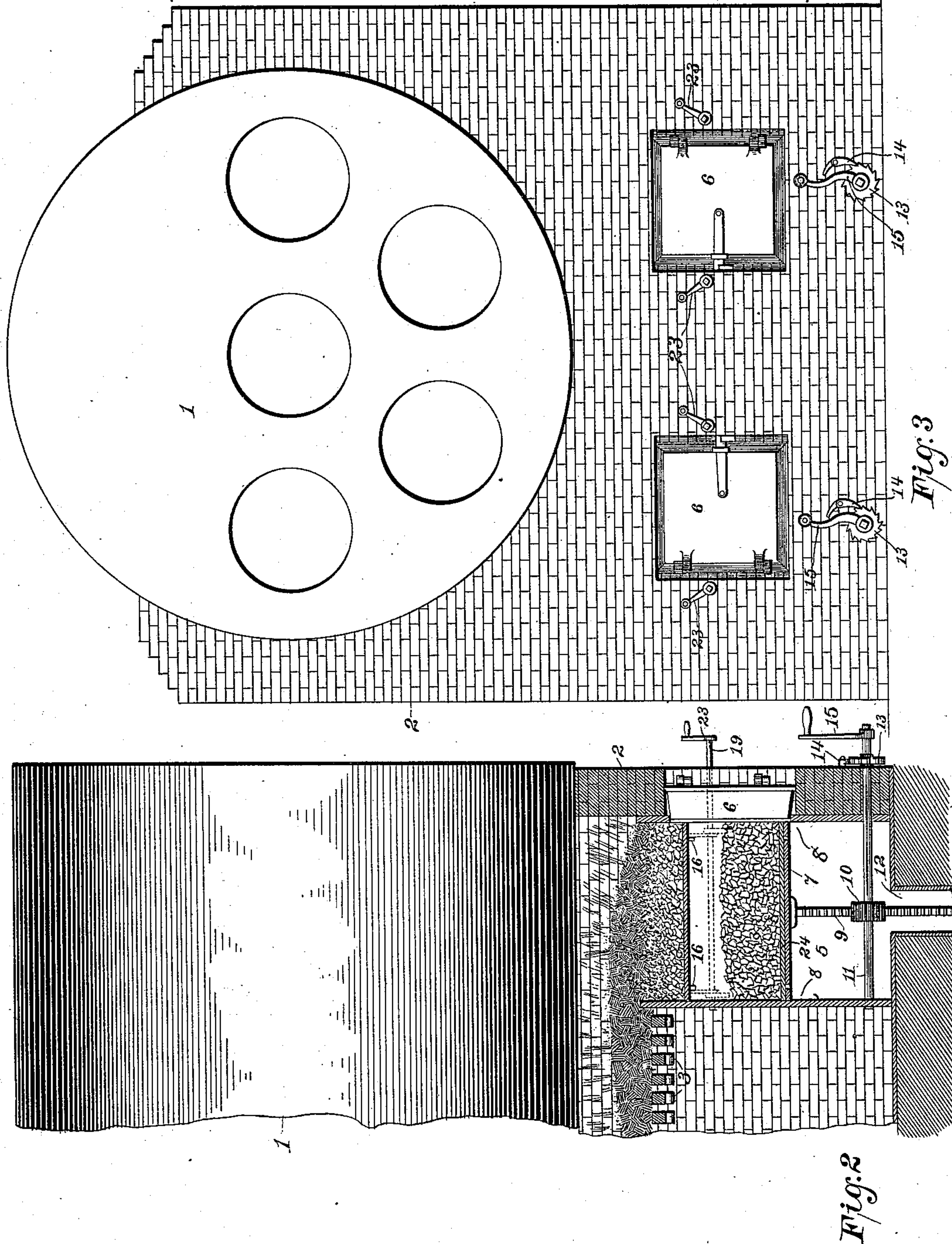
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2 Sheets—Sheet 2.

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FUEL RAISING DEVICE.

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Witnesses.

*G. T. Myers*  
*J. M. Withrow*

Inventor  
E. F. Sailor,

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# UNITED STATES PATENT OFFICE.

EUGENE F. SAILOR, OF ST. LOUIS, MISSOURI.

## FUEL-RAISING DEVICE.

SPECIFICATION forming part of Letters Patent No. 548,762, dated October 29, 1895.

Application filed January 16, 1894. Renewed June 25, 1895. Serial No. 554,049. (No model.)

*To all whom it may concern:*

Be it known that I, EUGENE F. SAILOR, of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Fuel-Raising Devices, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to produce an improvement in fuel-raising devices for that class of furnaces known as "Fales' smokeless furnace," in which the fuel is raised in the fire-box from below.

The object of my invention is to avoid the difficulties which in practice oppose themselves to the proper operation of this class of furnaces, and to produce a simple, convenient, and efficient device for the purpose.

In the accompanying drawings, Figure 1 is a transverse sectional view of my machine as applied to a boiler. Fig. 2 is a longitudinal sectional view of the front part thereof, and Fig. 3 is a front elevation thereof.

1 indicates a boiler supported by outside walls 2. 3 indicates the grate-bars, and 4, a middle partition-wall, which with the outside walls and the fire-boxes 5, serve to support the grate-bars. With the exception of the fire-boxes, which are of a somewhat peculiar construction, the parts above mentioned are of the ordinary kind and are mentioned only to give a better understanding of the arrangement and elevation of the parts which constitute my invention. The fire-boxes or "fuel-chambers," which they may be called, since they partake of the functions of both, are preferably made of cast-iron securely bolted together.

6 indicates a door in the upper front end of the fuel-chambers.

7 indicates a metallic platform or carrier fitting snugly within the fuel-chamber. The carrier is provided with suitable devices for preventing it from tilting—as, for example, lugs 8—upon the under side of the platform at each corner thereof.

9 indicates a rack firmly secured to the bottom of the platform and meshing with a pinion 10, that is fixed to a shaft 11, mounted in suitable bearings near the bottom of the fuel-chamber. A pit 12 is provided for the reciprocation of the rack. The shaft 11 is preferably provided with a fixed ratchet-wheel 13,

with which a pawl 14, secured to the front of the fuel-chamber, engages to hold the load on the carrier at the required elevation. A removable crank 15, fitting over the squared end of the shaft 11, affords a convenient means for operating it.

16 indicates slots located at a suitable height in the side walls of the fuel-chambers nearer their upper ends. Within these play supporting-pins 18, actuated by shafts 19, revolvably supported in bearings 20, which may consist of ears cast on the sides of the fuel-chambers. A convenient means of operatively uniting the shaft to the pins is by a joint or crank-piece 21, secured to the shaft and pivoted to the pins, as indicated at 22.

23 indicates a crank attached to the forward end of the shaft 19, by which it may be rotated for raising and lowering the carriers.

24 indicates a false bottom adapted to be carried upon the top of the carriers, and to sustain the load of coal. It is designed to support the coal upon the pins 18 while the carrier is being lowered for a new supply.

The operation is as follows: While the carriers are at the lowest limit of their travel the false bottoms are placed upon them and the chambers are filled with coal through the door 6, the grates being also filled with a sufficient quantity of coal. The fires are started from the top, which is usual in this class of furnaces, and as more fuel is needed the carriers are raised evenly and gradually. When a carrier has reached the proper height, the shafts 19 are rotated, so as to bring the pins 18 underneath the false bottom. The pins will serve to support the bottom with its load of coal in this position. The carrier may then be lowered, another false bottom supplied, and the space filled with coal. Thereupon the carrier may be raised, as before, until the top of the coal approaches or presses lightly against, the lower side of the false bottom which has been supported by the pins. The pins may then be thrown back and the false bottom withdrawn. In this manner a constant supply of fresh coal may be provided for the fires without interfering with the fire-bed proper in any manner, and with the utmost facility and rapidity of operation.

What I claim is—

1. In a furnace, the combination with a fire

box, vertically movable carrier, operating mechanism, of a false bottom adapted to be supported upon the top of the carrier, and mechanism for supporting the false bottom  
5 in the fire box independently of the carrier, substantially as set forth.

2. In a furnace, the combination with a fire box, carrier, and mechanism for operating the same, of a false bottom, shafts pivoted upon  
10 the sides of the fire box, and pins operatively connected with the shaft and working through the sides of the fire box to support the false bottom, substantially as set forth.

3. In a furnace, the combination with a fire

box, carrier, and means for operating the 15 same, of a false bottom, ears on the outside of the fire boxes, slots in the side thereof, shafts pivoted in the ears, crank pieces upon the shafts, and pins pivoted to the crank pieces and working in the slots to support the false 20 bottom, substantially as and for the purpose specified.

In testimony of all which I have hereunto subscribed my name.

EUGENE F. SAILOR.

Witnesses:

O. E. WILLIAMS,

JOHN M. NEWMAN.