

No. 622,518.

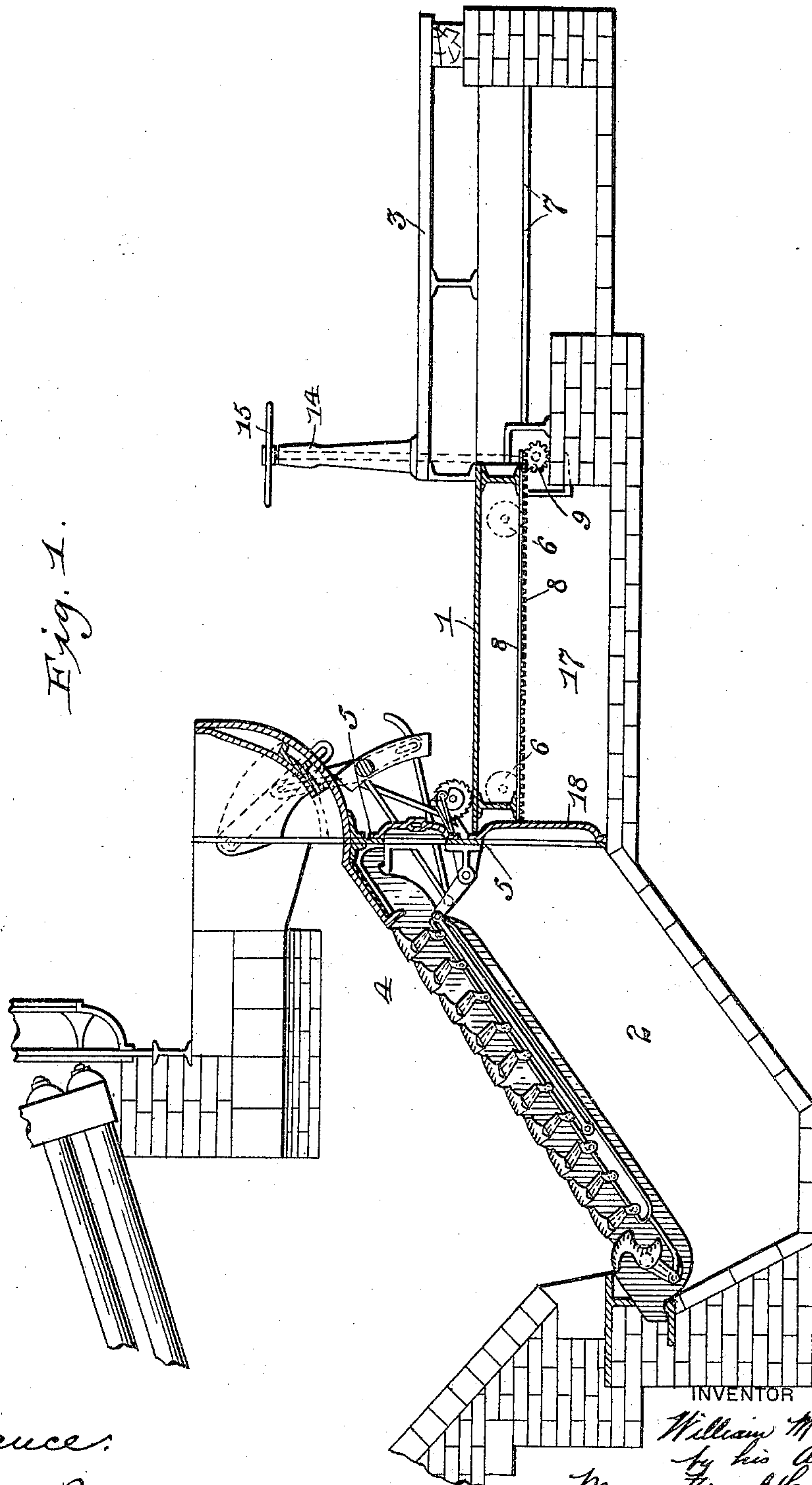
Patented Apr. 4, 1899.

W. McCLAVE.
FURNACE.

(Application filed Sept. 12, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES

Everance.
Stewart Rice.

INVENTOR

William McClave
by his Atty
Mason Thomas Lawrence

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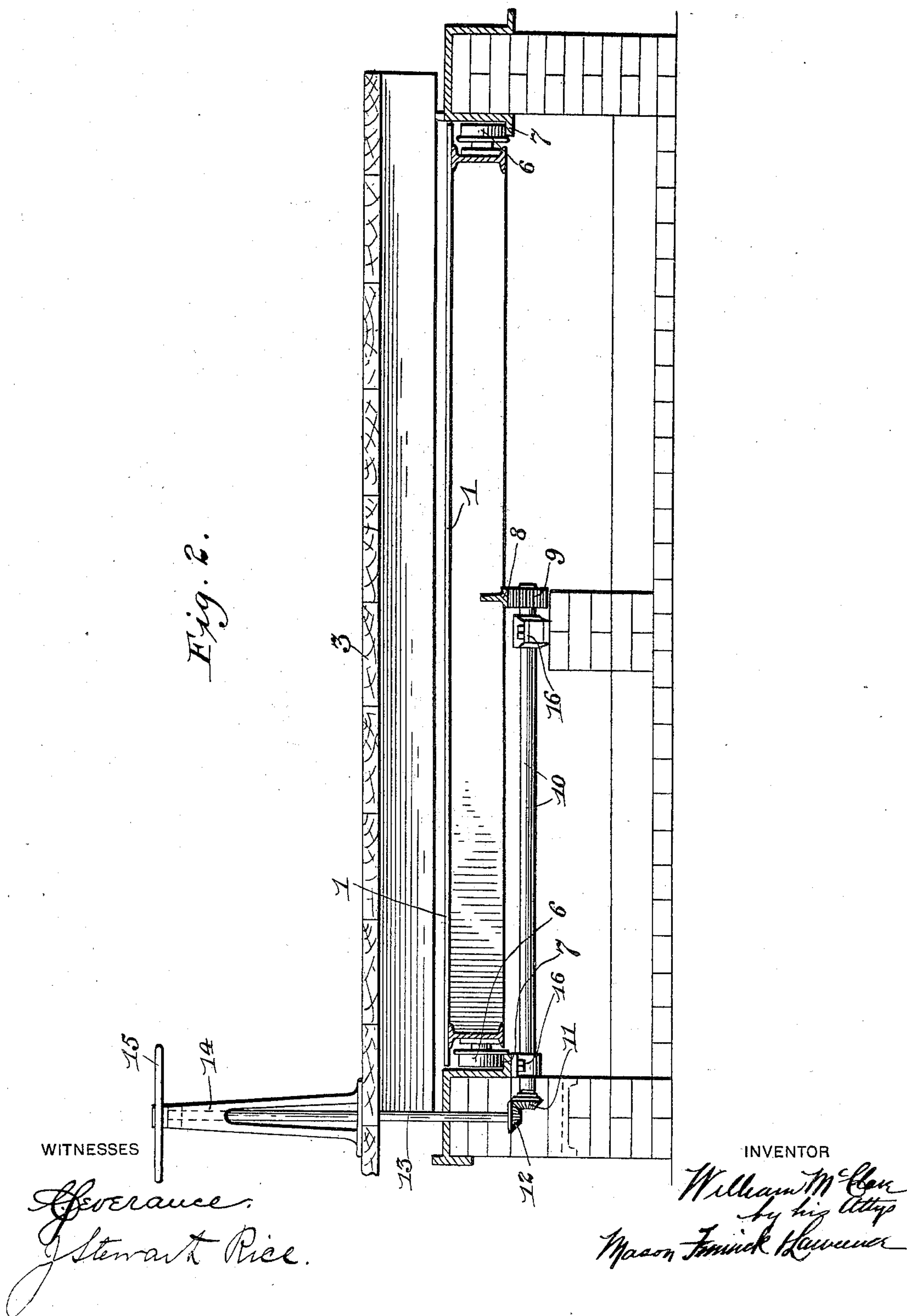
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2 Sheets—Sheet 2.



UNITED STATES PATENT OFFICE.

WILLIAM MCCLAVE, OF SCRANTON, PENNSYLVANIA.

FURNACE.

SPECIFICATION forming part of Letters Patent No. 622,518, dated April 4, 1899.

Original application filed May 10, 1898, Serial No. 680,272. Divided and this application filed September 12, 1898. Serial No. 690,789. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MCCLAVE, a citizen of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in 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.

My invention relates to improvements in furnaces; and it consists in the combination, with a furnace, of a movable floor adapted to bridge the space between the coal-bin or fuel-floor and the front of the furnace and means for moving the said floor back out of the way to permit of the ashes being removed from the ash-pit; and it also consists in certain details of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 represents a longitudinal vertical section through a movable floor and fuel bin or floor constructed in accordance with my invention, the same being shown in connection with a furnace, which latter is not claimed under this application; and Fig. 2 is a cross-section through the ash-receiving space in front of the furnace and showing the mechanism for operating the sliding floor.

In the accompanying drawings, 1 represents a movable floor; 2, an ash-pit; 3, a coal-floor, and 4 a furnace.

I make no claim under this application to the specific construction of the inclined grate and the means for operating the same, as the same forms the subject of an application filed by me on the 10th of May, 1898, Serial No. 680,272, of which this application is a division, nor to the specific construction and arrangement of the hopper, as the same forms the subject of an application filed by me on the 12th day of September, 1898, Serial No. 690,790.

In constructing a furnace having an inclined grate the inclination of the grate nearly always necessitates the constructing of an ash-pit which extends a considerable distance below the floor-surface, and it is necessary to provide a sufficient room for hoeing or drawing the ashes up out of the ash-pit and re-

moving the same at necessary intervals. This usually necessitates the forming of the floor-line immediately in front of the furnace at such a distance below the feed-hopper that it is necessary for the attendant to shovel the coal from the coal bins or heaps over the wide intervening space to reach the hopper. To correct this difficulty, I have conceived the idea of placing a receding floor in front of the furnace, so as to bridge the space between the coal floor or bin and the front of the furnace. As shown in the drawings, the coal-floor 3 is arranged at a suitable height with respect to the hopper, and between it and the front 5 of the furnace is a traveling floor, as 1. The floor 1 preferably consists of I-beams or other suitable angle-irons, bolted together to form a substantial structure, and plates or flooring secured to the top of the same to form a floor-surface and is carried by wheels, as 6. The wheels 6 engage tracks 7, mounted upon suitable brickwork upon either side of the floor 1. To the under side of the floor 1 is also secured a rack-bar, as 8, which is adapted to be engaged by a pinion, as 9, secured to the end of a shaft 10. To the other end of the shaft 10 is secured a bevel-gear 11, which meshes with a corresponding bevel-gear 12, secured to the lower end of an operating-shaft, as 13. The operating-shaft 13 extends up through the coal-floor 3 and finds a bearing at its upper end in a standard, as 14. A hand-wheel or other operating means, as 15, is secured to the upper end of the vertical shaft 13, and by turning the same the rack 9 can be rotated to run the floor 1 back and forth upon its tracks. The shaft 10 is mounted in bearings, as 16, secured to the foundations of the coal-floor 3. By operating the hand-wheel 15 in one way the floor can be run back beneath the coal-floor 3, and the space 17 below the said floor will be thus opened, so that the attendant can get to the ash-doors 18 and by opening the same pull the ashes out of the ash-pit and remove them. When this has been done, by turning the hand-wheel 15 in the opposite direction the floor 5 can be again run out from beneath the floor 3 and bridge the space between the coal-bin and the front of the furnace-hopper. This is of great importance in shoveling coal from the coal-floor to the hop-

per, as the attendant can stand upon the floor 1, and thus easily reach the hopper of the furnace and not have to pitch the fuel from the end of the floor 3 over to the hopper.

5 Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a furnace, of a movable floor arranged horizontally in front
10 of the furnace, and over an ash-removing space, and mechanical means for moving the floor horizontally out and in.

2. The combination with a furnace, of a stationary fuel-floor having a space beneath
15 it and a horizontally-arranged movable floor located in front of the furnace, and means for moving the floor out and in and beneath the fuel-floor.

3. The combination with a furnace, of a
20 stationary fuel-floor having a space beneath

it, a horizontally-arranged movable floor provided with wheels and located in front of the furnace and over an ash-removing space, a track for the floor to travel on, means for moving the floor out and in, said means comprising a vertically-arranged shaft provided on its lower end with a beveled gear which meshes with a beveled gear on the horizontally-arranged shaft, which shaft is provided on its other end with a pinion, and a rack attached to the underside of the floor which is engaged by said pinion, substantially as described.

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

WILLIAM MCCLAVE.

Witnesses:

JOHN J. HURLEY,

JOHN P. BUTLER.