T. FEWKES.

FURNACE GRATE.

No. 182,427. Patented Sept. 19, 1876.

Fig.1.

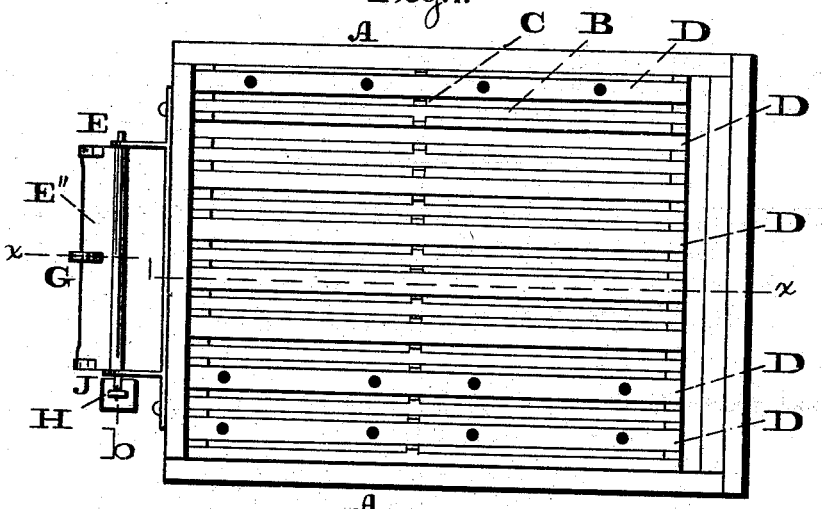


Fig.2.

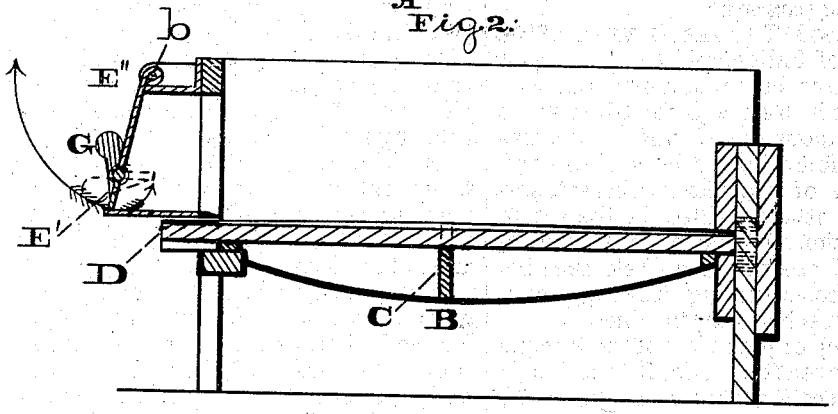


Fig.4.

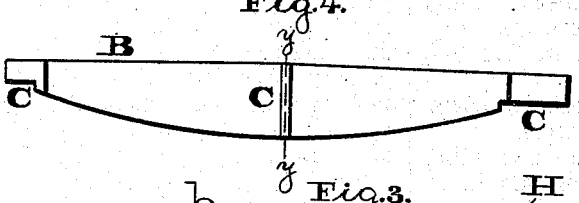
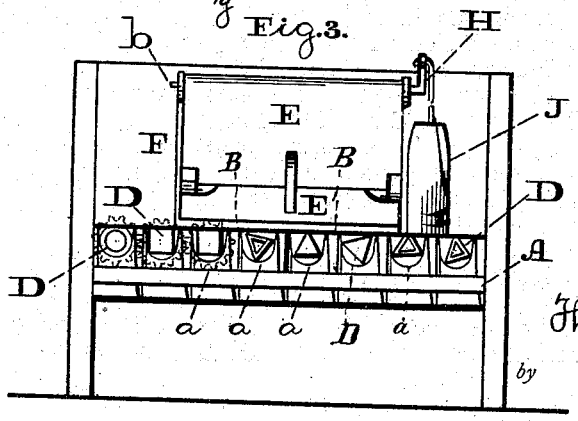


Fig.5.

Fig.3.



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UNITED STATES PATENT OFFICE.

THOMAS FEWKES, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO RALPH R. GURLEY, OF SAME PLACE.

IMPROVEMENT IN FURNACE-GRATES.

Specification forming part of Letters Patent No. **182,427**, dated September 19, 1876; application filed June 28, 1876.

To all whom it may concern:

Be it known that I, THOMAS FEWKES, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Furnaces for Bituminous and Semi-Bituminous Coal; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawings, making part of this specification; in which—

Figure 1 is a top or plan view of the furnace embodying my invention. Fig. 2 is a longitudinal vertical section thereof in line *x x*, Fig. 1. Fig. 3 is a front view thereof. Fig. 4 is a side view of one of the grate-bars. Fig. 5 is a transverse section thereof in line *y y*, Fig. 4.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a series of rotating bars, which are supported on bearings intermediate of stationary grate-bars, which alternate with the rotary bars, whereby the bars will be properly separated, the bed of fuel firmly supported, and the fire may be readily raked.

Referring to the drawings, A represents the bed or plate, on which will be supported the grate-bars B, which consist of longitudinally-extending bars with blocks C at their sides, the upper face of each of the blocks having a circular depression, as at *a*.

D represents a series of bars, which are adapted to rotate, and they may be geared together or in pairs, or have motions independent of each other. These bars are placed on the blocks C, which form their bearings, and their ends may be exposed so as to admit of the application of a key, wrench, or other suitable rotating implement.

It will be seen that the blocks C also serve to separate the grate-bars B, and their transverse dimensions are such that ample space is provided between the stationary bars B and rotary bars D for the passage of air.

It will further be seen that the two series of bars provide a firm support or foundation for the bed of fuel, and when the fire requires raking the bars D will be rotated either all together, or only such a number or pair as is required at a certain part of the fire, the combined action of the stationary bars and rotating bars causing the raking to be easily and reliably accomplished, without liability of choking or serious disturbance of the fire. The extent of raking will be regulated relatively to the amount of rotation of the bar or bars D.

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

The stationary bars B, with laterally-projecting separating-blocks C, having supporting depressions *a*, in combination with the rotary bars D, alternating with the stationary bars, substantially as and for the purpose set forth.

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