(No Model.)

O. PEDERSON.

GRATE.

No. 456,733. Patented July 28, 1891.

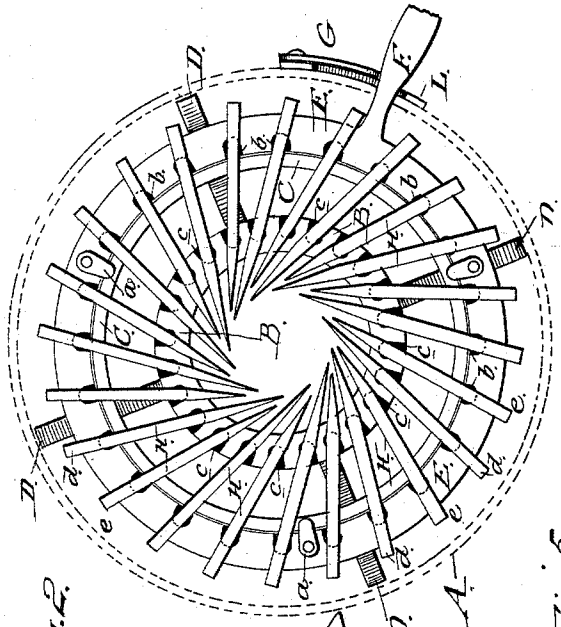


Fig. 2.

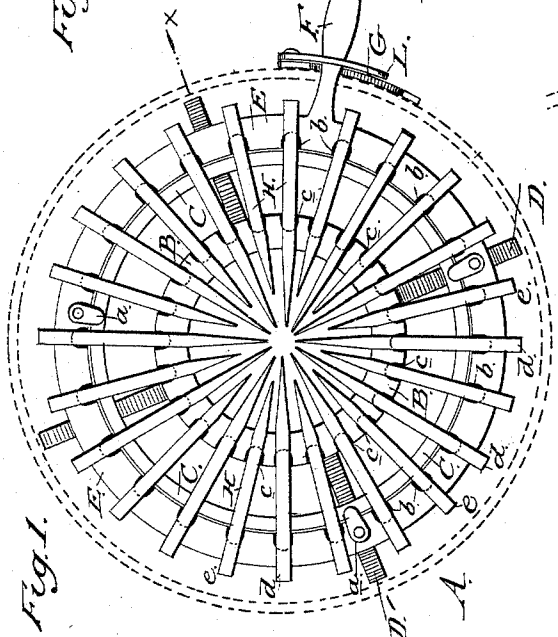


Fig. 1.

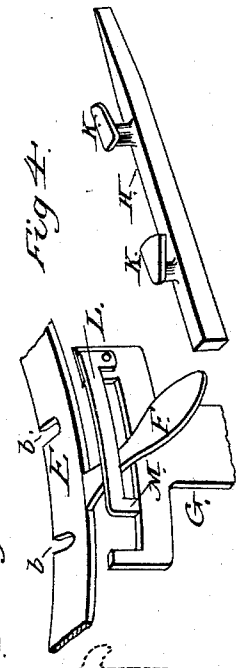


Fig. 4.

Fig. 5.

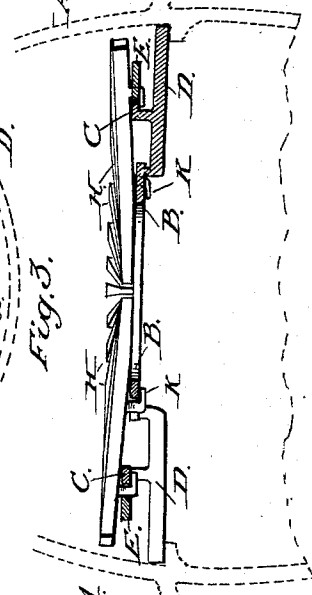


Fig. 3.

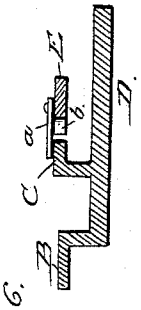


Fig. 6.

WITNESSES

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GRATE.

SPECIFICATION forming part of Letters Patent No. 456,733, dated July 28, 1891.

Application filed February 14, 1891. Serial No. 381,448. (No model.)

To all whom it may concern:

Be it known that I, OLE PEDERSON, a citizen of the United States, residing at Moline, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Grates, as set forth in the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a plan view of a grate embodying my invention. Fig. 2 is a similar view showing the grate-bars moved into a new position. Fig. 3 is a sectional view on the line *x x*, Fig. 1. Fig. 4 is a detail of one of the grate-bars. Fig. 5 is a detail to be referred to. Fig. 6 is a detail sectional view showing one of the bars D, the rings B, C, and E, and one of the lugs *a*.

My invention relates to certain improvements in stove-grates adapted to have an oscillating movement; and it consists of the constructions and combinations of devices which I shall hereinafter fully describe and claim.

To enable others skilled in the art to which my invention appertains to make and use the same, I will now describe its construction and indicate the manner in which the same is carried out.

Referring to the drawings for a more complete explanation of my invention, A represents any desired form of base or lower part of the stove, adapted to support the grate upon which the fire is built. This grate consists, essentially, of an inner fixed ring B and an outer fixed ring C, these two rings being held together against movement by means of arms or lugs D, which extend outward beyond the outer ring and rest upon any desired support in the base A, whereby the grate is securely maintained within the stove casing or cylinder in the usual manner. Outside the ring C and concentric therewith is another ring E, having a handle or lever F projecting through the stove-casing and through a slotted guide G (see Fig. 5) on the exterior thereof and serving as the means for imparting to said ring an oscillating movement. The ring E is provided with lugs *a*, which overlap the outer fixed ring to guide the movable ring in its movements and to secure the two rings together, and said movable ring has its inner circumference formed with radial openings *b*, which, with similar openings *c* in the outer circumference of the inner fixed ring B, are designed to secure the grate-bars in position in the following manner: The inner fixed ring B lies in a plane somewhat lower than that of the rings C and E, and the grate-bars H, which are supported upon the rings B, C, and E, are therefore inclined downwardly toward the center of the grate. These grate-bars are radially disposed and are preferably in two series, one series *d* having inner ends projecting to the center of the grate, so that they nearly meet, and the other series *e* being interposed between the long bars *d* and made shorter, as shown, the two series of bars having tapered inner ends to provide the necessary space for the movement of said ends. Each of the bars *d* and *e* has formed upon its under surface at points inside of its inner and outer ends the L-shaped lugs K, which are designed to be passed through the radial openings *c* in the inner fixed ring and outer movable ring, so that the horizontal flanged portions of the lugs will pass under the fixed rings B and C and serve as guides for the oscillating movements of the grate-bars, and also as means for securing the grate-bars in position.

The slotted guide G on the exterior of the stove-casing, and through which the handle or lever of the movable ring E passes, is provided with a pivoted latch L, whose free end is formed with a stop M for limiting the movement of the lever, and thereby regulating the size of opening in the center of the grate.

From the foregoing description it will be seen that when the parts are in the positions shown in Fig. 1 the grate-bars are radial, and the central opening between their inner ends is contracted; but when the free combustion of the coal is impeded by the accumulation of clinker, slate, or other objectionable material the lever or handle F is moved sidewise back and forth, thereby oscillating the movable ring which carries the outer ends of the grate-bars and causing said bars to turn upon the inner L-shaped lugs, (which latter serve as pivots,) so that the inner ends of the bars move away from the center of the grate and assume the positions shown in Fig. 2, thereby increasing the size of the opening at the center of the grate and permitting the free discharge of any foreign matter which

may rest thereon. By inclining the bars toward this opening the more rapid and successful displacement and discharge of the clinker or other material are provided.

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

1. In a grate, the fixed movable rings having openings therein and the downwardly-inclined grate-bars tapered at their inner ends and provided on their under surfaces, at points inside of the inner and outer ends thereof, with L-shaped lugs adapted to pass through said openings in the rings, whereby the bars are held in position, and a lever on the movable ring for rocking the bars, substantially as herein described.

2. In a grate, an inner fixed ring having openings in its periphery, an outer fixed ring in a higher plane than the inner ring, and arms or lugs joining the two rings and forming a support for the same, in combination with a movable ring exterior of the outer fixed ring, having openings in its inner periphery, a handle projecting from said movable ring for oscillating it, and the downwardly-inclined grate-bars having L-shaped lugs on their under surfaces adapted to pass through said openings in the fixed and movable rings, whereby the grate-bars are secured in position, substantially as herein described.

OLE PEDERSON.

Witnesses:
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