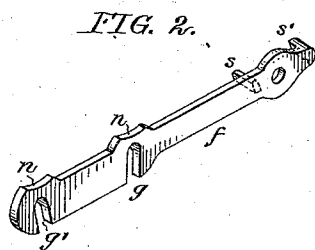
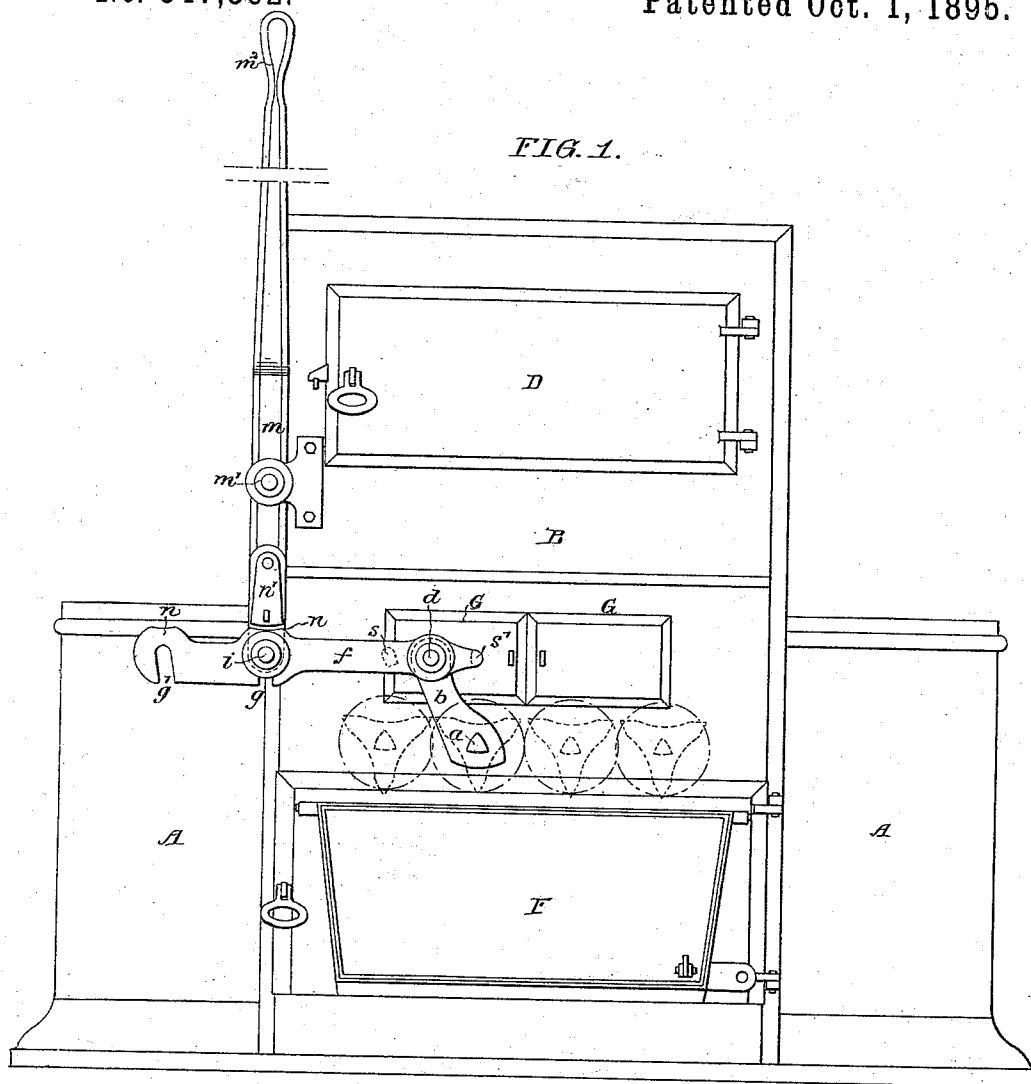


(No Model.)

F. L. SHEPPARD.
GRATE OPERATING MECHANISM.

No. 547,362.

Patented Oct. 1, 1895.



Witnesses:

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UNITED STATES PATENT OFFICE.

FRANKLIN L. SHEPPARD, OF PHILADELPHIA, PENNSYLVANIA.

GRATE-OPERATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 547,362, dated October 1, 1895.

Application filed April 8, 1895. Serial No. 544,927. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN L. SHEPPARD, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Grate-Operating Mechanism, of which the following is a specification.

My invention relates to operating devices for that class of furnace-grates which consist of a series of grate-bars located side by side and geared together, so that movement imparted to one of them will be transmitted to the others, the object of my invention being to so connect the primary grate-bar—that is to say, the one to which power is directly applied—with the operating-lever that the manipulation of the latter may be caused to effect either a shaking of the grate for the purpose of agitating the fire and shaking down the ashes or a tilting of the grate-bars to such an extent as to dump the contents of the fire-pot into the ash-pit.

In the accompanying drawings, Figure 1 is a view of part of the base-section and front plate of a furnace provided with a grate and grate-operating mechanism in accordance with my invention; and Fig. 2 is a perspective view of a link, whereby the arm on the grate-bar is connected to the operating-lever. A represents the lower section of the casing of the furnace, and B the front plate, having the usual feed-door D, ash-pit door F, and poke-hole doors G.

The grate consists of a series of triangular bars, (shown by dotted lines in Fig. 1,) these bars being connected by suitable spur-wheels, (represented by dotted circles in Fig. 1,) so that when one bar is turned or partly turned corresponding movement will be imparted to the other bars of the series. The bar to which power is directly applied has a spindle *a*, projecting through the front plate of the furnace and having detachably mounted upon the outer end an arm *b*, the upper end of which is pivoted by means of a detachable pin *d* to one end of a link *f*, which has two notches *g* and *g'*, one near the outer end of the link and the other some distance inward therefrom. Either of these notches is adapted for the reception of a pin *i*, carried by the lower or short arm of a lever *m*, which is hung to a bracket *m'* on the front plate, the upper or

long arm of the lever terminating in a suitable handle *m²*, so that the lever can be readily vibrated.

Directly above each of the notched portions of the link *f* is a curved seat *n*, with which is adapted to engage a pivoted latch *n'*, hung to the lower arm of the lever *m*, so as to maintain either notch in engagement with the pin *i* of the lever, the latch being readily swung to one side or the other when it is desired to lift the link *f*, so as to free its notch from engagement with the pin *i*. Ordinarily the parts are adjusted to the position shown in Fig. 1, the inner notch *g* engaging with the pin *i*, and the vibration of the lever *m* under these circumstances simply effects a rocking of the grate-bars sufficient to agitate the mass in the fire-box and shake down the ashes therefrom; but when it is desired to dump the contents of the fire-box into the ash-pit the latch *n'* is swung to one side and the link *f* and lever *m* are manipulated, so as to shift the pin *i* of the lever from the inner notch *g* to the outer notch *g'*, whereupon said lever *m* can be so moved as to cause a more extended rocking movement of the grate-bars and a discharge of the contents of the fire-box into the ash-pit.

Excess of movement of the grate-bars in either direction is prevented by reason of lugs *s s'*, formed on the inner side of the link *f*, on opposite sides of the opening formed in said link for the reception of the pin *d*, whereby it is pivoted to the outer end of the arm *b*, the lug *s* coming into contact with the arm when the link *f* reaches the limit of its movement in one direction and the lug *s'* coming into contact with the arm when the link reaches the limit of its movement in the opposite direction. Instead of providing the link *f* with two notches for engagement with the pin of the lever said link may be hung to the lever and provided with two notches for engagement with the pin on the arm *b*; but the construction shown is preferred because of the greater convenience which it affords for the use of the retaining-latch *n'*.

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

1. The combination of a rocking grate bar having a spindle with a projecting arm, an

operating lever for said bar, and a link connecting said lever and arm, with means for connecting the lever to the link at two different points at such distance apart as to cause
5 the operating lever to either shake the grate bar or dump the same, substantially as described.

2. The combination of a rocking grate bar having a spindle with projecting arm, an operating lever for said bar, and a link hung to
10 the outer end of the arm and having notches at different distances from the point of connection between the link and the arm, either of said notches being adapted to engage with
15 a pin or projection on the operating lever, substantially as specified.

3. The combination of a rocking grate bar having a spindle with projecting arm, an operating lever, a link hung to one of said parts
20 and having two notches, either of which is

adapted to engage with a pin or projection on the other part, and a swinging latch whereby the notched portion of the link is prevented from becoming disengaged from
said pin or projection, substantially as specified.

4. The combination of a rocking grate bar having a spindle with projecting arm, an operating lever for said bar and a link connecting the lever and arm, said link having
30 projecting lugs which, by contact with the arm, serve to limit the movement of the link in either direction, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of
35 two subscribing witnesses.

FRANKLIN L. SHEPPARD.

Witnesses:

FRANK E. BECHTOLD,
JOSEPH H. KLEIN.