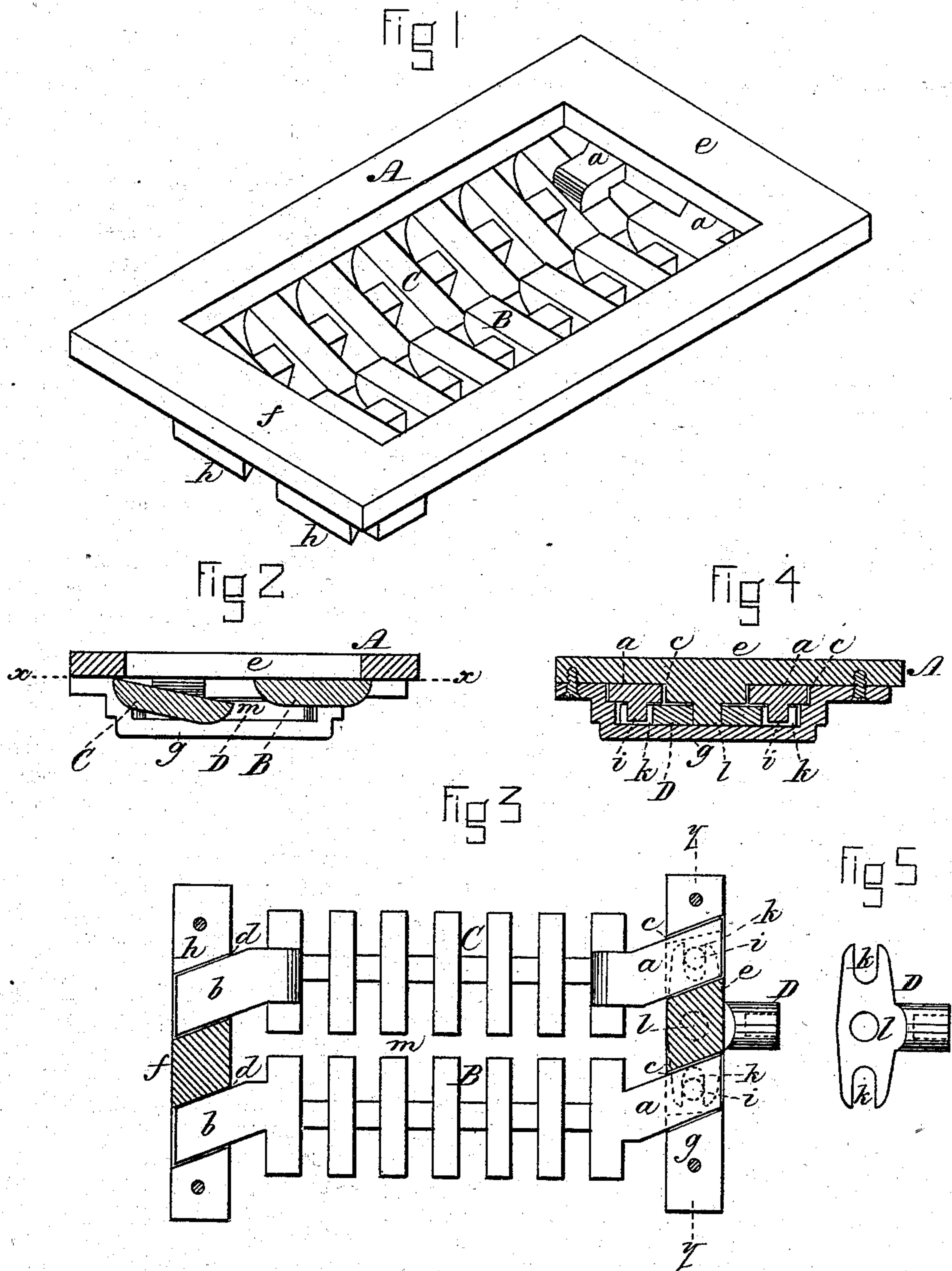


(No Model.)

F. O. HART.
GRATE FOR STOVES AND FURNACES.

No. 274,938.

Patented Apr. 3, 1883.



WITNESSES
W. J. Cambridge
Char. E. Griffin

INVENTOR
Fred O. Hart
per J. E. Schenck

UNITED STATES PATENT OFFICE.

FRED O. HART, OF WAKEFIELD, MASSACHUSETTS, ASSIGNOR TO HIMSELF
AND ERASTUS D. WESTON, OF SAME PLACE.

GRATE FOR STOVES AND FURNACES.

SPECIFICATION forming part of Letters Patent No. 274,938, dated April 3, 1883.

Application filed January 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, FRED O. HART, a citizen of the United States, residing at Wakefield, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Grates for Stoves and Furnaces, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a stove-grate constructed in accordance with my invention. Fig. 2 is a transverse vertical section through the center of the same. Fig. 3 is a horizontal section through the same on the line *xx* of Fig. 2. Fig. 4 is a transverse vertical section on the line *yy* of Fig. 3. Fig. 5 is a detail.

My invention has for its object to facilitate the withdrawal of clinkers from the grate of a stove or furnace and prevent it from becoming clogged or obstructed thereby; and my invention consists in a grate composed of two separate sections or portions which are adapted to be reciprocated by suitable mechanism, and are provided at their opposite ends with inclined lugs or projections fitting into correspondingly-inclined slots or guides in the frame of the grate, whereby as the sections are reciprocated they are also caused alternately to approach and recede from each other in such a manner as to retain their parallelism, this compound movement of the two sections causing the clinkers to be crushed or broken up and discharged through the space or opening between them.

My invention also consists in inclining one of the sections of the grate at an angle to a horizontal plane, so that its inner edge will be below the inner edge of the opposite section, whereby the discharge of the clinkers is facilitated and an opportunity afforded to insert a bar or poker from beneath between the two sections, to dislodge any clinkers which may not roll freely down the surface of the inclined section of the grate; and my invention also consists in certain details of construction, as hereinafter set forth and specifically claimed.

In the said drawings, A represents the frame of the grate, within which is placed the grate

composed of two separate and independent sections or portions, B C, of the form shown in Figs. 1 and 3. Each of these sections is provided at its opposite ends with lugs or projections *a b*, which are inclined one to the right and the other to the left, as seen in Fig. 3. These inclined projections *a b* are adapted to slide within correspondingly-inclined slots or guides *c d*, formed, respectively, at the ends *e f* of the frame A, between the underside thereof and the straps or pieces *g h*. On the under side of each of the projections *a a* is a pin, *i*, which fits into an open slot, *k*, in one of the branches of a T-shaped lever or rocker, D, which is centrally pivoted at *l*, and is provided at its outer end with a socket (seen dotted) adapted to receive the end of a bar or shaker, and thus as the lever D is rocked on its center the two sections B C are alternately reciprocated in opposite directions, and at the same time, by reason of the projections *a b*, sliding within their inclined guides, caused to move away from and toward each other in such manner as to retain their parallelism. The rear section, C, of the grate is inclined downward toward the front, or at an angle to a horizontal plane, as seen in Figs. 1 and 2, so that its inner edge will be below the inner edge of the section B, the latter slightly overlapping when the two sections are nearest to each other.

It will be apparent that the inclination of the section C will cause the clinkers to roll down to and be discharged from the longitudinal space or opening *m* between the sections when the latter are reciprocated as above described, while the parallel motion of the sections toward and from each other will cause any clinkers too large to pass through the space *m* to be crushed or broken between the two inner edges of the sections as the width of the space *m* between them is alternately increased and diminished, and their escape thus facilitated, whereby the liability of the bars becoming clogged or obstructed is reduced to a minimum, and a perfect anti-clinker grate is thus secured. Another great advantage resulting from the inclination of the rear section, C, is that it affords a convenient opportunity to insert from beneath the grate a poker or bar at such an angle as to en-

able it to reach over the entire upper surface of the inclined section C, and thus dislodge or pull out any clinkers which may have become wedged in place or otherwise prevented from escaping through the space *m*.

My invention may be applied to circular, oval, or other forms of grates, as well as to those of rectangular form.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A grate composed of two separate sections adapted to be reciprocated horizontally, and adapted to have a parallel motion toward and from each other alternately, substantially as and for the purpose set forth.

2. A grate composed of two separate sections adapted to be alternately reciprocated in opposite directions, and provided at their opposite ends with inclined lugs or projections fitting into correspondingly-inclined slots or guides in the frame of the grate, whereby as the sections are reciprocated they are caused alternately to approach and to recede from each other in such manner as to retain their parallelism, substantially as and for the purpose described.

3. A grate composed of two separate sec-

tions, B C, having a compound reciprocating and parallel motion toward and from each other, as described, and with the rear section, C, inclined downward, so that its inner edge will lie below the inner edge of the opposite section, whereby the discharge of clinkers from the space *m* between the sections is facilitated, substantially as and for the purpose set forth.

4. The combination, with the frame A, of the two separate sections B C, provided at their opposite ends with inclined lugs or projections *a b*, adapted to slide within correspondingly-inclined slots or guides *c d* in the frame A, and having a parallel motion toward and from each other, as described, and the T-shaped lever or rocker D, pivoted at *l*, and connected with the sections B C by means of pins *i* and slots *k*, and adapted to reciprocate the sections alternately in opposite directions, substantially as and for the purpose set forth.

Witness my hand this 17th day of January, A. D. 1883.

FRED O. HART.

In presence of—

P. E. TESCHEMACHER,
W. J. CAMBRIDGE.