G. CHILSON.

Grate.

No. 2,246. Patented Sept. 11, 1841.

Fig: 1.

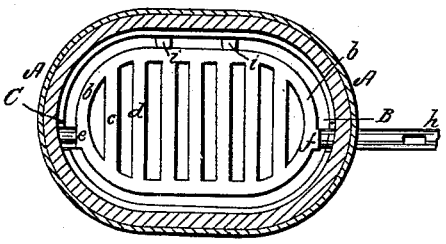


Fig: 3.

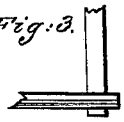
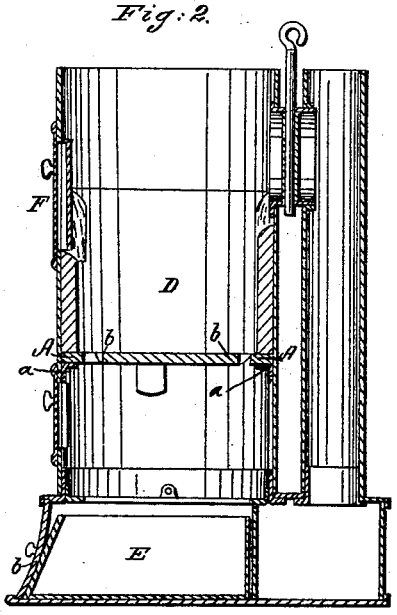


Fig: 2.



UNITED STATES PATENT OFFICE.

GARDNER CHILSON, OF BOSTON, MASSACHUSETTS.

METHOD OF CONSTRUCTING AND ARRANGING THE GRATES OF STOVES.

Specification of Letters Patent No. 2,246, dated September 11, 1841.

To all whom it may concern:

Be it known that I, GARDNER CHILSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in the Manner of Supporting and Arranging Grates in Stoves, Furnaces, and Generally in All the Varieties of Apparatus in Which Grates are Used, and that the following is a full and exact description of the same, reference being had to the accompanying drawings, which will be hereinafter described and which, taken in connection herewith, composes my specification.

In said specification I have set forth the principles of my improvement, by which it may be distinguished from other inventions of a similar character, and such parts or combinations as I claim to be my invention and for which I solicit an exclusive property for fourteen years to be secured to me by Letters Patent.

The figures of the accompanying plate of drawings represent my improvement.

Figure 1, is a plan of the grate and frame, on which it is supported, and Fig. 2, is a transverse vertical section of what is usually called the "column grate or stove," showing the application of my improvement to the same, and Fig. 3 is a detail view.

A A is the frame on which the grate rests, being of the oval or elliptical shape represented in Fig. 1, or having any other form which may be desirable or applicable to the apparatus in which it is to be arranged. On the ends of this frame are formed the gudgeons or bearings B, C, the bottoms of which project considerably below the underside of the frame. These gudgeons are not formed in the center of the sides of the frame, but on the side of the same, that is, so that a line drawn through the center of these gudgeons will not coincide with, but be apart from some distance and parallel with the conjugate axis of the elliptic frame. The frame rests on suitable supports *a*, *a*, &c., projecting from the inside of the stove as shown in Fig. 2 just above the ash box.

The grate *b*, *b*, is somewhat smaller, in the dimensions of its transverse and conjugate diameters, than the frame, leaving a space between the exterior or periphery of the former, and the interior of the latter, about equal, to that between two of the adjacent bars *c d* of the grate as shown in Fig. 1.

Each end of the grate has a journal *e* or *f* cast on or attached to the underside of the same to prevent them from being burnt out. These journals are arranged on the ends of the grate, in the same position, relative to the conjugate axis or center line of the grate, as the gudgeons are to the axis of the frame. The journals rest so deeply in the gudgeons of the frame, as to bring the surface of the grate upon a level, or in the same plane with the top surface of the frame. One of the journals, viz, *f* is longer than the other and has a collar *j*, to prevent the grate from sliding much or moving from its position. This journal passes through a suitable hole in the side of the stove, and has a slot or mortise *h* in which a lever may be inserted, as shown in Fig. 3, for vibrating or shaking the grate, the edge of the greater or heavier side of said grate resting on the projections *i i* from the lower side of the frame. From the above specified arrangement of the grate and frame it will be seen that the former will rest firmly on the latter whether the stove is empty or filled with fuel, and that when, by means of the lever, applied as above mentioned, the grate is vibrated, and made from time to time to impinge upon the projections *i i* it effectually and speedily sifts the ashes from the coal or other fuel, and if the grate is turned so as to be vertical the fuel will be removed from the same, as will be seen by an inspection of Fig. 2. The above operation can be accomplished when the stove is entirely closed, thereby preventing the ashes from passing into the apartment.

In Fig. 2, above mentioned, D represents the fire box and E the ash box, said boxes having their doors at F G, respectively, the precise arrangement of these and other parts not noted above, being no portion of my invention need not be particularly described, as they will be sufficiently understood by an examination of the figure.

It may be observed in addition to what has been above stated, that by my improvement, the use of a poker in cleaning the ashes from the fuel, is entirely superseded, as is also that of a pin or button in supporting the grate.

Having thus described my improvement, I shall claim as my invention extending one of the journals of the grate through to the outside of the stove, and by means of a lever inserted therein in combination with the

projections above mentioned obtaining an easy process by which the ashes may be shaken or sifted from the coal, and the coal may be removed from the grate, while the same is entirely closed, the whole being constructed and operating substantially as above specified.

In testimony that the above is a true description of my said invention and improvement, I have hereto set my signature this second day of July, in the year eighteen hundred and forty one.

GARDNER CHILSON.

Witnesses:

R. H. EDDY,

EZRA LINCOLN, Jr.