

(No Model.)

C. F. HUTCHINSON.
GRATE FOR STOVES, FURNACES, OR RANGES.

No. 509,224.

Patented Nov. 21, 1893.

Fig 1.

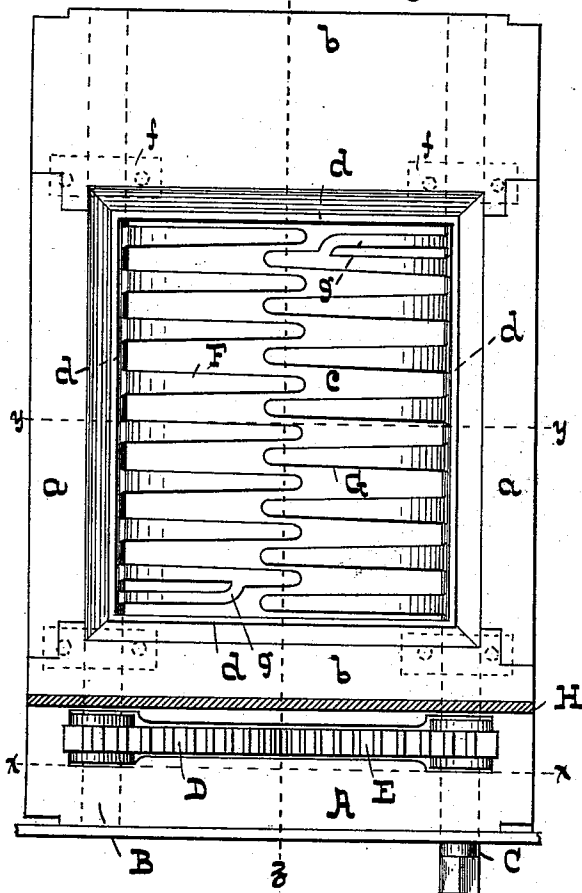


Fig 4.

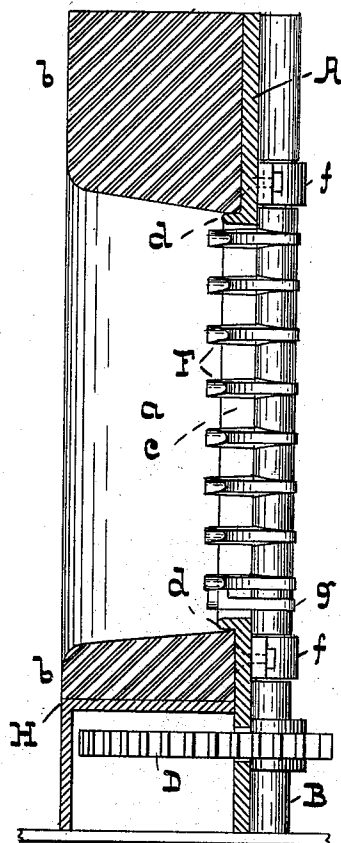


Fig 2.

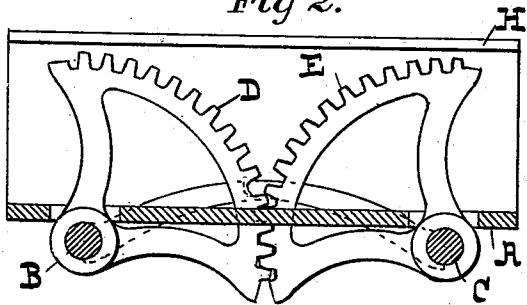
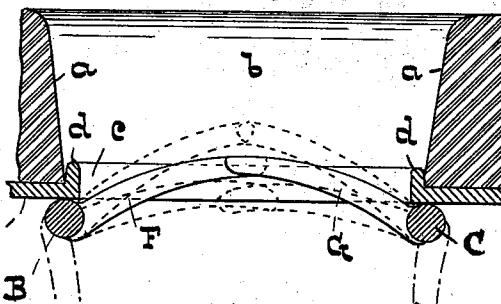


Fig 3.



-WITNESSES-

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UNITED STATES PATENT OFFICE.

CHARLES FREDERICK HUTCHINSON, OF BALTIMORE, MARYLAND.

GRATE FOR STOVES, FURNACES, OR RANGES.

SPECIFICATION forming part of Letters Patent No. 509,224, dated November 21, 1893.

Application filed April 7, 1893. Serial No. 469,418. (No model.)

To all whom it may concern:

Be it known that I, CHARLES FREDERICK HUTCHINSON, of the city of Baltimore and State of Maryland, have invented certain Improvements in Grates for Stoves, Furnaces, or Ranges, of which the following is a specification.

In the description of the said invention which follows, reference is made to the accompanying drawings forming a part hereof, and in which—

Figure 1 is a top view of the improved grate and certain parts of the stove connected therewith. Fig. 2 is a section of Fig. 1 taken on the dotted line $x-x$. Fig. 3 is a section of Fig. 1 taken on the dotted line $y-y$. Fig. 4 is a section of Fig. 1 taken on the dotted line $z-z$.

In the said drawings, A is the base plate of the stove grate, on which the side and end fire bricks, a and b are seated. The ordinary grate opening c in the said plate has a small flange d around it which protects the lower edge of the fire bricks a and b .

B and C are shafts or spindles situated under the plate A, supported by means of bearing straps $f f$. One of the said shafts, C, extends beyond the front edge of the plate A, and is made square in cross section to admit of the application thereto of a shaking lever not shown, as will hereinafter more fully appear.

D and E are toothed segments, secured in any suitable manner to the shafts B and C, and in gear with each other, as shown. By means of this construction, any vibratory movement of one shaft is communicated to the other, as will be readily understood.

F and G are curved grate bars or fingers, projecting from the shafts B and C, and arranged to interlock without touching. See Fig. 1. The last finger in each series beginning at the front with one set, and at the rear with the other, has a side projection g to reduce the space between the finger and the inner edge of the plate A. See Fig. 1. The fingers F when in their normal position, or in use as supporting the contents of the fire

box, are curved upward and extend above the plate A. This arrangement gives a larger surface of fire exposed to the air below and at the same time they are in the best position to resist the weight of the coals.

It is an angular covering plate for the toothed segments. This plate is erected on the plate A and forms a box in which the toothed segments are inclosed. See Fig. 4.

To shake the fire to expel the ashes, the shaft C is rapidly vibrated by means of the lever before alluded to as applied to the square end of the shaft C, which causes a simultaneous vibration of the fingers or their movement from the position indicated by the full lines shown in Fig. 3 to that represented in their dotted delineation in the same figure, and back.

To dump the contents of the fire box, it is only necessary to turn the lever until the fingers pass to the position illustrated by the broken lines in Fig. 3. When the fingers are in this last named position there is no obstruction to the discharge of the contents of the fire box owing to the shafts being entirely outside of the opening in the plate A.

From the foregoing description it will be seen that the shafts B and C being below the plate A and exterior of the opening therein, are protected from the influence of the fire and therefore cannot become warped by heat, and that the toothed segments D and E are inclosed in a box which prevents their becoming clogged with dust and ashes.

I claim as my invention—

In combination with a stove grate base plate having the usual grate bar opening, two vibratory shafts hung beneath the said plate and situated exteriorly of the grate opening, the said shafts having upwardly curved interlocking fingers which form the grate and toothed sectors whereby the said shafts carrying the fingers may be vibrated, substantially as specified.

CHARLES FREDERICK HUTCHINSON.

Witnesses:

CHARLES LOUIS JUSTI,
HENRY HAMMOND.