(No Model.)

A. JAHANT.

GRATE FOR FURNACES OR STOVES.

No. 528,165. Patented Oct. 30, 1894.

Fig. 1.

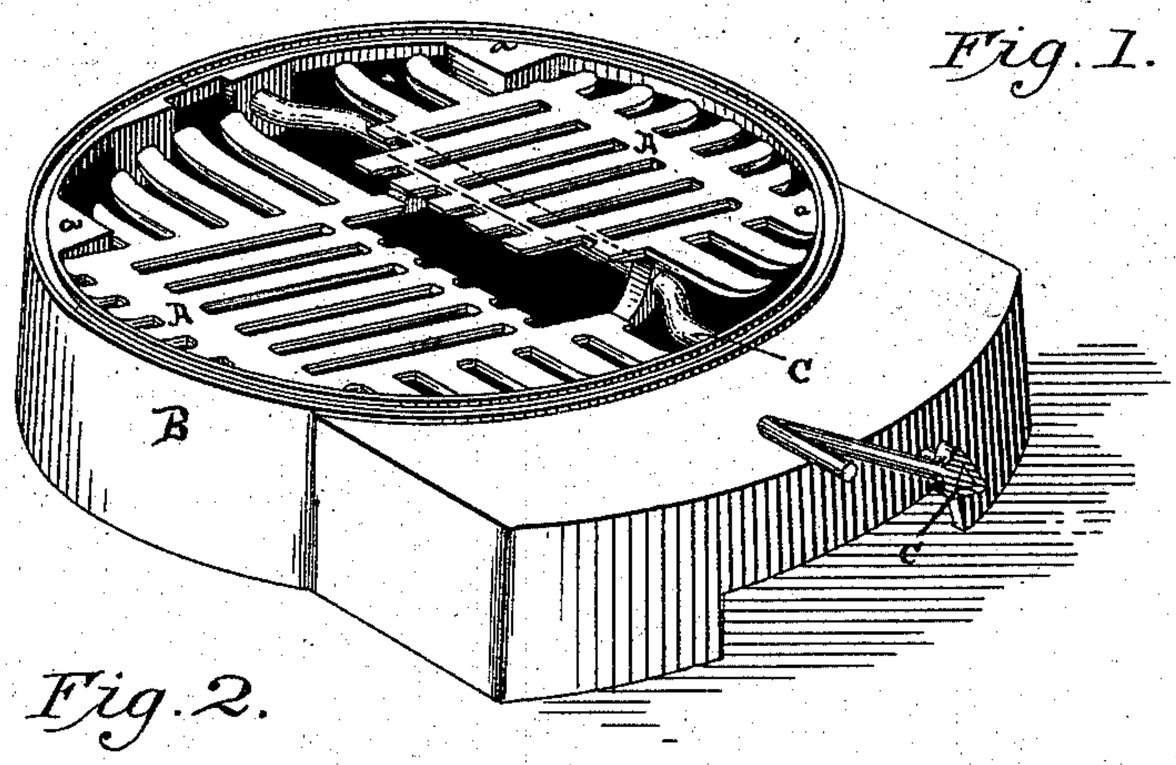


Fig. 2.

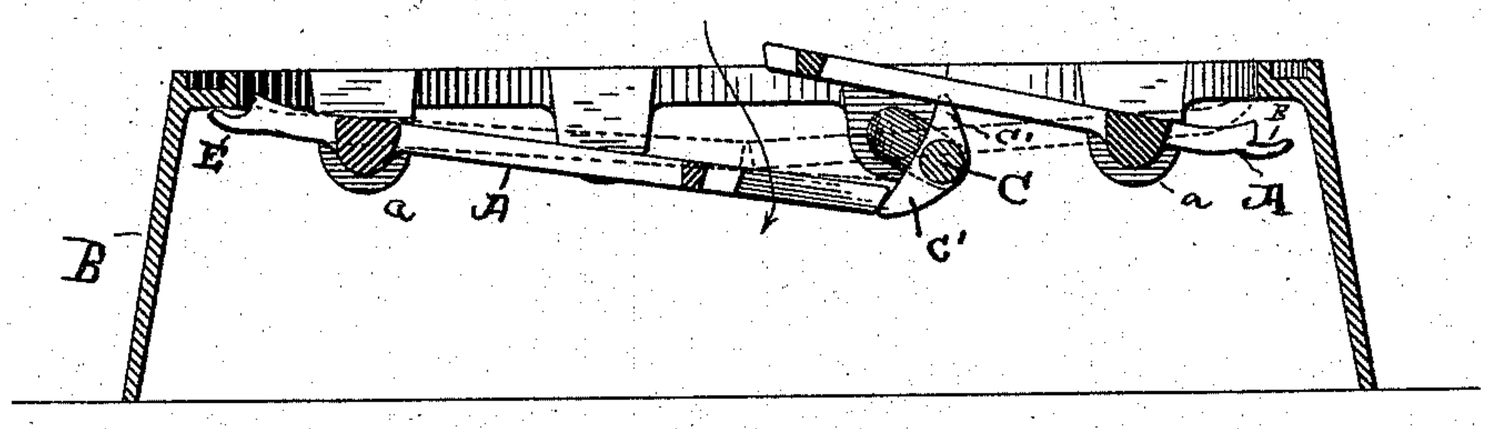


Fig. 3.

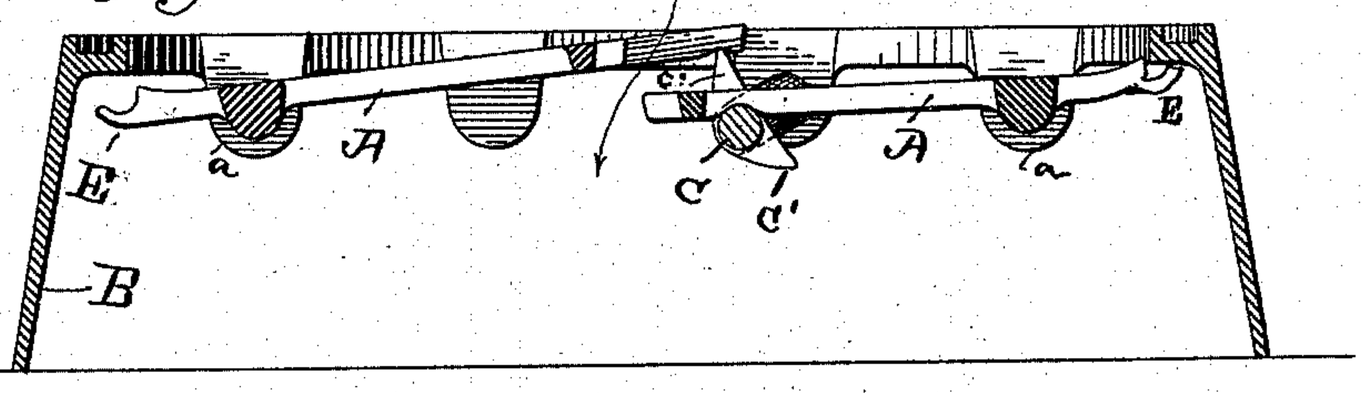
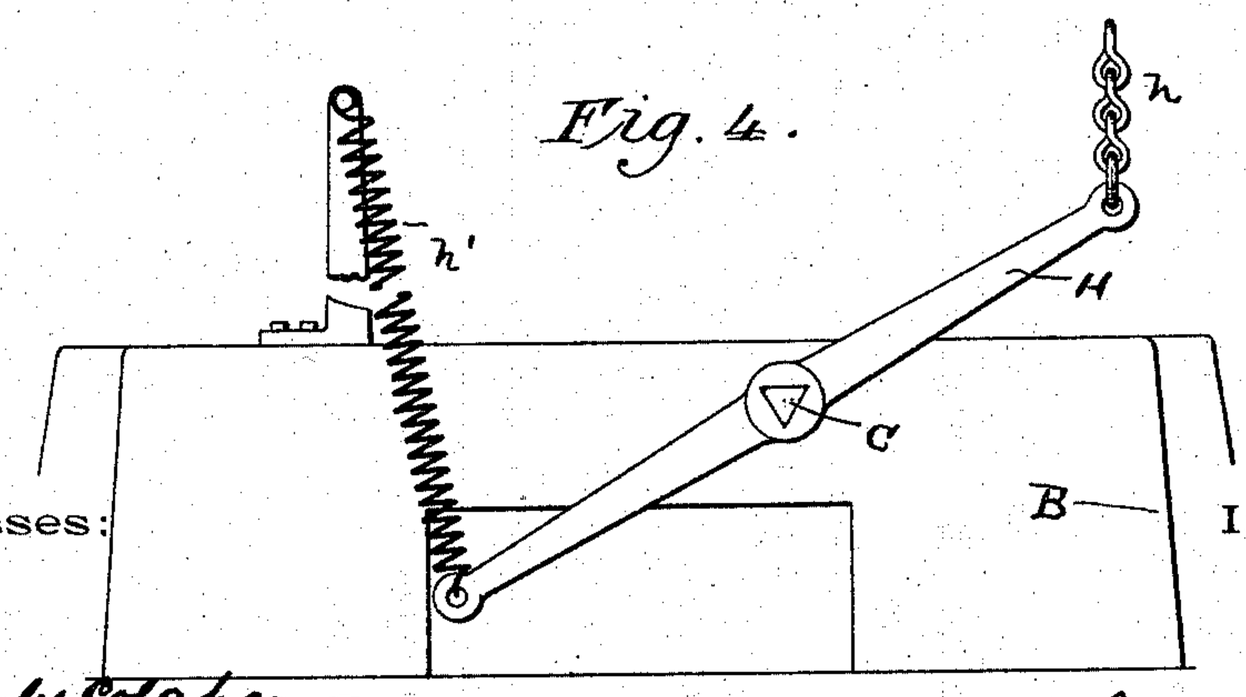


Fig. 4.



Witnesses:

Charles Colahan

Sidney P. Hollingsworth

Inventor.

Augustus Jahant

UNITED STATES PATENT OFFICE.

AUGUSTUS JAHANT, OF AKRON, OHIO, ASSIGNOR OF ONE-HALF TO JOHN C. WEBER, OF SAME PLACE.

GRATE FOR FURNACES OR STOVES.

SPECIFICATION forming part of Letters Patent No. 528,165, dated October 30, 1894.

Application filed March 16, 1894. Serial No. 503,943. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS JAHANT, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Grates for Furnaces or Stoves, of which the following is a specification.

The nature of the invention consists in the novel construction, as hereinafter specified, which enables me to attain to the operation desired to secure perfect combustion of coal and a steady, reliable fire, that is not liable to go out, and burns without producing clinkers, thereby securing full benefit of the coal and great economy in quantity required.

In the accompanying drawings, Figure 1 is a perspective view of the grate and ash-pit. Fig. 2 is a vertical sectional view, taken transversely to the grate sections and rocking shafts, about midway of the grate; Fig. 3, a similar view to Fig. 2, showing the movable parts in a different position; and Fig. 4, is a side elevational view of the operating mechanism.

The base or frame of the furnace, usually termed the ash-pit or frame, has pivoted therein two vibratory grates supported on or near the center by a free and independent rocking or vibrating crank supporting bar also pivoted in bearings one on each side of the base frame, or ash-pit. This vibrating, or rocking, and grate supporting bar is also provided with projecting lugs, or their equivalent, on each side that alternately raise and lower the grate sections, as the supporting bar is caused to rock or vibrate to the right or left by its hand actuating crank lever, as shown in Figs. 2 and 3 of the drawings or a centrally pivoted actuating lever, also used for this purpose, at one end of which is attached a chain, extending to a room above, that may be pulled upwardly, and when it is let go to permit it to drop, a spring at the other end of the lever will raise that end, and thereby vibrate the rocking lever, or a vertically moving rod may be substituted for the chain to rock the lever, and when the lever or bar is turned in one direction the supporting bar and its projecting lugs, or their equivalent, will be brought in contact with the under side of the grate and cause that section of the grate to rise and thereby lift the coal fire resting upon it, while the other side resting on the projecting lugs of the other side of the rocking supporting bar, is permitted to fall with the coal fire resting thereon, and thus each half of the fire in the furance fire-pot is caused to alternately rise and fall to loosen and shake or jar off the ashes throughout the mass, and the ashes will all fall downwardly and sift through the grate bars, and should there be any noncombustible substance or clinkers on the grate bars a hook may be inserted between the grates, to remove the same, by turning it to either side. As the rocking bar is turned with its crank portion horizontal, the cam surface will be vertical, one portion of the grate being raised and supported by the cam surface above the other portion which is permitted to fall and is locked by means of the lug E coming in contact with the grate supporting frame which makes an opening between the grates to admit the removal of the clinkers. Ordinarily the action of the grate sections at the center breaks or discharges the clinkers in a horizontal direction through the opening without liability of clogging the grate or discharging live coals.

In the drawings, A A represent the grate sections; B, the ash-pit or base-frame of the furnace; C, the rocking grate supporting bar. C′, the lugs secured on the side of the grate supporting bar C; *a*, the journal bearing of the pivots of the grate bars; *h*, the lifting chain, and *h′* its reacting spring, of the centrally pivoted actuating lever. E is the locking grate lug.

There is great advantage in the use of the free rocking grate supporting bar and its projecting lugs, or their equivalent, for supporting and agitating the pivoted grate sections. It requires very little power to rock the crank for the purpose of raising and lowering the grate sections, and thoroughly agitating and disturbing the entire mass of coal fire, at the same time to dislodge the ashes throughout the fire pot, and thus insure perfect combustion of all the coal, thereby producing more heat from the same quantity of coal, and preventing the formation of clinkers, or liability of the fire dying out until the coal is entirely

consumed. I find by use of this construction of grate, that I can save one third of coal ordinarily used in the old-fashioned grates. There is another great advantage in constructing and operating this form of grate—in the fact that it is not liable to clog or obstruct by clinkers or coal, and is always free to rock easily and assume its proper normal position the moment the free rocking bar is released from the hand operating crank.

It will be observed that the outer grate bars are curved upwardly and no obstruction can get under them between the outer ends and the furnace frame. The central tooth of the grate is provided with a lug E that extends under the frame, so that the grate when inclined downwardly towards the center is locked by said lug, as it comes in contact with said frame, which prevents its falling lower than shown in the drawings.

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

The combination of the grate frame, the sections A with their limiting lugs E E co-operating with the grate frame and the rocking or vibrating crank shaft with its cam surfaces operating substantially as shown and described.

AUGUSTUS JAHANT.

Witnesses:
CHARLES COLAHAN,
M. HANSON COLAHAN.