(No Model.)

W. NEWBURN.

FIRE GRATE.

No. 354,567. Patented Dec. 21, 1886.

Fig. 1.

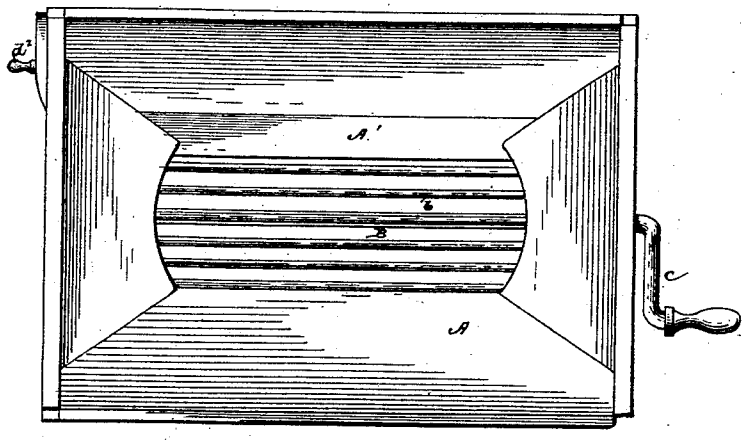


Fig. 2.

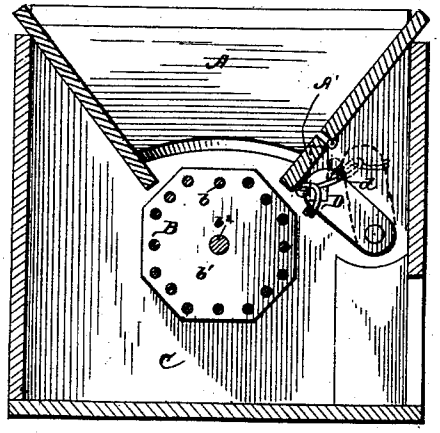


Fig. 4.

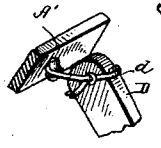
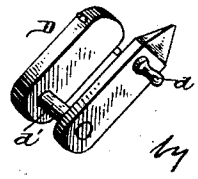


Fig. 3.



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UNITED STATES PATENT OFFICE.

WALTER NEWBURN, OF THE UNITED STATES ARMY.

FIRE-GRATE.

SPECIFICATION forming part of Letters Patent No. 354,567, dated December 21, 1886.

Application filed May 26, 1886. Serial No. 203,283. (No model.)

To all whom it may concern:

Be it known that I, WALTER NEWBURN, hospital steward, United States Army, (of Westchester, stationed at Fort Schuyler, in the county of Westchester and State of New York,) have invented certain new and useful Improvements in Fire-Grates; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention pertains to improvements in fire-grates for stoves; and it consists in the detailed construction, combination, and arrangement of the parts, substantially as hereinafter fully set forth, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a plan view of my improved fire-grate as applied to the fire or combustion chamber of a stove. Fig. 2 is a cross-section thereof looking toward the securing or propping button of the hinged section or portion of the fire or combustion chamber, showing in dotted lines the hinged section swung or let down as in practice in removing the cinders. Fig. 3 is a detail view of the button or arm for operating the hinged plate or section of the combustion or fire chamber, and Fig. 4 is a detail view showing the button as secured to the hinged plate or section.

In the organization of my invention I employ, in connection with a fire or combustion chamber, A, of a stove, preferably of the form or construction herein shown and presently more fully described, the rotatable grate B, which latter is composed of series of longitudinal spaced-apart rods or bars *b*, secured to end plates or heads, *b'*, having a central shaft, b^2, with its ends projecting about centrally therefrom and bearing or journaled in the end walls of the ash chamber or pit C. One of the ends of said shaft is formed outside of the end wall of the ash chamber or wall with a crank or handle, *c*, for rotating or operating the grate.

The several series of grate rods or bars *b* of which the grate is composed are so disposed as to contribute in their entirety or outline a geometrical figure or body—as, for instance, (as in the present example,) an octagon, or it may have any other polygonal form or shape—the idea being to provide a suitable resting or horizontal supporting surface for the fuel when undisturbed, and at the same time to permit of the fuel receiving an agitating or poking action from the grate itself, which twofold result, it is obvious, is obtained by my grate, since any one side of this grate serves as the grate proper when at rest, while upon turning it to right or left the angles thereof will poke or open up the incandescent mass of fuel in combustion, and thus agitate and separate therefrom the formed or accumulating ashes.

The combustion or fire chamber A, before alluded to, which preferably has its sides and ends sloping or inclined downward, and centrally of the said chamber and toward the grate B, is provided in one side with a lower hinged plate or section, A', which forms a part of the combustion or fire chamber itself. This plate or section is secured or propped in place by means of the button or arm D, having one end in contact therewith and connected thereto, it may be, by any suitable means—as, for instance, by a wire, *d*—encompassing and held upon the button or arm by a headed stud or pin, and connected to a headed projection or pin upon said plate or section, the object of said wire being to connect the button with the said hinged plate or section to effect the dumping and propping in position of said plate or section when operated through means of said button. The opposite end of the arm or button D is fixed to a short shaft, *d'*, bearing or journaled in the end wall of the ash chamber or pit B, and having a handle or finger-piece, d^2, applied or secured to its outer end, outside of the said chamber, for manipulating said button in operating or letting down and returning to its place the hinged plate or section A', which, as will be readily understood, is dropped to dump or remove the cinders from the fire or combustion chamber in cleaning the same, after which latter performance the cinders can be returned to the said chamber for reuse as fuel.

From what has been deduced it will be seen that the operation of separating the ashes from and opening up the incandescent mass

or fuel, giving it the required or increased draft to promote combustion, can be performed with great facility and thoroughness, as can also the operation of dumping or removing from the combustion-chamber the cinders, whereby a great saving in fuel can be effected, while the use of a poker, which is greatly inconvenient, irksome, and ineffectual as compared to the action of my grate in securing the end desired, is wholly dispensed with.

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

The fire or combustion chamber having the downwardly and centrally sloping sides and ends, one of which sides is provided with a hinged section or plate, in combination with the button or arm fixed to a handled shaft, and securing or propping the said plate or section in place, and the rotatable polygonal grate, with its shaft journaled in the ash bin or chamber and provided with a handle or crank, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WALTER NEWBURN.

Witnesses:
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