J. H. GOODFELLOW.

Stove.

No. 209,558. Patented Nov. 5, 1878.

FIG. 1.

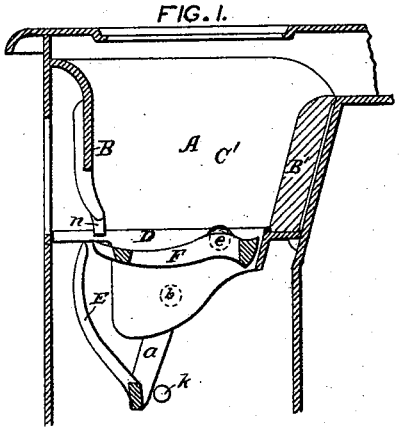


FIG. 2.

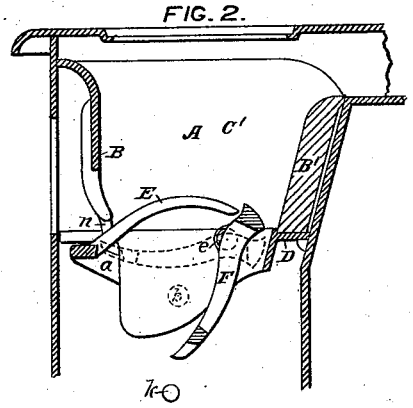


FIG. 3.

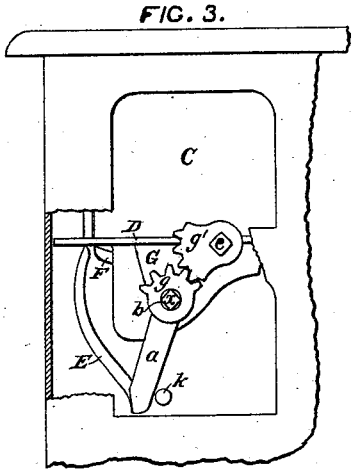


FIG. 4.

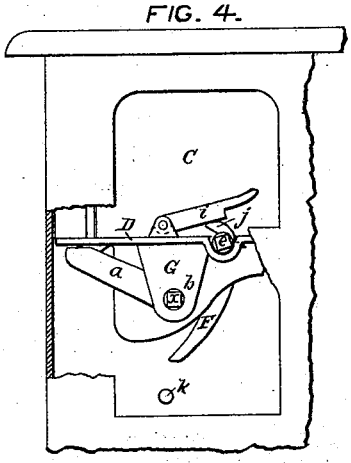
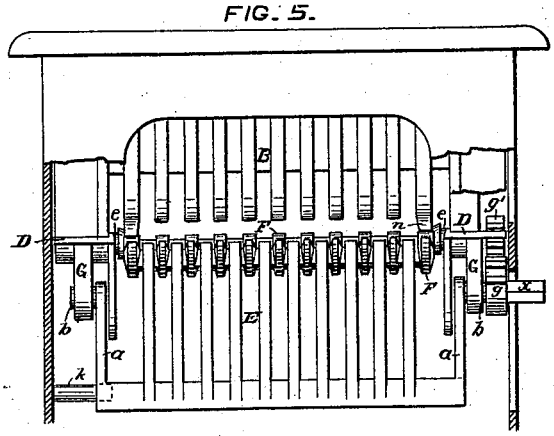


FIG. 5.



ATTEST:

James H. Slade,
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INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN H. GOODFELLOW, OF TROY, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO PHILIP F. MILLER, OF SAME PLACE.

IMPROVEMENT IN STOVES.

Specification forming part of Letters Patent No. **209,558**, dated November 5, 1878; application filed April 9, 1878.

To all whom it may concern:

Be it known that I, JOHN H. GOODFELLOW, of the city of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Stoves, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figures 1 and 2 each represent a vertical section of a portion of a cooking-stove crosswise of its fuel-chamber, and in which is shown a portion of my invention in different positions. Figs. 3 and 4 represent a side elevation of a part of a cooking-stove, having a portion of its outer casing broken away to more fully show other parts of my invention at the end and outside of the fuel-chamber. Fig. 5 represents a front elevation of the same, with a part of its casing broken away to show the portions of my invention in the same position as in Figs. 1 and 3.

My invention relates to that class of stoves in which the fuel-chamber is rectangular, or nearly so, in form horizontally; and its principal object is to facilitate in stoves in which it is employed the removal of ashes and clinkers from the lower part of the fuel-chamber in limited quantities, and at such times as it may be desired to renovate the fire thereinabove.

In the aforesaid drawings, in which like characters refer to corresponding parts in the various figures, A is the fuel-chamber, formed by the side walls, B B′, and end walls, C C′, supported on a bed-frame, D, in the usual manner. E is a cut-off, so constructed separate from the fuel-supporting grate F, and arranged and supported in relation to the fuel-chamber A and its fuel-sustaining grate F, as to be free to be moved to and fro through the arc of a circle from a position below and at one side of the said grate F to that across, or partly across, the lower part of the chamber A and above the said grate F, in such a manner that when in this latter position the cut-off E will form a support for the contents of the fuel-chamber above such cut-off, while the ashes and cinders between it and the said grate F are being precipitated into the ash-pit by the removal or dumping of such grate, the quantity of the ashes and cinders thus removed from the chamber A being regulated by the distance the said cut-off in this position and the grate are adjusted to be from each other.

Though the cut-off E, constructed and arranged as shown, may be supported in any suitable manner, so as to be operated between the positions indicated in Figs. 1 and 2, I prefer to so support it by providing its arms *a* with journals *b*, resting in bearings in projections or ears G, fixed to and extending from the under side of the bed-plate D.

Though the fuel-supporting grate F, constructed separate from the cut-off, can be constructed, arranged, and supported in its place in any suitable manner, so as not to interfere with the herein-described action of the cut-off E, I have preferably shown it provided with journals *e* at or near its rear edge, resting in bearings in the ends of the bed-frame D.

In Figs. 3 and 5 one of the journals *e* of the grate F, and one of the journals *b* of the cut-off E at the same end of the fire-box, are shown provided with fixed toothed segments *g g′*, engaging with each other, so that when the cut-off is moved the grate F is also simultaneously moved between the positions shown in Figs. 1 and 2. Thus at one and the same operation, by means of a lever on the shank *x*, or by any equivalent means, the ashes or fuel between said grate and cut-off are precipitated into the ash-pit beneath, while the cut-off advances to support the fuel above it in the chamber A.

Should it be desired to operate the cut-off E and grate F independently of each other, the toothed segments *g g′*, or any device equivalent therefor that may be employed, can be removed or disengaged, and the grate F sustained in its horizontal, or nearly horizontal, position by means of a catch, *i*, engaging with a projection, *j*, on one of the journals *e* of said grate, (see Fig. 4,) or by means of a device equivalent thereto, while the cut-off E is being brought to the position shown in Fig. 2, after which the grate F can be released, to permit the ashes and clinkers between it and the cut-off in this position to fall into a receptacle beneath, and returned to its former horizontal, or nearly horizontal, position pre-

paratory to withdrawing the cut-off E to the position shown in Figs. 1 and 5.

The cut-off E is prevented, when not engaged or connected with the grate F by means of the segments *g g'*, or their equivalent, from falling or passing beyond this position by coming in contact with the projection or lug *k*, or equivalent therefor.

When the cut-off E and grate F are engaged with each other, so as to be operated together conjointly, substantially as shown in Figs. 3 and 5, I prefer to prevent the cut-off E from passing beyond the position, as indicated in Figs. 1, 3, and 5, when withdrawn from the fuel-chamber A, by providing the side wall, B, of the chamber A with one or more projections or fingers, *n*, to meet the grate as it reaches its horizontal, or nearly horizontal, position.

It has been heretofore proposed to construct the fuel-supporting grate of stoves in two parts, (arranged longitudinally therewith,) one of which parts of grate is hung on a shaft at its outer side, so as to permit its inner side to fall away from the fuel-chamber, while the other part of grate is hung at its inner side, having at its outer edge, and made in one piece therewith, a cut-off extending downward therefrom in the form of a grated cylindrical segment, and in such a manner that in order to bring this said cut-off into the position intended to support the upper portion of the fuel in the fuel-chamber, the side of the grate connected with this said cut-off must necessarily be raised and traverse therewith, thus carrying the ashes, &c., resting on this said part of grate upward and before the cut-off, thereby materially disturbing the contents of said fuel-chamber; and the warping of this said part of grate by the heat of the fire thereon must necessarily distort the shape of the cut-off, and the replacing of the grate, by reason of its burning out, also necessitates the replacing of the cut-off, and the cut-off (being cast solid with this part of the grate) is dependent upon the axis of such part of grate for its center of motion; but in the device herein described as of my invention the cut-off is not necessarily connected with, and is constructed entirely separate from, the fuel-sustaining grate, or any part thereof, and it enters the fuel-chamber and passes through the contents therein edgewise, in a fork-like manner, with but little, if any, resistance therefrom, simply dividing the portion of fuel in said chamber above the path of the cut-off from the ashes, &c., below it, without any material disturbance of said contents, and can be vibrated to and fro in and out the fuel-chamber without necessarily at the same time operating the fuel-sustaining grate, and the axis of the cut-off can be adjusted independently of the grate, so as to divide off a greater or less amount of the under portion of the contents of the fuel-chamber for delivery into the ash-pit of the stove, as may be required; and it is evident that the cut-off or its successful working is not affected by the warping or burning out of the grate.

What I claim as my invention is—

1. The cut-off E, separately constructed and arranged and supported, substantially as described, in combination with the fuel-chamber A and its fuel-sustaining grate, to be movable to and fro from a position at one side, and below, or partly below, the said fuel-sustaining grate, to a position above said grate, and across, or partly across, the lower portion of said fuel-chamber.

2. The cut-off E, separately constructed and arranged, in combination with the fuel-chamber A and its fuel-sustaining grate F, supported by trunnions *e* at or near its side opposite to that of the said cut-off, substantially as shown and described.

3. The cut-off E, separately constructed and arranged and supported, in combination with the chamber A and grate F, and provided with mechanism whereby the said cut-off and grate can be operated together simultaneously, substantially as specified.

4. The cut-off E, provided with supporting-arms *a*, constructed and arranged, substantially as shown and described, so as to be capable of being employed, in combination with the chamber A and grate F, in the manner substantially as set forth in the above specification.

In testimony whereof I hereunto set my hand this 4th day of April, 1878.

JOHN H. GOODFELLOW.

Witnesses:
JAMES H. SLADE,
JAMES T. GOODFELLOW.