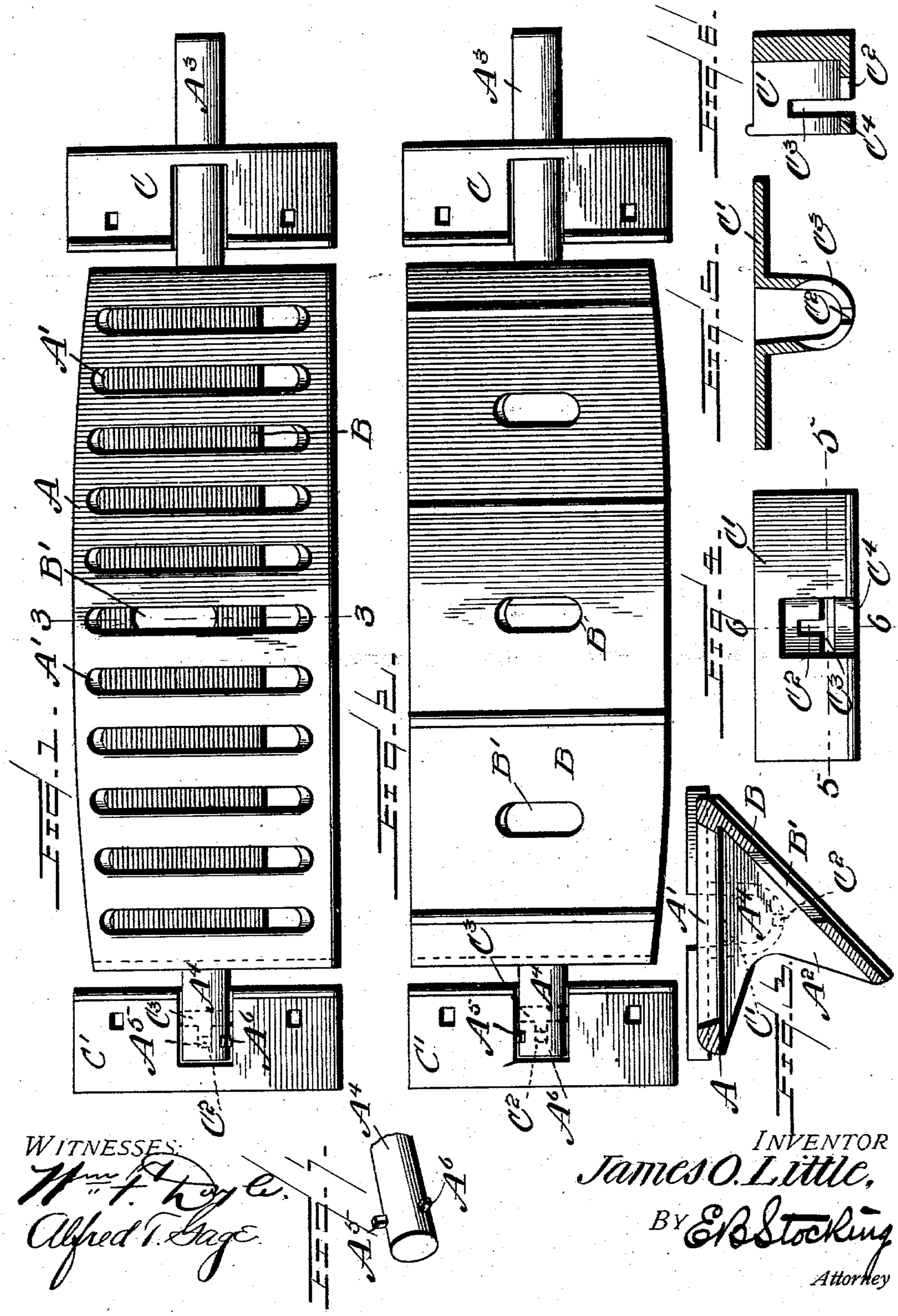
No. 740,880. PATENTED OCT. 6, 1903.

# J. O. LITTLE.

## DUPLEX GRATE.

APPLICATION FILED MAY 19, 1903.

NO MODEL.

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No. 740,880. Patented October 6, 1903.

# UNITED STATES PATENT OFFICE.

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## DUPLEX GRATE.

SPECIFICATION forming part of Letters Patent No. 740,880, dated October 6, 1903.

Application filed May 19, 1903. Serial No. 157,821. (No model)

*To all whom it may concern:*

Be it known that I, JAMES O. LITTLE, a citizen of the United States, residing at Quincy, in the county of Adams, State of Illinois, have invented certain new and useful Improvements in Duplex Grates, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a duplex grate, and particularly to a construction embodying independent fuel-supporting surfaces adapted for use with different characters of fuel.

The invention has for an object to produce a duplex grate in which the fuel-supporting surfaces are disposed at an acute angle to each other, whereby when one of the surfaces is in a horizontal position to support the fuel the other is disposed diagonally beneath the same, so as to conduct and deliver any ashes sifted through the grate-apertures to one side of the grate and prevent the collection thereof between the faces of the grate.

A further object of the invention is to provide lugs upon the grate-rod coöperating with a locking-slot, by means of which the grate may be held against any rotary movement, while the longitudinal movement of the grate permits the same to be rocked for shaking purposes or completely dumped when found desirable.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the drawings, Figure 1 is a plan of the grate when one fuel-supporting surface is in position. Fig. 2 is a similar view with the other supporting-surface in position. Fig. 3 is a vertical section on the line 3 3 of Fig. 1. Fig. 4 is a plan of the grate-rest. Fig. 5 is a vertical section thereof on the line 5 5 of Fig. 4. Fig. 6 is a similar view on the line 6 6 of Fig. 4, and Fig. 7 is a detail perspective of the grate-rod and locking-lugs thereon.

Like letters of reference refer to like parts in the several figures of the drawings.

The letter A designates one face of a duplex grate, which may be provided with a series of apertures A′ and is adapted for supporting coal or other similar fuel which requires a large amount of draft. Extending at substantially an acute angle to the grate A is a second grate B, having a less number of apertures B′ and adapted for use with wood or other fuel which requires only a relatively small amount of draft. These grates A and B are connected together at opposite ends by web-plates $A^2$, and at one end a rod $A^3$ is projected through a grate-rest C beyond the front of the stove or heater, so that the grate may be operated thereby. At the opposite end of the grate a rod $A^4$ is provided and has secured thereto locking-lugs $A^5$ and $A^6$, disposed upon the rod with the lug $A^5$ at the opposite side thereof to the face A and the lug $A^6$ opposite to the face B of the grate. This rod $A^4$ is adapted to lie within a grate-rest C′, which is provided with a locking-slot $C^2$ and also with a laterally-extending rocking slot $C^3$, within which slots the lugs $A^5$ and $A^6$ are adapted to lie. The grate-rest C′ is also provided with an end wall $C^4$ beyond the slot $C^3$, which prevents the rod leaving the rest in the longitudinal movement thereof.

In the operation of the grate when the coal-supporting face is to be used the lug $A^5$ is engaged within the locking-slot $C^2$, and the parts are then supported against any rotary movement. When it is desired to shake the grate in this position, it may be accomplished by a reciprocatory movement thereof, or if it is desired to rock or dump the grate the latter is moved longitudinally by means of the rod $A^3$ until the lug $A^5$ enters the rocking slot $C^3$, when the parts are free to be rotated. If it is desired to use the wood-burning surface B of the grate, the latter is turned completely over while in this position until the lug $A^6$ is opposite the slot $C^2$, when a longitudinal movement of the grate causes the lug to enter the slot and locks the parts in the position shown in Fig. 2. The disposition of the fuel-supporting faces of the grate at an acute angle to each other provides an inclined conducting-surface beneath the supporting-surface of the grate, by which the collection of ashes in the grate is prevented and the refuse of the shaking operation is deposited in the ash-box of the stove. It will also be seen that the simple construction of the rocking means permits the use of either

face of the grate by simply moving the same longitudinally and rotating the grate until the locking-lug of the opposite face enters the locking-slot in the rest, while the shaking of the grate being either a reciprocating movement or a rocking movement may be effected, so that all of the advantages of a reciprocating and a rocking grate are obtained and the parts are free to be dumped at any time.

It will be obvious that changes may be made in the details of construction and configuration without departing from the spirit of the invention as defined by the appended claims.

Having described my invention and set forth its merits, what I claim, and desire to secure by Letters Patent, is—

1. In a duplex grate, a grate-bar provided with opposite fuel-supporting surfaces, a rest provided with a locking-slot, pivoting-rods extending centrally of the width of said faces to permit a rotary movement of the grate, and independent devices carried by a pivoting-rod to engage a locking-slot for securing said grate with either of its fuel-supporting faces in position for use.

2. In a duplex grate, a grate-bar provided with opposite fuel-supporting faces, pivoting-rods extended centrally of the width of said faces to permit a rotary movement of the grate, a grate-rest provided with a locking-slot therein extending parallel with one rod, and independent locking-lugs carried by one of said rods and adapted to engage the slot when the respective faces are in fuel-supporting position.

3. In a rotatable grate having opposite fuel-supporting faces, pivoting-rods at opposite ends thereof located substantially centrally of the width of said faces, independent locking-lugs carried by one of said rods, and a grate-rest provided with a locking-slot parallel to the rod carrying the lugs and a rocking slot disposed at an angle thereto.

4. In a duplex grate, a grate-bar provided with opposite fuel-supporting surfaces, pivoting-rods at opposite ends thereof located substantially centrally of the width of said faces, a grate-rest provided with a locking-slot parallel to the rod, a rocking slot disposed at an angle thereto, and independent locking-lugs carried by one rod and adapted to engage said locking-slot when the respective faces are in fuel-supporting position.

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

JAMES O. LITTLE.

Witnesses:
A. M. SIMONS,
HOMER M. SWOPE.