

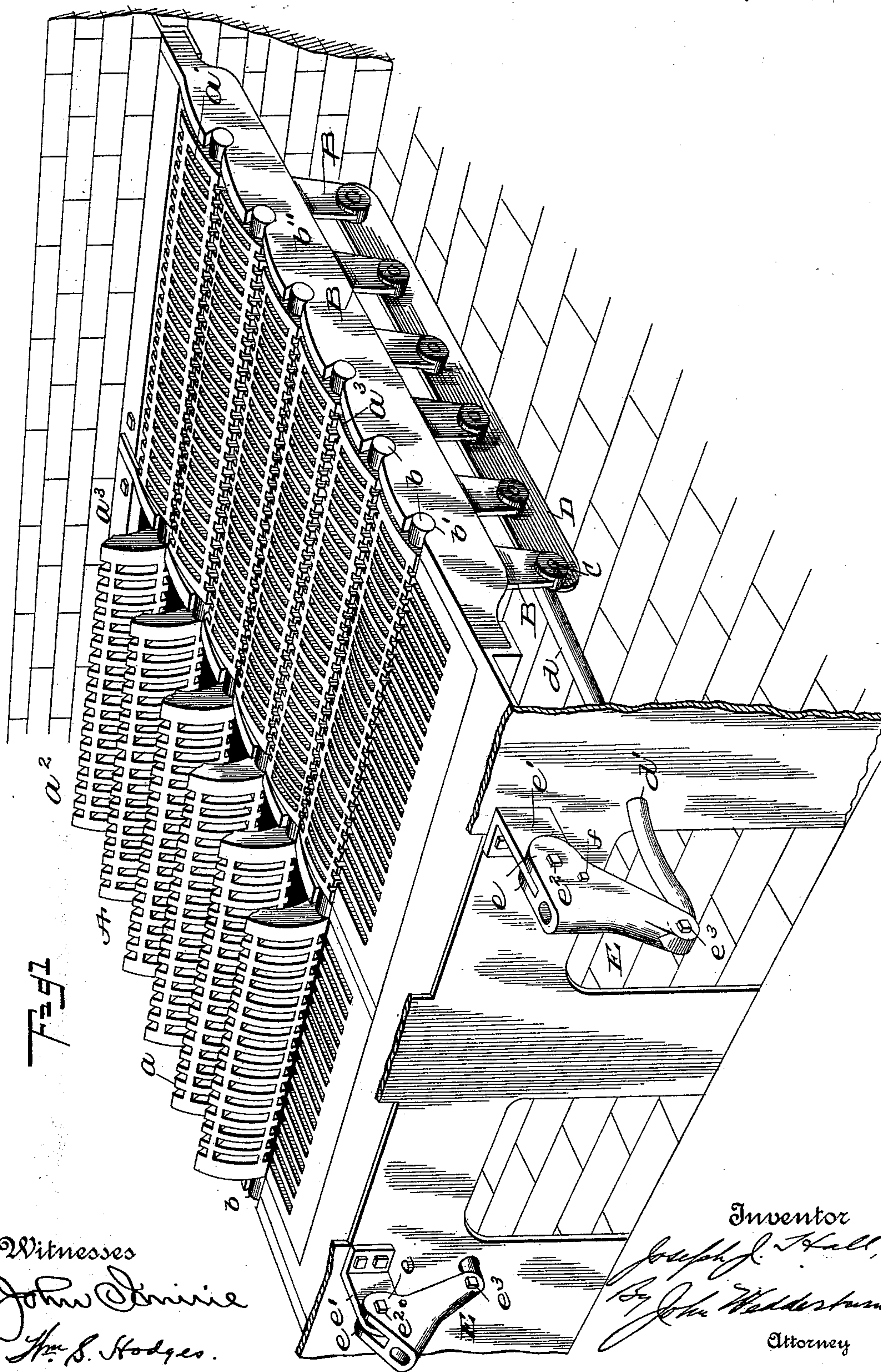
(No Model.)

2 Sheets—Sheet 1.

J. J. HALL.
GRATE.

No. 500,493.

Patented June 27, 1893.



Witnesses

John D. Irvine
J. S. Hodges.

Inventor

Joseph J. Hall,
By John W. Wadsworth.

Attorney

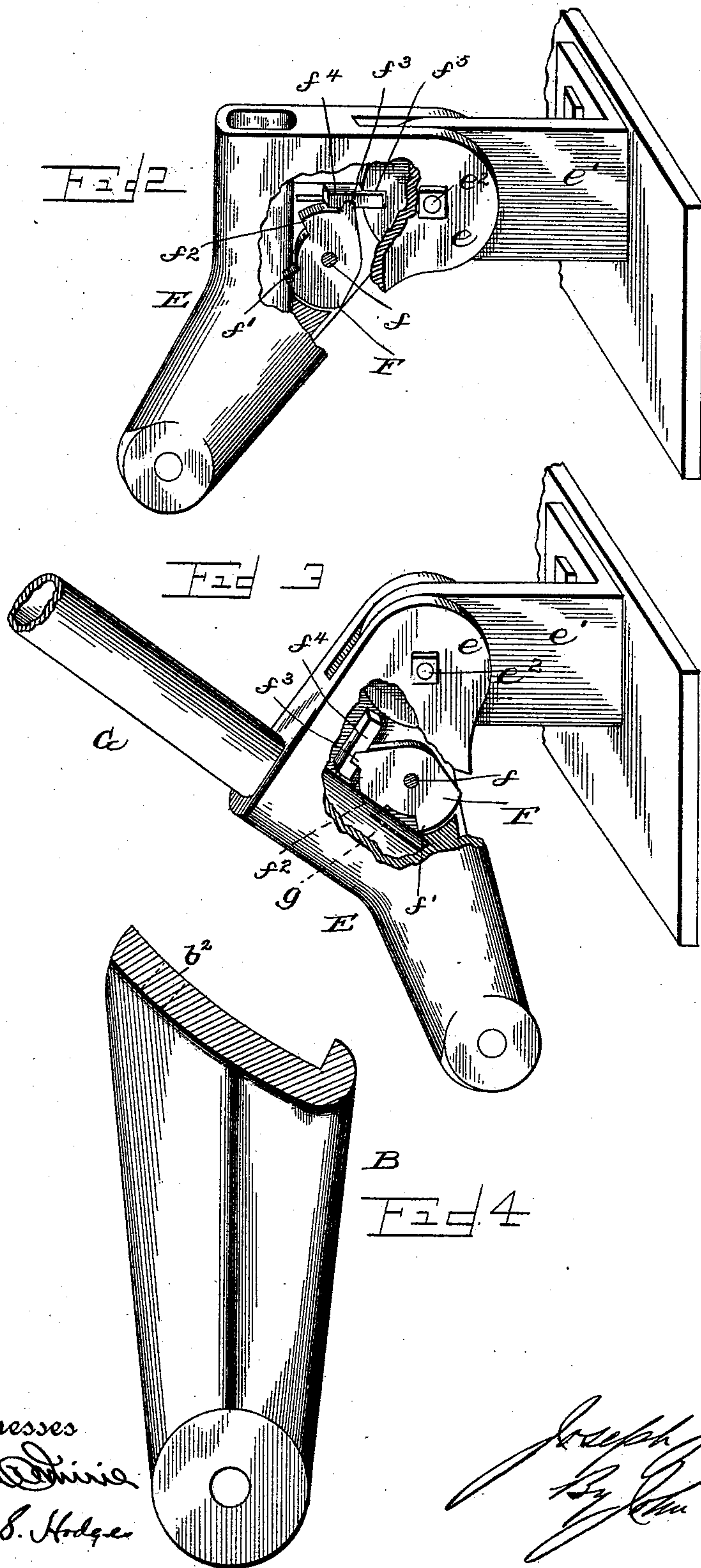
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GRATE.

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Witnesses
John D. Smith
Wm. S. Hodges

Inventor
Joseph J. Hall
By *John W. Henderson*
Attorney

UNITED STATES PATENT OFFICE.

JOSEPH JOHNSON HALL, OF WILLOW, CALIFORNIA.

GRATE.

SPECIFICATION forming part of Letters Patent No. 500,493, dated June 27, 1893.

Application filed August 18, 1892. Serial No. 443,409. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH JOHNSON HALL, of Willow, in the county of Glenn and State of California, have invented certain new and useful Improvements in Grates; and I do hereby 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.

This invention contemplates certain new and useful improvements in grates, all the bars of which can be readily operated in unison and held firmly in the position which they are made to occupy.

The invention comprises the detail construction, combination and arrangement of parts, substantially as hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings:—Figure 1 is a view in perspective illustrating my improved grate, one section of which is shown open, the other being closed. Fig. 2 is a detail perspective view of the lever-socket, parts being broken away. Fig. 3 is a similar view of the same feature shown in a different position. Fig. 4 is a detail view showing one of the arms connected to the grate.

Referring to the drawings, A designates a grate preferably formed in two sections a, a' , each section being composed of corresponding grate-bars a^2 . Each grate-bar is of approximately semi-circular shape and has two bearing flanges a^3 . From the centers of the ends of these grate-bars project short studs b which fit in recesses b' of supporting bars b extended longitudinally the length of the stove. By thus making the grate-bars with double bearing faces they are capable of double use, that is, if one face should become worn or injured, the other face can still be used. In thus making the grate-bars no additional material is required, since the metal now used for strengthening a single faced grate-bar is made to form the additional face in my grate-bar.

To the under side of each bar is secured the upper end of an arm B, the same being attached to such bar beneath the face in use in forming the grate by screws passed through holes b^2 . At their lower ends these arms are loosely connected by bolts C to a sliding bar

D. To this latter is connected an operating rod d , which near its forward end is bent or curved upward and projected through a hole or opening d' in the front wall of the stove or furnace. By thus bending or curving the operating rod it is not necessary to form a slot in said wall, and hence the annoyance of additional draft is avoided.

E is a lever socket which is provided with two corresponding ears e between which fits an arm e' rigidly attached to the front wall of the stove. A pivot pin e^2 is passed through coincident holes in said ears and arm. At its lower end this lever-socket is pivotally connected by a bolt e^3 to the outer end of the operating rod. Within lever socket E is a cam F mounted on a pivot pin f , and having two corresponding front teeth or shoulders f', f^2 , and a third upper tooth f^3 . This latter tooth has rigidly secured thereto a short arm or locking plate f^4 , which when the cam is in its normal position is projected into a slot f^5 in the end of arm e' .

G is the operating lever rod provided in one side near its end with a slot or opening g . This lever rod is inserted down into the lever socket and will strike against the lower shoulder f' of cam F and effect the turning thereof and the removal of locking plate f^4 from engagement with arm e' , which will permit the lever socket to turn on its pivot pin e^2 and effect the inward movement of the operating rod. At the same time that the cam is turned to effect the unlocking of plate f^4 the tooth or shoulder f^2 enters slot or opening g of the lever rod and hence locks the latter therein, and it is impossible to remove the lever rod without returning the grate bars to their normal position. Hence it will be seen that by inserting the lever rod in the lever socket, the latter is unlocked and when turned will effect the turning of the grate-bars into a vertical position, and thus dump the contents of the grate. In order to remove the lever-rod the grate bars are of necessity returned to their normal position. In this way all danger of the bars being left in a vertical position is avoided.

The advantages of my invention are apparent to those skilled in the art to which it appertains.

A grate thus constructed is simple and inexpensive, strong and durable and not liable to readily get out of order.

I claim as my invention—

- 5 1. The herein-described improved grate, comprising a series of pivoted grate-bars, an operating rod therefor, a lever socket, a stationary arm pivotally supporting the same a cam in said lever socket carrying a locking
10 plate designed to engage said arm, and the lever rod for operating said cam, which latter will hold said lever rod in said lever socket when the latter is out of its normal position, as set forth.
- 15 2. The herein-described improved grate, comprising a series of pivotal grate-bars, an operating rod therefor, a lever socket con-

nected to said rod, a stationary arm supporting said lever socket and having a slot in its end, the cam pivotally mounted in said lever- 20 socket and having teeth or shoulders, a locking plate carried by said cam and designed to enter said slot, and the lever rod having a slot designed to move said cam and be held by one of said teeth entering said slot, sub- 25 stantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOSEPH JOHNSON HALL.

Witnesses:

W. K. DOBSON,
J. N. WATERS.