

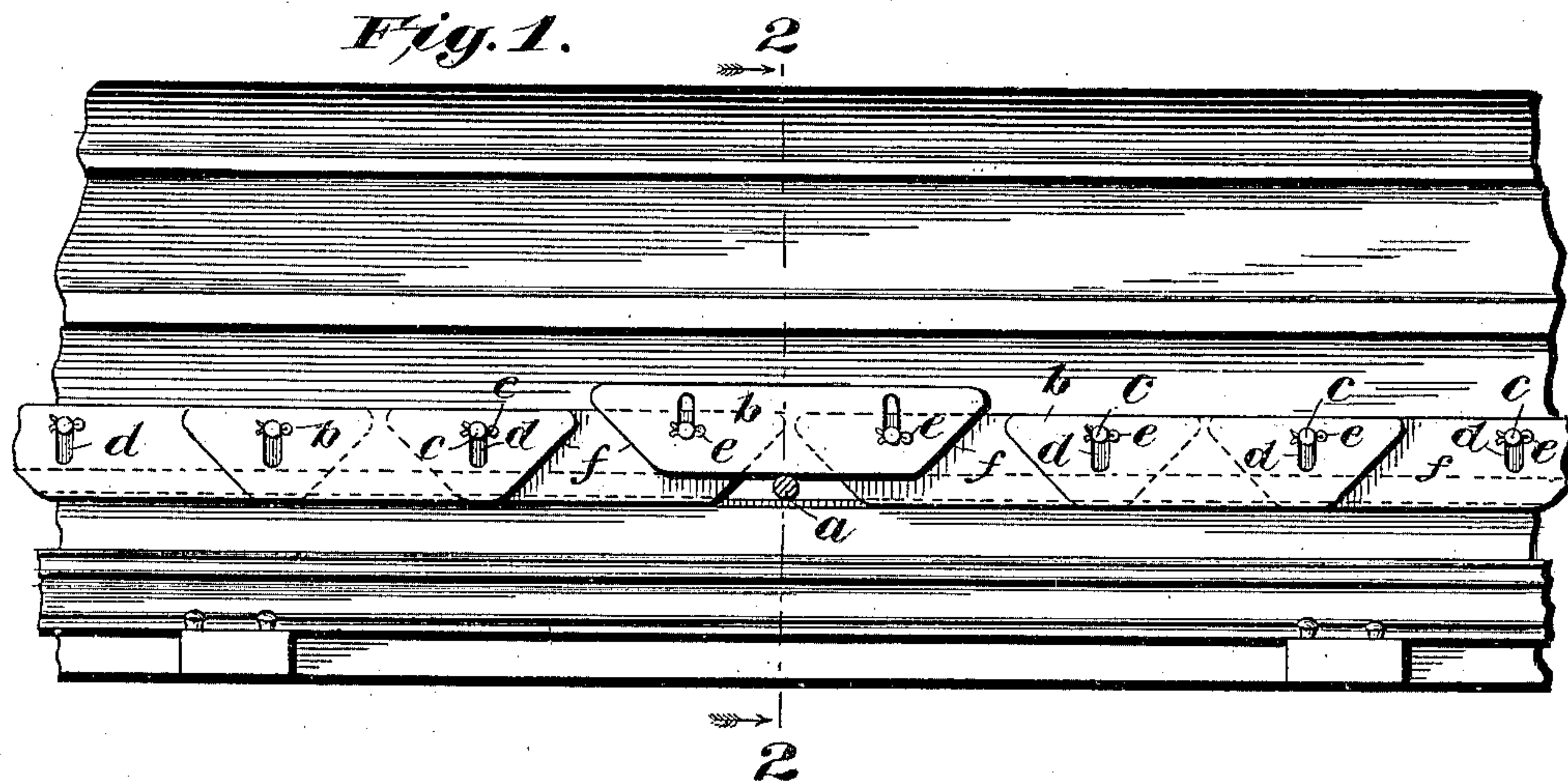
No. 688,587.

Patented Dec. 10, 1901.

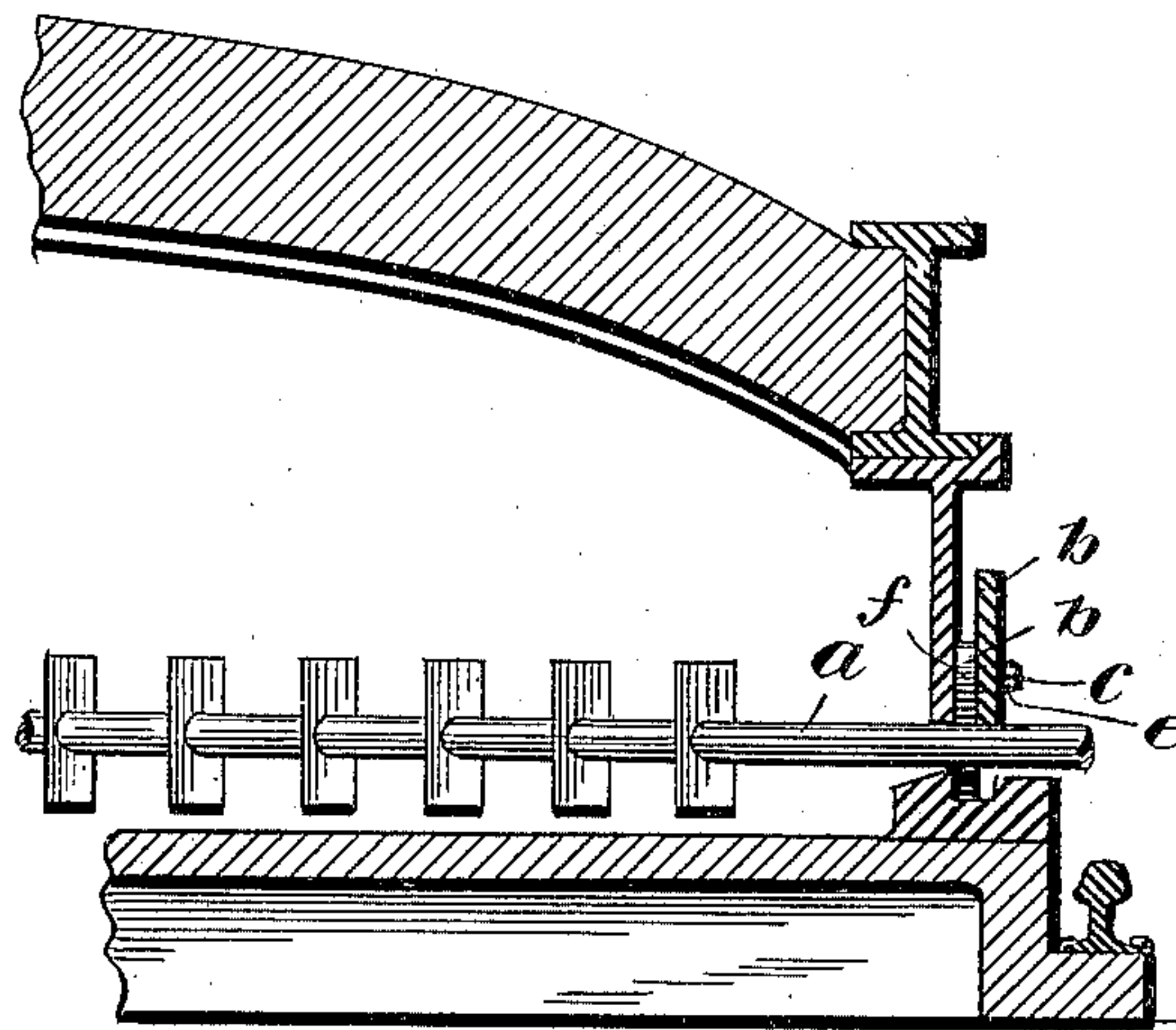
J. P. BRIDGEWATER.  
DOOR FOR ORE ROASTING FURNACES.

(Application filed Aug. 13, 1901.)

(No Model.)



*Fig. 2.*



Witnesses:

*Elmer Seavery,*  
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# UNITED STATES PATENT OFFICE.

JOHN P. BRIDGEWATER, OF EVERETT, WASHINGTON.

## DOOR FOR ORE-ROASTING FURNACES.

SPECIFICATION forming part of Letters Patent No. 688,587, dated December 10, 1901.

Application filed August 13, 1901. Serial No. 71,928. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN P. BRIDGEWATER, a citizen of the United States of America, residing at Everett, in the county of Snohomish and State of Washington, have invented a new and useful Improvement in Doors for Ore-Roasting Furnaces, of which the following is a specification, reference being had to the accompanying drawings, in which—

10 Figure 1 is a side elevation of a portion of a calcining-furnace provided with my improved gravitating doors; and Fig. 2 a transverse section of the same, taken on the line 2 2.

15 The object of this invention is to provide simple devices for automatically closing the slot at the side of the furnace through which the stirrer-shaft works, as more fully hereinafter set forth.

20 The rabble or stirrer-shaft *a* in the well-known Wethey furnace (see Patent No. 640,058, dated December 26, 1899, to A. H. Wethey) works through a horizontal slot in the side of the furnace while the stirrer or rabble is being operated, and it is desirable to employ devices for normally closing this slot, but which at the same time will permit the rabble or stirrer arm to work freely along the slot. To accomplish this, I employ a series of plates *b*, which are hung upon pins *c*, projecting outwardly from the side of the furnace just above the slot. Preferably each plate is hung upon two pins *c*, projecting from the furnace above the slot, and the adjacent ends of the plates overlap to a sufficient extent to break the joints between the plates and entirely close the slot. The plates hang loosely on the pins, and normally their lower edges lie below the slot in a channel in the bottom iron of the slot. Each plate where the pins *b* pass through it is slotted vertically, as at *d*, so as to permit the plate to freely rise and fall, and the plate is prevented from coming off the pins by suitable keys *e* inserted in their ends. Each end of each plate is beveled downwardly and inwardly, as at *f*, these beveled edges inclining toward each other, giving to the plate a trapezoidal shape.

50 It will be observed that as the stirrer-shaft passes along the slot it will strike against the inclined edges and automatically raise the plates one after another, each plate dropping back into place after the arm or shaft passes

it. It will be observed that the movement of the plates will be easy and noiseless and that but a small area of the slot will be uncovered at any one time. It will be observed that by beveling both the forward edge and the rear edge of each plate the plates will not only be raised easily and noiselessly, but will also fall back into place with a minimum of noise and wear.

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

1. The combination with a calcining-furnace having a slot in its side wall and a series of pins projecting from said wall above said slot, of a series of plates supported on said pins and having a vertical bodily movement thereon and normally closing said slot, the adjacent ends of said plates being overlapped and the lower forward edge of each plate being beveled upward.

2. The combination with a calcining-furnace having a slot in its side wall, of a series of plates supported on said wall and having a free bodily vertical movement, the adjacent ends of said plates being overlapped and the lower forward edge of each plate beveled upward.

3. The combination with a calcining-furnace having a slot in its side wall, of a series of plates supported on said wall and normally closing said slot, and means whereby said plates are permitted a bodily vertical movement, the adjacent end of said plates being overlapped and the forward and rear lower edge of each plate being inclined upward.

4. The combination with a calcining-furnace, having a slot in its side wall and a series of pins projecting from said wall above said slot, of a series of plates hung loosely on said pins and slotted so as to have free bodily vertical movement thereon, the adjacent ends of said plates being overlapped and their forward and rear lower edges being inclined upward away from each other.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 6th day of August, 1901.

JOHN P. BRIDGEWATER.

Witnesses:

GEORGE HOLCOMB,  
CHAS. H. RUNKEL.